

An Examination of Great by Choice: Redux

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Given the works by Collins, and later Collins with Hansen, we examined the performance and practices of the fourteen companies in Great by Choice [GBC]. We looked at the financial performance for the 11 years ending the GBC comparison period (1991-2001) and the 11 years of our research period (2002-2012). We used financial analysis to develop and examine research propositions as to whether the companies continued, discontinued, or started employing the GBC practices. Overall, we concluded that GBC has good advice for companies.

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JEL Classification: Y10, O34, O31, M11, K42, L25, M21

I. Introduction

In a series of books, starting with *Built to Last* (Collins, 2001), Jim Collins and a team of researchers sought to discover the underlying principles of greatness. Their approach was to identify companies that differentiated themselves through outstanding marketplace performance, comparing them to other, equally promising companies that were less successful. These comparisons covered a specific period where the firms had equal potential for success. It is to a recent edition of the Collins series that we address this paper – *Great by Choice* (Collins and Hansen, 2011).

Collins and Hansen sought to identify principles and practices that were unique to successful companies across sample sets. This approach appears to be scientifically rigorous. We decided to test their conclusions beyond their sample sets' *dynastic period*. The principles and practices apply to companies within the period of analysis, but what about beyond? There are certainly examples of once great companies that have fallen off the pedestal in Collins' own body of work (Collins, 2009). Collins made the argument that those that *fall* from greatness did not invalidate his conclusions because during the dynastic period the companies were engaging in those practices identified as being *great*. His assumption was that the companies are no longer *great* because they are no longer modeling the practices. In this paper, we test to see if continued great performance is explained by the application of GBC practices or if a reduction in performance is explained by companies discontinuing the use of the practices that ostensibly made them great. Similarly, we look to see if the comparison companies identified in GBC improve their financial performance if they adopt GBC practices. We begin with a review of Collins' previous works to determine how their conclusions and practices were derived (Table 1).

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Table 1: Quick Reference to Collins and Team Series of Books

Title	Reference	Objective
Built to Last	Collins and Porras (1994 and 2001)	Identify practices that enable the transformation from a mediocre (good) company to a great company.
Good to Great	Collins (2001)	Identify practices of great companies.
Good to Great and the Social Sectors	Collins (2011)	Identify practices of great companies in the social sector.
How the Mighty Fall	Collins (2009)	Identify mechanisms that cause once great companies to fail.
Great by Choice	Collins and Hansen (2011)	Uncertainty, chaos luck—why some thrive despite them all.

In *Good to Great* Collins showed how great companies triumph 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 general 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. They noted that the transformation was a process of build-up, followed by breakthroughs, broken into three broad stages, with a few key differentiators in each as described in Figure 1.

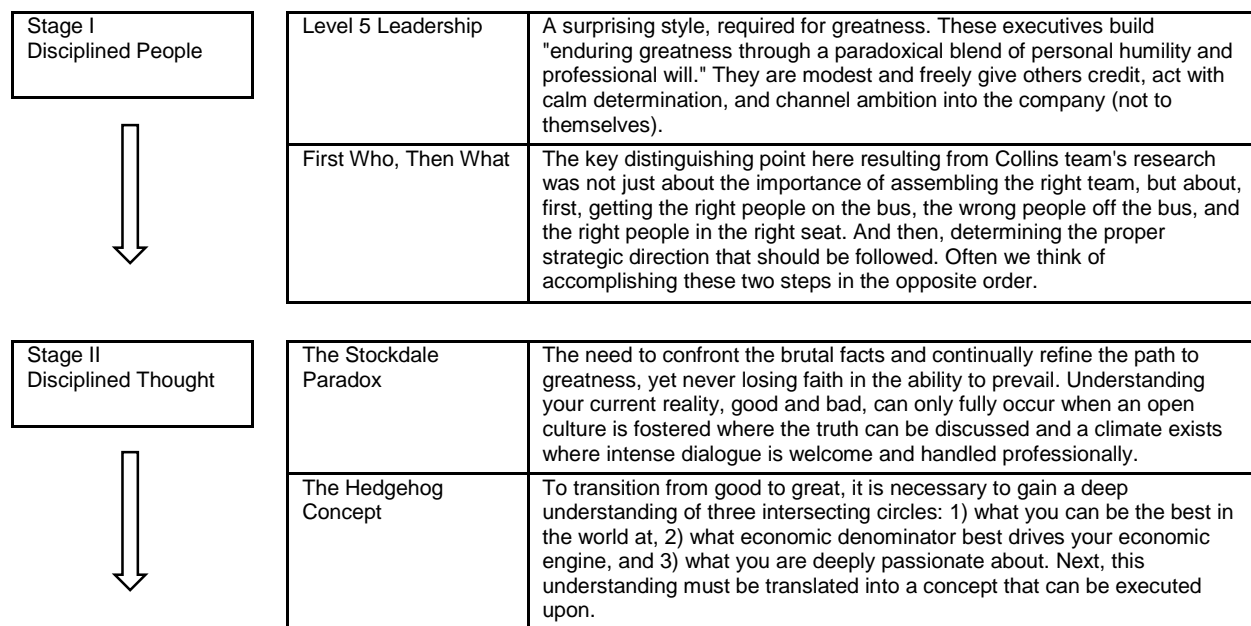
Figure 1: Good to Great Stages and Key Differentiators

Figure 1: Good to Great Stages and Key Differentiators: Continues

Stage III Disciplined Action	The Culture of Discipline	The good-to-great companies built a consistent system with clear constraints, but they also gave people freedom and responsibility within the framework of that system.
	Technology Accelerators	Good-to-great companies think differently about technology. They do not use technology to transform from good to great, but to accelerate their progress, staying focused on their Hedgehog. Collins asserts that technology by itself is never a primary cause of either greatness or decline.
	The Flywheel and the Doom Loop	Why those who do radical restructuring fail to make the leap to greatness, while those that consistently accumulate momentum (turn upon turn, step by step) can transform themselves. Patience, persistence and discipline are critical to achieving desired results.

Collins and Hansen (2011), subsequent to *Good to Great*, extended this research work in GBC to 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. The final organizations that met their criteria, after considering over 20,000 companies, were Amgen, Biomet, Intel, Microsoft, Progressive Insurance, Southwest Airlines, and Stryker.

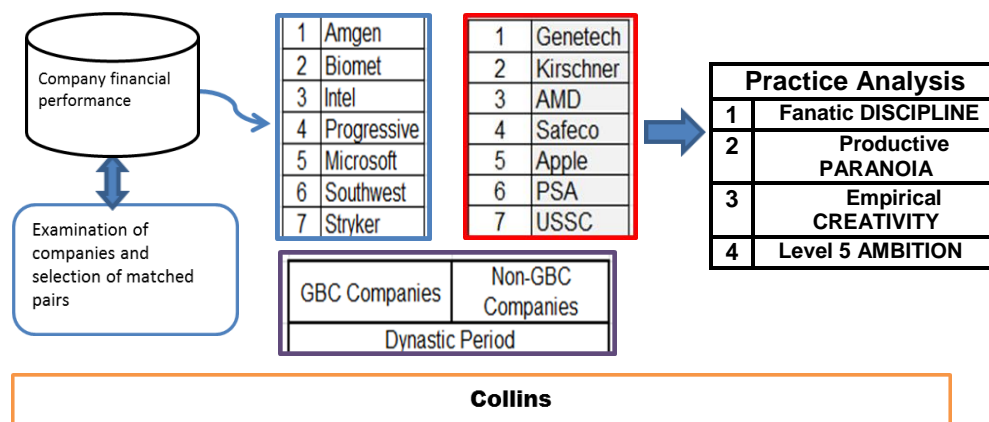
These companies started from a position of vulnerability, rose to become *great by choice* with spectacular performances, and did so in unstable environments characterized by big forces that were out of their control, fast moving, uncertain, and potentially harmful. Simultaneously, they compared these companies to matched pairs that failed to become great in the same extreme environments. They used the contrast between winners and the “also-ran” comparison companies to uncover the distinguishing practices that allow some to thrive in uncertainty. Table 2 presents the GBC practice concepts.

Table 2: Great by Choice Practice Concepts

<u>Practice</u>	<u>Analogy</u>	<u>Description</u>
Fanatic Discipline	The 20 Mile March	Consistent execution without overreaching in good times or underachieving in bad times.
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.
	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	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.

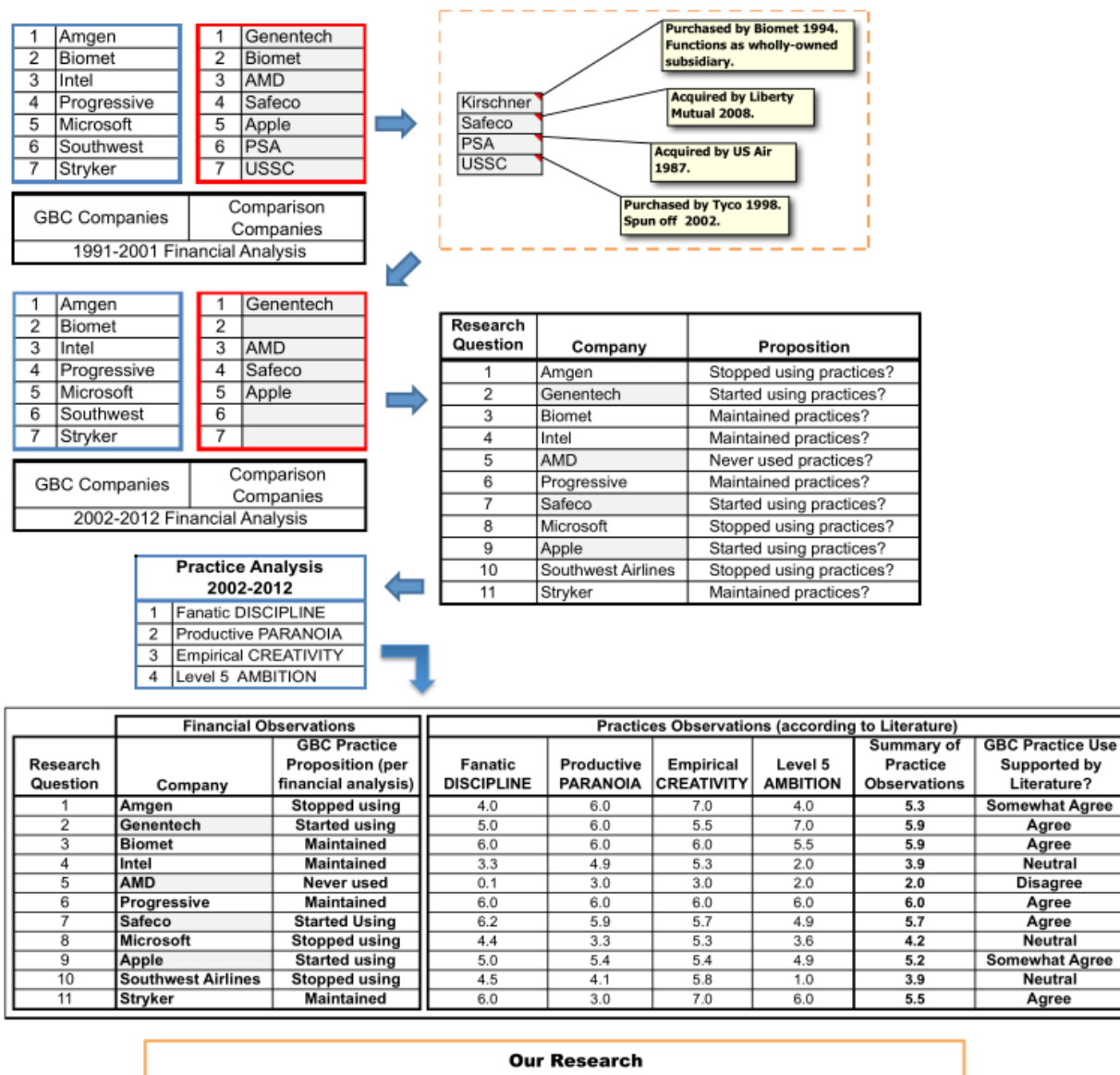
Given these works by Collins, and later Collins with Hansen, we set out to examine the performance and practices of the fourteen companies in GBC since the study was completed. We used a convention of looking at the financial performance for a specific time periods, namely the 11 years ending the GBC comparison period (1991-2001) and the 11 years of our research period (2002-2012). This approach is depicted in Diagram 1 and Diagram 2.

