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JOURNAL OF THE INTERNATIONAL ACADEMY FOR CASE STUDIES

CONTENTS

LETTER FROM THE EDITORS

Welcome to the *Journal of the International Academy for Case Studies.* The editorial content of this journal is under the control of the Allied Academies, Inc., a non profit association of scholars whose purpose is to encourage and support the advancement and exchange of knowledge, understanding and teaching throughout the world. The purpose of the *JIACS* is to encourage the development and use of cases and the case method of teaching throughout higher education. Its editorial mission is to publish cases in a wide variety of disciplines which are of educational, pedagogic, and practical value to educators.

The cases contained in this volume have been double blind refereed, and each was required to have a complete teaching note before consideration. The acceptance rate for manuscripts in this issue, 25%, conforms to our editorial policies. The Instructor's Note for each case in this volume will be published in a separate issue of the *JIACS.*

If any reader is interested in obtaining a case, an instructor's note, permission to publish, or any other information about a case, the reader must correspond directly with the author(s) of the case.

The Academy intends to foster a supportive, mentoring effort on the part of the referees which will result in encouraging and supporting writers. We welcome different viewpoints because in differences we find learning; in differences we develop understanding; in differences we gain knowledge and in differences we develop the discipline into a more comprehensive, less esoteric, and dynamic metier.

The Editorial Policy, background and history of the organization, and calls for conferences are published on our web site. In addition, we keep the web site updated with the latest activities of the organization. Please visit our site and know that we welcome hearing from you at any time.

Inge Nickerson, Barry University
Charles Rarick, Barry University

CASES

ARCTIC FREEZER PLANT

Michael J. Pesch, St. Cloud State University
Sohel Ahmad, St. Cloud State University
Timothy Nebosis, St. Cloud State University

CASE DESCRIPTION

The primary subject matter of this case concerns managing diversity issues in the workplace and the application of total quality management principles. Specifically, an appliance manufacturer is experiencing challenges involving Somali refugees who comprise a significant percentage of the plant's available labor pool. These challenges include quality and productivity problems caused by the Somali workers' lack of English skills and adherence to cultural and religious customs, as well as by the plant's own poor preparation to manage this group of employees. The case has a difficulty level of three or four, appropriate for junior or senior level students. The case is designed to be taught in a ninety minute class period, with two hours of outside preparation time by students.

CASE SYNOPSIS

Imagine the challenge of being a manufacturing plant manager of a major employer in the community, faced with the need to satisfy rigorous customer requirements in the areas of quality, price, and delivery. You must fulfill these requirements with a local labor pool that has a limited supply of applicants and recently has become populated by refugee immigrants who speak little or no English. Additionally, these refugee employees have cultural and religious customs that pose challenges in the areas of plant safety and productivity.

As a leading employer in the business community, you know the spotlight will be on your company to help come up with ways to address the community challenge of helping a new immigrant population become productive members of the community. The last thing your company needs is bad publicity in the area of relationships with workers from diverse ethnic backgrounds. Yet you know that your plant must compete on a global basis and your giant retail customers will spare no time in seeking other suppliers if you cannot meet their requirements.

INTRODUCTION

It was 7:30 am on a Friday in late September, when Susan Michaels, a senior manufacturing engineer at the Arctic Freezer plant in Xenia, Minnesota, knocked on plant manager Jim Gromberg's

door. "Excuse me, Jim, but we're at the 3-week mark since we launched the third shift on the upright line, and it's been pretty much of a quality and output disaster, with not much hope in sight for improvement. Despite everything we've tried, there are so many problems with these new Somali workers that we're almost out of ideas. I'm not sure how much longer we can go on before it starts hurting our quality and delivery reputation."

Jim was afraid of this. The third shift on the large up-right freezer line had been added in early September to address a growing backlog of orders from major customers such as Best Buy and Sears. The demand for freezers tends to be counter-cyclical to the national economy and this was proving to be true once again; retail demand for freezers was up 20 percent in the past year, as consumers began shopping for bargains and stocking up on meat and other frozen food items. However, the third shift was not meeting productivity expectations and certain issues that related to the 90 Somali workers (out of 120) on the third shift were proving to be more challenging than first expected. The moment had come for Jim to assess the situation and make a decision.

COMPANY AND PLANT BACKGROUND

Arctic Home Products was a subsidiary of WH Alliance, a Norwegian appliance manufacturer. The Arctic plant in Xenia, Minnesota, manufactured approximately 2 million chest and upright freezers per year, about 60 percent of the total annual number of freezers that were sold in North America. The plant employed 1,600-1,700 International Association of Machinists Union employees who worked on the chest and upright freezer assembly lines. The plant operated 2-3 production shifts per day. As is typical of assembly line work in general, the work involves repetitive tasks completed on high unit volumes. Due to high variations in demand, the workforce is subject to frequent layoffs and rehirings, resulting in extremely high turnover of employees. An assembler was typically paid $10.54-$10.79 per hour. No prior work experience is required, but a high school diploma or a general equivalency diploma is necessary to be hired.

Background on Somali Immigrants in Minnesota

Since the late 1980s, civil war and famine have caused over 1,000,000 Somalis to flee to neighboring countries like Kenya, Ethiopia, and Yemen. In addition, the United States, Britain, Canada, and Sweden have provided refugee status to tens of thousands of Somalis. By the year 2002, Minnesota had approximately 50,000 Somali immigrants, the highest Somali density outside of East Africa.

Refugee status generally brings a host of special adaptation challenges that are not generally featured in non-refugee immigrant groups. Among these challenges are higher rates of illiteracy, lack of English skills, significantly lower economic resources, and often a stronger adherence to religious and cultural customs from the home country. These challenges are more prevalent among

refugees because these people have been suddenly uprooted from their traditional way of life and, by necessity, must seek out a new approach to providing for themselves and their families.

Somalis are only the most recent immigrant group to arrive in Minnesota, joining previous groups of immigrants who have settled in the state over the past twenty-five years, arriving from Mexico, the former Soviet republics, Southeast Asia, China, and India. There are several reasons for the general increase in immigrant populations over this time period, especially in Minnesota. First, a change in immigration law in 1997 allowed family members of refugee immigrants from several African countries to enter the U.S. under the family preference provisions of the law, instead of the refugee provisions that impose a high standard of proof of the likelihood of persecution in their home country. Somalia was one of the countries included in this change in immigration law.

Second, Minnesota is well-known for a strong economy that features many low-wage jobs in food processing, meat and poultry packing, agriculture, and the hospitality industry. The state also provides exceptional social services from both public and private/religious agencies, generous welfare programs, excellent schools, and high levels of medical care.

A third factor is the cultural and social support structures for particular groups of immigrants that are created when a critical population level is reached to attract additional members of immigrant groups who may have initially settled in other parts of the U.S. Even Minnesota's climate has played a role in the increase of immigrants, with some Russians moving to Minnesota because they *prefer* Minnesota's climate to the warmer regions of the U.S. It is considered likely that the current factors that have promoted the immigration of foreign-born people to Minnesota will continue to build this segment of the state's population.

THE NEED FOR A THIRD SHIFT

There were three main reasons why a third shift was needed on Arctic's upright line. First, a plant workers' strike had drawn down inventory to minimum levels. Second, major customers such as Sears conducted model changes in the spring of the year and inventories of the old model numbers had been allowed to gradually phase out. Third, the mild economic recession had boosted consumer freezer sales by about 20 percent, as mentioned previously.

Hiring the Third Shift

Despite the increase in national unemployment statistics, workers continued to be scarce in central Minnesota. Arctic competed aggressively with other area employers of low skill workers such as Gold 'N Plump (a poultry processor), and Fingerhut (a catalog sales company).

In mid-August, Jim began hiring the 120 line workers for a third shift on the upright freezer line. The Minnesota Workforce Center, a state employment agency, referred a large number of newly-arrived Somali immigrant refugees to Arctic for employment interviews. Each applicant

filled out a personal data form and was interviewed for about twenty minutes to determine the applicant's education level and work history. Since most Somalis spoke little English, some information was difficult to obtain, although a handful of Somalis who spoke some English were used as interpreters during the interviews. When the hiring was completed in early September, 90 of the 120 workers were Somali.

Training the Third Shift

The training of the new workers consisted of the following: 1) Early in the week before the official launching of the third shift, the new hires were brought to the plant and divided into groups of 10-12, shown a 2-hour video on general plant and safety rules, and given a plant tour. 2) In the afternoon of the first day, the workers were paired with experienced line workers to learn how to perform assembly line duties. 3) This "shadowing" by new hires of regular line workers continued for 1-4 days, with fewer days for workers who were hired just a few days prior to the start-up of the third shift.

Performance of the Third Shift

When the third shift was started the following week, quality and productivity problems were numerous. Output of finished freezers was only about 50% of standard for the third shift. Work in process and finished goods inspection revealed numerous problems, from missing parts and poor workmanship to scratched paint. These problems were expensive and time-consuming to correct. Direct labor costs per unit soared for the units produced by the third shift.

Jim Gromberg and his staff recognized that the third shift was going to need more assistance in getting the line up to speed than could be provided by the standard number of two supervisors and one area manager per line. He asked for volunteers from the management and engineer ranks to work for two weeks on the line alongside the workers. Six people volunteered (one quality manager, three manufacturing engineers, one maintenance engineer, and a production supervisor from another part of the plant). These individuals supervised operations in critical areas of the line, such as door assembly, refrigerant fluid injection, and rework operations. However, this stopgap measure to boost line performance could not last beyond two weeks, since the volunteers could not be expected to work the 11:00pm-7:00am shift indefinitely. Moreover, performance of the third shift line was not improving as rapidly as needed, despite all the special attention the line was given. Performance in schedule attainment, units produced per labor-hour, and quality continued to languish. This lack of performance was one of the contributing factors in the recent loss of a 2,500-unit order from one of the plant's long-term customers.

Factors Related to Poor Third Shift Performance

Although all new shifts suffered initial inefficiencies and quality problems, these problems were usually resolved within a few *days*, as supervisors work with the new line workers to fine-tune their skills. However, in the case of the Somali employees, the language barrier proved to be a significant challenge in teaching workers correct work methods. First, at the startup time of the third shift, none of the technical instructions for executing line procedures had been translated into the Somali language. Second, a great deal of manufacturing process knowledge was in the heads of the experienced workers on the first and second shifts. Although the newly-hired Somali workers spent time shadowing the experienced workers, it was usually difficult for the experienced workers to explain proper procedures to the Somali workers. Third, although some Somali workers could speak some English, their level of fluency usually fell short of that which was necessary to translate technical instructions with sufficient accuracy so the non-English speaking workers could understand and follow them properly. Consequently, the learning curve for the Somali workers was much longer than for newly-hired workers of local origin.

Safety was another issue that proved more challenging in supervising the Somali workers. The printed safety information in the plant was in English and obtaining accurate printed Somali translations was proving to be difficult. There were more than 500 sets of posted instructions in the plant that would have to be translated. The plant's leadership was trying to determine how best to provide accurate translations of signage and documentation. However, as the days elapsed, management became aware that many of the Somalis were probably illiterate. For these illiterate workers, a significant safety concern would remain even after signs and manuals had been translated.

Another safety issue that was particular to Somali workers was loose clothing, particularly the traditional clothing that was worn by Somali female workers, which often consisted of long billowing dresses, yards of cloth draped over the shoulder and tied at the waist, and headscarves. These garments posed a significant risk of becoming entangled in the manufacturing equipment and endangering the workers. Plant management was able to convince workers to alter their clothing by either wearing clothing that is more typical of American workers, or by fastening the native Somali clothing more closely to their bodies. However, these changes in dress behavior happened slowly and required managers to remind some workers several times to adjust or change their work clothing.

A significant cultural issue with the Somali workers involved Muslim prayer customs that require Muslims to pray five times per day at specific times. These prayer times often did not coincide with regular work breaks. For reasons of line pacing and productivity, the workers could not take their breaks at the exact prayer times. Consequently, some workers would request permission to use the toilet, but instead would go to the restrooms to pray. Additionally, washing before prayer is another part of Muslim religious observance and some workers would excuse

themselves to visit the restroom and sometimes leave large amounts of water on the restroom floor, creating a safety hazard.

Another cultural issue that sometimes affected productivity and quality performance was the reluctance by Somali men to take direction from female supervisors. Although some progress was made to convince the men to follow instructions from female supervisors, this too was slow in taking hold, partly because it was difficult to determine whether it was the language barrier or the gender barrier that explained the lack of responsiveness to female supervisor requests.

Nonverbal Communication Barriers

Other challenges involved differences in the meaning of gestures and body language. For example, a thumbs-up gesture is considered obscene to Somalis. It is also impolite to point the sole of one's foot at another person, a common occurrence when someone sits in a chair across from someone else. To Somalis, using one's index finger to call someone over is used for calling only dogs.

JIM GROMBERG'S DILEMMA

Jim knew he had to face the fact that the productivity and quality problems on the third shift upright freezer line weren't getting better as quickly as they needed to. In the current business environment of "lean manufacturing" and "just-in-time" supplier relationships, the Arctic plant operated within tight profit, quality, and delivery parameters. Many of the plant's customers didn't keep warehouses of finished goods inventory as a buffer against delivery delays. Therefore, orders placed by these customers necessarily had high delivery priority. Of course, quality problems also had a big impact on delivery time performance and were expensive to correct.

Jim also was well-aware that the problems on the third shift upright line necessarily affected overall plant delivery performance. This was due to the fact that several major customers regularly placed orders for a mix of different freezer models. As often as possible, the plant would load all the models in a single order together in one semi-trailer for shipment to the customer's store. For these mixed model orders, a delay in the production of a single model could hold up the delivery of all the other models to the customer.

Jim wondered, "How long could the plant afford to absorb the effects of the third shift's sub-optimal performance?" He picked up a report that had just arrived from the information systems department. First, he looked at the productivity chart (Figure 1). The chart showed the productivity figures for all shifts for the five weeks prior to the start of the third shift (Weeks 1-5), as well as for the three weeks following the launch of the third shift (Weeks 6-8). Jim could see that aggregated productivity for Weeks 6, 7, and 8 was hovering around 4.3 units per labor-hour, about 20% lower than the historical average for the line. This was disturbing to Jim, especially since only the basic

no-options version of the upright freezer line was scheduled for the third shift, while first and second shifts produced the more complex versions of the upright line. The third shift had a long way to go to meet the productivity standards that the first and second shifts were achieving.

Jim recalled that Eileen Engdahl from the shipping department wanted to know if something could be done in manufacturing to reduce late deliveries. Jim pulled out the late delivery chart (Figure 2) he received from the shipping department. Again, late deliveries appeared to be a problem that could be traced to the introduction of the third shift at the beginning of Week 6. Although delivery performance had improved slightly over the past three weeks, about 20% of the deliveries still did not meet the promised delivery time. "It won't take long before we lose some long-time customers if we do not dramatically improve delivery performance," Jim thought. Arctic's customers were used to getting on-time delivery. Data from the five weeks previous to the introduction of the third shift attested to this fact. Jim noticed that only Week 2 had about 2% late deliveries; all other weeks prior to the start of the third shift in Week 6 showed 100% on-time deliveries.

"What can be done from a manufacturing standpoint to help the shipping department?" Jim wondered. The data on schedule attainment may provide some clues, he thought. However, the schedule attainment chart (Figure 3) delivered more bad news. The newly introduced third shift consistently lagged the other two shifts on the upright freezer line. Moreover, there was no sign of improvement. From past experience, Jim knew that failure to attain schedule had a cumulative effect on late delivery due to the mixed-model shipping requirements of the plant's customers. "This is not good," Jim murmured to himself.

Jim knew his plant was inexperienced in dealing with large numbers of non-English speaking immigrant workers. Out of all the managers and supervisors, only two were fluent in a second language and in both cases the language was Spanish. Also, diversity training for the plant's staff consisted of two videos, one on how to accommodate individuals with physical disabilities, and another that superficially discussed the advantages of workplace diversity.

As he reflected on the disappointing performance of the third shift, Jim realized that the training approach taken for the Somali workers had inadequately prepared them to perform to plant standards within the expected length of time. Jim also wondered if the plant could afford to address all the special needs required of workers like the Somalis. On the other hand, the shortage of low-skilled employees in the region made him consider that perhaps management had little choice but to learn and adapt to the needs of the available labor pool. Despite all of the unique issues that were associated with the new Somali workers, Jim knew that none of these issues necessarily meant that the Somali workers could not become just as productive as the other workers in the plant. (Jim recalled that his friend, Brent Haws, Human Resources Director at Gold 'N Plump, commented to him that the Somali workers in his company's poultry processing plants were among the "best workers" in terms of low absenteeism, low turnover, and high productivity.) Jim also knew that as a major employer in Xenia, Arctic would be in the community spotlight in discussions of how best to assist the Somali people in becoming integrated into the Xenia community.

Jim thought to himself, "Should I discontinue the third shift to stem productivity losses? Or is there something else I can do to more effectively achieve Arctic's strategic goals?"

Figure 1: Productivity for uprignt freezer line (All shifts)

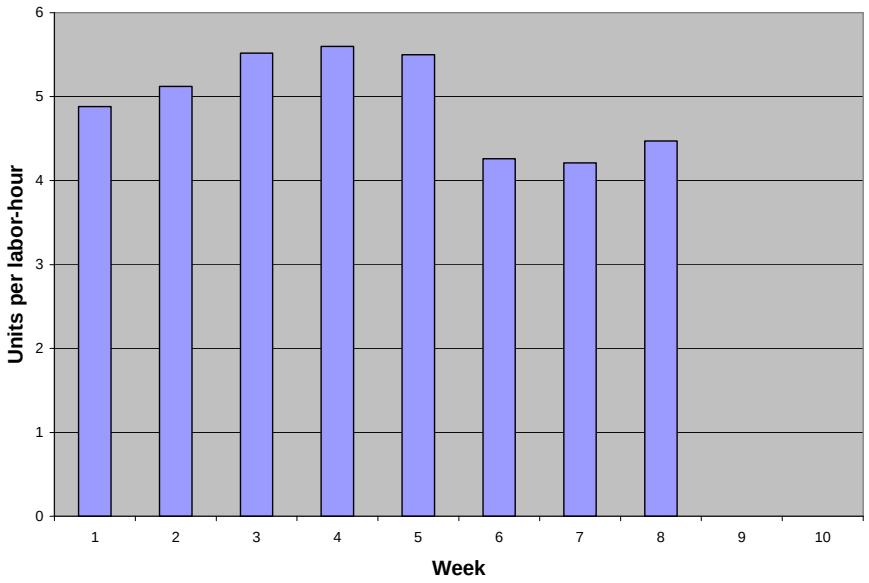


Figure 2: Late Deliveries (Plant)

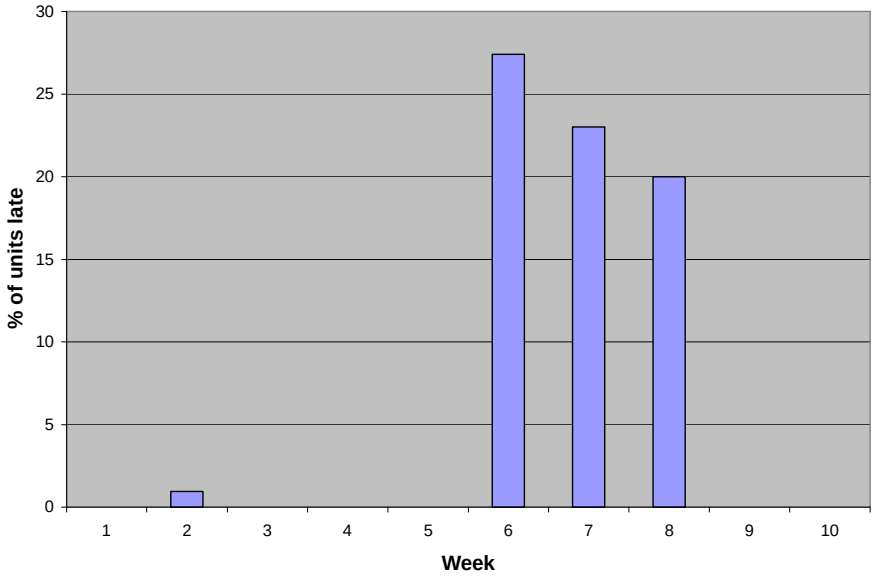
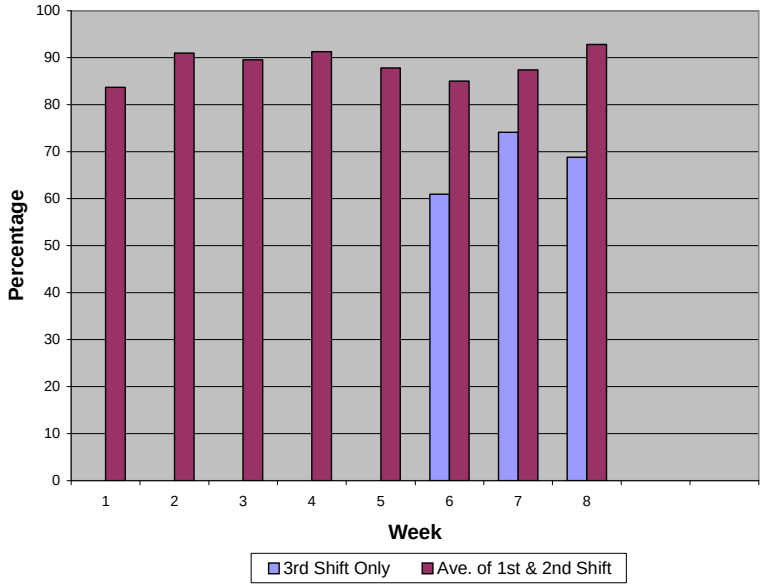


Figure 3: Schedule Attainment for uprignt freezer line



MAGINET.COM: COMPETITION IN *e*-ENTERTAINMENT SERVICES

Seungwook Park, Inha University, Korea
Mohsen Modarres, Fort Hays State University
Kookchul Lee, Kookmin University, Korea

CASE DESCRIPTION

The focus of this case is on the selection of appropriate international strategy by e-entertainment company, MagiNet. The products provided by the MagiNet Company included Information System, Movie-on-Demand, and Internet-TV services for luxury segment of the hotel industry. Secondary issues in the case are globalization vs. multi-domestic strategies; R&D costs for new products; cross-industry application of the services by MagiNet Company; The levels of difficulty in this case are4 – senior capstone classes and 5- first year of graduate classes. The case is designed to be taught in 1.5 hours of class time, and 3 hours of outside preparations by students.

