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SYSTEMS

INTERNATIONAL VS. DOMESTIC MANUFACTURING IN THE CONSUMER
ELECTRONICS INDUSTRY: HOW FEASIBLE DO BUSINESSES AND
CONSUMERS VIEW THIS ISSUE?

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ABSTRACT

One present day issue for consumer electronics companies is to decide what locations are best to optimize current manufacturing processes or further, start new ones. It is a decision that will yield implications for a business and can be judged on a consumer, firm, or ethical basis. This thesis aims to illustrate the advantages and disadvantages for consumer electronics companies which are interested in the prospect of onshoring their product manufacturing operations back to their country of origin. This thesis uses Apple Inc. and its widely successful and known iPhone 5 as the primary example to investigate and research further whether onshoring make sense from a cost perspective and from a consumer behavior perspective. Given the company's recent announcement of its initiative to bring some of its manufacturing processes back to the United States for certain products, this thesis seeks to provide guidance and recommendations for how this type of manufacturing decision needs to be based on several different components.

By analyzing the situation from a purchase behavior standpoint through distribution of a consumer behavior survey, this thesis provides insight into how knowing where a product is made plays a role in a consumer's decision to buy one product versus another. Ultimately the purchase decision comes down to how much a manufacturing location will impact the final cost of a product. However, it is also important for consumer electronics companies to make such a decision with good ethical and business sense in order to not negatively impact company reputation or product quality.

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Chapter 1

Introduction

The consumer electronics industry is a large and powerful one. In this ever-developing world of new technology, the way businesses operate has changed tenfold compare to a decade ago. Technology now surrounds society and makes it easier than ever to streamline work processes, improve and benefit business users and operations, and has helped to redefine what used to be possible in maintaining a profitable business. With this evolution in technology, the ability to handle business abroad has become easier, and the communication practically instant.

The growth of global business has made it possible for companies to outsource manufacturing processes outside of their own country of origin, and purchase materials at better cost, quality, or both from other suppliers worldwide. There are many reasons why a company might want to outsource. By being able to leverage the benefits of third party suppliers or agencies outside of the country, a company has many potential opportunities to improve overall operations. From obtaining lower costs in both operations and labor, to allowing more time to focus on other core business processes more prevalent to company image and profit, outsourcing certain operations can be critical to a firm's success. This thesis will first examine the effects of outsourcing in the consumer electronics industry, focusing on the outsourcing strategies employed by Apple Inc. The tech company also has employed efforts to bring more of their international manufacturing processes back into the United States, and this thesis seeks to provide

detail on whether it is truly feasible for the company to make such a move. And if so, what manufacturing network goals should be put into place to gain maximum advantage?

By formulating a framework for consumer electronics companies, the benefits of onshoring international manufacturing to the United States can be learned. In addition to looking at supply chain strategies, marketing strategies should also be taken into consideration in the onshoring manufacturing decision.

Background

In large, it is known that “The U.S. doesn’t make things anymore,” a line echoed in the 2012 presidential election campaign (DiLeo, 2012). But companies can use this fact to their advantage if they look into the benefits of domestic production and use it as a strategy in their marketing campaigns. Determining whether or not consumers truly believe or care about where products are being manufactured is important to marketing strategists. If consumers don’t care, why should the company care if they are already benefiting from an international supplier?

The process of a company relocating part of a business or a business process from one country to another is called offshoring. This process is prevalent in a majority of consumer electronics companies around the world who seek to yield lower costs on manufacturing, customer service, or other operational procedures that can be achieved cheaper by the use of international labor and tax practices. In May 2013, Reuters completed a study that claimed that U.S. companies boosted offshore earnings by 15% in 2012 to a record \$1.9 trillion by keeping profits made abroad to avoid hefty U.S. tax bills (Aubin, 2013). Comparatively speaking, onshoring or “near-shoring” is the prospect of companies moving such processes back from overseas to the local country of origin.

Recently, there has been a growing trend in onshoring back to the United States. In 2012, companies like G.E., Lenovo, Caterpillar, Boeing, Coleman and Apple all began looking into and contributing to the onshoring as an option to the way they each respectively runs their business. There are a number of reasons why onshoring is beginning to gain interest amongst companies, primarily due to the increase labor and energy costs in China and strong preferences for “Made in USA” products by both American and Chinese consumers (Odette, 2013).

Apple Inc., a U.S. headquartered company, with over 500 suppliers in the Asian region, is a prime company that would be able to benefit from bringing some of the manufacturing of its most popular products back to the United States. Due to the multifaceted nature of moving an entire manufacturing process from one country to another, this is no easy task; however it has already just begun to do so with one of its professional Mac product lines. Tim Cook said in an interview with ABC Nightline’s Bill Weir that this is a “small step in the right direction” (Polidoro, 2012) and that the company is actively looking into the prospects of bring further production back into the United States in the future. Cook highlighted that it is not something that happens overnight, given the complexity of manufacturing processes and skillset of the Chinese workers who currently do the job for the millions of people that use their products.

This thesis will be divided into several sections. After the research methodology, a literature review will be developed, examining the onshoring manufacturing issue and presenting an overview of Apple Inc.’s current strategy, company performance, and outsourced manufacturing procedures. This will include an investigation of what currently works for the company and its largest suppliers, what doesn’t, and how a

manufacturing company in the United States would need to compare in order to be as successful as those currently in China. From this review recommendations will be made as to what consumer electronics companies should look for in thinking about the United States has becoming more of a hub for manufacturing operations. Finally, a pair of consumer behavior surveys will be administered to help seek insight to the question, “Does domestic manufacturing really matter to a consumer?” and the results and findings will be summarized to showcase the consumer standpoint on this issue.

Chapter 2

Research Methodology

The research methodology to be used for this thesis will be the use of publicly available documents synthesized through a literature review. It is important to provide an overview of Apple, their product line, company performance and information, supply chain strategy, and current supply base to be able to suggest a framework of future recommendations for consumer electronics companies like Apple when it comes to domestic manufacturing.

Two main sources for this research will be Apple's recently published 2013 Supplier Sustainability Report and the 2012 Fair Labor Association Findings Report. The latter is a report authored by a non-profit organization Apple partnered with that took a first-hand look inside their largest device manufacturing assembly plant in China, Foxconn. By comparing and contrasting both of these reports, in addition to looking at information from several third party research articles found through research databases and trusted online web sources, a solid understanding of what is currently happening in Apple's offshoring manufacturing facilities can be developed. Determining what manufacturing skills and methods work in China will shed some light into what the United States will need to do if the company were to bring more of its assembly back to the their country of origin.

In addition to the literature review, an analysis of total landed cost will be conducted to determine whether or not this is a main reason as to why companies like

Apple have yet to move manufacturing processes back to the United States. Total landed cost is the total cost of a product incurred once it leaves the manufacturing plant and comes into the buyer's possession. Companies seek to have the lowest total landed cost possible in order to increase profit margins on products. If it is found that it would most likely be lower by having manufacturing processes in the locations they presently have, then this would decrease the desire for a company like Apple to make any change in its manufacturing network.

Survey Methodology

The final part of the research methodology will consist of conducting a survey that will examine the marketing facet of this thesis. Faculty in the Department of Marketing in the Smeal College of Business at Penn State will be consulted to formulate and conduct a consumer behavior survey. The goal is to reach a sampling frame of about fifty Penn State students between the ages of 18-24 to see if young professionals care about international versus domestic manufacturing and if it really has an impact on a consumer's purchasing habits. All consumer electronics companies take into consideration what their consumer base wants and likes into their own corporate strategy. Using Apple and their widely known and successful iPhone 5 as the primary focus within the survey, further insight will be gained into formulating recommendations on manufacturing strategy on Apple's behalf. Asking questions that use price and socio-economic status as determinant factors, the results of this survey will be used to provide insight as to whether or not a consumer would be willing to pay more for a product that is produced in the United States versus China. The survey questions asked are listed in Appendix A.