Diagram 1: Collins Approach During Dynastic Period



We think this is a valid and comparable financial performance indicator that meets the intent of Collins and Hansen to compare matched pair companies under identical economic conditions. Basically in this paper we replicate the methodology presented in Collins and Hansen's GBC over the end of their period of examination (1991–2001) and extend it into a second period (2002–2012). Our objective is to determine if the practices identified in GBC, and related performance, continued (or increased) or discontinued (or decreased) based on financial and practice analysis comparable to that used in GBC. We used our financial analysis to develop research questions and propositions as to whether the eleven remaining companies in the GBC sample were or were not employing the GBC practices. We used propositions rather than hypotheses because we viewed the practice analysis to be of a qualitative nature. We then tested these propositions by seeing if the companies indeed were or were not using the practices based on a review of the relevant literature. The sections that follow describe our financial analysis, the development of our propositions, our practice analysis, and conclusions as to the validity of Collins and Hansen's assertion that GBC practices lead to great performance.

Diagram 2: Our Research Approach 2002-2012



II. Financial Performance Analysis

A. GBC Procedure

Collins and Hansen selected and compared companies based on total price return performance from 1972 to 1992. If the company was not publicly traded in 1972 its performance was held at the “general stock market rate of return.” This convention actually created some interesting anomalies in the “10x’ers” claim. Some companies benefited considerably from riding the general market trend until its initial public offering. For example, the GBC return for \$10,000 purchased December 31, 1972, and assumed to be held at the general stock market rate until Amgen went public in 1980, and then held until 2002, would yield \$4.5 million. This equates to 24x the market. However, \$10,000 invested in 1980 and sold at the end of 2002 would yield only 4420 percent or \$442,000.

The S&P 500 Total Price Return was 226.6 percent for the same period. Therefore, Amgen outperformed the market by 19.5x since 1980. During the last 10 years of the GBC period from 1992 to 2002, Amgen only outperformed the S&P 500 by 2.1x. While this performance may still be considered “great,” it points to an inherent problem in allowing the results to be influenced by variable public offering dates.

B. Our Process

Table 3 shows the Total Price Return percentage and “times better” of the eleven remaining GBC and comparison companies for the two periods: 1991–2001 and 2002–2012. Table 3a provides data when full 11-year periods were available. Table 3b provides data when less than full periods of date were available.

The first check we performed was to see if the relative financial performance identified by Collins and Hansen was maintained in the last eleven years of their study. To do this, we examined how the GBC companies performed in comparison to the Standard and Poor’s 500 and to their comparison companies. All the GBC companies we examined performed 2.1 to 7.1 times better than the S&P 500. Two of the three comparison companies examined did worse than the S&P 500: Safeco and Apple. We looked at the five remaining comparison pairs in the sample: Amgen-Genentech, Progressive-Safeco, Intel-AMD, Microsoft-Apple, and Stryker-USSC. The Stryker and USSC comparison was only done for 1991-1998 because USSC was purchased by Tyco in 1998. All these pairs showed that the GBC Company outperformed their comparison company by 3.3 to 29.4 times. Although not consistently “10x,” these observations generally support the selection of GBC and comparison companies by Collins and Hansen and for continued use in our research.

Table 3a: Total Price Return Percentage Comparison for Full Periods

	GBC (1991-2001)			Update (2002-2012)		
	Percentage Change Total Return	Times better (times worse) than S&P 500	Times better (times worse) than Comparison Company	Percentage Change Total Return	Times better (times worse) than S&P 500	Times better (times worse) than Comparison Company
S&P 500 Index	346			54		
Amgen	2076	4.9	3.9	57	1.0	
Genentech (1)	460	1.3		See Table 3b		
Biomet	938	2.3				
Kirschner (2)						
Intel	2574	6.0	4.1	-17	(1.9)	5.5
AMD	551	1.5		-85	(10.2)	
Progressive	821	2.1	3.3	118	1.4	
Safeco (1)	180	(1.6)		See Table 3b		
Microsoft	3069	7.1	29.4	7	(1.4)	(46.0)
Apple	8	(4.1)		4801	31.9	
Southwest Airlines	1534	3.7		-44	(2.7)	
PSA (2)						
Stryker	1428	3.4		102	1.3	
USSC (3)	See Table 3b					

Notes: continued on next page

Notes: from Table 3a.

1. Updates for Genentech and Safeco are included in Table 3b due to change or discontinuation of business during 2002-2012.
2. PSA dropped from analysis due to acquisition early in the GBC period.
3. USSC GBC partial period included in Table 3b due to acquisition after 1998.

Table 3b: Total Price Return Percentage Comparison for Partial Periods

Company	Comparison Period	S&P 500 Basis Percentage Change	Percentage Change	Times better (times worse) than S&P 500	Times better (times worse) than Comparison Company
<i>Great by Choice Partial Period</i>					
Stryker	1991 – Nov. 1998	335	449	1.3	4.9
USSC			13	(3.9)	
<i>Update Partial Period</i>					
Amgen	2002 – Apr. 2009	-13	-14	(1.2)	(4.1)
Genentech			250	3.5	
Biomet	2002 – Oct. 2007	49	53	1.5	
Progressive	2002 – Oct. 2008	-5	28	1.3	(2.0)
Safeco			152	2.5	

C. GBC-Redux

We looked at the 11-year update period 2002-2012. Most of the companies did worse due to the 2008 recession, except for Apple, which went from being 4.4 times worse than the general market to being 31.9 times better. To test Collins and Hansen’s implied hypothesis that GBC practices lead to great performance and the lack of these same practices leads to worse performance, we applied the same performance comparisons to the S&P 500 and the remaining comparison companies to develop indicators of great and mediocre financial performance.

Overall, the GBC companies did not fair very well in the update period. In comparison to the S&P 500, only Progressive (1.4x) and Stryker (1.3x) were doing slightly better than the market. Amgen and Biomet performed only as well as the general market (1.0x). The other three GBC companies were doing worse than the general market: Intel (1.9x worse), Microsoft (1.4x worse), and Southwest Airlines (2.7x worse). With respect to the comparison companies, Genentech, Safeco and Apple now outperform the S&P 500 by 4.x, 2.7x, and 31.9x respectively. AMD and USSC are the only remaining comparison companies that continue to do worse than the general market.

Collins and Hansen had seven matched pairs of companies for comparison. In the update period, we had enough data to make comparisons for four remaining matched pairs. For three of the matched pairs, the GBC Company was now performing worse than the comparison company: Amgen-Genentech, Progressive-Safeco, and Microsoft-Apple. Collins and Hansen observe that the true test of a company’s ability to handle a turbulent business environment is best accomplished by comparing like companies operating in the same environment. For the four remaining comparisons that we looked at, only Intel is still doing better than its comparison company, AMD. The relationship for the other three comparisons has reversed, with the comparison companies Genentech, Safeco, and Apple doing better than the previous “great” companies in the update period 2002-2012. From a survival analysis perspective, the fact that more agile firms absorbed Kirschner, PSA, and USSC provides support for the GBC hypothesis. In addition, the two other companies absorbed—Genentech and Safeco—improved their performance during our research period and became targets for acquisition. Biomet actually acquired Kirschner and went private during our period of study.

Based on our financial analyses we proposed a set of eleven research questions and propositions related to the GBC practices. These research questions, shown in Table 4, depict our expectations for GBC practice or lack of practice given on our financial analysis of the update period. Next, we looked for evidence of practice use during the update period 2002-2012 and summarized our observations in the table. Our supporting analyses and literature examination is discussed in the sections that follow.

Table 4: GBC Practice Usage During Update Period 2002-2012 Propositions

Research Question	Financial Observations		Practices Observations (according to Literature)					
	Company	GBC Practice Proposition (per financial analysis)	Fanatic DISCIPLINE	Productive PARANOIA	Empirical CREATIVITY	Level 5 AMBITION	Summary of Practice Observations	GBC Practice Use Supported by Literature?
1	Amgen	Stopped using	4.0	6.0	7.0	4.0	5.3	Somewhat Agree
2	Genentech	Started using	5.0	6.0	5.5	7.0	5.9	Agree
3	Biomet	Maintained	6.0	6.0	6.0	5.5	5.9	Agree
4	Intel	Maintained	3.3	4.9	5.3	2.0	3.9	Neutral
5	AMD	Never used	0.1	3.0	3.0	2.0	2.0	Disagree
6	Progressive	Maintained	6.0	6.0	6.0	6.0	6.0	Agree
7	Safeco	Started Using	6.2	5.9	5.7	4.9	5.7	Agree
8	Microsoft	Stopped using	4.4	3.3	5.3	3.6	4.2	Neutral
9	Apple	Started using	5.0	5.4	5.4	4.9	5.2	Somewhat Agree
10	Southwest Airlines	Stopped using	4.5	4.1	5.8	1.0	3.9	Neutral
11	Stryker	Maintained	6.0	3.0	7.0	6.0	5.5	Agree

III. Practice Comments

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, but open to change. According to Collins and Hansen, successful companies were not as innovative as the control companies; they were in some cases 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).