CASE SYNOPSIS

MagiNet was launched in 1995 as an entrepreneurial subsidiary of Pacific Pay Video Company. The mission of MagiNet was to provide e-entertainment services in the Asia Pacific market. Soon after its establishment the company realized rapid growth and became a leading service provider of movie-on-demand, Internet TV, and information services to luxury hotels in Asia Pacific region. By 2002 Maginet became leader in e-entertainment service and expandedboth domestically and internationally. MagiNet's market share increased to 78%, and annual sales reached $6.62 million dollars. However, the strategic audit for the year ending 2003 indicated a gradual decline in total sales and a simultaneous increase in operating costs. The decline in the company's performance created a dilemma for Lee the CEO of the company. After much thought and consulting views, Lee decided that the implementation of drastic reorganization and changes in the strategic orientation of the company may be the only viable alternatives to improve the financial performance and long term survival of the company.

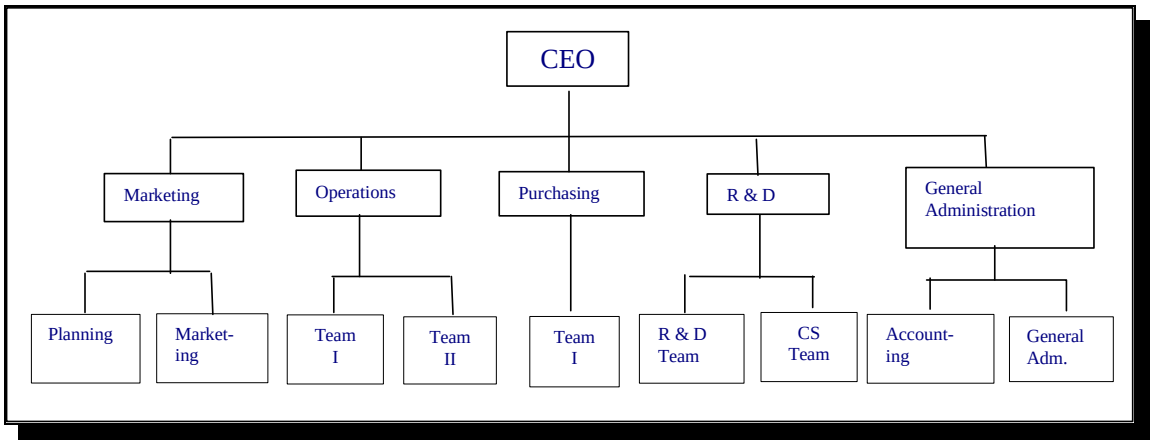
COMPANY OVERVIEW AND MISSION STATEMENT

Pacific Pay Video was founded in 1991 in the United States. PPV's mission was to provide *e*-entertainment to luxury segment of the hotels industry. During the early years of its operations Pacific Pay Video (PPV) realized a rapid growth rate. In 1995 PPV's top management decided to expand internationally by establishing a subsidiary company in South Korea. Environmental scanning indicated that national culture, favorable competitive environment among *e*-entertainment providers, and telecommunication infrastructure would make South Korean market a strategic opportunity for the initial stage of international expansion. The mission for the new subsidiary was to provide high quality *e*-entertainment services to luxury hotels in Pacific-Asian countries. The cultural differences pressured the new international subsidiary to be cognizant of customer preferences and customize its products and services for the Korean market. However, the customization required greater financial resources for successful operations. To secure required financial resources, Lee, the CEO of MagiNet Company, decided to initiate public offering to NASDQ which turned to be unsuccessful. PPV's cash flow problems eventually pressured top managers to implement an extensive reorganization and eliminate non-value added activities and processes. Two years after the restructuring strategy about 90% of five-star hotels in Seoul had contracted with MagiNet for the interactive movie-on-demand services. The success in international expansion strategies encouraged the company to provide new services for a pre-installed laptop or desktop computer, on-demand, Internet-TV and PC services as a bundle to the hotels in the Asia-Pacific region. To maintain the competitive position in international market product differentiation and understanding of cultural differences were strategically important. To sustain its competitive position in Asia-Pacific MagiNet established an effective network that enabled the company to offer services in luxury segment of hotel industry. Moreover, the marketing strategy focused differentiating services in Information System, Movie-on-Demand, and Internet-TV services to major cities in more than 12 countries.

ORGANIZATIONAL STRUCTURE

MagiNet was an entrepreneurial company with functional structural arrangement. The culture of teamwork provides a strong values and ethics within the company and each function. Moreover, the entrepreneurial nature of the company promoted close team-work, cross-functional cooperation, and flexibility in decision making processes. Structural flexibility enabled the top managers to select appropriate competitive strategies in response to environmental opportunities and threat in a timely fashion and build capabilities as it grew in size.

MagiNet Corporation
Marketing, Operations, Purchasing, R&D, and General Administration



Designing teams in each of the organizational functions has enabled MagiNet to resolve cross-functional issues and facilitate a faster decision making process. The cross-functional structural arrangements have enabled the company to transfer capabilities, expertise and innovation to other parts of organization. Moreover, the top managers played an important role by establishing informal contacts, formal evaluations, identify where the best practices can be developed and implemented. Top managers including the CEO MagiNet also promoted a policy of gains-sharing strategy to award bonuses based on costs savings. The CEO also implemented an open book policy by disclosing the operating costs and encouraged employees to read the financial statements and find ways to save costs. The open-book policy contributed to congruence and harmony between executives and employees in cost saving activities.

CORPORATE VALUES AND SOCIAL RESPONSIBILITY

As an entrepreneurial company Maginet was concern about the economic responsibilities to provide products and services of value to society. However, the company also acted as an active public medium supporting global issues concerning with environment, medicine, relief aid, and universal peace. MagiNet took advantage of the popular worl cup event and initiated its campaign of social responsibility during the 2002 Korea-Japan World Cup. The company also capitalized on other international events to promote its views as a socially responsible company on global issues.

BUSINESS STRATEGIES AND CORE COMPETENCE

Through differentiation strategy MagiNet created unique attributes and characteristics to its products and services. Differentiation strategy created value for MagiNet's customers through integrated services and core competence such as advanced information systems services, movie-on-demand, and Internet-TV which were considered superior to services offered by rivals. Heavy investment in *e*-entertainment services with high switching costs made integrated products as a bundle an attractive option for luxury hotel sensitive to high technology prices. Such differentiation business strategy enabled MagiNet to capture 78 percent market share with $6.62 million of sales domestically and internationally by 2002.

TECHNOLOGY/ RESEARCH AND PRODUCT DEVELOPMENT

The CEO of Maginet viewed convergence of the technologies such as telecommunication and computers as opportunities for MagiNet to introduce services in multiple market segments. To gain competitive advantage in e-entertainment market, during the years of 2000 to 2002, the company allocated $1,000,000 in R&D for development of hardware technologies such as internet box. MagiNet's interactive Internet set-top box was recognized as one of the superior technologies in the Korean market. Using Internet set-top box hotel guests were able to access the Internet and movie services through television receiver connections at the same time. Developing its unique technology enabled the company to gain competitive advantage in existing markets and become a first mover in providing a number of services in hotel industry.

INTERNATIONAL STRATEGIES

The rivalry in USA market resulted in reduced revenues for PPV. As such, top managers decided to implement a geographic international strategy. International expansion was believed to increase projected sales and revenues in the short-term. However, in the long-term costs for product differentiation and customization for each market would be high. Capitalizing on established network the company conducted environmental scanning and gathered information on global, socio-cultural, political, and technological trends in a number of prospect countries. Based on the international market studies, top managers decided that South Korea was the first viable market for MagiNet. The decision to expand to South Korea was primarily based on competitive climate, telecommunication infrastructure and relatively limited competitive rivalry among service providers. By 2003 MagiNet expanded its international presence in pre-installed laptop or desktop computer, on-demand, Internet-TV and PC services as a low cost bundled products and services to the hotels in the Asia-Pacific region in more than 12 countries. The company's international portfolio included:

Interactive video service (IVS)

IVS included two different types of video services, MagiNet Interactive Video (MIV) and MagiNet Channel (MC). MIV was an interactive video service that delivers movies to the guests in luxury hotels on a demand basis in 24 hours a day. Through licensing agreements with Universal, Paramount, MGM, United Artist, Dreamworks SKG, Columbia TriStar, Sony Pictures Entertainment, 20th Century Fox, and Warner Brothers, MagiNet could deliver its clients the best and latest movies and quality entertainment TV programs at a low cost 24 hours a day. Low investment costs for the MIV services enabled MagiNet's management to offer MIV to a larger market segment including medium-sized as well as larger hotels. The company made MIV more attractive with high quality digital technology. MagiNet Channel (MC) services provided customers with dynamic movie previews, hotel image and advertisement screens, and informational videos as a part of room service. MagiNet Channel provided a greeting screen hotel guests turned the TV on. The greeting screen also provided a menu guide to use the remote control and television system. One of unique feature in MagiNet Channel was availability of programs in ten different languages.

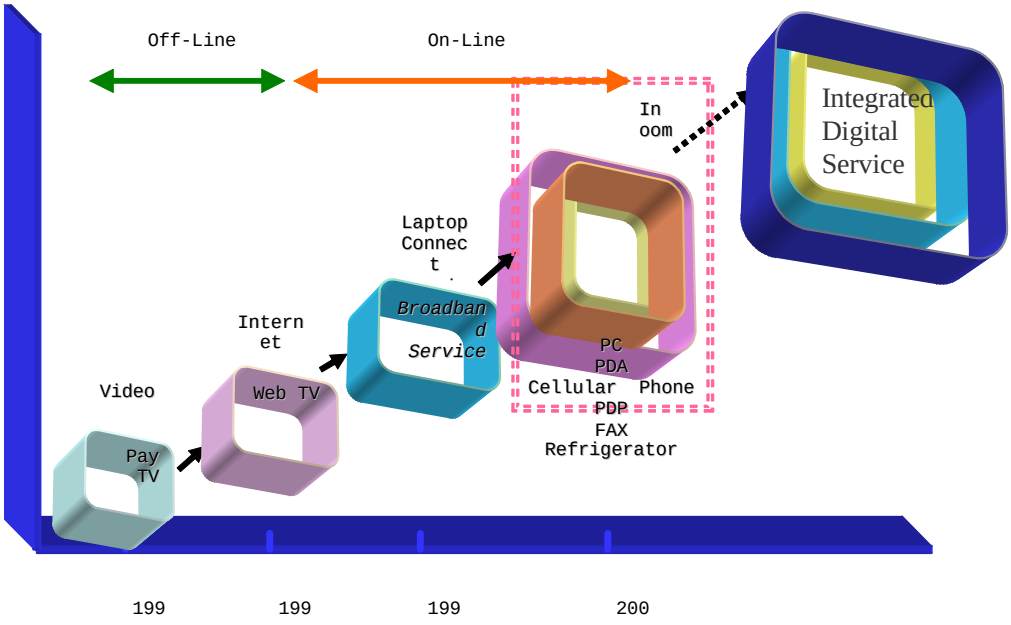
MagiNet Internet TV (MITV)

MITV was considered as a one-stop entertainment center that provided a high-speed Internet service and T.V programs at the same time. MagiNet developed interactive Internet set-top box. This set-top box allowed guests in the hotel to have access to Internet and movie-on-demand services at the same time through television receiver connections. MITV guests to surf the Internet while watching a TV program.

MagiNet laptop connection (MLC)

MLC is an Internet access solution that warranted high-speed connection to Internet. Most travelers would like to have access to Internet with high speed and low cost. MLC broadband system allowed gusts in the hotel to have access to Internet without changing setting of their laptops. The IP addressing diagnostic intelligence was built into MLC broadband, therefore through the specialized network address translation technology allowed users to have instantaneous access to the Internet MLC broadband WLAN. In addition, the wireless connection warranted higher surfing mobility and productivity. MLC broadband WLAN was a powerful, high-speed network solution. Users were able to access Internet anywhere anytime in their hotels by plugging a Wi-Fi card.

Figure 1: MagiNet's Products and Services



In-Room Information System (IRIS)

IRIS targeted for guests that required a combination of hotel information, web browsing, and PC applications together through the PC installed in the hotel room. IRIS embodied a one-stop service and offered a variety of functions to the travelers. Through IRIS, the travelers on business were able to access e-mails, local and international news, foreign exchange rates, and various computer software packages including Microsoft Office and PowerPoint. The travelers on vacation obtained information about hotel service and travel sites. Hotel guests also received messages, car and cellular phone rental service, translation service, and information about their accounts such as billing, travel mileage, and checkout status in their rooms. The IRIS not only decreased a hotel's operating costs but also improved customer's satisfaction.

MagiNet Integrated Digital System (IDS)

IDS services allow guests to connect many devices by wireless. Useful information could be acquired in a digital format and connect their devices such as PDA, cell phone, and laptop computer to the MagiNet's server to retrieve the information they need from any place in the hotel. As shown in Figure 2, the services would be transmitted through broadband in the digital format. Laptop computer rental at the hotel front desk provided immediate office atmosphere in the hotel

room. The Yahoo and Compaq alliance system allowed the hotel guests to access other frequently used software packages including PowerPoint and Excel. As a result, the guests had no need to visit the hotel's business center.

Figure 2: MagiNet's Integrated Digital System

MARKETING STRATEGIES

MagiNet's marketing strategy focused on differentiated products with reasonable costs to customers. The company promoted advertisements for traveling and retail businesses through hotel industry. Furthermore, the company extended its marketing strategy to multinational corporations, large businesses, and small enterprises. Using its established network of its 45,000,000 users and international environmental scanning the company established a reliable data base on the effectiveness of the sponsors' marketing campaign. The company used push marketing strategy by advertising its unique set of integrated products and services to luxury hotels at low cost. The company also used a pull strategy in which clients had heard of MagiNet services through marketing campaigns and other customers and requested such services from five star hotels.

THE INDUSTRY CONTEXT

Hotel industry is very competitive and rapidly changing. Competition in the industry, as in many others, compelled companies to deliver constantly increasing value to customers. Demographic changes such as dual family incomes and rise in number of baby boomers in the USA and industrial countries led to increased improvements in services offered in hotel industry.

Competitive Rivalry

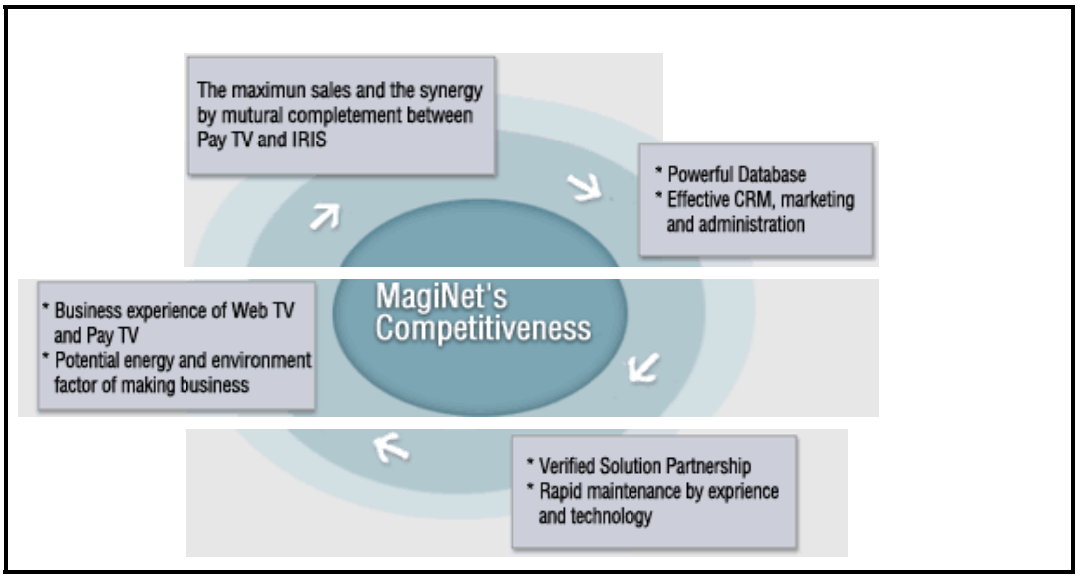
By the year 2000 high rivalry among companies reduced the growth prospects in domestic markets. Competitors realized high initial investment costs in information technology would make switching costs very high for clients. In 2000, Roonets Company, the major competitor of MagiNet, introduced a PC-based Internet services and gained a share of the market by attracting large hotels in Seoul such as COEX International, Grand International, Grand Intercontinental, Sillar, Ritz Carlton, Renaissance, JW Marriott, and Grand Hyatt. The system was called Tourism & Business Information System (TBIS) which was an integrated information system. This system was complete and convergent information system provided to hotel rooms for purposes of enabling the guests to enjoy a variety of contents and services as well as high speed access to the Internet. In addition, the client hotels were provided with the TBIS portal that would be used for a tool of e-commerce. The TBIS portal also serviced hotels by enabling the hotels to manage an on-line duty-free shop where the hotel guests buy various products and pick them up at the airport. Over 85% of the hotel guests used TBIS services. This led to competitive advantage position for the Roonet's company over other hotel information service providers.

To compete with the TBIS, MagiNet launched the in-room information system (IRIS) in 2001. Although Roonets took the lead in the hotel-room information service business, MagiNet had been closing the gap by targeting the five-star hotels at the cities where the World Cup games were scheduled. In the first half of year 2002, MagiNet agreed to provide the IRIS to around 7000 hotel rooms. In addition, MagiNet developed the Chinese-version of IRIS to attract a large number of Chinese tourists visiting Korea for the World Cup. MagiNet gained competitive advantage in providing movie-on-demand and web TV services, establishing synergy through networking interactive TV and IRIS services, creating powerful database enabling effective CRM, marketing, and administration, providing a 24-hour service to the client hotels. Figure 3 shows Maginet's competitive advantage based on its unique strengths.

Rapid Technological Change

The rapid change in Internet support technologies and software had restructured the market. The Internet support technologies and software improved the speed of data flow in the cyber world. Similarly, many Internet users in Korea were able to watch movies and download useful information in a shorter amount of time. In addition, the information available in Internet was updated on a real-time basis. These dramatic changes made PC-based Internet service possible at the hotels.

Figure 3: MaGinet's Product Competitiveness



Hotel Informationization

Hotel informationization was developed in two distinct markets, e-business and informationalization of hotels. Utilized to improve operational efficiency, the e-business information systems included customer relationship management (CRM), management of client database, e-procurement, e-payment, and enterprise resource planning (ERP). Westin Chosun Hotel recently implemented the CRM system to embody e- business. Nobotel Hotel adopted e-procurement to improve purchasing efficiency last year. Other five-star hotels in Seoul were considering adoption of the e-business information systems.