In addition to this survey, a shorter examination survey will also be implemented via classroom setting. The manufacturing topics will be asked to a class of over 700 students on the Penn State University campus, namely SOC 119: Race and Ethnic Relations, and are highlighted in Appendix B. The audience in this survey will be much larger than the in-depth survey; however, limited time and questions will be able to be asked. Ultimately, any trends that can be identified from these survey results will be interesting to analyze with respect to how a greater amount of students aged 18-24 year olds feel about the manufacturing location topic at hand.

Methodology Conclusion

The decision on whether or not to move international manufacturing back to the United States is a present day decision that many consumer electronics companies are contemplating. In addition to looking into the supply chain complexities in moving from one country to another, gaining an understanding as to whether or not consumers actually care or not is also important. And if consumers should care, how much of a premium would they be willing to pay when purchasing a product, assuming an increase is necessary per result of such a supply chain shift. Chapter 4 will review the final results as highlighted by survey feedback, followed by additional recommendations on manufacturing operation locations in Chapter 5.

Chapter 3

Literary Review

Company Overview

Two co-founders, Steve Jobs and Steve Wozniak, founded Apple Inc. in 1976 in California's Santa Clara Valley. From Steve Jobs' garage to one of the largest technology companies in the world, Apple has since kept to its California beginnings and is currently headquartered in Cupertino, CA. It has become a giant consumer electronics company, with 245 retail stores in the United States and an additional 112 internationally (Apple Inc., 2013). Apple started with the innovation of a computing device called the Macintosh and is now known for producing many more products. In 2001, Jobs introduced an MP3 player called the iPod. This was the one product that was able to pull the company out of the red, as it was previously on the verge of bankruptcy. Finally Apple revolutionized a product that became a real game-changer in the industry after many decades of not being able to do so. Part of the reason why the iPod became such a success was because Apple was able to control the music ecosystem with the introduction of iTunes, an application used to purchase and manage music files and other multimedia content. This is an example of one other unique factor to the company: Apple is heavily involved in the creation of their own software, in addition to their hardware platform. Their current operating systems that now run on "iDevices", iOS, and the OS X, which is home to the Mac, are all managed in-house. This allows for a truly cohesive user experience which consumers enjoy using. Apple continued to grow and dominate the computer electronics

industry with new innovations like the iPhone, MacBook Air, and iPad product lines. Since the last decade, Apple's leadership has continued to remain strong to the present day. Even after Steve Jobs left the company in 2011, due to health issues which ended up taking his life later in the year, Tim Cook was appointed the new CEO after handling the company in his previous COO position when Jobs was in control.

Financially, Apple had sales of \$156.51B in 2012 with a net income of \$41.73B. Between 2011 and 2012, Apple saw a one-year sales growth of 44.58 percent (Apple Inc., 2013). Predominantly, this growth was the result of the introduction of the next-generation iPad and extensively popular iPhone 5, Apple's sixth version of the product. Apple seeks to provide regular updates to each of its product lines, improving upon both form factor, chip designs, and other alternative hardware and software features associated with each device. Though the company is known for its secrecy, Apple does not do everything in-house. Apple outsources much of its production, partnering with many suppliers overseas, primarily Hon Hai Precision Industry and Quanta Computer. Hon Hai Precision Industry is the owner of Foxconn in China, currently home to Apple's largest final assembly manufacturing plant where they assemble Apple's iPhone and iPad product lines.

Supply Chain Strategy

Apple's supply chain cannot be overlooked in the industry. Being a widely admired and appreciated consumer electronics technology company comes with it a lot of behind the scenes work that is readily not seen or even apparent to the person who purchases the product. The types of relationships Apple has with its supplier's runs much deeper than many consumers would think, but the company's secrecy often make this

note hard to highlight. Despite this fact, Apple has an advantage when working with suppliers against their competitors, like Samsung or Microsoft, for three reasons: volume, money, and exclusivity (Satarino, 2011).

In order to make sure Apple can make its popular “iDevices” available to consumers, they need the materials to do so. In a November 2011 Bloomberg BusinessWeek article, the green laser located in the company’s popular MacBook was discussed. Apple was able to sign an exclusivity agreement with the company that produces the lasers in order to be the only company that has the freedom to have this feature in their final manufactured product. Apple has “built a closed ecosystem where it exerts control over nearly every piece of the supply chain, from design to the retail store,” (Satarino, 2011). This closed ecosystem gives the company an advantage when it comes to working with suppliers that are devoted to Apple and providing pieces of hardware for Apple’s products only, and those that are certified and pass Apple’s tough supplier checklist of necessary requirements in order to be used as an Apple product supplier.

Volume is another key factor when it comes to providing the type of operational excellence Apple offers. Just taking one of Apple’s product lines as an example, the iPhone, one can see the type of volume Apple is dealing with on an annual basis. In one CNET article, it stated that Bill Choi, an investment analyst for Janney Capital Markets, projected that Apple would sell upwards of 107 million iPhones in 2012 (Reisinger, 2011). With each new generation of the iPhone, Apple continually seeks to expand its market share and consumer base and the iPhone 5 introduction was no different. But how does a technology company produce that quantity and ship it in a timely manner? Money and power, and Apple has a lot of both.

Money can especially give Apple a lot of pull in the marketplace. Overall, Apple's cash reserves have amounted to so much that it is able to do what Steve Jobs did in the 2001 holiday season just after the first generation iPod launched. Jobs decided to pay transportation carriers to "buy up" a majority of the available air freight space and reserve it solely for the company's products to get priority shipping to consumers. This in turn affected other retailers' efforts in getting their products to consumers on time or in a streamlined process, aggravating the companies that realized Apple basically bought them out of the opportunity. The \$50 million price tag to pull this feat off shows the industry their supply chain mantra, as stated in the article: "to spend exorbitantly whenever necessary, and reap the benefits from great volume in the long run" (Reisinger, 2011). This interprets into the fact that even though the company has to spend something, the amount of product they are able to further deliver and benefits from customer satisfaction outweigh the costs incurred.

Apple's competitive advantage in being a worldwide manufacturer means it additionally has an effect on the amount of global trade between various countries. Highlighted in a December 2010 Wall Street Journal article, the effect may not always be positive. Two academic researchers have indicated in their research that Apple's iPhone has actually led to a \$1.9 billion trade deficit for the United States (Batson, 2012), despite the fact that it is one of the best-selling products in America. The reason behind the researchers' claim is the fact that iPhones, like mostly all of Apple's other products, are manufactured and assembled in China, therefore considered a Chinese export once completed and shipped to other countries including the United States. This fact shows the imbalance with the trade revenue that China receives for the exports despite the fact that

a majority of the products and cost of internal hardware and materials come from other countries individually. Throughout the research, it was found that this isn't an issue for just Apple, but has more to do with China's current unfair trading practices and the way imports and exports are measured.

Though some efforts are being put into place to try and see how these trading practices can be correctly recognized and dealt with appropriately, it is a prime example of how Apple has had a large influence not only on itself as a company but also on each individual country's financial well-being. This large influence adds to the company's potential buying power and leverage with its supply base.

Apple: Current Supply Chain Operations

Apple's suppliers currently operate under a strict set of guidelines and downward pressure on prices, a piece of Apple's own bargaining tactics. Guidelines include pre-product launch efficiency, secrecy, and manufacturing overview. In addition, manufacturers are told to go through the company's greatest efforts to control product leaks. This is one facet that cannot be overlooked, just because a great part of Apple's identity and culture is made up of and recognized with its product secrecy. Also, suppliers must deal with the high volumes in a manner that may sacrifice the production for other companies. This high volume is attractive for many suppliers though, due to the recent growth in demand and ever-growing popularity in Apple's product line. However, suppliers need to ensure that the relationship between the buyer (Apple) and the seller (supplier) stays positive and that they don't become too dependent on just the one company.