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. They found that 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. Designated as “Level 5 Ambition,” this is the centerpiece and grounding practice of leaders that support the other three GBC practices—“Fanatic Discipline,” “Productive Paranoia,” and “Empirical Creativity.”

“Fanatic Discipline:” In GBC the authors introduced the “20-Mile March” analogy to illustrate the practice of fanatic discipline. It is about having concrete, clear, intelligent, and rigorous performance mechanisms with two types of self-imposed control: (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 make well-reasoned, measured commitments and stick to them.

“Productive Paranoia:” In practicing productive paranoia, GBC leaders and companies are positioned better than their comparison companies to take advantage should the worst (or best)

happen. GBC leaders continuously scan the environment in what Collins and Hansen call “zoom out” mode and then “zoom in” to put specific plans and resources in place to cover even lower probability eventualities if the effect is potentially devastating enough. Another analogy that Collins and Hansen make in support of this practice is “return on luck.” Both GBC and comparison companies have the same good and bad luck opportunities. However, GBC companies are better positioned to take advantage of extraordinary events or situations.

“Empirical Creativity:” A key practice of GBC companies is their unique ability to collect and analyze their own data. GBC companies are data driven. They are not “me, too, companies” that mindlessly follow the crowd. The analogy that Collins and Hansen use to describe a typical application of this practice is “first bullets, and then cannon balls.” GBC companies do many small experiments and tests of the market place, before committing to a huge investment of time and resources.

We used these practice descriptions, and those in GBC, to identify practice usage by the sample companies. To better understand the context and business environment of the update period we also considered a number of additional factors that complemented and might be considered correlated to 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 extensive activity. Examples are litigation dealing with the drug companies; the joint ventures of AMD in their attempt to compete with Intel; the acquisition activity of Microsoft; and the personnel changes and leadership ratings of Southwest and Amgen and Stryker.

We performed a detailed practice analysis of the eleven companies depicted in Table 4. To verify our propositions we examined an extensive set of sources and references. Of note, there was neither uniform nor consistent availability of the company data. For example, Wikipedia was somewhat useful for providing a ready supply of current links and sources. For some organizations, such as Intel and Microsoft, company websites overwhelmed us with data while others (e.g. Stryker) had minimal content. We visited all of the company websites and examined their financial declarations for the eleven years of our study. There was much variability among the companies in the form and content of reporting. For a number of the companies, media and press releases were quite useful—in most cases, this involved sifting through two to three hundred references for each of the eleven years. Two other sources we used were *Brint.com*, a specialized business search engine and *Motley Fool*, a specialized stock portfolio analysis tool. The Brint.com source allowed us to view academic journals, business magazines and newspapers, as well as industry specific publications, while deploying various search filters.

Overall, we rated each company as shown in Table 5 on the four practices: “Fanatic Discipline,” “Productive Paranoia,” “Empirical Creativity” and “Level 5 Ambition” and noted whether the data supports or does not support our proposition. We scored articles and incidents using GBC discussions and descriptions. The scores were converted into a 7-point scale 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 propositions on practice usage based on financial performance (Table 5), then our analysis supports Collins and Hansen’s work in GBC. For example, in the case of Genentech we proposed that they had started using GBC practices based on their better-than-comparison and market financial performance. An overall practices rating of 5.9 (agree) indicates that this was indeed the case. Collins and Hansen’s work is supported. In another instance, Amgen had worse-than-comparison and industry financial performance. We

proposed that they had stopped using GBC practices. However, an overall practices score of 5.3 (somewhat agree) indicates that the GBC practices were still in place. In this case, Collins and Hansen's work is not supported.

Of the eleven companies we examined from 2002 to 2012, only one case clearly did not support the proposition that GBC practices lead to better financial performance. Amgen seems to have continued to use the GBC practices, but had worse financial performance. Seven of the cases clearly supported the use of GBC practices either by confirming great financial performance or by confirming poor performance through the lack of practice usage. Three of the cases lacked decisive evidence for practice usage either way (neutral).

In the remainder of this paper, we provide a case-by-case description of our analysis and conclusions with respect to GBC practice usage by the study companies in the period from 2002 to 2012. At the conclusion of the paper, we summarize our findings and conclude with some observations about the nature, replication and extension of Collins and Hansen's work.

A. Proposition 1: Amgen Stopped Using GBC Practices

During our study period, 2002 to 2012, Amgen started applying the scientific method and experimentation to the sales process. Typically, pharmaceutical salespersons represent several products. However, selling new medications entails educating physicians and medical staff making the sales effort very labor intensive. Based on experiments suggested by an Amgen research scientist, salespersons were made specialists in individual products. This has proven to be beneficial in some industries; however, for Amgen it became a distraction and a deviation from the GBC practices of "Fanatic Discipline" and "Productive Paranoia."

As part of our research on Amgen, we examined and categorized 138 news releases over our study period (Amgen News Releases). Table 5 presents a summary of these categorizations.

Table 5: Amgen News Releases 2002-2012

Acquisitions	Jt Ventures	Personnel	Philanthropy	Litigation	Financial	Recognition
13	13	29	18	10	18	37

A. 1. Fanatic Discipline [Neutral]

During the period of our study, Amgen had a stable of drugs under patent protection generating cash flows. It also had several high potential drugs in its R&D pipeline. Amgen is the largest independent biotechnology firm in the world. The market for biotechnology products is expanding significantly, and the market will continue this expansion. Amgen had a record of accomplishment of delivering solid growth earnings, causing it to be selected by Collins and Hansen as a GBC company. However, in 2009, 2008 and 2007, Amgen incurred restructuring charges of \$70 million, \$148 million and \$739 million respectively, related primarily to staff separation costs, asset impairment charges and accelerated depreciation and loss accruals (Flinn, 2012). These developments had an adverse impact on sales and operations. However, Amgen continued its disciplined focus on solving compelling medical problems using good science (Bashe, 2008).

A. 2. Productive Paranoia [Agree]

Amgen's patents protected them from competition. This is an example of adherence to "Productive Paranoia." However, manufacturing difficulties, disruptions or delays have limited the supply of their products and consequently their product sales. Current economic conditions have magnified certain risks that affect their business (U.S. Security and Exchange Commission, 2010). Another measure for productive paranoia, as used by Collins and Hansen, is to examine the relative current ratio and debt to equity ratios for each firm. The data for all firms are included in Table 6. This data is comparable to the data provided in GBC, which stated that the great companies have current ratios better than comparisons 72 percent of the time and better total debt-to-equity ratios 64 percent of the time. Essentially, great companies have more cash and less debt to guard against uncertainties in the environment. Our analysis concurs with Collins and Hansen in that three of the four great companies had better average performance than the comparison companies in the last eleven years of the GBC period. Amgen was the exception. Amgen also had only a slight improvement in current ratio performance (7 percent) and a decrease in debt to equity ratio performance of 162 percent in the update period.

Table 6: Average Current Ratio and Debt-to-Equity Ratio

	GBC (1991-2001)				Update (2002-2012)					
	Average Current Ratio	Percent Better than Comparison Company	Average Debt/Equity Ratio	Percent Better than Comparison Company	Average Current Ratio	Percent Better than Comparison Company	Percent Better than GBC period (1991-2001)	Average Debt/Equity Ratio	Percent Better than Comparison Company	Percent Better than GBC period (1991-2001)
Amgen (1)	2.56	-63%	0.13	-31%	2.74	-4%	7%	0.34	-56%	-162%
Genentech (1)	4.16		0.09		2.85		-31%	0.15		-67%
Biomet	5.18		0.03		3.19		-38%	0.31		-933%
Kirschner (3)										
Intel	2.50	28%	0.08	288%	2.70	37%	8%	0.08	2700%	0%
AMD	1.80		0.31		1.70		-6%	2.24		-623%
Progressive	na		0.39	18%	na			0.34	-15%	13%
Safeco	na		0.46		na			0.29		37%
Microsoft	3.57	32%	0.00	much better number	2.74	13%	-23%	0.06	-83%	slightly worse number
Apple	2.42		0.30		2.39		-1%	0.01		97%
Southwest Airlines	0.91		0.50		1.10		21%	0.44		12%
PSA (3)										
Stryker	2.46		0.64		3.12		27%	0.09		86%
USSC (3)										

Notes:

1. Amgen-Genentech update comparison period is 2002-2008.
2. Biomet update period 2002-2007.
3. Company dropped from analysis due to acquisition or discontinued business early in the update period.

Our conclusion is that Amgen is not consistently applying this practice.

A. 3. Empirical Creativity [Strongly Agree]

Amgen expected to encounter increasing competition from bio-similar products and anticipated this impact on their profitability. Regardless they did not hesitate to stop late-stage studies (Berkrot, 2012). At Amgen, research is very creative. In some ways, chaos runs rampant. The most persistent, aggressive, and gifted people make it to the top. Their research function consisted of constantly shifting networks of projects and allegiances that formed, prospered, and

faded with little direction from above. A project that looked promising would attract scientists. The mechanism of shepherding researchers was mostly informal. In general, about twenty percent of a scientist's time was free to spend on their own projects (Berkley, 1992). This creates a hail of "bullets" which then are followed by cannon balls as critical mass is reached through the attraction of scientists to successful projects.

A. 4. Level 5 Ambition [Neutral]

Over the period of our study, it appeared that Amgen believed they could make change happen simply by force of personality, position, or intellect. Under CEO Sharer's leadership, Amgen overhauled its management team, altered its culture, and fired a couple of cannon balls (George, 2007). The CEO was considered an interventionist when it came to acquisitions and mergers by not allowing the process to follow naturally. There were several situations where Amgen restructured or stepped back from planned expansions (Fubini, 2006). In 2008, Sharer ranked second for CEOs with the highest disapproval ratings and was at risk of being ousted (54 percent disapproved) (Glassdoor Team, 2008). Sharer retired in 2011.

In Research Question 1, we proposed that Amgen stopped using GBC practices based on our financial analysis. However, our examination of the four practices found that Amgen did indeed continue the practices. This finding rejects our proposition and does not support the findings in GBC.

B. Proposition 2: Genentech Started Using GBC Practices

Genentech's greatest strength lies in its research team and in its capacity to innovate specialized, highly effective drugs. However, a number of other extraneous, and possibly unnecessary, investments had drained Genentech's resources. This included the development of unspecialized drugs for health problems such as asthma. In addition, one division consists of highly educated and specialized marketing experts that sell drugs to specialists.

In 2009, Roche acquired control of Genentech, making it a wholly owned subsidiary. Consequently, our research on Genentech has focused on the public period from 2002 to 2008 before their acquisition.

As part of our research on Genentech, we examined and categorized 125 media releases over the eight years of available data. Table 7 presents a summary of the categorizations.