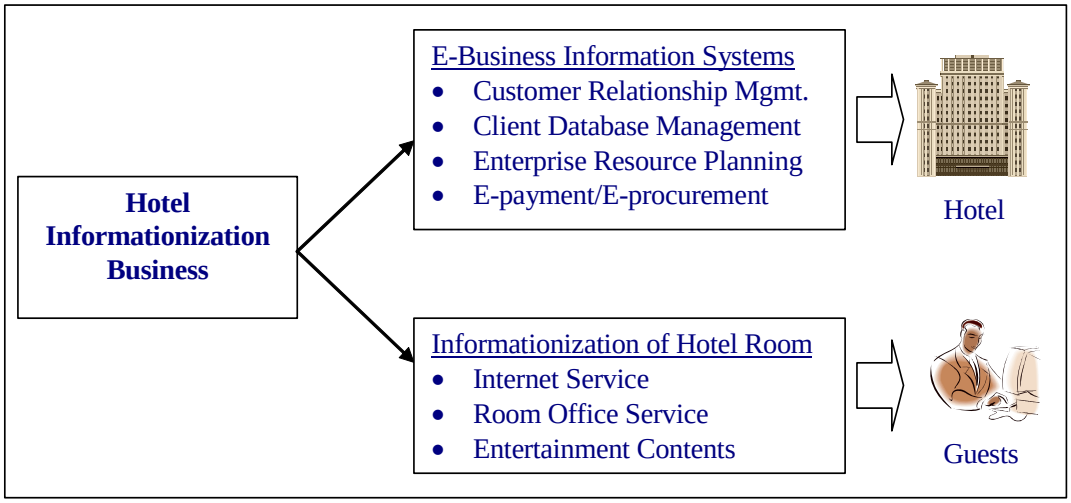
The second market was e-entertainment services which included web TV, customized Internet service, and entertainment contents to the hotel rooms. This service was stimulated by the third Asia Europe Meeting (ASEM) held in Seoul in 2000.

Tourism Industry

MagiNet's success and competitive position is heavily dependent on tourism market. The number of foreign visits to South Korea reached 5,347,468, following the year 2000 when visitors first exceeded five million. This figure for 2002, however, increased by a mere 3.9% over the previous year due to the continuing fallout of the September 11 terrorist attacks, worldwide economic recession, and the co-hosting of the 2002 FIFA World Cup that resulted in a drop in the

number of Japanese visitors to Korea. The aftermath of September 11 that led to negative growth in 2001. The economic downturn worldwide including major markets in the USA and Japan continued to affect Korea's tourism market in year 2002. During the first half of the 2002 tourism industry recorded a 4.3% decline compare to previous years. Expected Japanese visitors to Korea dropped during the World Cup. However, after the world cup event popularity in Korean cultural streams such as sudden popularity of Korean pop singers and movies increased the number of foreign visitors to Korea by 12.3% in the last half of 2002 over the previous year.

Figure 4: Hotel Informationalization



The Korean Tourist Market

Exhibit 1 shows the classification of tourists' visitations based on leisure, business, family and religious purposes. About 50.8% of visitors in 2002 indicated pleasure as the purpose of their travel. Around 38% of visitors were classified as business travelers. Among these business travelers, the visitors on government trips in particular upped by 9.9%, which is quite a jump compared to others. The number of those in the "others" category (including crew), 23.9% of the total number of foreign visitors, amounted to 1,279,064.

Exhibit 1: Tourists' Classification		
Years	2002	2001
Leisure, entertainment or just for relaxation	50.8	50.1
Business-related visit	37.4	36.2
To meet friends or relatives	7.8	8.2
Pilgrimage or other religious purpose	0.9	0.8

Exhibit 2 shows the monthly distribution of foreign visitors to Korea. The largest number of visitors were during October, a record 526,527 foreign visits, after the successful FIFA World Cup and the Asian Games. Conversely, the month with the fewest visitors was January (362,304 visits). This is the off-season, and the continuing aftermath of the September 11 terrorist attacks added to the slump. The tourism data in Exhibit 1 distribution shows that the period furthest from the 9-11 terrorist attacks had the most visitors, which implied the impact of the September 11 event on tourism industry in Korea.

Exhibit 2: Monthly Visitors Arrival to Korea (1999 – 2002)							
Year	2002		2001		2000		1999
Month	Visitors	Growth rate(%)	Visitors	Growth rate(%)	Visitors	Growth rate(%)	Visitors
Jan.	362,304	-9.0	398,095	6.6	373,424	13.9	327,838
Feb.	395,402	0.7	392,689	-8.2	427,929	20.5	355,260
Mar.	449,487	-0.3	450,964	1.6	443,937	11.5	398,207
Apr.	444,256	2.6	433,180	-0.2	434,071	22.3	354,919
May	437,327	-7.0	470,220	-0.8	473,849	18.5	399,885
Jun.	403,466	-12.4	460,330	2.8	447,890	12.5	398,022
Jul.	459,073	0.4	457,269	0.2	456,447	16.7	391,139
Aug.	477,092	0.1	476,642	6.6	447,317	9.7	407,806
Sep.	488,734	16.1	421,076	-8.4	459,803	16.9	393,338
Oct.	526,527	25.5	419,422	-10.9	470,669	6.9	440,194
Nov.	447,585	19.7	373,855	-17.9	455,115	12.1	405,998
Dec.	456,215	15.9	393,462	-8.8	431,341	11.4	387,179
Total	**5,347,468**	**3.9**	**5,147,204**	**-3.3**	**5,321,792**	**14.2**	**4,659,785**

Japanese Tourists

Japanese tourists (2,320,837) accounted for 43.4%, the largest number in regional distribution of the total foreign visitors to Korea. Economic recession in Japan and the co-hosting of the World Cup 2002 brought the number of visitors down by 16.7%. China has become the second largest market in 2001 due to hallyu. Visiting Korea were 539,466 Chinese tourists, up by 11.9% from the previous year. Although the Chinese market has grown, the overall growth of the Asian market was recorded as less than 1%. Comparatively, Europe, the Americas and Oceania realized 17.4%, 9.8%, 12.2% increases in number of visitors, respectively

Chinese Tourists

Since the normalization of relations between China and South Korea in 1992 and the inclusion of South Korea on the list of countries most Chinese citizens are allowed to visit freely, tourists from there have constantly increased. In 2002, there were 539,466 visitors which accounted for 10.1% of all foreign travel to South Korea. Compare to 2001 with 482,227 visitors and the year 2000 with 442,794 visitors, the 2002 number grew by 11.9% compared to the previous year. China is now the second largest market following the number-one Japan. Even though the global economy was in decline in general, China has shown rapid economic growth primarily due to its stable economy. The popularity of hallyu (Korea Wave) was also instrumental in improving Korea's image in China, which led to gradual increases in Chinese tourists. Exhibit 1 shows the number of visitors to China for vacation and non-business purposes. The survey of the travelers indicated that visitors that traveled for vacation (pleasure) increased by 41.0% in 2000 and 14.4% in 2001. This increase was, in part, due to Chinese governments' positive relations with Korea and allowing Chinese to travel freely to Korea. The average of nights Chinese tourists spend in Korea has increased steadily from 6.3 in 1999 to 8.6 in 2002. Korean National Tourism Organization (KNTO) revealed that more than eight (80.9%) out of ten Chinese survey respondents replied they intend to visit Korea within three years. Growth has been continuous and gradual.

Convention Market

Since the ASEM was held in 2000, the convention industry witnessed huge growth and it was expected to play a bigger role for the hotel-room informationization market in the coming years. Many software providers including MagiNet expedited the process of product development for the hotel informationalization services which facilitated the processes from registration to hotel reservation. The Ministry of Culture and Tourism acknowledged such fostering of experts on international conventions, more aggressive promotional activities, and establishment of a database. The revision of the Tourism Promotion Act in 1998 led to referring to the convention industry as

it was called today. The change in name had more meaning than just met the eye, since it also implied that the concept of the industry had been expanded to cover a wide range of fields. As of June 2002, the number of registered convention-planning organizations amounted to 87 in Seoul, 8 in Busan, and 4 on Jeju Island, totaling 102 nationwide. Moreover, the Act on international convention stipulated the types and scales of international convention centers, possible support for hosting international conferences, the criteria for selecting host cities of such international events, administrative procedures and how they are simplified in the future. However, Korea still lacked detailed articles on the support for hosting international conventions, and as a result, experienced some difficulty on the working level.

Target Customers

MagiNet's primary target customers were five-star hotels in Korea. There strategic factors made five-star hotels an attractive market segment. Five star hotels were larger and had rooms than other grade of hotels. MagiNet could enhance its image by servicing five-star hotel clients. MagiNet counted on recommendations and world of mouth by business people or travelers that have used its products and services in five-star hotels. This could increase sales. Then competition to MagiNet the Roonets Company received high publicity by providing in-room services to the hotels and convention centers during ASEM event. Exhibit 3 shows 39 super-deluxe five-start hotels and 64 deluxe five-star hotels in Korea. The total rooms of super-deluxe five-star hotels were 16,293 and those of deluxe five-star hotels were 11,491 rooms in total. It was worthwhile to note that the smaller number of super-deluxe five-star hotels had more rooms in total than the deluxe five-start hotels. The super-deluxe five-start hotels were concentrated in three major areas, Seoul, Busan, and Jeju Island.

The super-deluxe five-star hotels clients in Seoul adopted in-room information service from either MagiNet or Roonets. The two companies were targeting five-star hotels in other cities and provinces in Korea. Challenges in gaining additional market share in this segment, pressured Maginet to focus on four-star hotels. However, the high initial costs made four-star hotels hesitant to investment heavily in *e*-entertainment information system. As such, MagiNet marketed the IRIS system to 400 hotels in 13 other countries including Thailand, Hong Kong, Japan, and South America. Local competition, and high marketing costs, however, reduced revenues in these countries.

Exhibit 3: Tourist Hotels and Rooms by City/Province

City/Province	Total		Five-Star Hotel				Four-Star Hotel	
			Super Deluxe		Deluxe			
	Hotels	Rooms	Hotels	Rooms	Hotels	Rooms	Hotels	Rooms
Seoul	**106**	**19,342**	15	8,556	17	4,583	33	3,445
Busan	**58**	**6,211**	5	2,407	4	862	13	1,162
Daegu	**29**	**2,037**	1	207	5	500	16	989
Incheon	**12**	**897**	-	-	4	529	4	226
Gwangju	**16**	**932**	-	-	2	167	8	538
Daejeon	**24**	**1,653**	-	-	4	654	7	470
Ulsan	**7**	**895**	2	494	1	175	-	-
Gyeonggi Province	**49**	**2,887**	-	-	2	241	24	1,560
Gangwon Province	**29**	**2,605**	-	-	9	1,402	12	813
Chungbuk Province	**23**	**1,575**	-	-	1	180	16	1,184
Chungnam Province	**12**	**888**	-	-	2	270	3	324
Jeonbuk Province	**13**	**1,051**	1	118	2	277	5	390
Jeonnam Province	**20**	**1,041**	-	-	-	-	6	427
Gyeongbuk Province	**46**	**4,254**	5	1,698	3	521	15	910
Gyeongnam Province	**25**	**2,131**	-	-	4	565	13	1,112
Jeju Province	**42**	**5,687**	10	2,813	4	565	15	1,344
Total	**511**	**54,086**	**39**	**16,293**	**64**	**11,491**	**190**	**14,894**

Source: Korea Hotel Association

Financial Performance

As a small and entrepreneurial enterprise, MagiNet had made a significant growth since its founding. Sales had continued to increase for the last four years. Income statements for the 1999, 2000, 2001, and 2002 fiscal years were shown below. The company reported 78% of market share with $6.62 million of sales in year 2002 and estimated $15.5 million of sales in year 2003(see exhibit 4).

Exhibit 4: Income Statements for the 1999 – 2002 years				
	Year 1999	Year 2000	Year 2001	Year 2002
Revenue	4,293,885	6,673,393	6,331,220	6,618,162
Cost of Goods sold	2,988,380	4,872,138	4,779,541	5,995,516
Gross Margin	1,305,505	1,801,255	1,551,679	622,647
Operating Expenses				
Salaries	160,505	241,178	399,827	408,846
Depreciation	35,652	245,466	103,162	54,623
General and administrative	585,891	611,404	1,283,264	1,301,242
Total Operating Expenses	782,048	1,098,048	1,786,253	1,764,711
Operating Income (Loss)	523,427	703,207	(234,574)	(1,142,064)
Other income and expenses				
Other Income	265,980	456,678	643,996	938,112
Other Expenses	315,145	337,060	269,631	1,780,366
Other Income and expenses-net	(49,165)	119,618	374,365	(842,254)
Net Income Before Tax	474,292	822,825	139,791	(1,984,319)

MagiNet continued to expand during years of 2000 and 2001. However, the September 2001 event has a significant negative impact on the tourism industry. (See exhibit 5 for company's balance sheet).

Exhibit 5: MagiNet Inc. - Consolidated Balance Sheets (Audited)			
Year Ending December 31	2002	2001	2000
Assets			
Cash and cash equivalents	$754,068	$2,478,994	$233,102
Short term investments	$1,442	$224,775	$682,132
Accounts receivable	$1,670,348	$3,354,606	$2,529,106
Prepaid expenses	$258,817	$109,537	$426,101
Short-term note receivable	$1,258,333	$250,231	$5,833
Deferred income taxes	$168,085	$92,583	$0
Inventories	$553,543	$354,318	$418,411
Total current assets	$4,664,635	$6,865,045	$4,294,686

Exhibit 5: MagiNet Inc. - Consolidated Balance Sheets (Audited)			
Year Ending December 31	2002	2001	2000
Note receivable	$35,273,439	$1,775,918	$786,097
Property, plants, and equipment, net	$2,692,976	$3,231,709	$2,805,910
Other investments	$311,357	$253,062	$252,199
Goodwill and other intangibles	$1,193,414	$531,227	$135,873
Total assets	$44,135,821	$12,656,962	$8,274,764
Liabilities and stockholder's equity			
Short-term borrowings	$4,477,500	$2,676,410	$533,999
Accounts payable and accured expenses	$549,816	$1,005,950	$1,590,871
Accrued taxes	$40,265	$0	$40,018
Current portion of long-term debt	$64,382	$51,271	$0
Total current liabilities	$5,131,963	$3,733,631	$2,164,887
Long-term debt	$34,485,587	$2,860,495	$0
Deferred and other long-term liabilities	$148,735	$86,946	$273,837
Nonpension postretirement benefit	$144,583	$186,152	$162,812
Total long-term liabilities	$34,778,905	$3,133,593	$436,649
common stock	$4,570,625	$4,208,333	$4,208,333
Capital in excess of par value	$1,189,523	$721,110	$721,110
Retained earning (loss)	($1,220,059)	$842,815	$743,785
Less common stock in treasury, at cost	($315,136)	($1,506)	$0
Foreign currency translation adjustment	$0	$18,985	$0
Total stockholder's equity	$4,224,953	$5,789,738	$5,673,228
Total liabilities and stockholder's equity	$44,135,821	$12,656,962	$8,274,764

FUTURE STRATEGIC DIRECTIONS

The CEO of MagiNet believed that continuous efforts to innovate new products would provide added value to MagiNet's customers. Moreover, the CEO envisioned that the services provided by the company would be widely used in new markets such as medical field, environmental science, and related industries. MagiNet's first-mover strategy in Pay-TV and Web TV market segments created a strong competitive advantage in existing markets and other related high-

technology industries. Planning for the future, the CEO of MagiNet viewed a number of strategic alternatives. A viable strategy would be international expansion of the products and services produced by MagiNet. The CEO and top managers debated whether to pursue future international expansion through multi-domestic strategy, and provide services to each selected country based on its culture and local demand? Or, pursue a global strategy. The latter alternative required globalization of operations by offering a standardized set of product and services to every country. Moreover, globalization required a major reorganization and reallocation of resources within the company. Lee, the CEO of MagiNet, decided further study and consulting views may be required prior to the selection of appropriate international strategies.

BIO-DIESEL PLANT LOCATION DECISION

Scott Metlen, University of Idaho
Doug Haines, University of Idaho
Amanda McAlexander, University of Idaho

CASE DESCRIPTION

This case addresses biodiesel production plant location considerations. The case is appropriate for undergraduate seniors (difficulty level: 4) in supply chain management, logistics, and/or general operations and marketing classes. Understanding the business issues presented is critical to firm success thus, to a student's success when they become involved in such decisions. The time a student must spend on this case for total understanding will vary depending on a student's base level of understanding, but most business students should be able to complete the case in four to six hours out of class and one hour of class discussion. The case is thirteen pages long, including references and appendices.

CASE SYNOPSIS

Bruce Nave had been using biodiesel in his own construction operation for over a year. With the advent of petroleum oil prices breaking seventy dollars per barrel, he saw an opportunity to start producing biodiesel on a commercial scale. Bruce knew that the success of his planned enterprise would depend in part on location, as each location would have different start up cost, cost of living, local laws, cost of doing business, availability and cost of inputs, and cost of shipping raw materials and finished product. Differences in these costs could quickly erode the slim contribution margins that commodity items generate. The case ends with Bruce wondering where he should locate his bio-diesel production facility. The purpose of this case is to provide a decision scenario to students that will be managing supply chains, logistic functions of a firm, and/or are otherwise involved in strategic decisions relative to location of capacity.

INTRODUCTION

While Bruce Nave sat in his Arizona office, he stared at the pile of information he needed to assess in order to determine where he was going to locate his new five million gallon per year biodiesel production facility. This new facility would need approximately 40 blue collar and ten white collar employees to operate effectively. In the past year, Bruce had experimented with the use

of biodiesel on a small scale to power over 65 diesel engines used in his construction business. From this success and the rising cost of petroleum derived diesel, he decided that producing biodiesel on a commercial scale was a viable business. He knew the location of the facility would profoundly affect profitability. The location decision would be easy if all he had to determine was which possible location reduced total inbound and out-bound transportation costs. However, there were many other quantitative and qualitative factors to consider. In fact, the affect many of these factors had on the location decision were not readily apparent and needed careful consideration, especially since production of biodiesel on a commercial scale was a new commodity industry. At the time, key success factors were not well known for the biodiesel industry.

BACKGROUND

Biodiesel is made by chemically reacting an animal fat or vegetable oil with a short chain alcohol such as methanol or ethanol in the presence of a sodium or potassium hydroxide catalyst in a process called transesterification. The primary product of the reaction is methyl (or ethyl) esters, also called biodiesel. Biodiesel can be used to power modern non-modified diesel engines in its pure form (100% biodiesel) or in any mixture with petroleum diesel. When biodiesel is burned, fewer pollutants are released into the atmosphere relative to burning petroleum diesel. Biodiesel is also quickly biodegradable. In addition, all outputs of the production process are usable.

Bruce was by no means one of the first users of biodiesel. Using vegetable oil to power engines is not a new concept. Rudolph Diesel invented the diesel engine in the 1890s with the intent of using renewable resources as the source of fuel. He used peanut oil to power his invention, but petroleum based fuels were plentiful, easy to produce, and inexpensive, so the diesel engine has since been powered almost exclusively by petroleum based diesel fuel (Grosser, 1978). However, biodiesel burns cleaner than petroleum derived diesel with less soot and no sulfur. In addition, the carbon that is released into the air upon combustion does not increase the current carbon levels, as biodiesel is extracted from plants that take carbon out of the atmosphere. This recycling of carbon means there is no net increase of carbon in the current carbon cycle as there is when petroleum products are burned. Over time, burning biodiesel instead of petroleum based fuel could stabilize the carbon cycle and possibly reduce global warming. Based on the environmental advantageous and the price of petroleum reaching $70/barrel, biodiesel was becoming a feasible alternative to petroleum based diesel.