Supplier Responsibility

Apple does not take supplier responsibility lightly. Ever since allegations of Apple treating their suppliers poorly, illustrated by several workers jumping to commit suicide at its largest final assembly plant, Foxconn, in Shenzhen, China over the past few years, it has become a mission for the company to be as transparent as possible to the public. Telling consumers the way they treat suppliers and what they are held responsible or accountable for has been vocalized as a concern by consumers worldwide. Tim Cook told BusinessWeek that “the more transparent we are the bigger difference we would make, (Greene, 2012).”

Apple has six main goals for supplier responsibility. As highlighted in their 2013 Apple Supplier Responsibility Progress Report, they include:

Table 3-1: Apple: Six Goals For Supplier Responsibility
1. Empowering workers to go greater and improve upon themselves educationally.
2. Protecting workers’ rights, being constantly aware of any problems which arise.
3. Safeguarding against workers’ health and well-being by following specific safety standards.
4. Reducing environmental impact wherever possible and conduct focused audits.
5. Holding themselves, in addition to the suppliers, responsible accountable for any action.
6. Committing themselves to transparency, willing to report and improve upon any problems found in their supply chain operations.

In conducting 393 audits, which examined all levels of the company’s supply chain and was a seventy-two percent increase over the number of audits in 2011, Apple seeks to continue its strict audit and review process into the future. Of these 393 audits,

fifty-five were focused on environmental issues, forty on specialized process safety assessments to evaluate how suppliers operated and the practices they carried through, and twenty-seven highlighted labor audits to protect workers from unfair recruitment fees.

Each supplier must adhere to the Apple Supplier Code of Conduct, which is based on the standards created by the International Labor Organization, the United Nations, and the Electronic Industry Citizenship Coalition. The conduct requires suppliers to use fair hiring practices, provide healthy work environments, be environmentally aware and responsible, and treat employees with fairness and respect. Managing such a conduct is tough for such a company with so many suppliers. However, it is so important to the company's brand image and nature that they willingly requested to be admitted to the Fair Labor Association (FLA) in February 2012 in addition to their own Apple-led audits. The FLA, an independent coalition committed to improving working conditions in businesses which need help, was ordered to improve working environments that were not up to par, namely Foxconn factories in Shenzhen and Chengdu, China.

Apple & Foxconn International Holdings Ltd.

In working to understand how Apple would need to manage operations in the United States, it is first important to gain a basis of understanding behind how Apple does so abroad. The way Apple would need to manage a U.S. manufacturing company is much different than the way they have to manage one in China. For insight on this topic, looking at Apple's largest final assembly plant, operated and controlled by Foxconn in the Shenzhen and Chengdu regions of China is a great example. Foxconn provides technology design and manufacturing services within the telecommunications industry

for many other known companies like Dell, Nokia, and Sony, but most notably Apple. The company consists of three facilities employing approximately 178,000 workers (Foxconn, 2013). In 2012 Apple went into the media spotlight for how workers at Foxconn were being treated when violence at the company broke out in various riots, committed suicides, two explosions, and employee complaints of the harsh working conditions. Apple was seen as a company that desired to improve the workplace for partners like Foxconn, but only when doing so did not intervene with supplier relationships or changing manufacturing processes that could disrupt fast product assembly and delivery.

Not including any additional compensational benefits, the average pay for a worker at Foxconn is just less than \$250 per month. This is much less than the average worker in the United States. Given the average work week of forty hours per week at the U.S. minimum wage rate of \$9.00 per hour, one employee would need to be paid \$360 per week. This means that on a monthly average, Foxconn pays its workers approximately \$1190 less per month. Wage payroll is one primary reason for why it is advantageous for Apple to have Foxconn as a supplier. If Apple can produce the same amount of product in China for a cheaper price, then it is beneficial for the company to do so, increasing their bottom line more so than they would be able to produce in the United States. What is more amazing to many Americans about this payroll difference and how much cheap labor impacts the decision of a company that is currently profiting an exorbitant amount of money, is that Chinese workers actually *want* to work there. One such Chinese worker, Li Yue, interviewed in a CNET September 2012 article by Jay Greene, says that the reason why she desires to continue working for Foxconn despite the

work environment and low pay is because in the grand scheme of things Foxconn pays higher than many other local companies. When asked if she knew of all the Foxconn suicides and dangerous behavior that was going on at the company's facilities she said she did, but that it would not stop her from getting a job that is still considered by many Chinese workers as "hard to get" due to the better pay and good job security (Geene, 2012).

Luckily, Apple is not ignoring all the negative events going on at Foxconn. In February 2012, at the company's request, they partnered with the FLA to give them unrestricted access to Apple's manufacturing plants at Foxconn and help to highlight, improve upon, and fix the complaints by Chinese employees who worked at the supplier. The assessments were conducted and enforced by Openview and SCSA, two local independent labor monitoring organizations accredited by the FLA, as well as FLA staff members. The FLA has since addressed issues in "enforcing ergonomic breaks, changing the design of workers' equipment to guard against repetitive stress injuries, updating maintenance policies to ensure equipment is working properly," along with working towards reducing the excessive work hours throughout the company (FLA, 2012). It was found that Apple's legal limit for their suppliers is a maximum of sixty hours of work per week. It was found that a majority of workers were working beyond this limit. In China, law requires employees to work no more than forty-nine hours per week so there were obviously some improvements that needed to be made within Foxconn. The FLA and Apple began to track the hours of over 700,000 employees and have since had ninety-seven percent of the workforce comply with the sixty-hour maximum that Apple specifies in their code of conduct. Since the FLA's report on Foxconn was made public, Foxconn

and Apple have been working together to carry out a remediation plan in order to ensure continual progress in the improvement of all the issues the FLA highlighted in an appropriate timeframe.

Apple & U.S. Manufacturing

For the first time in over a decade, Apple can now say that some of its products are “made in America.” This is because the company has put forth the effort to bring back the manufacturing for some of its Mac computer line to the United States by investing over \$100 million in onshoring its product. At the beginning of 2013, Apple began U.S. production in a plant in Fremont, CA. This marks a small step for the company in terms of bringing more jobs back to the U.S., because they still have a long way to go. As Tim Cook told NBC’s Rock Center in an interview, “It’s not so much about price, it’s about skills, etc. There are manufacturing skills that have left the United States. Not necessarily people, but the education system stopped producing them” (Grove, 2011). Apple is planning to track and use what successes they find with this one Mac line and continue to take control of their value chain and bring back more manufacturing to the United States in the future.

Literary Conclusion

The debate on whether U.S. manufacturing of Apple products as well as products of other consumer electronics companies is largely still not concluded. Like Apple, much of their company’s investment has gone to the development and growth of manufacturing in China; however the prospect of onshoring these processes back to the United States is one that the company is not overlooking. This thesis provides the means to examine the reasons why a company should or should not bring product production back to America,

and to further provide a framework that can be reviewed when thinking about whether or not to invest in such a move. It is hoped that the ideas, recommendations, and consumer behavior survey results help identify and leverage possible opportunities for consumer electronics companies like Apple to decide what is best for their product and company as a whole.

Chapter 4

Consumer Behavior Survey

Survey Results & Findings: In Depth Survey

The consumer behavior survey administered to a convenience sample of fifty students, aged 18-24, yielded some productive feedback into how members of the millennial generation feel about the topic of whether or not it is beneficial for consumer electronics companies to onshore their manufacturing processes. In the survey, the iPhone 5 was used as the primary example. The reason for this is because it is a product that is widely familiar by consumers in this age group, and is currently being manufactured in China amongst several other Apple branded products like the iPod and iPad. Survey takers were asked to compare an iPhone 5 pictured with the label “Made in China” on the back to an identical version with the label “Made in USA” on the back to see which one was preferred.

Do people of this age group really care where their electronics are made? Will it make a difference to them or affect their purchasing behavior if they are readily aware of where a product is made? And perhaps most importantly, for those that do care about having their products made in the United States, are they willing to pay a premium above the regular price (assuming that it is more expensive for companies like Apple to make such a manufacturing change)? Insight into these theoretical questions can be seen given the overall survey results and other qualitative feedback that was submitted. The survey instrument is contained in Appendix A.