Table 7: Genentech Media Releases

Acquisitions	Jt Ventures	Personnel	Philanthropy	Litigation	Financial	Recognition
6	18	26	7	11	13	19

B. 1. Fanatic Discipline [Somewhat Agree]

Genentech had an extensive internal pipeline of potential blockbuster drugs. They are noted for their investment in research and development of products while maintaining a talented workforce in research labs and marketing divisions. The company's defining success lays in the field of oncology, producing the most effective and advanced cancer drugs on the market.

Most large companies in the pharmaceutical industry purchase small companies to acquire new product pipelines. Genentech preferred to spend its resources strengthening its own pipelines instead. This strategy allowed Genentech to support small companies with promising drugs or technology that were still in an early stage of development licensing. They had only six acquisitions over the ten years of our analysis, excluding their own acquisition by Roche. Overall, they entered into 18 alliances or joint ventures over the period of 2002 to 2008 (Hall, 2012). In addition, Genentech had a strong reputation in the buying and licensing of compounds and technology platforms at all stages of development.

B. 2. Productive Paranoia [Agree]

Genentech had a sense of mission and a role in efforts to improve the lives of patients. Employees regard Genentech to be a great place to work. Each year, the IT part of the organization spends two days off-campus at the "Full Spectrum IT" event, where the group meets face-to-face with patients who have benefitted from the medications developed for people with difficult-to-treat diseases (King, 2010). Sensitivity to employees and customers is a special way that Genentech demonstrated the practice of productive paranoia. They obsess about getting this right and reap the benefits. On the other hand, from a fiscal standpoint, Genentech's current ratio and debt-to-equity ratio slipped in comparison to the GBC period (Table 6).

B. 3. Empirical Creativity [Somewhat Agree]

Genentech was conscious of the pharmaceutical industry changes over that time, becoming more regulated and more cost-conscious. According to their Marketing VP, "For many years Genentech was immune to some of these things—they were insulated, because they were delivering on the innovation, on breakthrough drugs, and technology—many salespeople took things for granted—that this was a job that was stable, where they could earn a great living and be able to provide for their families. And then all of a sudden that gets shattered" (Looney, 2011). Similarly a senior scientist noted that Genentech was "regarded as the number one company in innovation, and employees felt blessed and pleased to work with Genentech and Roche;" and "They come up with these incredible brands, patient services and communications that just scream innovation" (Iskowitz, 2011). These observations support the proposition that Genentech has become good at systematically investing in, and benefitting from, their creativity.

B. 4. Level 5 Ambition [Strongly Agree]

The past 18 months at Roche have involved rapid change and reorganization. Genentech was fully integrated along with the seamless design of a research and early development organization. A Genentech employee that was part of this process noted that change was not to be feared, but instead to be embraced—change can be exciting and often leads to new and interesting opportunities (Anonymous, 2010). In our study of Genentech, we noted a consistent pattern of recognition internally and externally that resulted in Genentech's being considered a model employer (King, 2012). In 2008, Genentech's Art Levinson came in as the number one rated CEO with a 92 percent approval rating (Glassdoor Team, 2008).

In Research Question 2, we proposed that Genentech started using GBC practices based on our financial analysis. In addition, our examination found that Genentech did adopt the GBC

practices. This could explain their improved performance relative to their comparison company and industry.

C. Proposition 3: Biomet Maintained the Use of GBC Practices

Established in 1977, Biomet, Inc. and its subsidiaries design, manufacture and market products used primarily by musculoskeletal medical specialists in both surgical and non-surgical therapy. At the end of 2006, our last year of analysis, Biomet as a family of companies enjoyed steady growth at levels exceeding market expansion. Biomet's performance demonstrates a responsive, customer-oriented approach to the healthcare market. Biomet thrives by strengthening its commitment to innovation and partnership.

Biomet recorded its twenty-eighth consecutive year of record year-over-year sales and earnings growth. 2006 was a milestone year for the company, attaining net sales exceeding \$2 billion, an increase of 8 percent over last year's sales, which approached \$1.9 billion. In September 2007 the company was acquired by a consortium of private equity firms and ceased trading on NASDAQ.

C. 1. Fanatic Discipline [Agree]

From its beginning (25 years as of our study), Biomet had become the recognized leader in the musculoskeletal products market with one of the top four positions in eleven segments of the U.S. musculoskeletal products market, as well as the #4 position in the European market. Biomet has successfully built itself primarily through internal growth, augmented by strategic acquisitions. Additionally, they expanded their sales forces to sustain excellent customer service to clinicians worldwide. Biomet's 1,850 person worldwide sales force is one of the largest and most responsive selling organizations in the orthopedic industry.

As a direct result of investing in research and development programs and new product technologies, in addition to selective small-to medium-sized acquisitions, Biomet possesses one of the broadest product portfolios addressing the fastest growing market segments of the musculoskeletal products industry. Consequently, the company is balanced and poised to capitalize on the continued growth anticipated in these market segments in the years to come.

C. 2. Productive Paranoia [Agree]

Over the period of our study, Biomet's research and development expenses have increased at a rate of 9 percent each year. This increase reflects the company's continued emphasis on new product development; enhancements and additions to existing product lines and technologies; and clinical outcomes of research related to the safety, efficacy and clinical performance of the company's products.

From a fiscal standpoint, current ratio and debt-to-equity ratio slipped appreciably in comparison to the GBC period (Table 6).

C. 3. Empirical Creativity [Agree]

Biomet strived to view their work through the eyes of one surgeon and one patient. They treated every solution they provided as if it was meant for a family member. Their approach to innovation created real solutions that assist surgeons in the delivery of durable personalized care

to each patient, whether that solution required a minimally-invasive surgical technique, advanced biomaterials, or a custom, patient-matched implant. Biomet prides itself on its unconventional profile: the responsiveness and innovation of a small company with the resources and market presence of a large company. The solid growth experienced by the company in both domestic and international markets was attributable to the company's emphasis on technological advances through line extensions and new product introductions.

C. 4. Level 5 Ambition [Agree]

At the end of our period of study of Biomet 72 percent of their revenues were generated in the United States. They continued to expand their market share in the estimated \$14 billion worldwide musculoskeletal products market. In less than five years of operations, Biomet-Merck had become the fourth largest musculoskeletal market participant in Europe. In addition, Biomet Orthopedics International division capitalized on numerous growth opportunities in attractive markets outside the United States and Europe. In particular, the company continued to focus its efforts on the further development of its newly created direct distribution channel in Japan.

During the period of our study, Biomet introduced more than 500 new products to the market. Biomet believed one of their strengths and key differentiating factors centered on management's drive to provide an environment conducive for the introduction of innovative products and technological advances. Biomet's annual report theme in 2005 stated that "innovation starts here." This is a tribute to the company's long-term commitment to product development and engineering excellence.

Following Dane Miller's retirement in 2005 the company began the process of implementing numerous management and infrastructural changes designed to enhance Biomet's operational execution in the coming years. The company intended to become more centralized in key areas such as accounting, information technology, human resources, clinical and regulatory affairs, and certain research and development activities.

In Research Question 3, we proposed that Biomet continued using the GBC practices based on our financial analysis. Our practice analysis confirms that Biomet was still using the GBC practices.

D. Proposition 4 Intel Maintained the Use of GBC Practices

Intel Corporation is the world's largest and highest valued semiconductor chipmaker, based on revenue (Wikipedia, 2012; Intel, 2012). Intel also makes motherboard chipsets, network interface controllers and integrated circuits, flash memory, graphic chips, embedded processors and other devices related to communications and computing. Intel combines advanced chip design capability with a leading-edge manufacturing capability (Valich, 2007).

During the 1990s, Intel invested heavily in new microprocessor designs fostering the rapid growth of the computer industry. During this period, Intel became the dominant supplier of microprocessors for PCs, and was known to use aggressive and sometimes illegal tactics in defense of its market position, particularly against AMD.

D. 1. Fanatic Discipline [Somewhat Disagree]

According to Intel CEO Paul Otellini (Stengel, 2011), it is possible to move too fast in some situations; however, sometimes slowing down early on helps you accelerate to a higher speed later. Proper planning had to be done, or the organization could not be fully engaged and prepared to execute the plan.

Intel has an extensive history of acquisitions and investments in related businesses. In 2011 and the early part of 2012, we noted 12 major acquisitions and 10 investments. Not all of their acquisitions have been that fruitful. One 2009 article commented that Intel had been in need of a “savior” for “several years” (*PC Perspective*, 2009). It conjectured that the technology industry’s most lucrative partnership—the long-running alliance between Microsoft and Intel—was coming to a day of reckoning. Tablets, smartphones, and televisions using rival technologies were taking off, pushing the two companies to go their separate ways (Wingfield, 2011). Further, Intel had formed an alliance with Google for Android-based smartphones and tablets to be optimized for Intel’s chips, highlighting the fracturing of the US chipmaker’s decades-long relationship with Microsoft (Nuttall, 2011). Overall, the fractious state of Intel’s alliance and acquisition strategy leads us to conclude that they have lost their “20-mile march” discipline, which was devoted to introducing core processors for PCs and laptops.

D. 2. Productive Paranoia [Somewhat Agree]

Systematic introduction of new products had been a means by which Intel created value for its customers. New products were being introduced with increasing frequencies. Transitions to these new products began while existing products were still selling in the market, giving rise to the challenge of simultaneously managing product life cycles for multiple product generations (Stanford Graduate School Case, 2005).

Intel is gearing up to provide more computing solutions for consumer electronics, smart phones, and products such as advanced refrigerators and cars that increasingly run on powerful CPUs. Intel is honing its strategy while seeking to maintain its dominance in computer chips where it has an 80 percent global market share.

Intel has invested over \$4 billion in a specialized chip-equipment in an effort to shave two years from the time needed to adopt new production techniques. They have also expanded their factory network to meet an increasing demand for chips. In 2011, they spent over \$9 billion on plants and equipment compared with \$5 billion in 2010 (King, 2011). Intel is pursuing “Productive Paranoia” by improving its product introduction capability and adding capacity. Both moves buffer against uncertainty. This is supported by their steady performance with respect to current and debt-to-equity ratios (Table 6).

D. 3. Empirical Creativity [Somewhat Agree]

A Senate report stated, “In the semiconductor industry, innovation is indispensable; research breakthroughs are essential to the life and health of the industry. Research and innovation in the design of semiconductor chips is threatened by the inadequacies of existing legal protection against piracy and unauthorized copying” (Senate Report, 1984).

While Intel had been having spectacular success as portrayed in the GBC study, they were beginning to lose market share by 2006 and more importantly, their leadership in technology was

challenged by AMD. In response, Intel’s CEO initiated a second restructuring and cost-cutting program to improve their competitiveness. Shortly thereafter, they entered into a costly acquisition of ATI Technology to gain market share in the manufacturing of graphics chips (King, 2011).