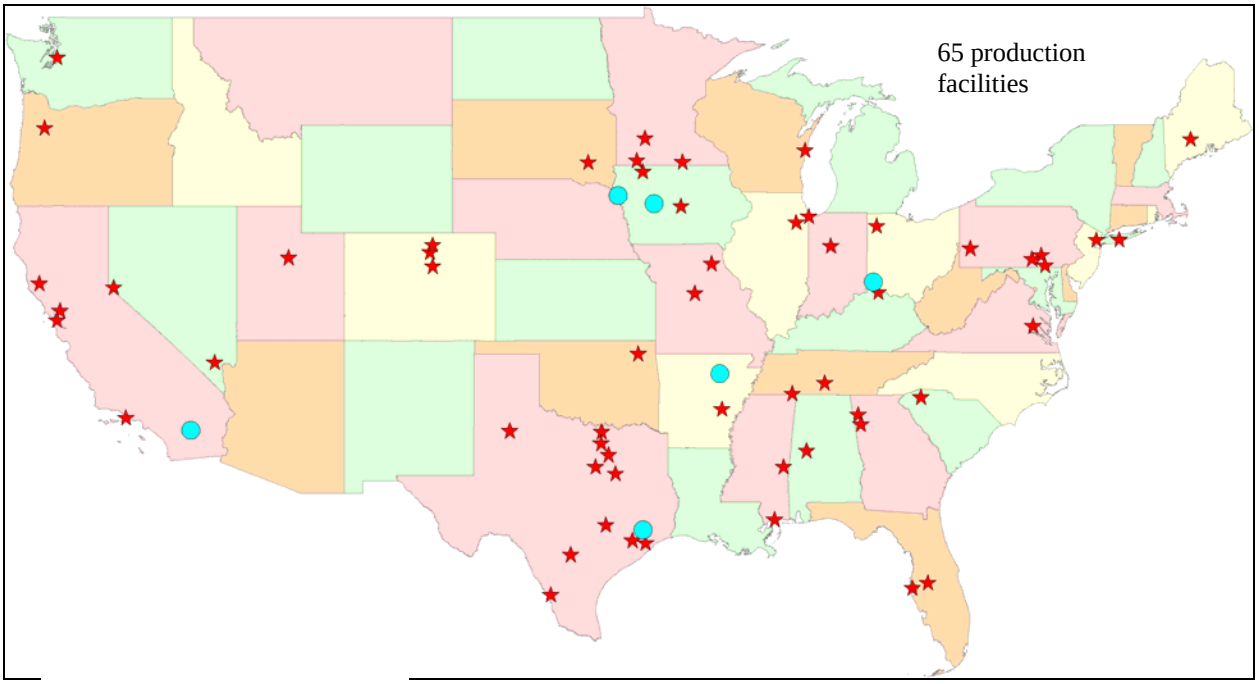
THE INDUSTRY

Worldwide interest in biofuels was growing as well as the actual production of biodiesel. Transesterification of vegetable oils was first recorded in 1853, but due to the inexpensive and abundant supply, and ignorance of environmental harm caused by burning petroleum, petroleum

diesel became the fuel of choice after 1920. There was a brief resurgence in ester production in 1940, but it was to produce glycerin for explosives. Glycerin is a byproduct of the transesterification of vegetable oils and can also be used to make soap. When some farm co-operatives in Austria started producing biodiesel for fuel in the 1980's, the industry truly started to grow. In the 1990's, several European countries and others throughout the world started producing biodiesel in commercial quantities, mostly using rapeseed oil. The Austrian Biofuels Institute listed 21 countries producing biodiesel in 1998. In 1999 the United States of America (US) only produced 500,000 gallons, but by 2005 the US production had expanded to 75 million gallons. In 2005, European production was measured at 800 million gallons per year. Biodiesel production was assured, because several US states and countries in Europe were mandating that biodiesel be used at some minimum percentage mix with petroleum diesel. In addition, some states and countries also offered tax incentives to produce biodiesel. As of April 28, 2006 there were 65 production facilities in the US, six of them BQ-9000 certified, which requires that a firm's production processes and products meet minimum American Society for Testing and Materials (ASTM) standards for biodiesel (Figure 1). BQ-9000 certification also requires biodiesel to meet some other market specific standards, such as storage requirements (EU Biodiesel Production Growth Hits Record High in 2005, 2006, National Biodiesel Board, 2006).

Together, the 65 US production facilities had a total capacity of 395 million gallons of biodiesel per year (National Biodiesel Board, 2006). Each gallon of biodiesel requires one gallon of feedstock. Oil feedstock can be derived from oil bearing product such as soy beans, canola, rapeseed, mustard seed, tallow, algae, and used cooking oil. Available US oil bearing products in 2000 for processing into biodiesel was 130 million gallons from soy beans and 65-130 million gallons from waste grease and tallow for up to 260 million gallons of feedstock (Campbell, 2000). Campbell, 2000 proposed that biodiesel production from waste grease, tallow, and oil seed crops such as soybeans, rapeseed, and canola could total four billion gallons in the US without infringing on food consumption. US consumption of diesel for transportation was 40 billion gallons in 2000 (Campbell, 2000). Thus, the US could replace up to 10% of its petroleum diesel usage with biodiesel using the current technology and US grown oil feedstock. World production of vegetable oil stocks was projected to increase, so available vegetable oil for biodiesel could increase. In addition, there was research on a high oil content algae which could conceivably produce all transportation fuel (including gasoline and petroleum diesel) and heating oil (230 billion gallons) without using farm ground that could otherwise be used to produce food (Briggs, 2004). Thus, to Bruce, even though there was unused production capacity, there seemed to be ample opportunity for a strategically located facility.

Figure 1: Production Facility Locations



Freight costs were a larger proportion of the total supply chain costs in production of biodiesel than they were for petroleum diesel. This is due to the large and expensive facilities needed to capture economies of scale with petroleum facilities relative to transesterification production facilities. Biodiesel production facilities do not need the same large capacity to cover fixed costs (National Biodiesel Board, 2006). For example, many of the 89 newly proposed US biodiesel production facilities in 2006 were expected to produce no more than one million gallons per year (National Biodiesel Board, 2006). Reasonable proximity to feedstock and a ready market to reduce freight costs were representing a bigger weight in the location decision than the economies of scale of the plant.

Further, encouragement to produce biodiesel was provided by the federal government and some state governments. They were offering some forms of user or producer incentives. The United States Department of Agriculture (USDA) offered grant funds of up to $750,000 for installation of renewable energy systems located in rural areas (National Biodiesel Board, 2006). As of 2005, producers of biofuels in the state of Washington were eligible for state and local deferrals of sales and use taxes until July 1, 2009 on investments in and construction of, buildings, new equipment, and labor. In addition, state and local property taxes were exempt for six years, under the 'Property Tax and Leasehold Excise Exemption,' and there was a 13.8% reduction in the Business &

Occupation Tax (Spokane County Conservation District, 2006). The state of Washington also mandated that all diesel sold in Washington had to contain 2% biodiesel by November 30, 2008. Once in-state feedstock and production facilities could match 3% of diesel demand, that requirement was supposed to increase to a 5% biodiesel blend for all diesel sold (Jaskor, Gail 2006). As of March 6, 2006, Idaho allowed up to a 10% tax reduction to licensed motor fuel distributors for the biodiesel they sold (Crockett, John 2006). In Oregon, the "Business Energy Tax Credit" would supply 35% of "eligible costs" for alternative fuel projects, which included the capital costs (Oregon Department of Energy, n.d.). Oregon also offered infrastructure loans to small businesses that built alternative energy facilities, which included biodiesel (Keto, Jeff 2006). Within each of these three states, there were also different tax exemptions available that dealt with the employment opportunities that building a facility would bring to the area.

There were also federal tax incentives offered to producers of biofuels in addition to the state incentives. The newest forms of federal tax incentives for biodiesel production at the time were detailed in the Energy Tax Incentives Act of 2005. Over a ten-year period, the US government was going to provide $14.5 billion in tax reductions to manufacturers involved with energy production (CCH, 2005). Under the Governors' Ethanol Coalition, the Commodity Credit Corporation will provide producers of biodiesel with incentive cash payment (they are willing to pay up to $150 million total) for increasing their agricultural commodity purchases from the year before (Governors' Ethanol Coalition, n.d.). Lastly, there was a ten cent per gallon tax credit for up to 15 million gallons of biodiesel produced with agriculture products for smaller producers (U.S. Department of Energy, 2005).

PRODUCTION PROCESS

The production of biodiesel is a relatively simple process. A suitable feedstock (vegetable oil, either virgin or used, or animal oil such as tallow) is necessary. There are numerous plants that have seeds or fruits that contain a high percentage of oil. This oil is the feedstock for biodiesel production. The amount of oil from an acre of farm ground for various oil producing plants is displayed in Table 1. The first three plants displayed are currently grown and available in the US, Jatropha is grown in many third world countries, palm oil is available on the world market, and the extraction of vegetable oil from algae is not yet commercially feasible. The display is in part to show that vegetable oil production is a viable and growing industry if the demand for biodiesel increases. Gallons per acre will vary dependent upon growing conditions and crop yield per acre (Pediment Biofuels, 2006).

Table 1: Yields of Various Feedstocks
(Hanson & Oelke, 1998; Brown, et al., 2001-5; Bhardwaj, 2006; Murphy, 2005; and Perry, 2006)

Feedstock	Average gallons per acre (approximately 7.6 lbs/gallon of oil)	Oil yield from seed	Assumed lbs seed/acre
Soybean	48	20%	1,824
Rapeseed & Canola	127	40%	2,413
Mustard	61	40%	1,159
Jatropha	202	25%	6,140
Palm Oil	635	30%	16,087
Algae	10,000	50%	152,000

Even though the transesterification process is relatively simple, it is not a process without risk or possible problems. The process starts with oil that is extracted from the oil producing portion of the plant through a crushing and/or chemical process. After extraction, the feedstock is then mixed with a methyl or ethyl alcohol and a catalyst such as sodium or potassium hydroxide. Both methyl and ethyl alcohol are very flammable. Methyl alcohol is very dangerous to work with. In fact, breathing the fumes and ingesting the fluid can be lethal. When methyl or ethyl alcohols are mixed with a base such as sodium hydroxide or potassium hydroxide, an especially strong base, such as sodium methoxide, can be created. These chemicals can be explosive, the fumes are toxic, and ingestion and skin exposure can have lethal results (Mallinckrodt, 2004, Science Lab, 2006). As in any production facility where hazardous material (methyl or ethyl alcohol and sodium or potassium hydroxide, plus acid for pre-treating oil that is high in free fatty acids) is used, adequate handling and emergency processes must be used to ensure safety to workers, the public, and the environment.

In addition, after the transesterification process, some amount of alcohol will be emitted as a gas. For economic and environmental reasons, this gas should be recovered for subsequent production. Any water introduced during transesterification will disrupt the process and if the correct amount of alcohol and hydroxide relative to the type and condition of vegetable oil is not used, the transesterification process will not be complete, producing an inferior product. After the transesterification process is completed, there is a cleaning process where water is bubbled through the biodiesel to remove excess alcohol, hydroxides, and soap that may have formed due to improper transesterification. This water may be cleaned and re-circulated, but some portion of the wastewater may need to be disposed of (Van Gerpen, Pruszko, Clements, Shanks, and Knothe, 2005).

In general 100 pounds of oil (about 13.16 gallons) plus 20 pounds of methanol and 1.25 pounds of sodium hydroxide produces 100 pounds of biodiesel, 11 pounds of glycerin and sodium, and 10 pounds of methanol. The sodium can be removed from the glycerin and reused, and then the

glycerin is commercially viable. Nearly all of the excess alcohol can be captured and reused in the process. Most meal from crushing oil producing seeds such as soy beans can be used as a commercial animal feed, or if it is a mustard seed, can be used as a pesticide. All inputs and outputs are biodegradable, although, as stated above, some materials used in production and the end products are toxic to animals. Once the biodiesel is washed and dried, it must be stored like petroleum diesel to prevent exposure to the ambient atmosphere, as it will pick up moisture that is contained in ambient air. (Methanol Institute, 2006)

FEEDSTOCK

While soybeans were the most prominent plant used to produce feedstock in the US, rapeseed was dominant in the European Union and had more favorable properties compared to soy biodiesel. Canola is a cultivar of rapeseed grown in Canada and the US. The yield per acre of feedstock is higher for canola than soybeans but soybean meal is more palatable to animals than the meal from canola/rapeseed. All the meals have high nutrient value, especially protein, and may be used as an animal feed supplement. In addition, the biodiesel produced has some desirable traits that esters made from other feedstocks do not, such as a lower gelling temperature (Herkes, 2006). Canola is generally a rotation crop for grasses such as wheat. Thus, it can be feasibly grown every other year in many areas, but is mainly rotated every four years for soil health. It grows best where the climate is moderate and it can be grown without irrigation if there is enough precipitation at the correct time of year. Irrigation can be used to improve yields where precipitation is inadequate, but other crops with a higher market value per acre were grown where irrigation was an option. The time of year the crop is planted can also have an effect on yields. Spring planted or winter planted canola can be produced. (Herkes, 2006).

The Palouse region in Eastern Washington and Northern Idaho, and the Camas Prairie of Northern Idaho are ideal areas for growing canola. The Palouse region encompasses two million acres with Rosalia, Washington the approximate center. On average, this area yields 1,555 lbs/acre of spring canola (Brown, Davis, Johnson, Wysocki, 2001-5). The Camas Prairie encompasses .6 million acres with Grangeville, Idaho the approximate center. Average yields in this area are 2,880 lbs/acre with about half coming from spring and half coming from winter canola (Brown, et al, 2001-5). In addition, the Columbia Basin of Eastern Washington and Oregon with Moses Lake, Washington the approximate center can grow canola using either dry land or irrigated practices. There are ten million acres of dry land farming that could yield approximately 1,500 lbs/acre of winter canola every four years in the Columbia Basin region (Brown, et al, 2001-5). If the price of petroleum increased, it is likely that crops such as canola would produce as much profit as wheat and the every other year cycle could become the most common practice.

POSSIBLE LOCATIONS, ASSOCIATED ATTRIBUTES AND COSTS

From studying the locations of other US production facilities, where plants that produce desirable feedstock could be grown, where there was a ready market for meal from the oil extraction process, and where there was a ready market for biodiesel, Bruce decided to locate in the Northwest. He felt that he could contract enough acreage of canola at $.15 per pound to produce five million gallons of feedstock. Part of the reason that Bruce chose the Northwest was that both he and his wife had roots in the Northwest where family farms had been in the farming community for a long time. He claimed his decision was more of an "emotional" attachment to the area than anything else. They also had family members that still farmed in the Palouse area, providing access to a network of farmers. Business people, including farmers, are skeptical of new industries and practices until proven profitable. Biodiesel production had not yet been proven profitable, so an established network was extremely valuable.

After considering a number of sites, he narrowed it down to three locations to assess in further detail; the St. John port in Portland, Oregon, the Port of Benton in Richland, Washington, and the port of Wilma in Clarkston, Washington. There were other possible locations, but these three all had the advantage of being fresh water ports on the same river system (Columbia River). Thus, product could be shipped by barge for approximately $.08/ton/mile (Tidewater, 2001). In fact, the St. John port could accommodate ocean-going ships for an estimated $.02/ton/mile. There was truck transportation, which cost approximately $.15/ton/mile, from all feed growing areas to each possible plant site (American Freight Companies, 2001). The only available transportation from Grangeville to Clarkston was by truck. Rail transportation was also an available option for much of the transportation needs as each port had rail siding access. National rail companies charged approximately $.12/ton/mile (Union Pacific, 2006). There was no national railway option from Rosalia in the Palouse area to Clarkston, but there was an alternative farmer co-op owned railroad. This railroad was only slightly more expensive at an estimated $.13/ton/mile. There was no rail or waterway from the Camas Prairie area to any of the three proposed production facilities, but there was a national rail system that connected all three proposed sites and Moses Lake which was located in the center of the Columbia Basin.

In addition to access of transportation from growing areas to each site, the three areas were in close proximity to high demand areas. Fleets of vehicles located in the greater Spokane and Seattle, Washington, and Portland, Oregon areas were all near, and large commercial and government users of diesel were more likely to purchase biodiesel than personal buyers. Due to the solvent nature of biodiesel, dedicated handling and storing equipment is recommended (Van Gerpen et al, 2005). In addition, marketing costs would be minimized by selling to large users. The Spokane Transit company alone used 1.37 million gallons of diesel per year, while the Seattle Transit and Ferry used an additional 20 million gallons per year. Based on the commercial use in the Spokane

area and population ratios, the Portland area diesel use can be estimated at 6.56 million gallons (U.S. Census Bureau, 2007).

Farmers used approximately 7.3 gallons of diesel per acre per year (Ryan and Tiffany, 1998). All of these customers were willing to use from a minimum of a 2% biodiesel content mix up to a 20% biodiesel mix. Bruce wanted to make his biodiesel available to area farmers and other local users within 80 miles of the production facility. Thus, farmers near the Clarkston location, such as Rosalia (2 million acres), would use approximately 14.6 million gallons of diesel fuel, based on an average of 7.3 gal/acre). Using the 7.3 gal/acre average for farm use, the other area demands can be estimated as well. Those farmers near the Richland area, Columbia Basin (10 million acres), would use approximately 73 million gallons of diesel fuel. Bruce expected the local users to be more willing to use a higher biodiesel percent mix than the Spokane, Portland, and Seattle users. The goal was to sell all biodiesel produced while minimizing total transportation costs and making sure that the type of customer base remained diversified by selling at least a minimum amount to Spokane and Seattle. Bruce also assumed the sales price would remain the same to all customers. All outbound freight would be by truck because production capacity was too low to make shipping by rail or barge feasible in a timely manner.

Displayed in Appendix 1 (conveniently divided into Tables 2-4) are the quantitative and qualitative factors for each location that Bruce had to assess in order to make his location decision. Where should Bruce locate and why?

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APPENDICES
Location Information

Table 2 : Location Distances
(www.mapquest.com, 2006)

Factor	Clarkston	Richland	St. Johns/Portland
Miles to Grangeville to	74	211	418
Miles Rosalia to	77	154	361
Miles Moses Lake to	154	81	287
Miles Des Moines to	1557	1647	1790
Miles Spokane to	106	146	351
Miles Seattle to	318	219	174
Miles Portland to	344	226	8
Miles Clarkston to	0	137	344
Miles Richland to	137	0	226

Table 3: Estimated Freight Costs
(Tidewater, 2006; Union Pacific, 2006; American Freight Companies, 2001)

Freight Method	Truck	Train	Private Train	Ocean	River Barge
$/Ton/Mile	.15	.12	.13	.02	.08

Table 4: Location Details/Costs
(Epodunk, Inc., 2006, U.S. Census Bureau, 2007)

	Clarkston	Richland	St. Johns/Portland
Real-estate availability (housing permit ratio to population, higher the better)	.00082	.006816	.000468
Real-estate cost (single family new housing construction permit avg. cost '04)	$66,100	$221,600	$169,700
Labor availability (unemployment rate, assume same pay rate at all sites)	6.3%	5.6%	6.2%
Labor skill level (35 years old % graduated high school)	81.4%	92.6%	85.7%

Table 4: Location Details/Costs
(Epodunk, Inc., 2006, U.S. Census Bureau, 2007)

	Clarkston	Richland	St. Johns/Portland
Relevant to biodiesel research University	University of Idaho/ Washington State University	University of Idaho/Washington State University	University of Idaho/ Washington State University/ Oregon State University
Hospital	Kadlec Medical Center and Lourdes Counseling Center	Tri-State Memorial Hospital and St. Joseph Medical Center (5 miles)	Approx. 8 including OHSU hospitals and clinics and Doernbecer
Hospital treat chem. Exposure	Yes	Yes	Yes
K-12 Schools	High Schools: 1 public Primary/Middle Schools: 8 public, 1 private	High Schools: 3 public, 1 private Primary/Middle Schools: 10 public, 2 private	Well over 10 in each public and private area of education
University Education Availability	University of Idaho/Washington State University/Lewis and Clark State College	University of Idaho/ Washington State University/ Columbia Basin College	University of Portland/ Portland State University/ Concordia University
Site Availability	Adequate growth potential	Adequate growth potential	Adequate growth potential
Culture Availability	Limited	Diverse	Highly Diverse
Diversity	93% White non-Hispanic	87% White non-Hispanic	75.5% White non-Hispanic
Estimated Permit requirements	$75,000	$32,000	$300,000
Port lot rent/month	$10,000/month	$15,000/month	$25,000/month
Estimated Utilities (power & H_2O)	$8,000/month	$5,000/month	$10,000/month
Estimated Hazardous Material Requirements Bond 8%/year	$1.5 million	$1 million	$5 million
Estimated Waste Disposal Cost	$5,000/month	$2,000/month	$10,000/month
Production Growth Possibilities	Unlimited	Unlimited	Unlimited
Feedstock Growth Possibilities	Unlimited	Unlimited	Unlimited
Local Demand growth	Stable	Stable	Some Growth
Airport Availability	Flights available to international airports	Flights available to international airports	Portland International Airport
Established Network with Farmers (80 mile radius)	High	Low	None

THE EFFECTS OF PERFORMANCE MEASUREMENT ON A DELIVERY COMPANY: A CASE STUDY

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CASE DESCRIPTION

The primary subject matter of this case concerns the challenges faced by a delivery company that uses technological tools to measure individual performance. Topics such as performance measurement, accuracy, employee motivation, and safety concerns are all explored in the case. Secondary issues include corporate culture, organizational structure, effects of incentives, and labor-management relations. The case has a difficulty level of 4-5, and is appropriate for senior-level undergraduates or first-year graduate students. It is designed to be taught in 2-3 class hours and is expected to require approximately two hours of outside preparation by students.