Part one of the survey asked participants to view a picture of a white iPhone 5, randomly designated as either being made in China, made in the United States, or having no label at all. The focus of this section of the survey was to see what participants thought was attractive about the phone and suggest what might make the iPhone 5 they viewed more ideal. Interestingly, only two of the fifty open ended responses made a reference to the product's manufacturing location in this section. The greater majority of responses focused around having an iPhone that was the most current version and iOS (iPhone 5C/5S running iOS 7) or due to form factor in terms of having a bigger and brighter screen or being slimmer and more lightweight. In large, manufacturing location was not raised as something that would make one iPhone more ideal over another until later in the survey where the topic was brought forth to their attention.

Second, survey participants were shown pictures of two identical iPhone 5 models side by side with a clear indication that one was made in China and the other was made in the United States. The participants were asked to choose between the two devices without regard to color or price of the product. Seventy-eight percent of the respondents chose the USA manufactured iPhone over the model made in China and out of this number, seventy-six percent admitted that they chose this option because they thought a phone assembled in the United States would be made with better quality and general

Figure 4-1: Level 1: Preferred Manufacturing Location Without Regard to Color Or Price

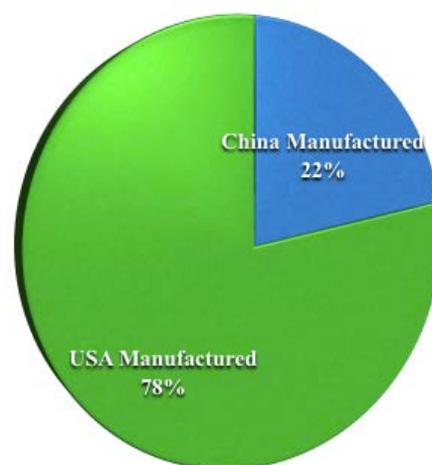
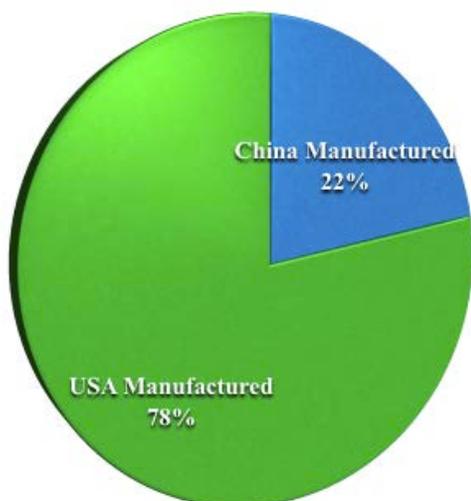


Figure 4-2: Level 2: Preferred Manufacturing Location Without Regard to Color, With Price Difference



domestic product appeal. Alternatively, twenty-two percent of respondents chose the Chinese manufactured product (See Figure 4-1).

Next, survey participants were shown the same two pictures of the iPhone 5 models in their respective manufacturing locations; however this time they were told that the price of the products were different. Being asked which iPhone model they would be willing to pay more for, the feedback proved to be identical to part 2. Seventy-eight percent of the respondents continued to choose the iPhone manufactured in the United States while twenty-two percent opted for the Chinese manufactured version (See Figure 4-2). Hypothetically, this outcome makes sense considering no assumption should be made about which iPhone can be manufactured at a lower price.

The follow-up question used this input to further determine *how much* of a premium, over and above the non-preferred product, would the student be willing to spend on the preferred product of choice. The twenty-two percent of respondents who chose the Chinese manufactured version said that they would not be willing to pay any premium because with the current method of production there would be no reason for a premium to be paid. Henceforth, those participants who used price as their sole determinant for purchase behavior chose the Chinese manufactured iPhone. The seventy-eight percent of the participants who chose the iPhone manufactured in the

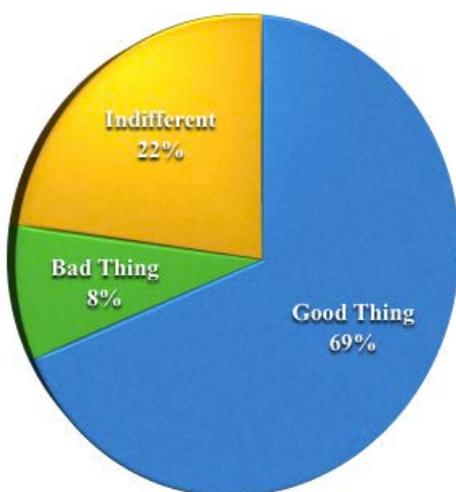
United States claimed that they would be willing to pay an average of a 16.6 percent premium over the Chinese manufactured iPhone. For example, if the base iPhone 5 model, currently manufactured in China, sold for \$199.00, it's feasible that Apple would be able to charge an additional 16.6 percent premium. This would equate to roughly \$33.00 charged extra to customers if the company decided to make the investment in onshoring their iPhone manufacturing operations.

When the topic of manufacturing location was brought up in a more conceptual manner, survey participants were able to respond to what primarily comes to mind when they hear the words “domestically manufactured” and “internationally manufactured.” The top subject topics to these responses are listed in Table 4-1 below.

Table 4-1: Top Judgments On Manufacturing Location	
Domestically Manufactured	Internationally Manufactured
More Expensive Labor	Cheaper Labor
Higher Quality Product	More Experienced Laborers
Better Labor Treatment	Lower Quality Product
More Trustworthy	Less Expensive End Product Price
More Jobs/Domestic Economy Boost	Globalization

The difference in consumer judgment between these two different scenarios can clearly be seen. It's evident that students in this age group believe that a product made in the United States would result in a higher quality product with a more positive business work ethic, albeit at a higher price. Compared to the internationally

Figure 4-3: Consumer Standpoint On A Consumer Electronic Company's Consideration To Move Manufacturing Operations Back To The USA



that would be positively and negatively affected by the move. From a consumers' perspective, a majority of sixty-nine percent claimed that onshoring manufacturing back to the United States would be beneficial for the consumer with eight percent claiming it would be bad and the remaining twenty-two percent feeling indifferent about the whether it would be good or bad (See Figure 4-3). The results for the implications the manufacturing move would have on the firm was a lot more evenly spread with thirty-five percent of respondents thinking it would be good for the firm, twenty-seven percent thinking it would be bad, and thirty-nine percent feeling unsure about the resulting implications (See Figure 4-4).

manufactured term, the feedback was generalized into a more negative manner despite resulting in a lower end product cost for the consumer.

Lastly, survey participants were asked a number of questions based on rating whether or not companies onshoring their manufacturing process would be good or bad from a consumer perspective, from a firms' perspective, and judged how much of an ethical dilemma it is when you take into consideration the economies

Figure 4-4: Implication For Firms On A Consumer Electronic Company's Consideration To Move Manufacturing Operations Back To The USA

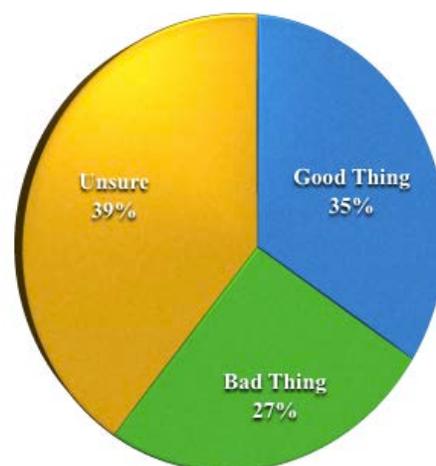


Figure 4-5: How Big Of An Ethical Dilemma Is It For A Consumer Electronic Company To Move Manufacturing Operations Back To The USA