Overall, we concluded that, although industry trends are taking Intel outside its traditional markets, Intel continues the GBC practice of doing many small experiments (firing bullets) following the successful ones with large investments (cannon balls).

D. 4. Level 5 Ambition [Disagree]

In 2005, Intel, following a change in leadership, entered into a major reorganization. The existing organizational structure had divided the company into broad industry categories—client, server, etc. The reorganization focused on the uses by which customers could put technology to work. This divided operations into five groups—digital enterprise, digital home, mobility, digital health, and channel platforms (Yoffie, 2005).

More recently, the leadership at Intel noted that these new business initiatives required a level of integration with the strategic leadership team, which had not yet been accomplished. Instead of working outside of the system, Intel needs to work closer with the business unit leaders from the earliest stages (Shih, 2010). Overall, we conclude that there is a lack of the type of integrative, selfless leadership that typically characterizes the GBC practice of “Level 5 Ambition.”

In Research Question 4, we proposed that Intel maintained the use of GBC practices based on our financial analysis. However, our examination of the four practices did not provide enough evidence to confirm or refute this proposition (neutral).

E. Research Question 5: AMD Never Used GBC Practices

Advanced Micro Devices (AMD) is a multinational semiconductor company that develops computer processors and related technologies for commercial and consumer markets. Its main products include microprocessors, motherboard chipsets, embedded processors and graphics processors for servers, workstations and personal computers, and embedded systems applications (IDG News Service, 2010). AMD is the second-largest global supplier of microprocessors and one of the largest suppliers of graphics processing units. AMD is the only significant rival—and sometimes partner—to Intel in the central processor (CPU) market for personal computers (Stokes, 2010; Myslewski, 2011). AMD has a long history of litigation with Intel as well (amd_Intel_Litigation_History.pdf, 1995).

As part of our research on AMD, we examined 432 press releases over the ten-year period (AMD Press Releases, 2012). Table 8 presents a summary of the categorizations.

Table 8: AMD Classifications

Acquisitions (Divestitures)	Jt Ventures	Infrastructure	Personnel	Philanthropy	Litigation	Financial	Recognition/ Presentations
7 and (2)	130	22	67	34	13	55	102

E. 1. Fanatic Discipline [Strongly Disagree]

AMD has been a reactor to market demands. They have been rather erratic. They have ventured into most of the computer arenas such as graphics, security, clouds, and 3D imagery. They have not been active in acquisitions with only seven over the period of study and two divestitures. AMD utilizes strategic industry partnerships to further its business interests as well as to tackle Intel's dominance and resources. During the ten-year period of our study, AMD entered into over 130 such arrangements—our impression being that they were rather scattered—a shotgun effect (Hryska, 2010).

E. 2. Productive Paranoia [Disagree]

In our categorization of AMD activities over the period of study, we added, and modified categories to explain their actions. We added infrastructure and modified recognitions to include presentations. AMD has demonstrated a significant ability to bring unique and high-quality products to market, yet their profitability was not forthcoming. They had two significant re-organizations (Vance, 2008), several layoffs (Linuxgram Newsletter for Open Source Community, 2011), and slowdowns (Burt, 2011). Of note is the large number of infrastructure changes—22 over the first nine years of the study period. Their consistently poor current ratio and debt-to-equity ratio performance (Table 6) confirms a lack of paranoia that changes may not go their way.

E. 3. Empirical Creativity [Somewhat Disagree]

AMD, as mentioned earlier, is reactive, not proactive—whatever the next technological wave is, they become a player—first in graphics, then processors for every form of workstation, PC, tablet, and other devices, and now even cloud computing. In a sense, they spread themselves too thin, compromising their profitability. Over the period of study, they have been recognized and honored for their high quality product offerings with 102 such recognitions. They have consistently been able to bring high quality products to market, yet are not able to increase their market share. It seems as though they are firing many cannon balls without aiming.

E. 4. Level 5 Ambition [Disagree]

Their personnel changes, appointments at the senior level across the spectrum and at the board level demonstrated a lack of sustained leadership. The overall image of AMD is that it is an admired company and one that takes care of its employees. In their Corporate Responsibility Report, it was noted, among other aspects, a wide interest in philanthropy and the encouragement of employee participation in community activities (AMD Inv, 2012). Overall, AMD has a significant array of philanthropic activities as exhibited by 34 different programs and offerings. Their major litigation activities centered about Intel, mainly in the 2005 period; other than that, their leadership has managed to avoid conflicts given the myriad of activities and product offerings in which they are engaged.

In Research Question 5, we proposed that AMD never used the GBC practices based on our financial analysis. In addition, our examination of the four practices confirmed the proposition.

F. Research Question 6: Progressive Maintained Use of GBC Practices

Beginning 85 years ago, Progressive has built a strong proposition in auto insurance through competitive pricing and by continuously improving their products and services. They pride themselves on offering competitive rates and 24-hour, in-person and online services to all drivers in the United States. Progressive customers can purchase auto insurance online, by phone, or from independent agents. Prices vary based on how they choose to buy (Progressive Insurance, 2012).

Progressive had an unequivocal commitment to maintaining a profitable combined ratio no matter what conditions it faced, how its competitors behaved, or what seductive growth opportunities beckoned. According to GBC, Progressive had a near-perfect record. However, they obsessed over what they needed to do to stay on track.

F. 1. Fanatic Discipline [Agree]

Progressive is one of a small number of companies whose business and online presence are virtually seamless. Progressive's technology operation has been ahead of the curve. Most of the insurance industry plays catch-up. Some of the innovative technologies and strategies that Progressive regularly introduces have become commonplace. Progressive's current CIO, Voelker, notes that "invent" continues to be important, but now so does "adopt and adapt" (Conz, 2009). The way that Progressive systematically introduces innovations while sticking to its core business is our justification for agreeing that they practice fanatic discipline.

F. 2. Productive Paranoia [Agree]

Ironically, over the past several years, Progressive has seen their bottom line shrink from \$1.1B to \$1.0B despite an increase in revenues from \$14.8B to \$15.4B. An increase in the percentage of sales devoted to cost of goods sold from 89.26 percent to 90.15 percent is one of the key components in the falling bottom line in the face of rising revenues (*Bloomberg BusinessWeek*, 2012). Progressive invests in new technologies and ways of conducting business to stay ahead of the competition. For example, they recently unveiled several new and enhanced mobile services—an upgrade in their mobile website that includes the ability to buy policies; a VIN capture feature by iPhone and Android apps allowing customers to get quotes based on a picture of a VIN; and severe weather text alerts based on Weather Central. These practices actually create a kind of "stock pile" or buffer against changes in the environment or actions by competitors. Progressive's debt-to-equity ratio was also rock steady over the entire 22 year period covered in this research (Table 6).

F. 3. Empirical Creativity [Agree]

Progressive provides a welcoming atmosphere for its employees. They enjoy a casual dress code and a unique work environment where all are required to risk, learn, grow and perform (Progressive Insurance Newsroom, 2012). Progressive's larger locations collectively house one of the USA's largest and most eclectic contemporary art collections. Their core values communicate a clear picture of what they try to achieve, how they interact with customers, and what guides their behavior. This permits all people associated with Progressive to understand what is expected, yet be inventive in how they meet business goals.

F. 4. Level 5 Ambition [Agree]

Progressive's Core Values serve as the foundation for its culture of innovation, empowerment and transparency. "At Progressive, fair dealing and transparency are synonymous with our way of conducting business," said Progressive's Chief Executive Officer, Glenn Renwick. "We have a culture that embraces innovation, risk taking, excellence and doing the right thing for our customers, agents, employees and investors. We revere honesty and transparency, and reinforce it in everything we do. That's crucial to be the company we strive to be."

One of the most tangible examples of Progressive's commitment to transparency is its financial reporting schedule. Every publicly traded company is required to report financial results on a quarterly basis. But, in 2003, Progressive became the first, and still only, public company to report full monthly financials to ensure frequent communication with investors and analysts (Progressive Insurance Newsroom, 2012). Many news releases mention the dominance of Progressive as a company in the insurance industry, but few discuss leadership. This can be attributed to leadership placing the company first.

In Research Question 6, we proposed that Progressive continued using the GBC practices based on our financial analysis. Our practice analysis confirms that Progressive is still using the GBC practices.

G. Proposition 7: Safeco Started Using the GBC Practices

Safeco was founded in Seattle, Washington in 1923 as the General Insurance Company of America, a property and casualty insurer. Safeco competed not only for business and individual customers, employers and other group customers, but also for agents and other distributors of investment and insurance products.

In 2001, new management was brought in to restructure the company. Commercial credit operations were sold to General Electric in 2001, and on March 15, 2004, the company announced the sale of its most profitable division, the life insurance and investments business, to a group of private investors. The same day, it was announced that Hub International Ltd. was buying Safeco's insurance brokerage operations. Less than a month later, it was announced that Mellon Financial Corporation would buy Safeco Trust Company, whose business is providing financial and estate planning services to individuals with over \$1 million in assets. Shortly thereafter, the closure of Safeco Asset Management, the mutual-fund business, was announced.

On April 23, 2008, Safeco announced an agreement to be acquired by Liberty Mutual for \$68.25 per share. Safeco continues to offer personal lines insurance (including auto, home, motorcycle, recreational vehicle, watercraft and more) through independent agents (Young, 2008).

Most of this turbulent activity during our period of study does not provide a representative picture of Safeco's practices. Of note though, is the selling off of non-core businesses which will be addressed in the practices discussion. Being Seattle-based an extensive amount of data was captured and chronicled in the University of Washington education library. We were able to view complete annual financial reports for the years 2002 to 2006. In addition, Motley Fool had over 900 articles and press releases about Safeco. Using these two sources we generated Table 9.

Table 9: Summary of Safeco GBC Practices from 2002 to 2006

Year	Fanatic DISCIPLINE	Productive PARANOIA	Empirical CREATIVITY	Level 5 AMBITION	Summary PRACTICES
2002	80%	90%	80%	90%	85%
2003	90%	90%	90%	90%	90%
2004	90%	90%	60%	60%	75%
2005	90%	60%	90%	50%	73%
2006	90%	90%	90%	60%	83%
	88%	84%	82%	70%	81%

G. 1. Fanatic Discipline [Agree]

Safeco over the period of study has focused on re-igniting sales by increasing the number of auto and small business policies; re-underwriting existing book of business and increasing life and investment revenues. In 2003 they announced a strategic redirection manifested in their sale of non-core businesses, staying with their property and casualty (P&C) business and selling off their L&L operations. This resulted in staff reductions with the aim of lowering their cost structure and facing increasing competition. However, Safeco believed that this focus could better provide a unified sales and service platform (called *Safeco New*) that would also lower their partners' costs. In addition they made efforts to get their expenses in line, strengthen their claim operations, and automate their underwriting.