CASE SYNOPSIS

The case examines how a delivery company uses incentives as a motivational technique to get drivers to work faster. This technique seems to work early on for one driver, Mike, until he hurts his ankle. This leads the reader to the next issue, safety, and how WDS handles a work environment in which injuries are common. The case explores the downsides of the drive to improve financial performance by increasing workloads and pushing productivity improvements.

The reader is able to get a clear understanding of how a delivery company operates and the type of management structure that is in place. The challenge of motivating employees and managers to continually increase performance is clear throughout the case. The unique problems of encouraging employee motivation in a unionized work environment arise at the end of this case.

This case is designed to stimulate discussion about performance measurement, motivation, and safety issues in organizations. Although this case focuses on the package delivery industry and the unique characteristics thereof, the challenges that the organization encounters related to the issues of tracking performance and heightening employee motivation are general enough to fit many business situations.

INTRODUCTION

Worldwide Delivery Service (WDS) is one of the largest delivery transportation companies in the world. Every day, it transports packages to recipients in more than 200 different countries. WDS spends over one billion dollars per year to research and develop new technology to enhance its operations. Technology is the backbone of its recent success in supply chain management. Many large automotive, retail, and technology companies rely on WDS's advanced supply chain management to help foster smooth transactions among their own customers.

WDS has gained a competitive advantage over its competition during the last decade because of its proprietary technology. Some of its developments during this time include: real-time package tracking, customs clearing, just-in-time shipping, and enabling customers to make financial transactions electronically. Constant upgrades in technology have enabled WDS to better manage its employees and reduce labor and materials costs.

This case will focus on how WDS implemented new technology to improve its service to customers, increase efficiency, and enhance productivity among employees. This case will also focus on how WDS uses its technology to measure performance and motivate employees. The problems that are associated with WDS's performance measurement studies will also be addressed. WDS's management is trained to believe that measurement is the basis for managing performance. Most areas of WDS's organizational structure have been impacted by changes in technology during the last decade. The organizational effects of performance measuring are presented in the case as well.

INDUSTRY ENVIRONMENT

The delivery industry has experienced steady growth over the last decade. Much of the growth in this area came from a strong economy and bull market that the United States experienced throughout much of the 1990s. During this time period, new companies entered the transport industry, and old ones expanded both in their size and in the services offered to the customer. The industry has become very competitive, and companies now face a variety of different factors that influence the business environment in which they compete. Some of these factors include: supply chain management, just-in time (JIT) inventory systems, TV shopping networks, new media such as the Internet, and an increase in business to business (B2B) and business to consumer (B2C) Internet transactions.

Due to the large amount of physical labor involved in the transport industry, there is a very high injury rate. WDS transports parcels by both air and truck. According to the Bureau of Labor Statistics, in 2003 there were 282,600 total occupational injuries in the transportation and warehousing industry and 44,600 injuries in the air transportation industry. Of the 282,600 injuries in the transportation and warehousing industry, 49,300 came from courier services. This number

makes up a large percentage of the injuries in the transportation and warehousing industries. The BLS findings also show that couriers and messengers had the highest incidence rate for injuries (11.4%). Since many parts of the operation involve physical labor, it is difficult for companies in this industry to automate the unloading and loading jobs performed by human workers.

COMPANY BACKGROUND

WDS, founded 50 years ago, is the world's largest express delivery company and a leader in supply chain management services. WDS delivers approximately 5% of the Gross Domestic Product (GDP) in the United States, equaling more than 10 million packages per day. WDS has grown to become one of the largest employers in the United States, with a fleet of over 140,500 vehicles and 400 airplanes. The WDS website receives more than 40 million hits per day, and WDS owns one of the largest private telecommunications networks in the world.

Recently, WDS started up three new strategic business units (SBUs) -- WDS Logistics, WDS E-ventures, and WDS Capital -- in order to further diversify its business. The majority of the revenue for WDS comes from worldwide distribution and logistics. WDS is able to achieve a large market share for all goods that are shipped from retailers who receive orders over the Internet because of its advanced tracking system. WDS has experienced the largest revenue growth rate in logistics and worldwide distribution (supply chain solutions) at 85.7%, and international package delivery revenue grew by 13%. U.S. domestic package delivery only grew by 2.8%.

In 1999, WDS went public with only 15% of its stock and raised over $4.5 billion on the first day of the initial public offering (IPO). The money raised is being used to repurchase class A shares (10 proxy votes) from managers who wish to retire and want to sell the stock that they have accumulated over their careers. The shares issued to the public are class B shares. They are the same price as class A shares, but are only worth one proxy vote. The capital raised has also been used to purchase companies that can potentially give WDS a competitive advantage. These companies include various technology firms and smaller competitors in the courier industry. An example would be specialty overnight delivery companies that operate only in specific states (West Coast Overnight).

Management Style

WDS has a top down management hierarchy; upper management makes all major decisions that affect workers. All orders are delegated from above and carried down the chain of command, so the management approach is of the command and control style. Employees are motivated to increase performance by being given threats of disciplinary action. Employees have a very small amount of power to change the work that is given to them. Hourly employees have no control to

change the orders from above that affect their work environment, and no feedback mechanism is in place once the orders are given.

An example is a driver who is told to start his/her day fifteen minutes later than usual, but is still expected to deliver all the "next day air" letters by 10:30 a.m. (the time that WDS guarantees all "next day air" letters will be delivered to the customer). Starting the driver 15 minutes later with the same commitment of time for the letters can be very frustrating to the drivers. Drivers are never asked how a change in time will affect their day. They are only given the orders to start later. In general, most decisions involving hourly employees are not discussed with them until after they have been implemented.

Management and Labor Issues

WDS employs over 300,000 workers, and the majority of them are members of the National Teamsters Union. The employees who are union members pay monthly dues for belonging to the union. The union membership provides employees of WDS with guaranteed working conditions and an annual hourly pay raise. The job conditions, such as a minimum amount of hours worked per day, overtime, health benefits, and pension are negotiated every five years.

Employees' routes are determined not by performance, but by seniority. This proves to be somewhat challenging at times for managers because the best driver for a route may not always work that specific delivery route because of seniority issues. If drivers feel unfairly treated or see any type of manager violating a contract agreement, such as working a teamster job, they can go to a shop steward and file a grievance. A grievance helps to ensure that the employee will be compensated for the time that he/she could have worked. Once a grievance is filed the local union agent and a panel of management from the center where it was filed review it and determine if a contract agreement was violated or not.

COMPETITIVE ADVANTAGE

WDS has achieved a competitive advantage over many new entrants into the delivery market primarily because of its commitment to investing in state of the art technology. It is a low cost leader and has very tight control over its employees; all minutes worked are coded and accounted for. WDS makes it easy for businesses to provide their customers with real-time package tracking via the web, phone, and e-mail. WDS offers free computers and training to businesses with large shipping accounts. Retailers can also incorporate WDS's online tracking functions within their own websites so their customers do not have to switch between the sites.

WDS's technology, along with that of only a few other competitors, has become so sophisticated that new entrants into the market need to have substantial resources to compete on the

same level. Since WDS offers such superior services to the customer, many shippers don't like to switch their business to competitors.

INTERNAL OPERATIONS AND ORGANIZATIONAL STRUCTURE

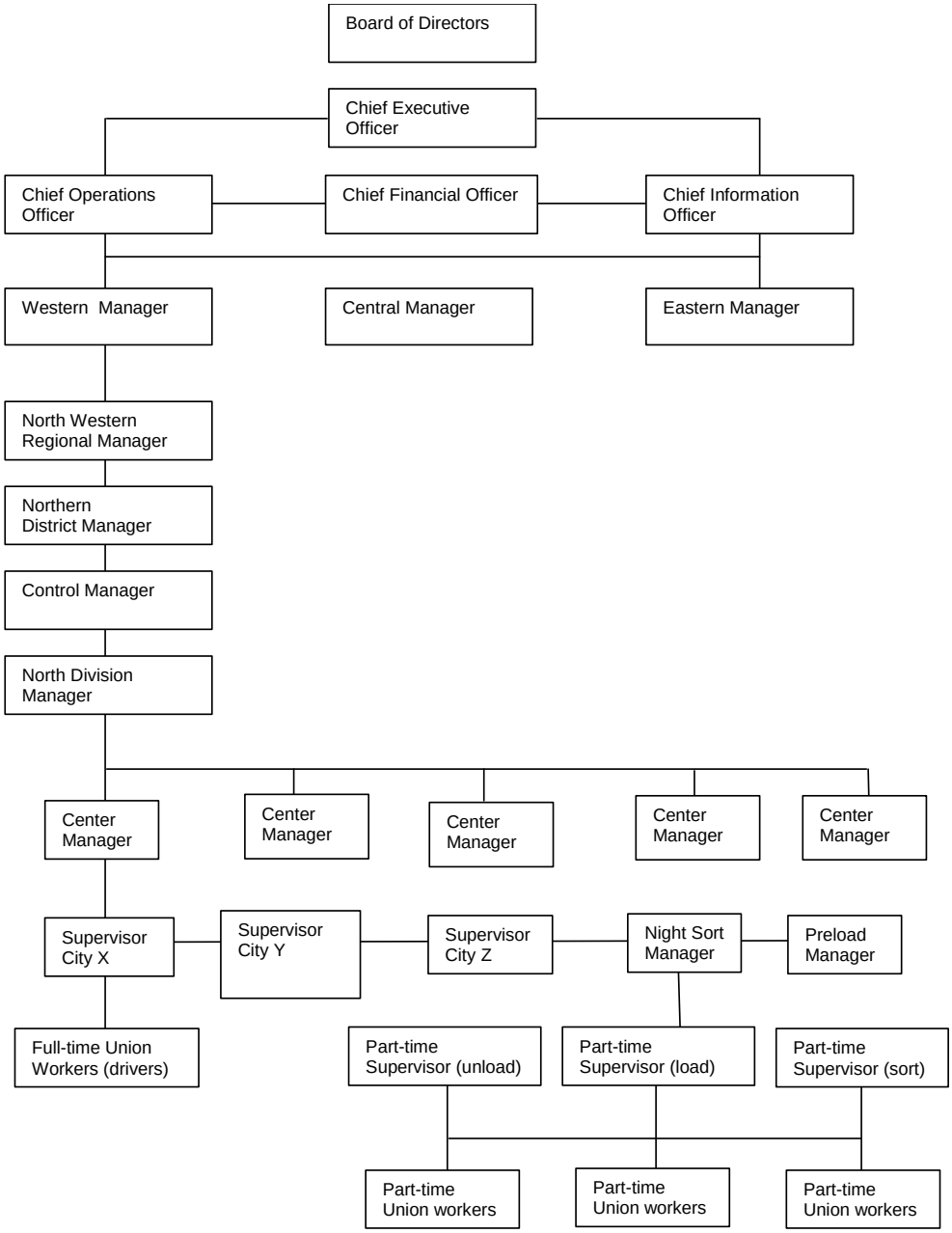
WDS's organization structure (Exhibit 1) is designed for maximum efficiency in a command and control environment; it is a very centralized structure. Since WDS is such a large corporation, upper-management is divided into three regions: western, central, and eastern. The manager of each of these regions reports directly to the company's chief operations officer, chief financial officer, and chief information officer. WDS's chief executive officer receives input from these three upper-level managers and then reports directly to the shareholders and board of directors. All of the major strategic decisions that affect the company are made at the top of the organizational hierarchy. Some of these decisions include: performance measurements, hub design and location, research and development financing, employee incentives (both union and non-union), acquisitions, and contract agreements.

There are district managers for each state. Some of the larger states, such as California, have two managers: one for the north and one for the south. The district managers receive information from the division managers, who are in charge of the major decisions that affect the overall strategy and corporate goals for their division, such as sales and revenue targets. Each division manager oversees several center managers. Center managers help with support, advice, and assistance to the division manager. Center managers are in charge of supervisors for both the drivers and the sorters. There are usually about five supervisors that report to a center manager. Supervisors ensure that the drivers and sorters at WDS perform their jobs efficiently and safely.

UNLOAD/SORT OPERATIONS

WDS runs two essential, internal shifts in each warehouse. If there is a work stoppage at any time during the two shifts, then the driver's day is also affected. Although the larger hubs have more than two shifts during the day, the focus in this case will be on the Preload and Night Sort shifts. These two shifts will be examined to better understand the management style and performance measurement standards that WDS uses.

Exhibit 1: Operational Structure for WDS



The Preload shift starts at 4:30 a.m. and runs until 8:15 a.m. During this time, the packages from large semi-trucks are unloaded onto conveyer belts and then sorted and loaded onto the delivery trucks. Depending on the size of the warehouse, work is overseen by a manager for the overall operation of the Preload and several part-time supervisors. These supervisors are divided into three groups: load supervisors, sort supervisors, and unload supervisors. The package car loaders have the most supervision because it is one of the most critical parts of the operation and requires the largest number of employees to perform. If employees in the load operation are not managed properly, the potential for service failures increases because of mis-loaded packages. Drivers will also be affected because they will not have their packages properly sequenced for their delivery area.

The Night Sort starts at 5:00 p.m. and is essentially the complete opposite of the Preload. Packages are unloaded from delivery trucks onto the conveyer belts, then sorted and loaded into large semi-trucks. The Night Sort tends to require fewer employees than the Preload because the packages are loaded into semi-trucks instead of the smaller delivery trucks.

Tracking Employees

In order for WDS to offer total tracking on all its packages, it had to develop a superior method of scanning. The only way it could track all packages was to place a barcode on every trailer and delivery truck. At first, WDS only tracked high-margin packages that were going by air (Second Day Air and Next Day Air) by scanning them with a large scanner that looked like a gun. The only problem with this was trying to identify which employee was using the scanner. Anyone could just pick one up and scan. There was also no way for managers to identify which loaders had problems scanning and loading the correct package into a specific trailer. An example would be a worker who loaded packages with a New York destination into a truck that was going to Reno, Nevada; this is considered a mis-sort.

WDS's managers needed to be able to identify which loaders were having problems with mis-sorts so that they could address the employees who were causing them and figure out how to prevent it from happening in the future. Every mis-sorted package meant potentially losing a customer to a competitor. By having every employee involved in scanning input their ID number, managers are better able to keep track of not only employees, but also the expensive scanners that they use.

WDS budgets a billion dollars per year for research and development. In 1996, WDS developed a new scanner that loaders can wear on their wrists, and the scanner includes a small trigger that straps to the index finger. The new design is much smaller than the old handheld gun scanner and much more sophisticated. One of the unique features is that workers must first log into the scanner by using the last four digits of their social security number and first three letters of their last name. These new armband scanners provide much more than just a new way of scanning

packages because they don't just scan. They also provide measurements of employee productivity and efficiency. The data includes how many packages are scanned and exactly when each package is scanned. This data provides supervisors with better information about when the flow of packages in the operation is increasing or decreasing. By using this data supervisors are able to staff their section of the operation better throughout the night to prevent downtime.

Performance Measurement

With the new armband scanners, managers can now see exactly how many scans an employee is doing at any given time. This number is used to determine an employee's packages per hour (PPH) rate. The old way of measuring this involved having a supervisor who walked around the building with a stopwatch and actually timed the employees. The new armband scanners work on a wireless LAN network within each WDS building. About every five seconds, a computer shows exactly how many total scans have been done by all the loaders, and the computer can even show exactly how many scans have been done by a certain worker. This was a huge step in helping managers and supervisors forecast volume and provide better staffing throughout the Night Sort. It allowed them to concentrate more on running the operation than on spending their energy on timing employees. There has also been a positive employee response because of the better staffing and mis-load feedback.

Performance measurement is done at WDS to ensure that each employee does his/her job in the most efficient way possible. This style of measurement has been used since WDS began fifty years ago. It is based on Frederick W. Taylor's principles of scientific management theory which argues that there is always "one best way" to do a job. Taylor developed four principles for managing employees to increase output and performance. "Management's role is to specify every single detail of each worker's task. Experimental job analysis techniques (e.g., time-and-motion study) will lead to the "one best way" of managing workers and organizing tasks. By separating task conception from task execution, and by dividing and specializing tasks, the firm becomes more efficient. Managerial authority is centralized, following the principle of unity of command, and supervisory autonomy is curtailed. The process of work is simplified, mechanized, and, whenever feasible, arranged in assembly-line fashion" (Guillen, 1994, p. 76). Appendix 1 shows an example of how scientific management is implemented at WDS.

Performance measurement allows WDS to operate in a very cost efficient way. The data received from performance measurement is used to reward the employees who are doing a good job and discipline the employees who are not. Performance measurement works best when the employees are trained properly. This is something that WDS has problems with because sometimes employees are not trained properly on the specifics of certain routes such as business locations and traffic patterns, so it is very difficult to measure their performance accurately. Usually newer drivers are trained on only one route because it is assumed that they should understand the basics well

enough of one route to be able to deliver any route that they are put on. This is not usually the case and often drivers are unable to perform as expected. Also, due to the large number of routes, drivers are frequently required to deliver more than one route in a day. These routes are known as "split" routes because two routes are split and combined to form one route.

Appendix 1: Methods Time Measurement

Methods Time Measurement (MTM) "developed in 1948 as a procedure which analyzes any manual operation into the basic motions required to perform it, and assigns to each motion a pre-determined time standard (PDTS). The basic unit of time in MTM is the Time Measurement Unit (TMU) —> 1 TMU = 0.00001 hr. = 0.036 seconds" (Keyserling, 2000, p. 3).

"Procedures for using MTM and other PDTSs.

1. Describe all left and right hand motions required to perform the job.
2. Determine the time required to perform each motion.
3. Eliminate non-limiting motions. A non-limiting motion is the shorter-duration activity of the left hand or right hand when two motions are performed simultaneously.
4. Compute the normal time for the job by adding the table values for each fundamental motion.
5. Use allowances to determine standard time" (Keyserling, 2000, p. 3).

Example: Starting a WDS Truck

1. Buckle seatbelt with right hand; reach 18 inches.
2. Turn key to start truck with right hand; reach 20 inches.
3. Release emergency brake with left knee 12 inches.
4. Transfer to right hand to stick shift and put in gear; 18 inches.
5. Move left hand to steering wheel; 20 inches.
6. Push in clutch with left foot, 16 inches
7. Return right hand to steering wheel; 20 inches.

MOTION	TMUs
Reach 18"	17.2
Buckle	2.0
Move 12" Turn Key	13.4
Release Brake	9.4
Move to RH 3"	4.9
Move Left Hand	5.6
Push in Clutch with foot	22.1
Release	2.0
Return (Reach) RH 20"	18.6
	95.2 TMUs @ 3.43 sec.

Motivational Approaches at WDS

WDS is now able to post a list of all the loaders and their scans per hour. Each day a new list is posted with numbers from the following night. The same type of list is also generated for drivers who scan their packages throughout the day. Employees often gather around each night before the start of their shift to see how they performed the prior night. The list includes how many scans each person did, and how many mis-sorts were found in the trailer they loaded. Since mis-sorts affect everyone in the operation, a person who has many mis-sorts will often hear about it from other employees. Everyone is affected because their combined performance affects the overall accuracy rate; if the accuracy goal is not met, then no one receives the reward (a BBQ). WDS has a corporate goal of one mis-sort for every 2,500 packages that are loaded or a .004 accuracy rate. This goal was developed with the hopes of one day reaching a six-sigma accuracy rate of four mis-sorts for every one million packages sorted.

Before the scanners were utilized, employees were motivated by monthly barbeques. The employees were given barbeques when the mis-sorts showed improvements. If the mis-sorts became too much of a problem, employees would receive a "write up" letter stating the problem and the possibility of termination if the sorting problem continued. This technique was used to increase performance. Employees were required to wear colored stamps on their hands. This allowed supervisors to track the employees who had problems with sorting packages. If the problems continued, these employees could lose their job or they could be transferred to another part of the operation that required more physical work and they could receive a possible pay cut.

Employees are given their results from the prior night's scanning each day that they report to work. If the employee's performance is not up to par with the accuracy rate, then employees are reprimanded. If they continue to perform poorly the following week, then they are written up by their supervisor.

Safety Issues

The average length of the Night Sort and Preload shifts is four hours. Although it is a relatively short shift there is a lot of heavy lifting. The most common types of injuries at WDS for the loaders, both in the Night Sort and Preload, are muscle strains and pulls. Employees are trained on how to properly lift packages and unload them, but sometimes they don't adhere to what they have learned. Many loaders often find it difficult to perform at the level that WDS expects throughout the whole shift. Most of the injuries happen toward the end of the shift when the workers are tired. Loaders tend to not lift properly toward the end of the shift because they become tired and don't want to bend with their knees. This is one the leading causes for back injures at WDS.