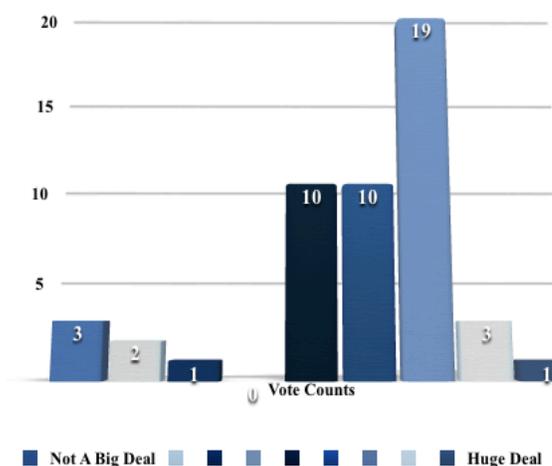
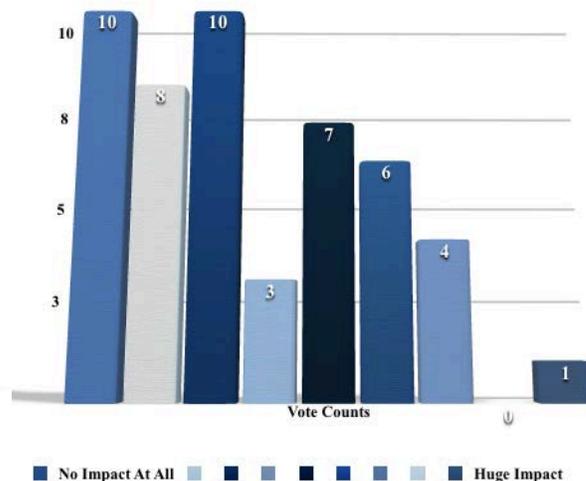


Figure 4-6: How Much Of An Impact Does Consumer Electronic Manufacturing Operation Location Have On Your Purchase Decision



When asked about how the choice of manufacturing location can be thought of as representing an ethical dilemma, participants rated on a scale of 1-9, 1 representing whether this was “not a big deal,” and 9 representing “a huge deal.” Sixty-seven percent of respondents rated it at a level 6 or higher, indicating that the ethical dilemma is overwhelmingly a large topic of importance when it comes to the onshoring manufacturing decision (See Figure 4-5).

Perhaps Figure 4-6 highlights one of the more interesting results. From a scale of 1-9, 1 indicating “No Impact At All” and 9 indicating a “Huge Impact” participants were asked whether or not a product’s manufacturing location made any impact on their final product purchasing decision. Fifty-six percent of the participants responded with a Level 3 or lower meaning that, in large, consumers don’t think of a product’s manufacturing location when it comes to choosing what to buy.

These survey results yielded some concrete judgments, and were compared to a shorter examination survey given to a larger audience of students aged 18-24. These results are explained below in the next section.

Survey Results & Findings: Short Examination Survey

Another shorter examination survey was distributed amongst a convenience sample of 200 students in the same 18-24 age group. Respondents gave their feedback via iClicker format where the survey questions were put up on a projection screen in front of the audience and students submitted their answers with a multiple choice remote control. Below is the feedback received with each of the given questions. No calibrator questions were asked so individual responses should be taken into consideration not based on ethnic or racial background or income level.

When the group was asked whether or not a consumer electronic company's decision to move its manufacturing location back to the United States of America was a good thing for consumers or a bad thing for consumers, just over fifty percent of the audience claimed that the move would be a good thing (See Figure 4-7). Interestingly, when asked about the implications for the firm on such a move, only twenty-nine percent of respondents said it was good from a firms' perspective (See

Figure 4-7: Consumer Standpoint On A Consumer Electronic Company's Consideration To Move Manufacturing Operations Back To The USA

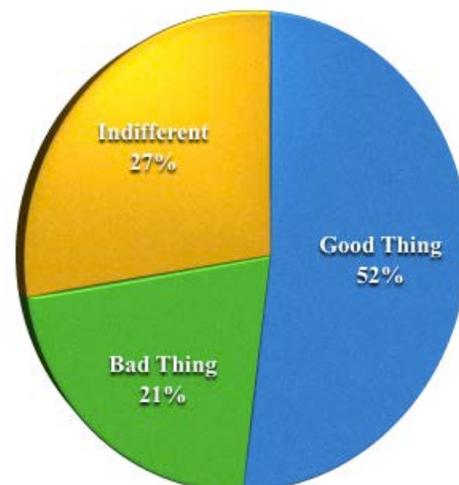


Figure 4-8).

The topic of international versus domestic consumer electronics manufacturing, as with manufacturing operations in any industry, comes with the same ethical dilemma described in the previous section. The manufacturing jobs and economic impact are plentiful in areas where operational facilities are located. Therefore, for a company to move its operations from one country to another needs to be questioned on the level of negative or positive impact which should be considered in a location change

Figure 4-8: Implication For Firms On A Consumer Electronic Company's Consideration To Move Manufacturing Operations Back To The USA

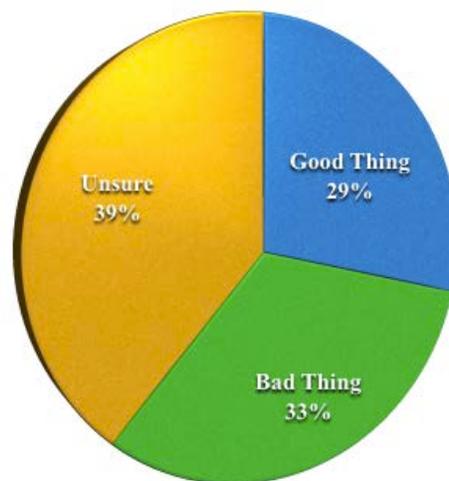
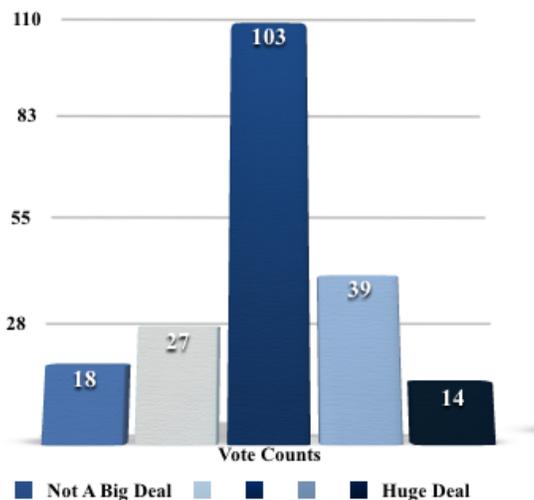


Figure 4-9: How Big Of An Ethical Dilemma Is It For A Consumer Electronic Company To Move Manufacturing Operations Back To The USA



decision. From a scale of 1-5, 1 being considered “Not A Big Deal,” and 5 being considered “A Huge Deal,” seventy-eight percent of students claimed it was at a level 3 or higher. Ultimately, this shows that this issue should not be overlooked because consumers care about the well-being and both the positive and negative impacts it may have on one country versus another (See Figure 4-9).

From a cost perspective, it is

important to recognize that a majority of students who took part in the survey *would* pay some type of premium for a preferred consumer electronic if they knew it was made in the United States, but how much? By looking at Figure 4-10, one can see that sixty-six percent of respondents said they would pay some type of premium; however the amount varies by different subgroups; 33.5 percent would only pay a premium if the extra cost was less than ten percent more. Twenty-five percent would pay a 10-20 percent premium, and a combined 7.5 percent would spend upwards of a fifty percent premium. Interestingly, when asked whether the manufacturing operation location has an impact on their purchasing decision on a scale of 1-5 (See Figure 4-11), 1 being “No Impact At All,” and 5 being “Huge Impact,” sixty percent of participants said Level 3 or lower indicating it overly doesn’t have a big impact when in a store looking between which product(s) to purchase. It is clear that the cost of a product is something consumers are weary about, but if manufacturing location doesn’t make a huge deal to students at the time of purchase then such a move should be clearly advertised beforehand.