During the period from 2002 to 2005 the insurance industry encountered a series of catastrophes. Despite addressing these, Safeco turned in back-to-back record net income. Faced with extensive payouts and increased competition, they maintained underwriting discipline and generated profits on every major line of their business.

G. 2. Productive Paranoia [Agree]

Over our period of study Safeco introduced a zero-defect service. They launched a multiyear initiative to drive out errors from processes involving customers. They also initiated six major projects to eliminate mistakes that degrade service and waste money. Safeco developed a business model focusing on the P&C business. This model was intended to drive greater efficiencies. Lower costs provide customers with competitively priced products and services, and create a sustainable market advantage. Their 37 percent improvement in debt-to-equity performance (Table 6) supports a shift to productive paranoia.

G. 3. Empirical Creativity [Agree]

While being committed to selling through independent agents, Safeco also recognized the need to mirror the diversity of consumers and their buying preferences. More and more people want to comparison shop—by phone, through affinity groups and especially via the internet. They took steps to insure that these preferences were accommodated. They brought together their major auto, property, specialty and small-to-midsized commercial products onto their online Safeco Now sales-and-service platform. The agent workplace was web-based and featured a single point of entry for all of the 17 Safeco commercial and personal products. In addition they rolled out new products that made it easier to customize insurance coverage such as the *Safeco Optimum Package*

for auto and home. As a safeguard their R&D sought and obtained patent protection for these new lines.

G. 4. Level 5 Ambition [Agree]

Safeco has made a commitment to invest in its people. They changed their compensation plan to reward achievement and introduced stock option grants. They stepped up training company-wide. Explicit consideration was given to increase diversity, especially in management. Safeco also had a strong independent Board of Directors. Management demonstrated that it would make painful decisions to give up market share when products were inadequately priced.

In Research Question 7, we proposed that Safeco started using the GBC practices given the results of our financial analysis. Our practice analysis confirms that Safeco started to use the GBC practices. Overall, they made progress in becoming a low-cost carrier, deployed capital to provide meaningful returns to their shareholders, and built an infrastructure and technical capability that meets a best-in-class standard. Thus, in effect, they became a desired take-over target resulting in their 2008 acquisition.

H. Proposition 8: Microsoft Stopped 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 and is active 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 2002; in that period Microsoft met the “great” criteria. Table 10 presents our compilation of the four practices for the ten-year period along with other considerations that mitigate the practices ending 2012. This compilation better clarifies by presenting both chronologically and in summary, introducing more granularity overall. Not all practices have a score for each year when there were no significant events.

Table 10: Microsoft Four Practices and Considerations

Year	Acquisitions	Infrastructure	Personnel	Philanthropy	Litigation	Financial	Recognition/ Presentations	Fanatic DISCIPLINE	Productive PARANOIA	Empirical CREATIVITY	Level 5 AMBITION
2002	4				4			10.00	7.33		
2003	2	1	0	0	3	0	0	7.50		7.00	
2004	2	0	0	0	5	0	0	7.00	7.00		
2005	7	1	0	0	3	0	0	5.33	6.00	8.00	8.00
2006	11	2	2	0	3	0	0		5.33	8.50	10.00
2007	8	1	3	1	3	3	3		5.00		
2008	16	1	0	0	0	1	0		5	9	5
2009	6	1	0	0	0	1	0	7.00	7.00	8.00	5.00
2010	3	2	1	0	0	0	1	8.00	5.50		
2011	3	0	1	1	0	3	2	4.67	7.60	10.00	5.00
2012	2	1	0	1	0	1	0	6.33	6.33		5.00
	64	10	7	3	21	9	6	74%	62%	84%	63%

H. 1. 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 to reflect local languages and conventions. Localizing a product may require 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 very active in acquisitions throughout its history. Over the past ten years, they have acquired 64 companies. Table 10 showed the distribution over the ten years of our study. Many of these acquisitions signify entries into new or developing marketing areas. They are rarely 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 very 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 (Fried, 2009). Over the past 20 years, Microsoft has exhibited discipline and endurance in its “not first mover” strategy.

H. 2. Productive Paranoia [Somewhat disagree]

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. The Xbox 360 console and Kinect for Xbox 360 contain 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 generally 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 constituted a change in strategy in the smartphone industry. Microsoft is now working more closely with smartphone manufacturers, such as Nokia, 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).

A relaxation in paranoia is also evident in the reduction in current ratio and increase in debt in comparison to the GBC period and in comparison to Apple (Table 6).

H. 3. 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 middle 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.

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 most 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.

H. 4. Level 5 Ambition [Neutral]

When Bill Gates, Chairman of Microsoft, announced his intention to step down in July 2008 (BBC News, 2006), he stressed that he was not retiring but simply making a transition. Even though he no longer would be the chair in two years' time, he intended to maintain a key role in advising the firm. In 2000, 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 contend that Microsoft used monopolistic business practices and anti-competitive strategies. This put 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 sue Microsoft over this set of tactics, resulting in billions of dollars in rulings against the company. Microsoft claims that the original strategy is not anti-competitive, but rather an exercise of its discretion to implement features it believes customers want.

In Research Question 8, 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.

I. Proposition 9: Apple Started Using GBC Practices

With respect to Apple in the period from 2002 to 2012, we noted a steady progression of improvement in "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 11 depicts the four practices and the associated set of activities.

Table 11: Apple Practices over the Period of Study

Year	Acquisitions	Infrastructure	Personnel	Philanthropy	Litigation	Financial	Recognition/ Presentations	Fanatic DISCIPLINE	Productive PARANOIA	Empirical CREATIVITY	Level 5 AMBITION
2002	2	4	2	1	1	6	4	6.67	7.68	8.93	
2003	0	2	2	2	0	5	3	8.50	8.40	8.70	8.00
2004	0	3	2	0	0	4	2	6.30	7.10	7.60	7.00
2005	0	2	1	1	0	5	1	8.40	7.30	7.80	6.00
2006	0	3	2	0	1	4	1	8.80	8.10	8.50	
2007	0	2	2	0	0	4	1	6.60	7.80	7.80	9.50
2008	0	5	2	0	0	4	2	8.20	8.8	7.7	
2009	0	0	3	0	0	5	1		8.80	9.20	
2010	0	5	2	0	1	4	2	10.00	9.40	9.60	10.00
2011	0	0	3	0	1	5	3	10.00	9.80	8.80	5.00
2012	0	1	2	0	1	3	2	10.00	9.80	9.70	
	2	27	23	4	5	49	22	83%	85%	86%	76%

I. 1. Fanatic Discipline [Somewhat Agree]

Apple's leadership has been pervasive (Mirchandani, 2012). Traditional supply chain disciplines like managing an extended network of contract manufacturers and component suppliers are fully in force, but beyond those areas, Apple has led in at least two vital ways. The first is in its huge 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 important is in the retail experience. As one of a handful of deeply vertically integrated brands, Apple's retail chain achieves almost unimaginable success in its stores.

I. 2. Productive Paranoia [Somewhat Agree]

Apple has built a retail store chain that is the envy of even long-time retailers (Mirchandani, 2012). It has built Apple's elaborate global network of suppliers and contract manufacturers that has confused the traditional accounting that economists use to measure 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 both 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 scale never seen before. Admirably, it built its supply chain in a much more volatile industry than that of consumer products or chemicals. It balanced the risk of overproducing, or increasing buffer inventory and taking write-offs, as opposed to producing and losing customers to the next competitive product just a few weeks away. Apple took that risk time and again, and made the rest of the industry do the same. Their improvement in current ratio and debt-to-equity performance (Table 6) allowed them to take risks while maintaining financial stability.

I. 3. 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 astonishing \$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 express the Apple ideal of creative exploration and self-expression. That meant that stores had to look beyond simply 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.

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 10x'ers to very creative outcomes, since the outcomes are based on empirical validation" (Grams, 2011). Collins points to Apple founder Steve Jobs, who bet 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 wasn't. ... The MP3 was already out in the world, and [Apple employees had] made an iPod for themselves. The company fired 'bullets,' or small empirical steps, to validate the concept, and then they went big with it."

I. 4. 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 a block 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 view as healthy 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 show 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 low concern for these outside factors.

In Research Question 9, we proposed that Apple started using the GBC practices based on our financial analysis. Our examination of Apple's use of the four practices confirmed the proposition.

J. Research Question 10: Southwest Airlines Stopped Using GBC Practices

According to GBC (Grams, 2011) Southwest demanded of itself a profit every year, even when the entire industry lost money. From 1990 through 2003, the U.S. airline industry as a whole turned a profit in just six of 14 years. In the early 1990's it lost \$13 billion and furloughed more than 100,000 employees; nevertheless, Southwest remained profitable and furloughed not a single person. Despite an almost chronic epidemic of airline troubles, including high-profile bankruptcies of some major carriers, Southwest has generated a profit every year for 30 consecutive years.

J. 1. Fanatic Discipline [Neutral]

Southwest has espoused a high level of customer service as a key component of their mission. The value placed on customer service is virtually unquestioned by the company's employees. Southwest Airlines is dedicated to the highest quality of customer service, delivered with a sense of warmth, friendliness, individual pride, and "company spirit" (Southwest Airlines, 2012). Interestingly, though, the foundation of Southwest's corporate message is not that customers are number one; rather, employees always come first with the company, with customers a respected second. Southwest, in turn, expects its staff to extend to customers the same level of warmth, respect, and responsiveness that they receive. This approach stands in stark contrast to the "customers first" approach taken by most service-oriented organizations. Equally important, Southwest had the discipline to hold back in good times so as not to extend beyond its ability to preserve profitability and the Southwest culture.

Southwest's decision in 2010 to buy AirTran Holdings, Inc. marked its first foray into a second jet type and its first boost in seating capacity since the end of 2008. They also faced off with bigger Delta Air Lines at its primary hub of Atlanta, the world's busiest airport and the only major U.S. city Southwest did not serve. Southwest also started flying at Washington's Reagan National, adding its first international flights, and meshed 8,000 employees into their workforce (Hughes, 2010). This is a strategic turning point for Southwest. They became a widespread, far-flung airline. Their emerging strategy is no longer just serving cities that met their simple requirements. With the acquisition of Air Tran Holdings, Southwest complicated their simple low-cost strategy by no longer flying just one fleet type (Boeing 737s). They could no longer hold down maintenance and training costs; make short hops between cities at high frequencies; and own most of their jets.

In 2008, Southwest Airlines (CNN, 2008) initiated inspection of 44 planes after an "ambiguity related to required testing" was found during a review of records, the airline said. At the same time, they placed three employees on administrative leave and began conducting an internal investigation into allegations that they flew planes without proper inspections.