There is a very high level of truck traffic in the building during both shifts and this is a safety issue as well. Many drivers find it hard to see what is behind them because of the large blind spots

that the trucks have. It is important for drivers to honk their horns because often loaders are not aware of the traffic that is moving through the building. WDS teaches all the drivers to honk the horn whenever a truck backs up. Most drivers are very good about honking their horns whenever they are in the building so there is not a high rate of injuries. There have been instances, though, during the last few years of employees being injured because drivers backed into them after not honking their horn.

JOB DESCRIPTION FOR DRIVERS

The drivers for WDS start their day at 8:15 a.m. and do not finish until all the parcels loaded on their truck are delivered. Drivers start their day by delivering all the next day air letters and packages in their area before 10:30 a.m. Since these packages are the ones that are guaranteed to arrive to the customer before 10:30 a.m., it is very important that drivers are not given too many packages. Packages that are delivered late could result in WDS having to give a refund to the customer since the 10:30 a.m. delivery time was guaranteed. Customer confidence in the company is also lost when packages are delivered late. After all of the next day air packages are delivered, the drivers start their routes by delivering all the business packages before noon. Business deliveries have a 12:00 p.m. guarantee. Only after these are finished can the driver start concentrating on delivering residential packages. There is no delivery time commitment for these.

Most drivers start their daily pick-ups from local merchants at 3:00 p.m. If they pick up any next day air packages, they must meet a shuttle driver at a specific location by 4:30 p.m. The shuttle driver collects all the next day air packages and then takes them back to the building before 5:00 p.m. for processing by the Night Sort shift. If the drivers still have residential packages on their truck after meeting the shuttle driver, they must continue to deliver them until everything is delivered. Drivers are given two 15-minute breaks and a one-hour lunch, but often drivers have to skip their lunch in order to finish their delivery work. They have the option of taking their breaks when they get back to the building. However, if they want to leave right when they return to the building, they are not paid for their lunch or breaks. Some drivers feel that the only way to get everything delivered on time is to skip their breaks until the end of the day.

Measuring Driver Productivity

In 1990, WDS created the Delivery Information Acquisition Board (DIAB), an electronic device that all drivers carry to scan the packages on their truck. Drivers use this board to gather information about the packages that they are delivering. The DIAB transmits real-time delivery information and allows for two-way communication between managers and drivers. The typical procedure when working with the DIAB is for the driver to enter the receiver's address into the DIAB and scan the barcode on the box or letter. Depending on the item and location, a signature

can be required, adding to the time spent at a stop. After all of the information is gathered, the driver saves all the information in the DIAB's memory. Once the driver returns to the building, the DIAB is downloaded and management can review the information.

The DIAB works in much the same way as the armband scanners do. It tracks every minute of a driver's day, from the moment he/she logs onto the board in the morning until he/she punches out. At the end of each day, management can review exactly how the drivers spent their time. Some of the data that can be retrieved include total miles traveled, miles between stops, exact time at each stop, and pick-up and delivery volume. These final numbers are then compared to the "planned" hours to determine if a driver was working efficiently or not.

Industrial engineers determine standard times or "planned" hours by doing a time study on all delivery routes. Exhibit 2 shows the factors are measured and how the total stops per hour for a driver are calculated. The main factors measured are: stops, pieces per stop, time at each stop, time between stops, and miles between stops. Exhibit 3 shows how two hours of a typical driver's route are measured to determine the average stops per hour. To find a standard time for a route, this same measurement is done for three days and the total numbers are then averaged. For example if during a nine hour day a driver had 120 stops on day one, 125 on day two, and 122 on day three then his average planned stops would be 122.3. The 122.3 is then divided by nine to give the average planned stops per hour (13.6) that are expected of a driver who is delivering on this route.

Exhibit 2: Industrial Engineer Time Study Worksheet

	Driver Name:			IE Name:		
	Route: 51A			City Name: X		
	Stops	Pieces	Time Arrived (minutes)	Time Leaving Stop (minutes)	Miles Between Stops	Traffic Time Between Stops
	1	14	9:00	9:08	0.5	2:00
	2	2	9:10	9:13	0.25	2:00
	3	8	9:15	9:21	0.25	1:00
	4	3	9:22	9:25	0.25	3:00
	5	11	9:28	9:38	0.25	2:00
	6	1	9:40	9:42	3	7:00
	7	1	9:49	9:50	1	2:00
	8	5	9:52	9:55	2	3:00
	9	1	9:58	10:00	1	2:00
	10	1	10:02	10:03	3	5:00
Total	10	47	62 minutes	55 minutes	11.5 miles	29 minutes

Average Stops Per Hour = total stops/total hours spent delivering
Average of 10 stops per hour

Exhibit 3: Performance Measurement Table for Drivers

	Stops	Pieces	Time at Stop (minutes)	Time Between Stops (minutes)	Miles Between Stops
	1	14	8	2	0.5
	2	2	3	2	0.25
	3	8	6	1	0.25
	4	3	3	3	0.25
	5	11	10	2	0.25
	6	1	2	7	3
	7	1	1	2	1
	8	5	3	3	2
	9	1	1	2	1
	10	1	1	5	3
	11	1	1	1	0.5
	12	1	1	1	0.5
	13	8	8	2	1
	14	1	1	1	0.25
	15	2	1	1	0.25
	16	1	2	8	1.5
	17	3	2	7	2.25
	18	1	1	2	0.5
	19	1	1	1	0.25
	20	2	4	7	3
total:	20	68	60	60	21.5

Average Stops Per Hour = total stops/total hours spent delivering
Average Stops Per Hour = 20/2= 10 **Average of 10 stops per hour**
Total Time Employee Spent Delivering = total time at stops+ total time between stops
Total time at stops = 60 min. Total time between stops = 60 min
Total Time Employee Spent Delivering = 60 min + 60 min = 120 minutes

Incentives and Their Effects

One of the main ways that WDS gets its drivers to work efficiently is through a series of time studies that are done every two years. An industrial engineer performs a "ride along" with a driver

for three days. During this time, virtually every aspect of the route is measured for accuracy. These factors include traffic patterns, buildings and residential locations, increases or decreases in area population, road improvements, and average stop counts. These numbers are then compared to other routes in similar cities and a variance and standard deviation are calculated. From this study, industrial engineers are able to determine the amount of hours it should take a driver to complete a route within the standard deviation. Each day the drivers are told what their planned day will be, and this number is generally based on how many stops they have.

Drivers can then choose to try to "outperform" the day's plan for a performance bonus. An example of this is when a driver is told that he/she will have a ten hour planned day; if he/she is able to finish in eight hours he/she will still be paid for ten. The result is a paid bonus of two hours that is added to his/her paycheck at the end of the week. Most drivers feel that they have to walk and move very quickly in order to achieve this bonus. WDS benefits from this because their customers receive their packages earlier and the trucks are not on the road as long, reducing maintenance costs. Some of the newer drivers are motivated by the current overtime rate that is $35.35 per hour. The newer drivers are only hired from either the Night Sort or Preload operation, both of which average only $15.00 for overtime. The large increase in hourly overtime motivates the new drivers in the short term.

As with the Night Sorters and Preloaders, drivers also have their information posted, and if performance problems occur then they are "written up" by management. If their performance problems continue, then management can choose to suspend the drivers. Most drivers don't like the long hours that they have to put in each day. They often complain about feeling overworked and that safety is an issue when they work long days. Some of the safety issues include muscle fatigue (knees, back, arms) and not being able to think clearly when driving because they are tired. Many times this results in grievances that are filed by drivers who feel they are overworked.

INCENTIVE STRUCTURE

WDS utilizes an incentive system to motivate all of its employees. Managers at WDS are motivated to perform with stock options and salary, and also advancement, responsibility, and recognition. Union workers (drivers and sorters) at WDS are motivated to perform primarily by salary, overtime, performance bonuses, and health benefits. The primary incentive for both managers and union workers is money. Monetary incentives for managers come from stock options, and for union workers they come from overtime.

There is a lack of social recognition for the drivers, sorters, and preloaders at WDS. Many drivers have felt that they are not recognized enough by managers at WDS. Their only recognition for performance comes in the form of monetary incentives.

VIGNETTE

Mike has worked at WDS for eight years. He started out as a sorter in the Preload shift, and after four years he advanced to a full time driver position. He is currently happy with the money that he earns as a driver and is able to provide his family with a comfortable lifestyle. Last year, he made $63,000. He is at the top of the driver pay scale and currently earns $23.50 per hour. Much of the money that he made last year came from overtime, currently $35.35 per hour, that he receives for working anything over eight hours. Although he likes some overtime, he has recently seen a gradual increase in the amount of overtime that he has to work each day. Mike's delivery truck, like many of his coworkers' trucks, is very old, and his seat is very uncomfortable causing his lower back to hurt after eight hours. Mike recently told his wife "I don't understand why a company like WDS can make $30 billion in revenue a year and not upgrade our trucks." Many drivers complain that the trucks are in poor condition and should not be on the road.

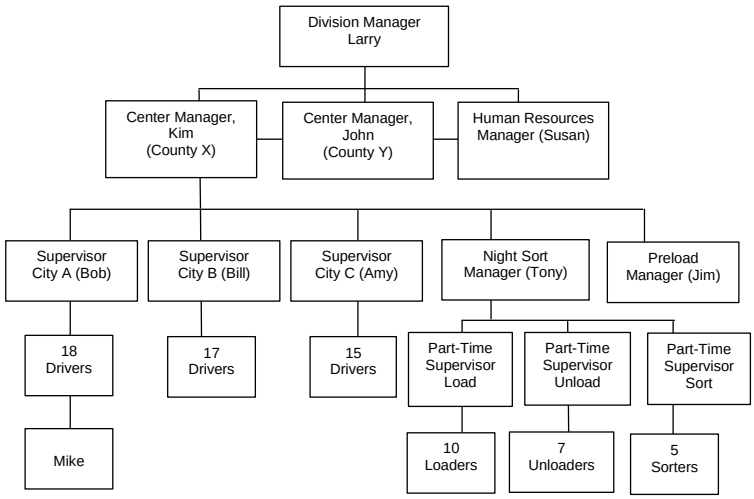
Mike has heard from coworkers that the reason they have been receiving more work is because managers are trying to condense the drivers' routes. Management feels that having fewer drivers on the road will result in more money that will be saved. One manager was recently heard saying "We don't mind paying overtime. It costs us a lot less than having to pay health benefits and vehicle maintenance for having extra drivers delivering."

Since WDS became a publicly traded company two years ago, many of the center and district managers have received pressure from upper management to increase productivity numbers and lower the amount of overall hours worked in each delivery center. By increasing drivers' productivity and lowering the amount of overall hours worked, upper-level managers are hoping to see a decrease in each of the centers' costs, leading to an increase in the company's earnings per share (EPS). Since the company is now public, upper-level managers need to really show improvements to shareholders, many of which are large mutual fund companies, to prevent them from selling their stock. In a recent meeting the regional manager said, "We need to get our first quarter earnings per share (EPS) up, so do whatever it takes."

Kim is the center manager for Mike's building (Exhibit 4) and many of the drivers go straight to her when they are experiencing problems with their route. Although Mike's supervisor is Bob, Mike always feels that issues get addressed faster when he goes straight to Kim. Mike recently went to speak with her about the increased amount of overtime he has been working. She told him that she understood and would try to keep his stop count down to reduce the overtime. She also explained to him that she had her hands somewhat tied. "Upper-management is giving us totally unrealistic goals; if I don't come close to meeting my numbers I could lose my job. Larry has really been putting the pressure on me lately," she said. Mike said he understood her difficult position and left the meeting feeling frustrated. He knew that if she did not meet her numbers she would lose a bonus in stock options, but most likely not her job. This is one of the ways that WDS motivated managers to achieve their quarterly numbers. Managers who do not reach their expected production

numbers are transferred to different locations. A location change could mean that a manager has to sell his/her home and have his/her family move to a new area. A manager's job assignment often changes if poor performance continues. For example, a manager with poor performance numbers might have his job switched from the day shift to a morning shift that starts at 2:00 a.m. A peer review determines how good the manager's relationship is with subordinates. A poor review will also have a negative effect on the manager's yearly pay raise.

Exhibit 4: Internal Operation Structure for North Division



A few weeks went by and Mike noticed a small improvement, until the beginning of his current work week. Mike came to work at 8:00 a.m. to start his day and noticed right away how full his truck was. The preloader who loads it told him that he had 90 stops on it today. Mike became upset the moment he heard this because yesterday he only had 75 stops on his truck and it took him a little more than nine hours to finish his route. Mike's route is along the coast and much of his time is spent driving. An extra 15 stops today meant more than one and a half hours of extra overtime.

Mike walked over to Kim's office and told her that he was looking at an 11-hour day with the amount of stops he had on his truck. She said "Sorry, you are just going to have to do your best. I have been told not to put any more drivers on the road today. You are the only one who really knows how to do this route well anyway. I know that it is going to be a long day for you, but you

are not the only one." Today was one of the worst days that this could have happened to Mike because it was his one-year wedding anniversary. He had hurried the day before to get the route done in under nine hours because he wanted to receive the bonus that drivers get if they finish their route under the planned time. Mike noticed that whenever he got a bonus that the next day he would be given more stops on his route. Mike was determined to finish this day in 9.5 hours so he could get home to his wife and take her out to dinner. He moved quickly most of the day and often jogged back to the truck after each stop in order to save time. Toward the end of the day Mike had completed 80 stops and was feeling good that he would finish on time and even get a bonus.

After his 80th stop, as he was hurrying back to his truck, Mike felt his ankle twist to the side as he climbed into the truck. He immediately dropped to the ground in pain grasping his ankle. The ankle hurt so bad that he could barely even push in the clutch to drive his truck back to the center. Using his DIAB, he sent a message to the center explaining his injury. He received a reply back saying "Can't you just walk a little slower and finish up the 10 stops that you have left? We don't have anyone to send all the way out there; you are the only one who really knows the route." Mike was furious when he got back to the center. He had worked an extra hour through the pain to finish the remaining 10 stops. He felt that his supervisor, Bob, was more concerned about getting the packages delivered than he was for Mike's ankle. Mike became very upset as he thought about it while waiting for a supervisor to fill out an injury report for his ankle.

He told Joe, a co-worker, what had happened to him that day. Joe, who has worked at WDS for 27 years, looked at Mike and said "I always see this with the new drivers! Don't you understand that the harder you work for a bonus, the harder WDS will make you work? All management cares about is getting packages delivered and out of the building. They don't care about us. Don't kill yourself trying to beat the DIAB and get a bonus. You will just end up getting hurt. Trust me I know. Around here the only thing that matters is seniority. We are Union. Remember that. If you feel like they are treating you unfairly, all you have to do is file a grievance." Mike went home that night wondering if he should start looking for another job.

DISCUSSION QUESTIONS

1. Describe the major issues presented in the vignette and prioritize the issues in terms of importance. How closely do they affect each other? Do you feel that any one issue is more important than the other? If yes, explain your answer.

2. Is Theory X the best motivational approach for WDS to use in order to increase the performance of employees? Would it be possible for a low cost leader, such as WDS, to remain competitive with another motivational approach?

3. How effective is WDS's current productivity measuring system? What are some better ways that WDS could measure driver productivity instead of "ride alongs"? How could teams be used effectively in this work environment?

4. Could Mike's injury have been prevented if there was no incentive plan in place? As a manager, how would you go about raising safety awareness for the drivers of WDS? If you had to form a safety committee, how would it be structured based on the organizational structure of WDS?

5. Using current theories of motivation, describe how WDS could motivate its employees instead of using monetary incentives? What would be a good way to motivate Joe given his perception that, "the harder you work for a bonus, the harder WDS will make you work"?

6. Develop two or three questions that you think would be a good basis for a class discussion on this case study.

THE GREEDY SEVEN

Wendi Boyles, Henderson State University
Carl Stark, Henderson State University
Toney Livingston, Henderson State University

CASE DESCRIPTION

The primary subject matter of this case concerns a salary increase and the internal and external compensation alignment of a university. The equity-theory helps explain the conflict that exists between the faculty members.

To assist in their analysis, students are provided with a timeline of the critical events of the case and comparison compensation tables. Students are asked to answer four questions that include solutions to management issues and a recommended long-term solution. This case has a difficulty level of four. The case is designed to be taught in two class hours and is expected to require approximately three hours of outside preparation time by students.

CASE SYNOPSIS

The case depicts a business school dean's attempt to raise the salaries of seven School of Business faculty members to the 25th percentile salary level of AACSB accredited institutions. This was an important step to retain valuable employees and ensure reaccredidation in 2007. The salary proposal created an uproar among the non-business faculty at the university. They felt the School of Business professors were already among the highest paid employees at the university. To make matters worse, this situation occurred during a financial crisis as many other employees were denied raises and several employees were laid off due to budget constraints. The problem is exacerbated by the lack of a clear pay policy and by serious constraints posed by the institution budget and state funding. This case illustrates the importance of internal and external compensation alignment within an organization. The President of the university and the Board of Directors are faced with the enormous challenge of creating cohesiveness among the faculty despite their irreconcilable differences. Their actions and decisions will shape the fate of the School of Business and the overall university

THE GREEDY SEVEN

J. Stacy Adam's Equity Theory of motivation, developed in 1963, helps managers understand the importance of their employee's perception of his or her input/output ratio. These individual

perceptions are formed by the employees' judgments of what constitutes a fair balance of rewards for their level of exertion on the job. Employees expect their level of compensation to be a fair reflection of their level of effort. Employees consider their education, experience, time, job duties, commitment and other factors as their input to an organization and expect a fair balance of outputs in the form of salary, benefits, bonuses, recognition or other types of rewards. Employees then compare their ratio with those of co-workers or others in the marketplace. This balance or imbalance plays a major role in the employees' morale and productivity. If employees feel that equilibrium occurs, they will be satisfied with their job and be motivated and productive. If payouts or their balance perception do not match expectations, employees will react negatively. Imagine if you had the same job responsibilities, education, and experience as your co-workers, but you recently learned that their salary was a lot higher than yours. On top of the fact, some of those co-workers were possibly going to receive a raise while your salary has not increased beyond the traditional standard of living adjustment. Would this information affect your morale and productivity? Employees who find themselves in this position have a couple of options to bring balance to their weighted situation.

In September 2002, Dr. Bill Johnson, a finance professor at Turrentine State University, was asked for the second time to apply for a department chair position at Central State University. He had been very unhappy about his current salary at TSU for a long time and was ready to make a change. He informed Dr. Mark Smith, the dean of the School of Business at TSU, about this opportunity and said that he would apply. Dr. Smith realized that several professors were also frustrated with their salary, so he immediately began working on a salary proposal to maintain TSU's competitiveness with other schools in the region.

The TSU School of Business faculty and staff had worked for over a decade before being accredited in February 1998 by AACSB International - the Association to Advance Collegiate Schools of Business. Requirements to become an AACSB International accredited school are very demanding, but the faculty believed that this was an important step toward the success of the school's future. In November 2002, Dr. Smith met with the TSU vice-president of academic affairs, Dr. Rob Downing, to present a salary proposal that would need to be completed before the AACSB re-accreditation team's visit in Fall 2007. One of the essential improvements outlined in the proposal was to raise the salaries of some of the most published and hard working professors from the bottom tenth percentile salary level across the nation to the bottom twenty-fifth percentile. According to the 2003 AACSB International salary survey comparing all of the accredited schools, the dean was the second lowest paid dean, the associate dean was the lowest paid associate dean, and several professors were among the lowest paid in the nation. The written proposal included raises for the dean, the associate dean and five highly marketable professors. The proposed faculty raises amounted to approximately twenty percent spread over two years. To put the finishing touches on his proposal, Dr. Smith asked the five faculty members if they would commit to a five-year contract; they all agreed.

Being a little apprehensive that his salary increase would not be approved, Dr. Johnson applied for the position at CSU in December and was scheduled for a campus visit in February. Dr. Sally McBrian, a management professor, also received a job offer from Everglades State University and was deeply considering leaving TSU. After a month of negotiations, Dr. Alan Foster, president of TSU, finally approved the raises in January 2003. The final approval stamp would have to come from the board of trustees, who would meet at the end of March. The board of trustees has always supported the president's decisions in the past and Dr. Foster felt confident that this one would be accepted as well. After receiving the news of the salary increase, Dr. Johnson withdrew himself as a candidate for the CSU position, and Dr. McBrian declined her offer at ESU.