Figure 4-10: How Much Of An Impact Does Consumer Electronic Manufacturing Operation Location Have On Your Purchase Decision

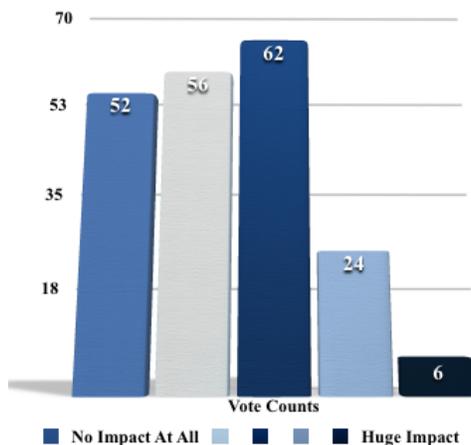
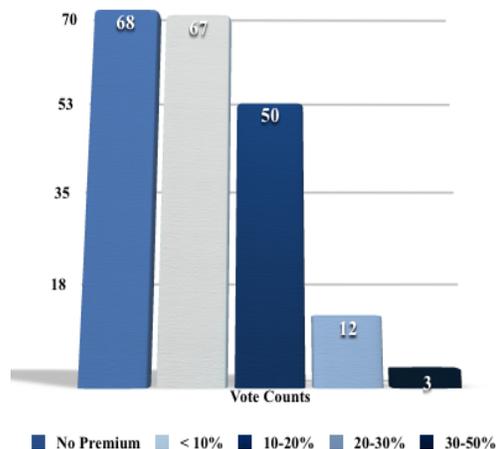


Figure 4-11: How Much Of A Premium Would You Be Willing To Spend On A Preferred Consumer Electronic Product If You Knew It Was Made Domestically?



Chapter 5

Manufacturing Location Recommendations

Continuing to use Apple Inc. as an example, the company has seventeen open final assembly facilities and over seven hundred suppliers which represent their total procurement expenditures. Of these final assembly locations, fourteen of the seventeen are located in China and only one of the seventeen is in the United States. From a supplier standpoint, exactly 748 were listed in their 2013 Supplier List and 663 of them are located in Asia with 331 of them in mainland China around where their final assembly facilities are located (Barreda, 2013). This is a clear indication that it's cheaper for consumer electronics companies to manufacture closer to where their raw materials and components for their products are sourced. If this is the case however, why are companies like Apple already beginning to move some of their manufacturing facilities back into the United States? Does it feasibly make sense from a cost perspective?

Total Landed Cost Analysis

One recommendation for consumer electronics companies interested in making the international versus domestic manufacturing location change decision is that establishing a specific total landed cost model is very important. This is tough to identify from an outsider point of view, however it goes without saying that the move would need to be beneficial from a cost point of view in order to make good business sense. As highlighted in Figure 5-1, many attributes go into a company's' landed cost structure and

can include a number of different cost information, from the original cost of the item to complete shipping costs, taxes, insurance, and handling fees.



Especially for consumer electronics companies who currently manufacture internationally, the landed cost must also take items like customs duties and tariffs into the equation. These often shift up and down based upon foreign exchange rate fluctuations and determination of the Harmonized Tariff Codes (HTS Codes), a standardized tariff nomenclature for classifying internationally traded products, goods, and commodities. Both of these factors are essential in international trade and have a direct influence on the final cost of a traded item.

The goal for any consumer electronics company that is looking at whether it would be more cost efficient to manufacture products domestically compared to internationally is to compare their individual total landed cost analyses. Evidently, it is desirable to choose the landed cost model that is of the lowest amount. Where a company sources their product components from will most likely have a direct influence on where a manufacturing location is chosen. Since most final manufactured products are shipped worldwide to different global consumer markets, most consumer electronics companies have their manufacturing locations closer to their component suppliers for lower shipping costs on the production side of the supply chain.

One useful measurement for consumer electronics companies to look into when initiating a landed cost analysis is to look a product's factory gate pricing. This price represents the actual cost of manufacturing a good before any additional fees are added to increase profit margin or pay for other necessary transportation and handling services. Finding out the factory gate pricing for each product interested in onshoring will help increase the clarity about how such product costs will shift based on location. By cross-analyzing these factory gate pricing product costs with different modes of transportation (motor carrier, ship, plane, etc.) from the manufacturing location to the retailer's distribution center, a company will be able to compare which will yield the lowest amount of total cost.

Several factors should be looked at in order to ensure that onshoring the manufacturing process is a reasonable decision. The decision on whether or not to onshore is different for every company, however overall the same goals in each category should be met:

Category	Description	Company Goal if On-Shoring
Logistics Complexity	Keep track of relevant logistics complexities which are prevalent in operations outside of the United States vs. inside the United States. Realize that costs are higher when there is increased complexity.	Decrease costs by ensuring lower logistics complexities.
Distance	Distance is a key indicator of speed. The closer operations are to each other, the quicker the supply chain velocity will be from start to finish. Speed becomes an important factor during times when product demand increases or decreases	Locate like operations as close as possible to one another to increase efficiency between different business units.

	unpredictably.	
Branding	Most important to any company is their brand. In the case of product manufacturing, consumers consider products made in the United States more trustworthy and reliable as compared to those made in foreign countries.	Strengthen brand and boost consumer impressions of products manufactured, but only if resources to manufacture the product are readily available domestically.
Quality	Product characteristic that is directly correlated to company brand. The higher the quality of a product, the better it will be perceived by the consumer market.	Increase quality or have product quality remain at the same level as current off-shoring operations.
IP Protection	The level of enforcement amongst IP rights is lower in foreign nations than the United States.	Increase the amount of IP Protection by manufacturing in a country who more tightly enforces IP rights.
Supplier Involvement & Engagement	The amount of collaboration between supplier and manufacturer. Communication overseas often increases the amount of time it takes to work between any problems that result between the two.	Decrease the communication complexity by having more direct supplier involvement and engagement, if the supplier is located within the United States.
Political Nature	Political stability within a nation will generally have an impact on the labor market, economy, and law.	Increase the amount of political stability to help safeguard against possible supply chain risks should changes result from political unrest. The United States is one of the most internally stable countries in the world.

These above factors should be clearly looked into and optimized as much as possible. In terms of implementing such goals into a landed cost analysis, it is necessary that accurate data be made available in order to maintain a truthful outlook on what is best for the company. Several challenges might hold a company back from building an accurate landed cost model, such as time constraints and pressure from upper management which might result in less than sufficient data that gets included. It is

common that companies may not often check or update landed cost input values, so if an analysis is being done over a long period of time checking to make sure current input values are being used is important. In addition, it is sometimes the case with companies that their organizational structure obstructs any cross-functional effort needed to build and uphold a truthful landed cost model so keeping open lines of communications between departments involved is crucial to landed cost model accuracy. If different input values result for different product models, creating several “what-if” cost analyses can give a consumer electronics company ample outlook into the different outcomes which may result from an onshoring manufacturing decision.

Consumer Input

In addition to total landed cost model comparisons, as highlighted by the consumer behavior survey, another recommendation would be to ensure the company has a solid understanding of consumers’ opinions on the manufacturing location change decision in both the foreign and domestic countries of interest. If a company takes consumer feedback with high regard, some of the cost differences between models might be overlooked in order to show consumers that they are listening to their feedback and understand that supply chains can be further optimized.

Chapter 6

Conclusion

The decision on whether or not a consumer electronics company should manufacture their product internationally or domestically in the United States is a current issue open for debate. Continuing to use Apple Inc. as a primary example, the company will begin to make strides in its onshoring manufacturing and assembly initiative with their newest generation of the Mac Pro product line in the state of Texas, set to be released in December 2013. When the company revealed that it would begin domestic production in the United States, it received the attention of U.S. consumers and was praised in recognizing the company's effort in terms of bringing production "back home" to aid in boosting economic infrastructure. However, what was the real reason aside from public appreciation for this move away from China?