J. 2. Productive Paranoia [Neutral]

Southwest had successfully navigated the turbulent aviation industry, making money as competitors bled by being conservative about everything, including technology. Southwest actually had reusable, plastic boarding passes that were collected as passengers boarded. In fact, the airline made a virtue of being low tech. New security after 9/11 forced the airline, kicking and screaming, to rethink ticketing and other automation. That was fortuitous because it allowed Southwest to align with a trend that started to accelerate around that time: the increasingly tech-savvy customer (Mirchandani, 2012).

Southwest improved its current ratio 21 percent and debt-to-equity ratio 12 percent from the period 1991-2001 to 2002-2012.

J. 3. Empirical Creativity [Agree]

Over the years, Southwest's practical and down-to earth culture allowed them to be very creative and they were easily able to identify many of their own problems and solutions. Keeping things simple has allowed Southwest to take advantage of speed and flexibility in contrast to their

competition. Outside resources are regarded to be helpful in certain situations. They do not want to pay consultants for their ideas, given that they have generated many ideas internally. However, they do need focus, tried-and-true methodology, and resources to help streamline or simplify the internal ideas into the most desired solutions. Sometimes they need unique skills in facilitation, methodology, and technology to put their ideas together into a project plan, and to mobilize the completion of the task at hand. In a discussion (Sartain, 1998), Southwest Airlines explained under what circumstances it uses management consultants. Of note, consultants are evaluated on these criteria: 1) cost efficiency; 2) track record and reputation; 3) ability to listen to corporate goals; 4) people; 5) culture fit; 6) honesty and integrity; and 7) customer service. These criteria can also be used to describe some of the aspects of “Empirical Creativity.” Consultants are, by Southwest definition, very expensive animals. They prefer to invest in their own people rather than in temporary consultants. They do not want the training and development expertise lost on consultants. Employees are considered to be more loyal and dedicated to doing what is best.

J. 4. Level 5 Ambition [Strongly Disagree]

Southwest has prided themselves with their focus on efficiency and high utilization of assets. Aircraft and ground equipment were employed in an effective manner; believing that an aircraft is not making any money when it is on the ground, their scheduling allowed for quick turnaround times of their planes, and better utilization of ground equipment. Southwest has level activity throughout the day, resulting in not having to hire a large of a staff to cover “rush hours.” Lower per unit costs can lead to higher profit margins (Jenkins, 2010).

Ironically, in the year Kelleher stepped down as CEO, Southwest posted a profit while still offering bargain fares (Pae, 2008). Southwest in the latter part of the study exhibited poor leadership. The President and CEO of Southwest Airlines is Gary C. Kelly. Kelly replaced former CEO Jim Parker on July 15, 2004 and assumed the title of President on July 15, 2008, replacing former President Colleen Barrett. Southwest Airlines’ CFO is Laura Wright. In July 2007, Herb Kelleher resigned his position as Chairman. Colleen Barrett left her post on the Board of Directors and as Corporate Secretary in May 2008 and President in July 2008 (Southwest Airlines, 2012). This type of leadership churning is not indicative of Level 5 Ambition.

In Research Question 10 we proposed that Southwest stopped using the GBC practices based on our financial analysis. Our practice analysis confirmed that Southwest significantly reduced the use of GBC practices.

K. Proposition 11: Stryker Maintained_GBC Practices

When John Brown became CEO of Stryker in 1977, he deliberately set a performance benchmark to drive consistent progress: Stryker would achieve 20 percent net income growth every year. This was more than a mere target, or a wish, or a hope, or a dream, or a vision. It was to use Brown's own words, “the law.” He ingrained “the law” into the company's culture.

K. 1. Fanatic Discipline [Agree]

Stryker since its inception has followed the path of sticking with its core areas. They have engaged in numerous acquisitions and joint ventures. In 2011 alone, they had two acquisitions and seven joint ventures. In 2011, Stryker’s CEO noted: “Our acquisitions have all been grown out of

existing relationships we have with our customers. It is not diversification for diversification's sake, but diversification because we see opportunities for growth.”

K. 2. Productive Paranoia [Somewhat Disagree]

Stryker has mixed marks with respect to productive performance indices. On one side, it has maintained consistent growth that strictly adheres to the Collins model; on the other side, Stryker has, in the past five years, experienced unwanted attention from the FDA and has been involved in several litigation incidents regarding product failures and quality. Since early 2007, the company has received three warning letters from the Federal Drug Administration citing issues in compliancy.

There have also been some ethical issues. In 2007, Stryker, along with other companies, was involved in civil litigation with the U.S. Department of Health and Human Services, Office of Inspector General. The office maintained that Stryker engaged in unlawful kickbacks to physicians who urged hospitals to purchase their respective products. Stryker, however, having cooperated early in the investigation, was not fined.

As of February 2008, a dispute exists between Stryker Corp. and the U.S. Department of Justice concerning a subpoena linking the company to aforementioned misconduct in sales of products. Since governmental filing of the injunction, Stryker notes that it has produced in excess of 300,000 pages of documentation in compliance with the mandate. U.S. Government counters, however, that the documentation was not proper as required.

In spite of these negatives, Stryker showed a marked improvement in current ratio and debt-to-equity ratio performance in the update period.

K. 3. Empirical Creativity [Strongly Agree]

Stryker has consistently maintained a culture of creativeness and innovation. They continue to focus on early-stage medical technology opportunities as well as emerging economies with complex healthcare needs. They have assembled a team with deep knowledge, expertise, and skill in global execution—combinations that will help deliver above-market growth. For example, their recently created Performance Solutions division developed and piloted new offerings. They are working to engage their customers on a deep level by delivering services and systems that enable healthcare providers to achieve clinical, operational and financial performance goals. These services and systems include performance management and other data-driven capabilities from one of their newly acquired businesses. At the same time, their plan to produce and execute with excellence in an ever-evolving healthcare landscape has become even more of an imperative as cost pressures continue to rise. Amid global economic challenges, they have continued to advance their quality discipline. The character of their employees and ability to adapt to an increasing rate of change defines Stryker as a medical technology leader for the long haul.

K. 4. Level 5 Ambition [Agree]

In 2011 at a company meeting, Stryker's CEO noted that the company has proven its mettle in tough times, allowing it to continue to perform, despite struggles in the orthopedic industry. For many years in med tech, the rising tide lifted Stryker, and he sees the company as a team that continues to deliver and is poised to win in any environment, despite mounting pressures from tough economic conditions that have been a drain on the entire orthopedic industry. Stryker

officials predicted 11 to 13 percent sales growth despite these conditions. The CEO said his confidence was rooted in the fact that the company is not dependent on just one market for success. In fact, no single franchise in the Stryker family makes up more than 18 percent of the company's total revenues.

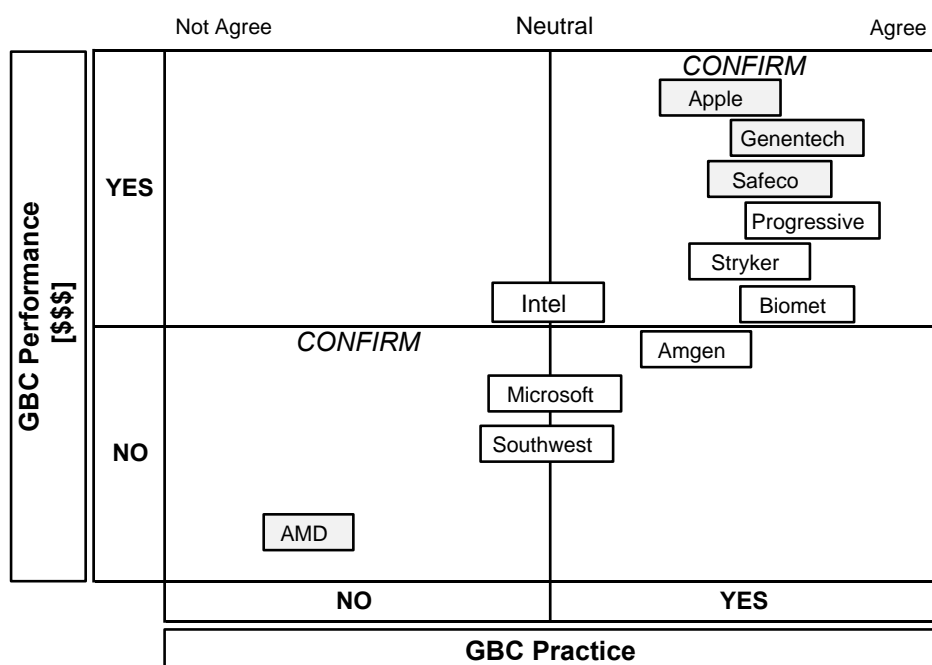
In 2003, Stephen P. MacMillan joined Stryker as President and CEO. In 2005, annual sales reached \$4.9 billion and John W. Brown transitioned to the single role of Chairman of the Board while Steve MacMillan became President & CEO. Steve MacMillan resigned from the post of CEO in 2012. Curt Hartman, the chief financial officer will serve as interim CEO while Stryker searches for a permanent successor to MacMillan. By 2007, Stryker had sold its Physiotherapy Associates division to private equity firm Water Street Healthcare Partners for \$150 million. There were some changes in management at the latter part of our ten-year study; to wit, the resignation of the Chairman, President and CEO. Yet Stryker has continued to be regarded as one of the most innovative companies.

In Research Question 11, we proposed that Stryker continued using the GBC practices based on our financial analysis. Our practice analysis confirms that Stryker is still using the GBC practices.

IV. 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 requires extensive subjective analysis. Figure 2 shows the placement of the companies in our study based on the GBC Performance and our practice analysis.

Figure 2: Summary of GBC Performance vs GBC Practices



For companies that started using the practices (i.e. Apple, Genentech, and Safeco), 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.

For companies that continued to use the GBC practices (i.e. Biomet, Progressive, and Stryker), their financial performance remained good. The only company we found that never used the GBC practices (disagree) is AMD. They never embraced the GBC practices and their financial performance was not as good as industry or their comparison company (Intel). For AMD the lack of “Productive Paranoia” was evidenced by its scattering and scrambling from product line to product line and the vast array of disjoint ventures and partnering.

For companies that reduced their use of GBC practices (i.e. Microsoft, Intel, and Southwest), two of the three had their financial performance suffer and one (Intel) maintained their financial performance. 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 wars dominated by Google) cost Microsoft over \$2 billion in losses.

The only instance we found that contradicts the confirmation of GBC was Amgen. In the study period, Amgen's financial performance did not reflect the use of the GBC practices we found still in place. A possible explanation is leadership. For Southwest and Amgen, many of their problems have been related to “Level 5 Ambition” or the lack thereof. Both firms continue to be very successful in their industries, but do not meet the criteria of great financial performance.

One observation we can make is that some of the GBC comparisons may become less relevant over time. Apple’s rivalry with Microsoft still flickers occasionally, but strategically they almost 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 the 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.