A financial crisis has existed at Turrentine State University for the last couple of years. Since Turrentine is a state funded school, the economic situation of the country greatly impacts the university. In that fiscal year alone, the state reduced the university's funding by one million dollars. The university budget committee had faced several challenges during the last couple of years, including tuition increases for students and no pay raises for most of the faculty and staff. However, the committee was committed to keeping Turrentine competitive for the students as well as the faculty. During the monthly cabinet meeting in January, the annual budget for the upcoming fiscal year was submitted to Dr. Foster without the School of Business salary increases. When Dr. Foster questioned the issue, the vice-president of financial affairs stated that he had never seen the approval for the salary increases on paper. The budget was quickly corrected and presented to the budget committee the following week.

The budget committee, which is comprised of all of the school deans, representatives of the staff and faculty senate, and the faculty senate president, did not give much response during their monthly meeting on March 6. However, several faculty members from the other academic areas met together to discuss this questionable issue. They felt that the School of Business faculty members were already among the highest paid employees of the university and did not understand why the salary increases were approved while TSU was experiencing such a financial strain (refer to Appendix B).

The faculty members from the other academic areas felt the raises were inappropriate for those selected employees because their job description was the same as those professors within the School of Business. Faculty members from all departments are involved in teaching, grading, advising, serving on school committees, and researching. They felt that their paycheck should justifiably represent their equal contribution to the university. They felt outraged that these selected School of Business professors were getting a substantial raise during this time of financial hardship. Several faculty and staff members from other departments had been declined a raise for the past couple of years or even laid off. The dean of the School of Business empathized with their viewpoint but held a different perspective. Dr. Smith knew that all university departments, especially the business department, are market-driven, and that business professors could make a lot of money using their specialized degree in the outside world.

Comparing salary data from accountants, computer programmers, financial planners, and business consultants, Dr. Smith knew that he had to make the university's salary competitive in order to keep TSU's professors from leaving the university to go somewhere else or leaving the teaching profession all together. He felt that the seven faculty members chosen to receive the raise had proven themselves to be very valuable to the department. He knew that their students had gained a lot from their knowledge and experience and felt that the business department would suffer from their departure. Dr. Smith also knew that the current salary structure was still within the lowest ten percentile in the nation. He feared that TSU would not be able to replace the current faculty members with qualified professors with such experience. Instructors can be the core strength or weakness of a college, and he worried that a number of unqualified professors could damage the school's reputation and could potentially defeat AACSB reaccredidation and begin the demise of the entire School of Business.

This colossal difference in opinion started a big uproar at the university. Several faculty members started sending nasty e-mails to each other, calling names, and starting rumors across campus. The five professors, the dean, and the associate dean from the School of Business were labeled "The Greedy Seven." The other School of Business professors not included in the salary proposal also questioned the issue. Why were only seven professors selected to receive a raise? This division within the School of Business resulted in an "internal" battle which affected working relationships, morale, and productivity. Friendships were broken as professors took their stand on the dividing issue. Students were also involved in this debate by expressing their opinions in the school's newspaper and on the school's radio station. Inappropriate cartoons depicting the two viewpoints were illustrated in the school's newspaper. A group of students organized a protest rally in front of the School of Business building and invited a local news team to cover the story. This outside publicity affected the community's image of the university.

Dr. Foster attempted to defend his decision by reminding the budget committee that the decision on the salary increases was almost identical to the process that had been followed nearly two years earlier, when the Department of Nursing almost lost five nursing faculty because their salaries were so far below market rates. If the board had not acted then, Turrentine probably could not have maintained a nursing program, or, at the very least, it would have been a substantially weaker program.

The faculty senate, comprised of representatives from the different academic departments, requested permission to address the Board of Trustees at its monthly meeting on March 31. During the meeting, several faculty members presented cases to the board explaining their opinions about the budget situation. However, the presenters also brought up a lot of irrelevant information about the School of Business, Dr. Foster, and the University. For example, personal attacks were made on Dr. Foster concerning several decisions in the past and on the accounting faculty members for the lack of currency in their CPA certification. Tensions filled the room as emotional appeals for and against the raises were declared. In concluding their remarks, the disputing academic areas

presented a resolution concerning the salary adjustments and asked that the administration and Board of Trustees rescind these disproportionate raises.

After a short break to discuss the situation, the chairman of the board read the following decision: "We are supportive of the School of Business, especially as to maintaining its AACSB International accreditation. We recognize that salaries need to be raised to more competitive levels. The timing of the salary increases is inappropriate, due to state budget constraints. We recommend that the administration postpone this action at this time and we instruct the administration to investigate avenues whereby we may achieve these goals for 2004-2005." A motion to approve the board decision passed. This was the first time in Turrentine history that the Board of Trustees had overturned one of Dr. Foster's decisions.

Ironically, the faculty senate met on April 21 to organize another resolution to present to the Board of Trustees at their April meeting later that week. This resolution stated that an academic journal had given Turrentine State University the worst rating in the state for faculty salaries and benefits. Therefore, the resolution further asked for the Board of Trustees to give serious consideration to taking all possible steps to increase faculty salaries in order to be competitive with other universities in the region.

During the April Board of Trustees meeting, the 2003-2004 academic budget was finally approved. In this budget, Dr. Bill Johnson and Dr. Sally McBrian did receive market adjustments to their salaries because they had turned down opportunities elsewhere. The other five members of "the Greedy Seven" did not receive pay increases. The budget did not permit general salary increases except for employees receiving promotions outlined in the *TSU Faculty Handbook*.

Dr. Foster responded to the budget approval by providing the following comments: "I am very troubled by the animosity that has been displayed on campus during the last several weeks. Many statements regarding the School of Business salary issue have been very personal and have made an important group of our colleagues feel unwanted and unappreciated at Turrentine. This does not refer just to the seven colleagues who would have benefited from a salary increase. I believe most faculty members in the School of Business interpret many of the statements made during the current debate to indicate that their function is not valued at Turrentine."

While Dr. Johnson did receive his salary adjustment, he decided to contact CSU and re-apply for the position. He received the job offer and signed a contract with CSU for the next fall. Dr. Johnson said, "I do not trust the administration at TSU anymore. This has turned into an integrity issue." Several other faculty members feel very under appreciated and hurt by the actions and words during this ordeal. Many are considering looking for other job possibilities in the future. If Turrentine is unable to recruit or maintain faculty members at the university, it faces losing accreditation of several schools, which could jeopardize the future of the university.

The final budget for the next fiscal year was approved on June 5, 2003. Ironically, the Board of Trustees reversed their decision and approved the salary adjustments for the seven faculty members from the School of Business. However, the university had already felt the consequences

from the situation. The dean of the School of Business applied and accepted a teaching position at another university. Several professors from the School of Business are also frustrated and are currently looking for other jobs. While seven professors were included in the "Greedy Seven", there were twelve business professors who feel that they should also deserve a raise but were not included in the salary proposal. While the university overall experienced turmoil, the School of Business also experienced an "internal" turmoil. This perceived unequal reference ratio of the "Non-Greedy Seven" professors could affect the morale and productivity of the department. If improvements are not made in the School of Business, it could face losing AACSB International accreditation in 2007.

Dr. Alan Foster is still in charge of the university. His authority has not been challenged since this situation, and he has maintained his good relationship with the Board of Trustees. However, the reputation of TSU has been damaged as outsiders have observed the university in turmoil. Dr. Foster will have to work hard to recreate a condition of stability for the university and rebuild morale. The TSU Public Relations Department currently has a new advertising campaign for the university in hopes to improve the university's image.

Decision Point - The search has begun for a new dean for the School of Business. With the recent uproar at the university, the search committee may have a difficult time finding a qualified dean who will accept this challenge. What would you recommend to the new dean as he tries to improve morale and bring a sense of balance to the reference ratio of his employees?

INSTRUCTIONS TO STUDENTS

Based on your knowledge of the Pay Equity Theory and using the provided appendices, evaluate the Board's decision relative to the proposed salary increases for the seven School of Business faculty and administrators by answering the following four questions:

Using the equity theory, discuss and rationalize the non-business faculty members' actions toward the salary adjustments for "The Greedy Seven".

1. In the conflict aftermath, what can the administration do to rebuild morale and reunite the academic areas to allow them to work together as a team?
2. Is the compensation plan of Turrentine externally and/or internally aligned? Explain your answer.
3. Should the administration try to externally or internally align the compensation plan? Explain your answer.

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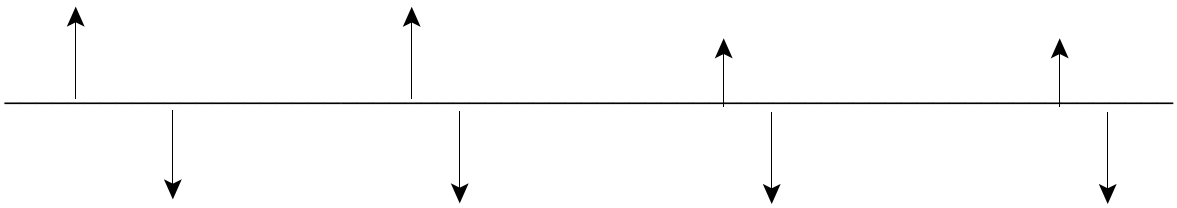
APPENDIX A

Table 1: Name & Title Chart
(In order presented in case)

Name	Title/Position at TSU
Dr. Bill Johnson	Finance Professor
Dr. Mark Smith	School of Business Dean
Dr. Rob Downing	Vice-President of Academic Affairs
Dr. Sally McBrian	Management Professor
Dr. Alan Foster	University President

APPENDIX B

September 2002	***January 2003***	***March 31, 2003***	***April 21, 2003***
Dr. Johnson & Dr. McBrian consider other job offers	Dr. Foster approved the salary increases	Announcement of approx. 1 million state budget cut	Faculty Senate meeting- resolution to raise all salaries



November 2002	***March 6, 2003***	***March 2003***	***April 24, 2003***
Dr. Smith met with Dr. Downing	Budget Committee meeting – Controversy begins	Board of Trustees meeting-Decision was reversed	Board of Trustees meeting-Dr. Johnson & Dr. McBrian received raises

APPENDIX C
Salary Comparisons

Table 1: School of Business Mean Salaries vs. TSU Mean Salaries				
PROFESSOR	2002-03	2003-04	2004-05	2005-06
School Of Business	$65,900	$70,700	$75,900	$81,800
TSU	$57,600	$57,600	$59,300	$61,600
ASSOCIATE				
School Of Business	$64,500	$66,100	$71,100	$74,800
TSU	$49,100	$48,900	$51,800	$54,500
ASSISTANT				
School Of Business	$59,500	$62,500	$65,400	$63,700
TSU	$39,500	$40,300	$40,800	$42,200
INSTRUCTOR				
School Of Business	NA	$38,000	$38,000	$39,800
TSU	$37,000	$36,100	$37,000	$37,500

Table 2: AACSB Mean Salaries vs. TSU School of Business Mean Salaries				
PROFESSOR	2002-03	2003-04	2004-05	2005-06
AACSB	$106,700	$108,900	$113,700	$117,100
TSU School of Business	$65,900	$70,700	$75,900	$81,800
ASSOCIATE				
AACSB	$84,000	$86,200	$90,100	$93,700
TSU School of Business	$64,500	$66,100	$71,100	$74,800
ASSISTANT				
AACSB	$81,500	$84,400	$87,900	$91,000
TSU School of Business	$59,500	$62,500	$65,400	$63,700
INSTRUCTOR				
AACSB	$50,400	$50,600	$53,700	$53,600
TSU School of Business	NA	$38,000	$38,000	$39,800

Table 3: School Of Business "Greedy Seven" Mean Salaries vs. "Non-Greedy Seven" Mean Salaries				
School of Business "Greedy Seven" Mean Salaries				
	2002-03	2003-04	2004-05	2005-06
PROFESSOR	$73,400	$82,900	$92,300	$94,800
ASSOCIATE	$77,100	$82,500	$84,200	$83,600
ASSISTANT	$61,600	$68,900	$75,100	NA
INSTRUCTOR	NA	NA	NA	NA
School of Business "Non-Greedy Seven" Mean Salaries				
	2002-03	2003-04	2004-05	2005-06
PROFESSOR	$60,800	$62,100	$60,700	$66,000
ASSOCIATE	$52,500	$62,100	$66,800	$69,000
ASSISTANT	$57,500	$59,300	$60,500	$63,700
INSTRUCTOR	NA	$38,000	$38,000	$39,900

ROLLING THE OATS

Graham Elkin, University of Otago, New Zealand

CASE DESCRIPTION

This case concerns the arrival of a Chief Executive in a small private company and his need to take stock of the company, and with the information that is available, plan a systematic collection of data, review the position and develop a strategy for the future. The case also deals with the development of a small business and in a minor way with some organizational development issues. The case is suitable for a number of levels of use from undergraduate to post- graduate and post experience (MBA) classes. The level of answers and analysis will vary with the level and previous understanding of business. Part One could take two class hours, Part Two three hours and Part Three three hours. The first part allows the student to consider being suddenly responsible and having little information or resources. They are invited to consider what to do first, then to plan the collection of systematic quantitative and qualitative data and the implementation of some way forward. Part Two provides information for the next three years and allows comparison of the student's ideas in Part One with what actually happened. Part Three moves on to consider the way forward for the restored company- based on the actual position.

CASE SYNOPSIS

Stuart has just arrived as the Chief Executive(CEO) of Harraways and Sons Ltd (Harraways) a small 100 year old family business. The main activity is the processing of oats into breakfast foods, and then distributing them directly and indirectly. (The processing of oats into porridge requires rolling the oats with large rolling machines- hence the title of the case!) It is a challenging environment in a difficult remote location. Stuart needed to rapidly assess the business and then plan for systematic data collection and work out how to preserve and grow the business. There is incomplete data, which is typically the case in small companies. The case begins in May 2001 when the CEO (who arrived in 2000) is asked to provide a strategy paper for his Board of Directors. Part One concerns an initial appraisal of the business and asks students what the CEO should do in that situation in 2001. Part Two is concerned with 2000- 2003 and asks students to compare what the CEO did with their suggestions from Part One. Part Three concerns the period 2004 – 2006 and brings students up to date. Current information is available on the company website.

PART ONE: WHAT SHOULD STUART DO?

At the end of May 2001 Stuart Hammer had been CEO of Harraways in Dunedin (New Zealand) for 12 months. He had been reviewing the company and had now been asked to prepare a strategy document for the Board suggesting ways to safeguard the future of the company. Stuart was 45. He had spent most of his career in production and operations management positions within the textile industry. Before joining Harraways he had been the General Manager of Alliance Hand Knitting Yarns – one of 4 autonomous textiles mills within the Alliance Group. In the late 1990's, the hand knitting wool division was amalgamated with Coats Patons NZ and Australia and a new company – Coats Spencer Crafts was formed.

The new company, under the management of a Coats senior executive as CEO had the initial tasks of relocating the Coats Thread distribution from Auckland to Dunedin; closing the Launceston (Tasmania, Australia) manufacturing facility and shifting the plant to Mosgiel (Dunedin); establishing a sales and marketing division and team in Melbourne (Australia) and installing a new IT system replacing the three stand alone computers.

Volatile New Zealand foreign exchange rates, lower priced imports, increased local and national compliance costs and restrictive trade legislation made the market conditions for textiles very difficult. Eventually the company assets and brands were sold and the division closed. Stuart presided over the closures. As a result of these experiences Stuart decided he wished to work for a company that was local and free from large corporate interference. Having looked at Harraways he refused another offer in the hope that he would become the CEO at Harraways.

HARRAWAYS BREAKFAST FOODS

Harraways began in Dunedin (in the South of New Zealand) in the 1870s. The business was established as a flour mill but early in the 1900's began oat processing as well. At its peak it was the largest flour miller in the South Island of New Zealand.

In 2000 the main activities consisted of oat processing, flour milling and stock food manufacturing. Retail oat products for the breakfast cereal market were sold to supermarkets throughout New Zealand under the Harraways brand. The company also processed oats for use in generic supermarket brands. It also produced branded flour and supplied the local area with a small range of stock food products.

Harraways is a traditional private company with family members as major shareholders. Although profitable the level of dividends needed to be raised to give an acceptable return on investment. The practice had been to divide the Net Profit after tax between the shareholders (30%), tax and retained funds for business development. Stuart believed Harraways' had the potential to improve the return for shareholders.

PRODUCTION AND OPERATIONS

Harraways entered into annual contracts with a small number of local farmers in the Otago and Southland areas (remote rural locations in the south of the South Island) to grow grain on a season by season basis. The grain was mainly oats for milling and a little wheat. The contracts specified the area of land planted. Oats are a once each year harvest, but the demand for oats continues during the whole year. Climatic conditions are critical to ensuring industry standard yields are achieved in each year. Dry summer conditions or excessively wet periods without sun cause problems with yield. Oats also need to be a particular size for milling. The quantity produced of the right size varied from year to year.

Imported oats were different in taste from oats grown locally. Harraways adds a kilning process (cooking) that also gives a slight nutty taste to the oat flake.

Oats can be batch processed on demand. The response time to meet urgent orders was very short. Output levels are varied by overtime working in addition to the regular two shift structure. Casual labour was employed from time to time. Stock control was by way of visual inspection. The original flour mill buildings, only used for stock food processing, were in need of some tender love and care!

PROFITABILITY AND MARKET POSITION

Although all aspects of the business faced a competitive environment, flour milling in particular was very competitive. The major competing flour producers had very high volumes and were often integrated into businesses that used the flour in baking bread and other products. Harraways' flour production was for retail sale only. The local market in the south of New Zealand was tiny. Auckland was four days away by road. A four hour ferry trip is involved between the South and North islands of New Zealand. Auckland was the home of the largest population in the country with over 1 million consumers out of a total population of 4 million. Consequently, flour had low gross profit margins, made a minimal contribution to overheads, and generally a very small or negative contribution to the profit of the overall business.

The gross margin on bulk commercial oat products varied as the exchange rate with the Australian dollar sometimes favoured importers. However, commercial oat production was a large market untapped by Harraways. The company had a 16% market share of the branded oat breakfast cereal market. The retail outlets had largely consolidated to become two large chains and a few smaller players. The bulk of the rest of the market for oats (porridge) was serviced through Goodman Fielder a largely Australian company with the strong Uncle Toby brand. They also owned the Cremoata brand which had been a New Zealand icon.

The total hot and cold breakfast cereal market in New Zealand was worth about $170 NZ million

DISTRIBUTION, MARKETING AND MANAGEMENT

The Company distributes product directly from its plant in Green Island (Dunedin) and through a warehouse in Auckland. The Sales Manager was in general, responsible for relationships with retail customers.

The management style of the Company was traditional. Many of the staff had been with the Company for over 10 years and had a wealth of knowledge. The Company had a "unionized" employment contract that did not always meet the needs of the Company or its employees.

THE COMPETITIVE ENVIRONMENT

Stuart was aware that there was increased demand for added value products and convenience products. Single serve sachets of porridge and porridge with fruit additives were becoming more popular. The popularity of oats and porridge based breakfasts as a health initiative, due to oats lowering cholesterol and having a low glycaemic index, was beginning to grow. There was also growth in demand for oat based muesli bar products and a general upsurge in healthy eating habits. Harraways also had a small traditional organic range of oat products. In order to be certified organic, the production lines needed to be completely cleaned before producing organic products the cleaning times between producing ordinary products and organic products were excessive compared to the small volume of organic products they were producing. At this time, the demand for organic products was also increasing and the brand/packaging might have export potential.

CONCLUSION

Stuart concluded that Harraways was in a reasonable position for the short term. There were no losses or borrowing. There was not a crisis situation in the short term. It was the medium and long term direction that needed to be addressed. Stuart needed to put together a tentative report for the Board about his initial thoughts and some ideas for priorities in the use of his time and energy. Perhaps that would clarify his thinking!

The Board would like to increase dividends to reasonable level of return on their investment. A long term rate of return of between 15 and 20% was considered acceptable and an achievable target

QUESTIONS

1. What should Stuart do next? Include the categories of information that he should seek and describe the processes he should go through to obtain them.
2. Outline the possible areas for action over the next year or so.