It turns out the new Mac Pro product line is machined from components made from companies in the United States. Apple claimed it was able to leverage component companies from over a dozen states to source parts for the product. Therefore, it would make sense that it is manufactured closer to these companies as opposed to overseas. The Mac Pro has been redesigned from the ground up and during its redesign phase much attention was linked to manufacturing. As stated by Apple Senior Vice President of Operations, Jeff Williams, the company had to pioneer completely new processes in order to build such an advanced machine in its new form factor (Wakabayashi, 2013).

The company is also leveraging its United States manufacturing initiative by investing and expanding in new facilities in Arizona and Pennsylvania. Both of these new

facilities will help with producing and fixing components for Apple products into the future and will also bring more than 2,000 jobs to the country (Wakabayashi, 2013).

Generally speaking, it is important for consumer electronics companies to weigh the pros and cons of onshoring with the prospect that further supply chain optimization might be gained by doing so and help increase the positive perceptions consumers ultimately have on a product with such a decision. There comes a time when consumer electronics companies must let the soft issues, like consumer preference and behavior, drive hard costs if the outlook remains cost effective.

Appendix A

Consumer Behavior Survey Questions: In-Depth Survey

Consumer Behavior: International Vs. Domestic Manufacturing

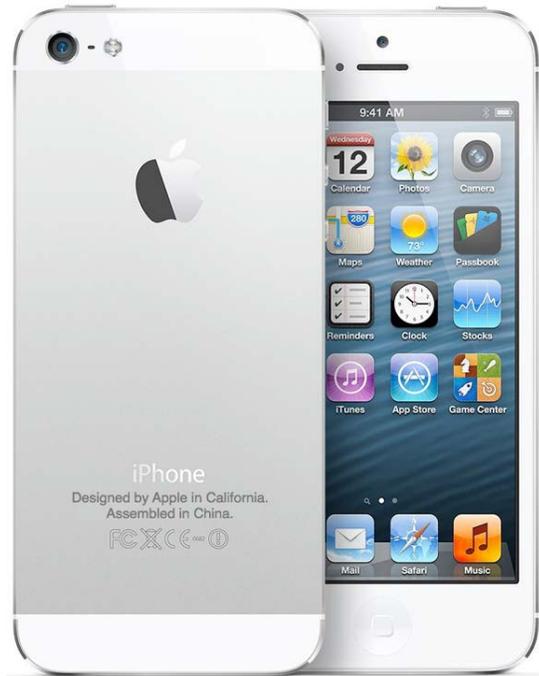
Q76 Consent: The purpose of this research study is to understand consumer perceptions of consumer electronic products and their primary manufacturing location. You will be asked to imagine yourself as a consumer in a consumer electronics store and give your reaction to a proposed product. The survey will take no more than 7-10 minutes to complete. Your participation in this research is confidential. The survey does not ask for any information that would identify who the responses belong to. In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared because your name is in no way linked to your responses. Your confidentiality will be kept to the degree permitted by the technology used. No guarantees can be made regarding the interception of data sent via the Internet by any third parties. Participants will receive \$1.00 for their research participation. Your decision to be in this research is voluntary. You must be 18 years of age or older to take part in this research study. By clicking the button below, you are implying that you have read the information in this form and consent to take part in the research. If you wish to withdraw, please stop immediately.

Yes, I agree to participate in this research study and would like to proceed. (1)

Q247 General Introduction: Thank you very much for agreeing to participate in this research study. It is being conducted as part of a Senior Honors Thesis in conjunction with faculty members in the Supply Chain and Marketing Departments at Penn State. Please answer each question as openly and honestly as possible. If you have any questions, you can direct them to Ari Hiller (arh5266@psu.edu).

Q153 Suppose you are at an electronics store, facing a display featuring the iPhone 5. How attractive would the following product be to you if you were buying it today? Examine the iPhone 5 and think about that for just a moment... (You will not be able to proceed for approximately 30 seconds.)

Q130



Q126 Timing

First Click (1)

Last Click (2)

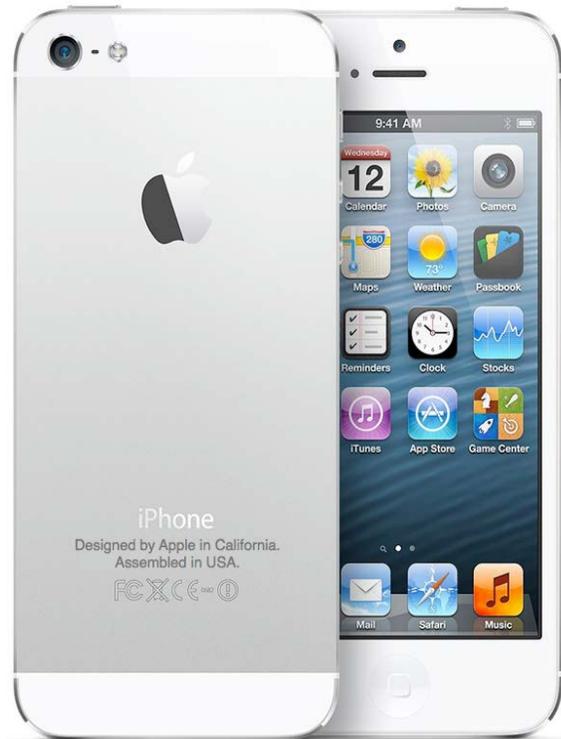
Page Submit (3)

Click Count (4)

Q272 Suppose you are at the electronics store store, facing a display featuring the iPhone

5. How attractive would the following product be to you if you were buying it today? Examine the package and think about that for just a moment... (You will not be able to proceed for approximately 30 seconds.)

Q273



Q274 Timing

First Click (1)

Last Click (2)

Page Submit (3)

Click Count (4)

Q302 Suppose you are at an electronics store, facing a display featuring the iPhone 5.

How attractive would the following product be to you if you were buying it today? Examine the iPhone 5 and think about that for just a moment... (You will not be able to proceed for approximately 30 seconds.)

Q303



Q304 Timing

First Click (1)

Last Click (2)

Page Submit (3)

Click Count (4)

Q67 Now consider both iPhones below:



Q69 Without regard for color or price, which phone would you prefer to purchase? The one on the left or the one on the right?

- The one on the left (1)
- The one on the right (2)

Q70 Please use the space below to indicate why the one you selected is more attractive.

Q71 Again, suppose that you were choosing between the two iPhones below:



Q72 Suppose the prices of the two products were in fact different. Ignore color options. Which iPhone would you be willing to pay more for? The one on the left or the one on the right?

- The one on the left (1)
- The one on the right (2)

Q73 How much more? What percent premium (over and above the non-preferred product) would you will willing to spend on the preferred product? (For example, if the non-preferred brand costs \$200, and you were willing to pay a 10% premium, you would spend \$220.)

_____ I'd be willing to pay this percent premium for the preferred option. (1)

Q74 How important are each of the following attributes to you in terms of your willingness to pay for an iPhone in general? Take 100 points and divide them across the attributes such that a higher number of points means that the attribute is more important to you. Pay attention to the relative distribution of points across attributes to make sure that your point allocation reflects each attributes relative importance.

_____ Storage Capacity (1)

_____ Color (2)

_____ Price (3)

_____ Network Compatibility (4)

_____ Assembly Location (5)

I have positive associations to the words "Made in the USA". (9)	<input type="radio"/>						
Knowing that something is manufactured in the USA makes me feel like it has higher quality. (10)	<input type="radio"/>						
I try to buy US made products when possible. (11)	<input type="radio"/>						
I check manufacturing labels to see where the products are coming from. (12)	<input type="radio"/>						
I own an iPad. (13)	<input type="radio"/>						

Q76 In the consumer electronics category in general (e.g., tablets, laptops, computers, etc.), what words come to mind you when you hear the words “domestically manufactured”?

Q77 In the consumer electronics category in general (e.g., tablets, laptops, computers, etc.), what words come to mind you when you hear the words “internationally manufactured”?