There is a tendency among academicians to criticize popular business press books as not meeting the rigorous standards required for academic journals. Collin’s works demonstrate the value of doing in depth case-based research on matched pairs that combines both financial and practice analyses. 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 duplicate this process wherein we showed a stream of significant events that tempered our determinations.

References

- AFP Relax.** 2012, May 21. *Microsoft launches social network So.cl, claims not to compete with Facebook.* Retrieved from Yahoo OMG: <http://ph.omg.yahoo.com/news/microsoft-launches-social-network-cl-claims-not-compete-110708921.html>.
- AMD Inv.** 2012. *Corporate Social Responsibility.*

- AMD Press Releases.** 2012, September 3. *Press Releases*. Retrieved from About AMD: <http://www.amd.com/US/ABOUTAMD/NEWSROOM/PRESSRELEASES/Pages/index.aspx>.
- amd_intel_litigation_history.pdf.** 1995. *AMD-INTEL LITIGATION HISTORY*. amd archive reports.
- Amgen News Releases.** 2002-2012. Retrieved from Amgen: <http://www.amgen.com/media>
- Anonymous.** 2010. "The New Breed of Leadership." *Pharmaceutical Executive*.
- BBC News.** 2006, June 15. *Bill Gates: A Timeline*. Retrieved from [new.BBC.co.uk](http://news.bbc.co.uk/2/hi/business/5085630.stm): <http://news.bbc.co.uk/2/hi/business/5085630.stm>
- Berkley, James.** 1992. *Amgen, Inc.: Planning the Unplannable*. Harvard Business School Publishing.
- Berkrot, Bill.** 2012, July 26. "Amgen Profit Beats Estimates; Raises 2012 Forecast." *Reuters*.
- Binder, Gordon, and Philip Bashe.** 2008. *Science Lessons: What Biotech Taught Me About Management*. Boston: Harvard Business Press.
- Bloomberg BusinessWeek.** 2012, September 4. *Bloomberg BusinessWeek Financials*. Retrieved from Bloomberg BusinessWeek: <http://investing.businessweek.com/research/stocks/financials/financials.asp?ticker=PGR>
- Burt, Jeffrey.** 2011, September 28. *AMD Cuts Q3 Forecast Due to Chip Manufacturing Problems*. Retrieved from eWeek.com: <http://www.eweek.com/c/a/Desktops-and-Notebooks/AMD-Cuts-Q3-Forecast-Due-to-Chip-Manufacturing-Problems-581901/>
- CNN.** 2008, March 12. *Southwest Grounds Planes, Places Three on Leave*. Retrieved from CNN.com.
- Collins, Jim.** 2001. *Good to Great: Why Some Companies Make the Leap...And Others Don't*. New York: HarperCollins.
- Collins, Jim.** 2009. *How The Mighty Fall: And Why Some Companies Never Give In*. New York: HarperCollins.
- Collins, Jim.** 2011. *Good To Great And The Social Sectors: A Monograph to Accompany Good to Great*. New York: HarperCollins.
- Collins, Jim, and Mortenson Hansen.** 2011. *Great by Choice: Uncertainty, Chaos, and Luck—Why Some Thrive Despite Them All*. New York: HarperCollins.
- Collins, Jim, and Jerry I. Porras.** 2001. *Built to Last: Successful Habits of Visionary Companies*. New York: HarperCollins (HarperBusiness for the 1994 edition).
- Conz, Nathan.** 2009, November 18. *Progressive Details Twitter Strategy*. Retrieved from Insurance Technology: <http://www.insurancetech.com/management-strategies/221900146>
- Flinn, R.** 2012. "Amgen Rises as Profit Tops Estimates on Drug Sales." *Bloomberg Business Week*. July 27.
- Fried, Ina.** 2009, February 12. *Microsoft Follows Apple into the Retail Business*. Retrieved from CNET CBS Interactive.
- Fried, Ina.** 2008, October 27. *Microsoft Launches Windows Azure*. Retrieved from CNET CBS Interactive.
- Fubini, David, Collin Price, and Maurizio Zollo.** 2006. *Mergers: Leadership, Performance and Corporate Health*. New York: Insead Business Press.
- George, Bill.** 2007. *True North: Discover Your Authentic Leadership*. San Francisco: John Wiley & Sons.
- Glassdoor Team.** 2008, December 18. *Which CEOs Have Been Naughty or Nice According to Their Employees?* Retrieved from Glassdoor Blog: Glassdoor.com

- Grams, Chris.** 2011, October 10. *A review of the new Jim Collins book Great By Choice.* Retrieved from Dark Matter Matters: <http://darkmattermatters.com/2011/10/26/a-review-of-the-new-jim-collins-book-great-by-choice/>
- Hall, Melanie.** 2012. *Genetech Inc: Hoover Company Profile.* Hoovers.
- Hau, L. Lee, Feryal Erhun, Jay Hopman, Mary Murphy-Hoye, and Paresh Rajwat.** 2005. *Intel Corporation Product Transitions and Demand Generation.* Stanford Graduate School of Business. Case no. GS43.
- Hryska, Joel.** 2010, July 17. *AMD Flip-Flops: Llano Later, Bobcat Bounding Forward.* Retrieved from hothardware.com: <http://hothardware.com/News/AMD-FlipFlops-Llano-Later-Bobcat-Bounding-Forward/>
- Hughes, John A.** 2010. *Southwest CEO Risks Keep-it-Simple Strategy to Reignite Growth.* Retrieved from anywhere: <http://www.webcitation.org/5vh7wuxod>.
- IDG News Service.** 2010, January 7. *AMD launches DirectX 11 graphics chips for laptops.* Retrieved from TechWorld: <http://news.techworld.com/mobile-wireless/3209713/amd-launches-directx-11-graphics-chips-for-laptops/>
- Intel.** 2012. *Intel Financial Report 2011.*
- Iskowitz, Marc.** 2011. Harrison & Star. *Medical Marketing and Media.*
- Isaacson, Walter.** 2011. *Steve Jobs.* Simon and Schuster.
- Jenkins, D.** 2010. *Chapter 7: Flight Arrival Flow.* Retrieved from Southwest Airlines: An In-Depth Review: <http://web.archive.org/web/20070222232106/http://www.erau.edu/research/BA590/index.htm>
- Kate, Maddox.** 2005. "Microsoft Opens the Lines of Communication." *B to B.* October 10.
- King, Ian.** 2011, February 18. *Intel Plans To Build \$5 Billion Chip Plant In Arizona.* Retrieved from Bloomberg: <http://www.bloomberg.com/news/2011-02-18/intel-plans-to-build-5-billion-chip-plant-in-arizona-hire-4-000-workers.html>
- King, Julia.** 2012. "18th Annual Report: 100 Best Places to Work in IT." *Computerworld.*
- King, Julia.** 2010. "These CIOs Go Way Beyond IT-Business Alignment." *Computerworld.* May 24.
- Linuxgram, The Newsletter for the Open Source Community.** 2011, November 4. "AMD To Fire 1,400."
- Looney, William.** 2011. "Emerging Pharma Leaders 2011: Managing In the Era Of Lean." *Pharmaceutical Executive.* June 1.
- Mirchandani, Vinnie.** 2012. *The New Technology Elite: How Great Companies Optimize Both Technology Consumption and Production.* Hoboken, New Jersey: John Wiley and Sons.
- Murray, Allan.** 2011. "Turbulent Times, Steady Success." *Wall Street Journal.* October 11.
- Myslewski, Rik.** 2011, June 14. *Intel, AMD in HP Notebook Smackdown.* Retrieved from ChannelRegister.com: http://www.channelregister.co.uk/2011/06/14/amd_hp_notebooks/
- Nuttall, Chris.** 2011. Intel and Google form Android Chip Alliance. Retrieved from Tech Hub: <http://www.ft.com/intl/cms/s/2/544c33a8-de3b-11e0-9fb7-00144feabdc0.html#axzz1YRA3N2Dr>.
- Pae, Peter.** 2008. "Hege on Fuel Prices Pays Off." *Los Angeles Times.* May 30.
- PC Perspective.** 2009, October 14. "Intel Needs a Savior."
- Progressive Insurance Newsroom.** 2012, March 16. *Ethisphere Institute Names Progressive to List of World's Most Ethical Companies.* Retrieved from Progressive Insurance: <http://www.progressive.com/newsroom/2012/March/ethical-company.aspx>
- Progressive Insurance.** 2012. *Progressive Insurance Company Introduction.* Retrieved from progressive.com: <http://www.progressive.com/progressive-insurance/companyintroduction.aspx>

- Rodgers, Will.** 2008. "Intel Exec: MS Wanted to 'Extend, Embrace and Extinguish' Competition." *ZDNet*. November 9.
- Sartain, Libby.** 1998. "Why and How Southwest Airlines Uses Consultants." *Journal of Management Consulting*, 10(2): 12-17.
- Senate Report.** 1984. *Senate Report Bill No. 425*. Washington, DC: 98th Congress Senate Report.
- Shih, Willy.** 2010. *Intel NBI: Intel Corporation's New Business Initiatives*. Harvard Business School.
- Southwest Airlines.** 2012. *Mission of Southwest*. Retrieved from Southwest Airlines: <http://www.southwest.com/html/about-southwest/index.html?int=GFOOTER-ABOUT-ABOUT>
- Stengel, Jim.** 2011. *Grow: How Ideals Power Growth and Profit at the World's Greatest Companies*. New York: Random House.
- Stokes, Jon.** 2010, February 8. *AMD Reveals Fusion CPU+GPU, to Challenge Intel in Laptops*. Retrieved from arstechnica.com: <http://arstechnica.com/business/2010/02/amd-reveals-fusion-cpugpu-to-challenge-intel-in-laptops/>
- US Securities Exchange Commission.** 2011. *Microsoft 10-K Report*. Washington, DC: U.S. Government.
- Valich, Theo.** 2007, September 19. *Secret of Intel's name revealed*. Retrieved from The Inquirer: <http://www.theinquirer.net/inquirer/news/1031210/secret-intel-revealed>
- van Kotten, Michael.** 2011, August 23. *Global Software Top 100 Edition 2011: Highlights*. Retrieved from SoftwareTop100.org: <http://www.softwaretop100.org/global-software-top-100-edition-2011>
- Vance, Ashlee.** 2008. A.M.D. to Split Into Two Operations. *New York Times*. October 6.
- Wikipedia.** 2012. *Intel*. Retrieved from Wikipedia.org: <http://en.wikipedia.org/wiki/Intel>.
- Wingfield, Nick, and Don Clark.** 2011. "Microsoft Alliance With Intel Shows Age." *Wall Street Journal*. January 4.
- Yoffie, David B.** 2005. Intel Corp. 2005. *Harvard Business Review* .
- Young, B.** 2008. "Liberty Mutual Group Completes Safeco Acquisition." *Insurance Journal*. September 24.