Q78 Some consumer electronic companies are considering moving their manufacturing operations back to the USA. Do you think this is a good thing, a bad thing or are you indifferent from the consumer's perspective?

- Good thing (1)
- Bad thing (2)
- Indifferent (3)

Q79 Some consumer electronic companies are considering moving their manufacturing operations back to the USA. Do you think this is a good thing for firms, a bad thing for firms, or are you unsure of the implications for firms?

- Good thing (1)
- Bad thing (2)
- Unsure (3)

Q80 The choice of manufacturing location can be thought of as representing an ethical dilemma...Companies can save money by off-shoring their manufacturing facilities, but this can have a negative impact on a domestic country. How big of an issue do you think this is?

- Not a big deal (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)
- 7 (7)
- 8 (8)
- A huge deal (9)

Q81 How much impact does this issue have on you when you are making a purchase decision?

(Be honest!)

- No impact at all (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)
- 7 (7)
- 8 (8)
- Huge impact (9)

Q76 We have just a few additional questions...

Q80 How old are you?

Q78 What is your gender?

- Male (1)
- Female (2)

Q82 What is your race/ethnicity?

- White/Caucasian (1)
- Black/African American (2)
- Hispanic/Latino (3)
- Asian/Asian American (4)
- Other (5) _____

Q84 Is English your native language?

- Yes (1)
- No (2)

Q86 If no, what is your native language?

Q88 How much discretionary income do you have each week? (This is income that has not be budgeted for rent, groceries, car payments, insurance, etc.)

- \$0-\$49.99 (1)
- \$50 - \$99.99 (2)
- \$100 - \$149.99 (3)
- \$150-\$199.99 (4)
- \$200 - \$249.99 (5)
- \$250+ (6)

Q72 Recent research on decision making shows that choices are affected by context. Differences in how people feel, their previous knowledge and experience, and their environment can affect choices. To help us understand how people make decisions, we are interested in information about you. Specifically, we are interested in whether you actually take the time to read the directions; if not, some results may not tell us very much about decision making in the real world. To show that you have read the instructions, please ignore the question below about items that you frequently read and instead check only the "Non-Fiction" option as your answer. Thank you very much. Please check all words that describe items you frequently read:

- Newspaper (1)
- News Magazine (2)
- Hobby Magazine (3)
- Pop Culture Magazine (4)
- Scientific or Medical Journal (5)
- Non-Fiction (6)
- Fiction (7)
- Essays (8)
- Short Stories (9)
- Online Blogs (10)
- Personal Letters (11)
- None of the above (12)

Q75 Thank you very much for participating in this study. Please see the researcher for further instructions on receiving compensation. Have a great day!

Appendix B

Consumer Behavior Survey Questions: Short Examination Survey

Q1 Some consumer electronic companies are considering moving their manufacturing operations back to the USA. Do you think this is a good thing, a bad thing or are you indifferent from the consumer's perspective?

- Good thing (1)
- Bad thing (2)
- Indifferent (3)

Q2 Some consumer electronic companies are considering moving their manufacturing operations back to the USA. Do you think this is a good thing for firms, a bad thing for firms, or are you unsure of the implications for firms?

- Good thing (1)
- Bad thing (2)
- Unsure (3)

Q3 The choice of manufacturing location can be thought of as representing an ethical dilemma...Companies can save money by off-shoring their manufacturing facilities, but this can have a negative impact on a domestic country. How big of an issue do you think this is?

- Not a big deal (1)
- 2 (2)
- 3 (3)
- 4 (4)
- A Huge Deal (5)

Q4 How much impact does this issue have on you when you are making a purchase decision? (Be honest!)

- No Impact At All (1)
- 2 (2)
- 3 (3)
- 4 (4)
- A Huge Impact (5)

Q5 Take these two locations and industry as an example. How willing would you be to spend a premium (a percentage added onto the total price) on a preferred consumer electronic product (computer, tablet, phone, etc.) if you knew that it was made in the USA vs. China?

- No, I would not pay any premium.
- Yes, if the premium was below 10%.
- Yes, even if the premium was between 10-20%.
- Yes, even if the premium was between 20-30%.
- Yes, even if the premium was between 30-50%.

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Smeal College of Business Dean's List (December 2009-Present)

City University, London, United Kingdom: Penn State Study Abroad Program (January 2012-April 2012)

Relevant Minor Coursework: European Business Culture, European Union Economic Integration

Experience

Intel Corporation, *Global Sourcing and Procurement Intern*, Hillsboro, Oregon (May 2013-August 2013)

- Initiated pilot program for new third party part selection and data management resource across various business units
- Coordinated user engagement and feedback amongst cross section of material program and commodity managers
- Analyzed quantitative and qualitative feedback to formulate actionable options for business group to advance negotiations

Penn State Purchasing Services, *Procurement Intern*, University Park, PA (January 2013-April 2013)

- Developed environmental sustainability survey regarding plausible changes to Penn State General Store delivery service
- Collaborated with peers to support other active purchasing services projects in a timely manner on a week-to-week basis

The J.M. Smucker Company, *Corporate Purchasing Co-op, Packaging Intern*, Orrville, Ohio (June 2012-December 2012)

- Collaborated with Supply Chain Purchasing Team to work towards company goals and business decisions
- Completed full Industry Analysis on the corrugated paper market on an internal and external basis
- Finalized foreign exchange study looking into the opportunities present in handling business with international suppliers

Apple Inc., *Penn State Campus Representative*, University Park, Pennsylvania, (January 2011-December 2011)

- Planned and executed events for students to engage with Apple technology and boost sales
- Hosted informational workshops to teach users how to maximize their use of Apple technology

Center for Global Business Studies, *Research Assistant*, Penn State University, University Park, Pennsylvania, (April 2011-December 2011)

- Designed and created professional and academic presentations for MBA Professor and William A. Schreyer Professor of Global Management, Fariborz Ghadar, on current global events in the business world
- Assisted the Center business manager in daily tasks within office, revise and update existing presentations with current data

Sony Corporation, Sony Electronic Reader™ Research Project: New Frontiers of Reading, *Co-Investigator*, University Park, Pennsylvania (August 2009-December 2009)

- Studied Sony Electronic Reader™ as a device to identify advantages of its potential adoption as part of the college lifestyle
- Designed and created a marketing plan for Sony Corp. with ideas of how the company may reach its goals for the product

Leadership

Phi Beta Lambda, Business Professional Fraternity, *Executive Board Member* (January 2013-Present), *Rush Co-Chair* (December 2010-May 2011), & *Fraternity Historian* (April 2010-December 2011)

- Documented fundraising, philanthropy, and professional development events through photography and cinematography
- Managed committee to strategically and thoughtfully help recruit incoming pledge class through planned events

Jewish Outdoor Group (J.O.G), *Founder & President*, Penn State Hillel, (January 2011-December 2011)

- Founded new student engagement group on campus to take members on off-campus adventures
- Arrange monthly trips and organize logistics of events to host group members

Global Business Brigades, *Secretary*, (August 2010-May 2011)

- Liaison for members of a new, start-up student organization and other executive board members and brigade director
- Responsible for notifying students of current fundraising events and up-to-date trip information

Onward State, *Business Plan Development Team*, (August 2010-December 2010)

- Developed 75-page business plan document/outline for company
- Investigated financials, market industry, marketing strategies, management, and organization structure

Honors, Awards, & Skills

Robert D. Pashek Scholarship, Smeal College of Business, Recipient (July 2011)

Gloria Kaufman Klein Smith Scholarship, Penn State Hillel, Recipient (March 2011, March 2012)

Altria Sophomore Leadership Development Program Participant (August 2010-May 2011)

National Society of Collegiate Scholars Admittance (April 2010)

Skills: IBM Lotus Notes, Oracle, Discoverer, IQ BackOffice, Microsoft Office 2010: Word, PowerPoint, Excel, Windows 7 and OSX Mountain Lion