EXHIBIT ONE
HARRAWAYS BREAKFAST FOODS
ORGANIZATION STRUCTURE

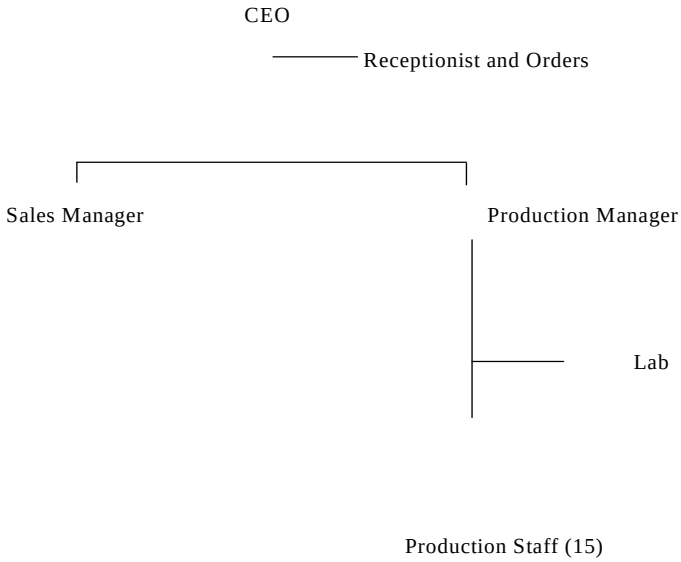


EXHIBIT TWO								
SALES AND CONTRIBUTION TO PROFIT (in $000s)								
Flour								
	1993	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Sales	1,000	1,000	1,200	1,200	1,200	2,800	2,800	3,400
Contrib	-28	-6	150	80	-60	-120	-130	-30
Stock food								
	1993	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Sales	150	200	300	300	200	201	160	120
Contrib	-60	-30	26	36	34	26	0	0
***Oats**								
	1993	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Sales	4,000	4,400	4,000	4,300	4,200	4,200	4,800	4,800
Contrib	1,400,	1,400	1,200	1,400	1,300	1,400	1,350	1,400
* In order to hide commercially sensitive data the Oats figures are illustrative (not actual). They are however a good representation of the real situation.								

PART TWO (2000-2003): WHAT STUART DID!

Stuart needed to systematically review the business and then plan the way ahead. The business was basically profitable and so there was time to think about things without the need to take immediate action. However the Board would like to pay increased dividends so as to provide an increasing return on investment to shareholders.

Sales, operational planning, financial forecasting and management in general needed some Key Performance Indicators. They would be used as measures of how well Harraways was doing.

Stuart decided to look at: Historical company trends. He set out to consider: the contribution to profit for oats, flour and stock food; Harraways possible markets; current and potential customers; possible exports; the products, production processes and plant; rationalization and expense control; and the way things were managed and led. However information often does not arise in a neat format as he investigated other issues arose. One of the first areas to look at was the products that Harraways made.

PRODUCTS

Flour

Harraways had grown as a flour miller. The competition had become stronger and gradually resolved into two major food groups who as well as being millers, were also integrated businesses with bread and other food manufacturing activities. They had national distribution networks and enjoyed economies of scale. The overwhelming bulk of the New Zealand market was in Auckland (1.2m people) and the rest of the North Island (2m). In the South Island 400,000 people lived in Christchurch and only another 400,000 lived in the Deep South (where Dunedin was situated) Dunedin was around 120,000 people. Geography and demographics were against supplying flour from Dunedin. The market was driven largely by price. Harraways flour operation generally made a negative contribution to the Gross Profit of Harraways. Exhibit one shows sales and contribution to the profit of the business from flour. Ceasing flour milling made more space available and would one day allow for a reorganizing of processes.

A decision was made to exit this business in 2002. Harraways ceased milling flour early in 2003. One small part of milling flour was a specialty nutritional product added to the Health Food product of another company. The equipment was sold to that company for in excess of $60,000 above the recorded book value. Even with more of the overheads being attributed to oats and stock food the effect on the balance sheet was positive.

Stock food

Stock food was manufactured from second quality oats. They were usually too small and were not suitable for flaked oat products. In 2001 around 10% of the oats were seconds. The market for stock food was erratic, depending on drought conditions. Every 10 years or so there would be an extreme drought and sales of stock food would boom as farmers were unable to feed their stock with grass. Those years were difficult to predict. The contribution to profit from stock food was very small in most years. (Exhibit One). From 2001 a food technologist was employed and conducted more thorough tests of incoming oats. Harraways raised the Quality Control standards for receiving oats and seconds declined to 2% of the oats received. These are sold to a stock food manufacturer or to local farmers. Harraways exited this market in 2003 with no major effect on overall profitability

Oat Products

As the flour and stock food were loss making, Harraways were going to be reliant on oat products or some other activity. In 2000 Harraways output of oat products was 90 % for retail sale and 10% commercial. The commercial market was made up of manufacturers wishing to use Harraways oats in their products and of bulk packages not usually sold through retail outlets. A conscious attempt to raise the commercial volume was made. Commercial oats are supplied in large bulk packs or sacks. There were about 20 retail products and some wholesale lines as well. Production of generic own brands for the main supermarkets was 10% of the business in 2000 and rose to 15% by 2003.

Sales of organic oats have grown slowly over time. The single production line at Harraways had to be cleaned down before every small batch of organic products to avoid non-organic contamination. This makes the process expensive. In 2003 the Fruit Harvest range and flavored oat single-serve products also joined the range.

The sales and contribution to profit of oats to the company are in Exhibit One.

MARKETING

Another priority for Stuart was to develop relationships and an understanding of the current and future customers. An extensive series of visits to the customers began to build these relationships. The 2003 retail market share for Harraways was 16%. Over the period to 2003 Harraways grew faster than the annual 6% growth in the cereal breakfast market. The retail market share reached 18% in 2003

The main player in the oat industry (Flemings) were taken over by an Australian company and closed in 2001. For a number of years the factory remained standing and the brand was produced

in Australia and imported to New Zealand. Consumers were unaware of the closure. TV campaigns in 2003 and 2004 were aimed at raising the awareness of Harraways. In the same period magazine, radio and give-away campaigns raised the awareness of Harraways. Harraways spent more than 5% of sales on those campaigns. Packaging was developed in cooperation with an agency involved. Margins dropped 15% (primarily due to increased commercial sales at lower margins -considered more of a commodity product) but increased volume more than made up for the decline, bringing a positive benefit to the Profit and Loss Account.

EXPENSE CONTROL AND FINANCIAL MATTERS

The accounting is done by a contractor off site. The ordering of products and billing was carried out at the factory under Stuart's supervision using a PC. A review of expenses showed no extravagance or large scale waste.

PRODUCTION, OPERATIONS AND DISTRIBUTION

When appointed, Stuart immediately introduced a sales forecasting and a stock control system utilizing the business's second PC. Stock control had been by visual inspection of physical stock in the warehouse. Batches of oats can be rapidly produced – almost to demand using a handful of different raw materials (different oats and a small number of other ingredients). Historically oats came in 50 kilogram bags or bulk in railway trucks, the sides opened and the oats poured on the ground to be hand moved into adjacent hoppers. The methods were not as crude in 2000 but the site was congested in the extreme. In 2002 the production manager resigned and was replaced.

Contracting with farmers for supply of oats is done at the time of planting. The contracts are for the year after the one being planted. The yield varies and so does the quality. The demand does not vary to the same extent. Farmers store the grain at the expense of Harraways until it is needed. Product is warehoused in Auckland and distributed to the North Island by road from Auckland. Distribution in the South Island is handled from Dunedin by contractors. A broker has the role of merchandising the supermarkets all over the country. Pak N Save supermarkets expect next day delivery. Commercial customers for bulk oats receive a four day delivery turn around.

The equipment in the plant is of a high standard. Some buildings needed some care and attention. The layout of activities could be improved. In 2002 a major fire took out the top floor of the mill- leading to three or four months when production was very difficult or impossible. During this time Harraways continued to trade and met all their customer's orders by sourcing products elsewhere and an innovative shift working system. During 2002 there was an industrial injury which distressed everyone at Harraways. A new focus on Health and Safety was initiated in 2002. Food Safety and certification standards were introduced in 2003. The boilers are fired by using the husks from the oats – an environmentally and economical move.

NICOLA"S

Nicola's was a manufacturer of organic Muesli products based in Auckland who used Harraways products. Harraways acquired Nicola's in 2003 from the owner operators who wished to pursue other things. The plant was moved to Dunedin. Nicola's product is distributed by the same broker who handles other products in the North Island and directly in the South. The total cost of the acquisition was recovered through increased profits in eight months.

PEOPLE AND ORGANISATION

Stuart believed in a team centred approach to management. The building of trust took time. In 2001 the Otago Polytechnic helped all the staff and Stuart build a commitment to a 'no blame' philosophy and to a shared approach to problem solving through a series of sessions at Harraways. Trust grew slowly as it became clear that the approach worked in practice and not just in theory. The staffing levels were broadly the same. The staff, who were not needed when the business exited flour milling and stock food, were absorbed in the growing oat activity and Nicola's production. Very little staff turnover has occurred and there has been no expansion of overhead and administrative staff.

THE RESULTS

When asked to look back over the 2000 to 2003 period and summaries the state of the business Stuart identified having reached a critical mass. He identified the concentration on the profitable activities and the generation of 200% growth despite the loss of the volumes from stock food and flour milling. Production and Stock control were well organised and the investment in a food technologist had brought great benefits. Market share was up, there were better relations with customers and no major borrowing had been needed. The returns to shareholders were rising steadily. He identified the freedom he has been given as very significant. The joy of no distant corporate Head Office interfering is hard to quantify.

QUESTIONS

1. Compare your suggestions for action from Part One with the action Stuart took. Explain anything you would do differently or suggest that Stuart would have been better to have done.

2. Describe and evaluate the state of the business in 2003

EXHIBIT ONE
SALES AND CONTRIBUTION TO PROFIT 2001 - 2003
(in $000's)

Flour Sales			**Flour Contribution**		
2001	**2002**	**2003**	**2001**	**2002**	**2003**
2,000	1,560	1,300	-50	-75	-125
Stock Food Sales			**Stock Food Contribution**		
2001	**2002**	**2003**	**2001**	**2002**	**2003**
56	80	100	80	-1.8	0
Oat Sales*			**Oat Contribution***		
2001	**2002**	**2003**	**2001**	**2002**	**2003**
5,300	6,800	8,200	1,600	1,700	1,750

* The figure for Oats is illustrative (not actual)

PART THREE 2004-2006 AND BEYOND: WHAT NEXT?

Having re-worked the business in the years 2000 – 2003, the following years showed a continuing increased return and reinvestment. By 2006 the business was producing four times the volume of 2000. Most the increase was at better margins. The company was in a healthy state. See Exhibit One for the contribution to profit. Growth has been mainly incremental within the existing product lines.

Nicola's had continued to grow and export sales of Nicola's product have begun in a small way to Australia. A new Bircher Muesli product has been introduced. Retail growth has continued through competitive pricing, actively seeking press coverage and health sector endorsements Market share was now 20% with increasing linear meters of space in supermarkets. The ability to trust Stuart and the business to deliver has grown and the relationships with farmers and customers have become more established. Societal sensitivity to health and obesity issues increasingly focused on good nutrition. In particular the publicity surrounding childhood obesity may enlarge the market for oat based breakfasts and snack bars.

It continued to be a time of investment in buildings and plant. A new 800 sq meter space was built in 2004 for the Nicola's operation. A new indoor loading bay followed in 2005 and an additional warehouse in 2006. New plant is on order which will allow parallel production and ease bottle necks. A second boiler provides back up.

Stuart has invited you to develop a set of options for the future and to recommend a course of action. He has already thought of a number of ideas ranging from doing nothing, through continual incremental change to radical change. As a private company, Harraways are reticent to

reveal the material that could expose them commercially. However to help with the process Stuart has provided some financial data that has not been included in the earlier parts of the case to help with the process

Annual sales are close to $13m. The balance sheet shows a growth of borrowing from zero in the year 2000 to $1.2m in 2005. The total assets are conservatively valued at $ 8m in 2005/6. In 2000 total assets had been valued at $ 5m. The equivalent operation in Auckland would conservatively cost many millions above the current value. The value of raw materials and stock has fallen from $1.8m to $1.2m in the same period. No accounting is made for goodwill and for Intellectual Property and the value of the brand.

The Marketplace for hot breakfast foods has simplified in the last 2 years. In late 2005 Goodman Fielder sold the Uncle Tobys and Flemings Brands to Nestle. This huge multinational food company is based regionally in Australia. They account for 55% of the market. Harraways directly supply 24 % of the market and also manufacture many of the generic house brand products sold in New Zealand. These make up a further 18% of the market. Stuart regards the Nicola's market segment as mature. The sale of oat products to food manufacturers is unlikely to grow substantially interesting very tiny markets have emerged such as oats for piglet mash production and oats for cosmetic face scrubs. They are unlikely to add much to the core business.

QUESTIONS

1. Brainstorm and list ideas for the future growth of Harraways.
2. Develop reasoned and balanced arguments for both proposals for the two best ideas. Include financial and marketing factors as far as you can.

EXHIBIT ONE
SALES AND CONTRIBUTION TO PROFIT: 2004 – 2005
($000,s)

Flour Sales		**Flour Contribution**	
2004	**2005**	**2004**	**2005**
1,200	0	-150	0
Stock Food Sales		**Stock Food Contribution**	
2004	**2005**	**2004**	**2005**
80	10	0	0
Oat Sales*		**Oat Contribution***	
2004	**2005**	**2004**	**2005**
11,000	12,200	2,000	2,450

* Oat figures are illustrative (not actual)

THE U.S. FLOORCOVERING INDUSTRY - 2006

Marilyn M. Helms, Dalton State College
Joseph T. Baxter, Dalton State College

CASE DESCRIPTION

The primary subject matter of this case is a study of the U.S. carpet and floorcovering industry. Secondary issues include consolidation of mature industries, global pressures, mergers and acquisitions, and rising raw material and fuel costs. The case permits in-depth discussion of the various externalities facing this changing industry including internationalization and consolidation pressures as well as shifting customer preferences away from carpet and toward hard surface flooring. It is designed for senior-level classes in strategic planning and business policy. It is expected to require two to three hours of outside preparation by students.

CASE SYNOPSIS

Dalton, Georgia is the carpet capital of the world and is home to the area's leading floor covering and carpet producers. The old world industry attracted the interest of Warren Buffet prompting him to purchase Shaw Industries, Inc. in 2001. Shaw and their key competitor, Mohawk Industries, Inc. has a rich history of growth through acquisitions. The industry giants have consolidated much of the formerly fragmented flooring industry they helped establish. Each is a full-line flooring producer manufacturing carpet, rugs, ceramic tile, laminate flooring, wood flooring vinyl, and other surfaces for commercial and residential customers and both continue to battle for the number one position in the U.S. The industry has experienced recent fiscal growth from the U.S. housing market boom and higher product sales prices exceeding analysts' expectations. However, rising fuel prices, competition from low-price Asian imports and actions by competitors continue to challenge the industry. Small suppliers exiting the industry have caused raw material prices to rise. Changes also include a shifting product mix driven by consumer preferences toward laminate, wood and ceramic tile flooring and away from carpet and vinyl products. The rug segment is growing along with hard surface flooring. Even with wood or laminate floors, consumers decorate with area and scatter rugs. The industry is changing and the leaders must consider additional ways to grow. Interviews with industry analysts, trade associations, and consultants provide additional insights.

INTRODUCTION

Carpet industry executives throughout Dalton, Georgia home of the world's leading floor covering and carpet producers reviewed industry challenges as they prepared their strategic plans for 2006 and beyond. The leading firms had a rich history of growth through acquisitions, consolidating much of the formerly fragmented flooring industry they helped establish. While the entire industry experienced recent fiscal growth from the U.S. housing market boom, this market had slowed in 2006. Also, while higher product sales prices exceed analysts' expectations, the rising fuel prices, competition from low-price Asian imports and actions by competitors continued to challenge the industry. Raw materials were also more expensive since several small suppliers left the industry. Executives pondered consumer's future floorcovering preferences. Recently customers seemed to choose laminate, wood and ceramic tile flooring along with area rugs instead of carpet or vinyl products. Clearly, the industry was changing and the executives wondered what future strategies should be.

INDUSTRY CHALLENGES

Rising Costs - Fuel, Raw Material, and Employee Health Care

Increasing oil and energy prices, raw materials and other supply shortages, a record number of lower-priced Asian imports, escalating health insurance costs for employees, and the falling U.S. dollar relative to other currencies, particularly the Euro, has carpet and floorcovering executives worried. While industry consolidation and vertical expansion had boosted profitability levels, rising fuel prices made 2006 and beyond more uncertain. The ability to obtain raw materials on a just-in-time basis is critical. The principal raw materials include nylon, polyester and polypropylene resins, fibers, and carpet backings, which are used exclusively in the carpet and rug business -- talc, clay, nepheline syenite and various glazes, including grit (ground glass), zircon and stains, which are used in ceramic tile business.

With a large U.S. workforce, rising employee health care costs continue to affect the industry. It is more challenging to offset these rising costs with lower selling general and administrative costs or through lower production costs.

Growth Through Acquisitions

Analysts question whether the mature industry can maintain the recent rapid acquisition rate. Mohawk Industries, Inc. and Shaw, Inc., the industry leaders, continue to acquire smaller competitors and suppliers. Shaw acquired SI, Inc. (formerly Synthetic Industries, Inc. a market of non-woven products and carpet backing) and Honeywell in 2005. These backward vertical

integrations added carpet backing and a source of carpet fiber to Shaw's range of products. Mohawk, too, continued its consolidation of the carpet industry and diversification, purchasing Unilin, Inc. in 2005 in a deal valued at $2.6 billion. Unilin, a Belgian-based laminate floor covering manufacturer with 2004 revenues of $1 billion and employing 2,400 in Europe and the U.S., gave Mohawk a stronger presence in the laminate flooring market along with an expanded range of flooring products and a larger European customer base. The large acquisition came just three years after Mohawk bought Dal-Tile, the largest U.S. ceramic tile maker.

Changing Product Preferences

Carpet manufacturers have morphed and matured into full-line flooring companies offering a range of hard surface categories to supplement their tufted carpeting products. Laminate flooring products is the most successful recent hard surface product. Ceramic flooring has more stock keeping units, and though popular, is more difficult to distribute throughout the US. Hardwood is a smaller category but has room to expand.

The industry is bi-modal with large conglomerates offering a full range of floorcovering products and at the other extreme, a number of niche players that compete on price or differentiation. Industry sales are 67 percent for residential flooring purchases and 33 percent commercial. Some 75 percent of the flooring sold is for replacement purchases (remodeling) and the remaining 25 percent for new construction.

While the hard surface manufacturers remain more fragmented, fewer than 35 carpet manufacturers remain. Most leaders agree size is the key to success in this rapidly consolidating industry. The industry has been boosted by a strong U.S. housing market. Laminate sales comprised only 5 percent of the US floor covering market but the category rose 24 percent in 2004 and is projected to be a $5 billion dollar industry in the next five years. Industry-wide, although carpet and rug sales continue to grow at over 9 percent, hard surfaces are growing at double-digit rates with wood flooring growing at 13.4 percent and laminate flooring experienced a 19.6 percent growth.

Ceramic flooring grew 15.3 percent but resilient flooring's growth was only 3.6 percent. The slow growth of resilient or vinyl is due to rising oil prices and a 2005 explosion in a raw material (PVC resin) plant supplying the company's key input. Other small suppliers exiting the industry also caused prices to rise. Price increases were numerous in 2005 due to continuing raw material and energy cost increases. Tufted carpet and rugs, like vinyl, use petroleum products as raw materials. Rising oil prices are seen as a potential and growing threat. As an example, Solutia (the spin-off company of Monsanto) raised the prices on all nylon carpet fiber by 8-12 percent for all shipments on or after October 1, 2005, citing rising fuel prices.

The rise in the rug segment is a result of the growth in hard surface flooring. Even with wood or laminate floors, consumers decorated with area rugs. Carpet tile remains a popular and

growing category among designers and architects and its ease of installation and option to replace only a few soiled squares has interested residential customers.

The principal methods of competition within the industry are price, style, quality and service. Price competition and market coverage are important because there is little differentiation among competing manufacturer's product lines. Investments in modernized, advanced manufacturing and data processing equipment, marketing strategy and distribution systems all contributed to the larger firm's ability to compete based on performance, quality, style and service, rather than price alone. Industry sales are seasonal. These results are primarily due to consumer residential spending patterns for floor covering, which historically have decreased during the first two months of each year following the holiday season. Commercial and institutional flooring sales peak in spring and summer, largely due to the remodeling of educational institutions during this period. Carpet's leading economic indicators are consumer confidence, interest rates, and existing and new home sales. The carpet industry leads economic recoveries, experiences volume rebounds, and demand from consumers' previously postponed purchases.

The primary categories of the United States floor covering industry includes carpet and rugs (63 percent), ceramic tile (12 percent), hardwood (10 percent), resilient and rubber (9 percent) and laminate (6 percent). Recent compound average growth rates for all categories, except the resilient and rubber category, meet or exceeded the growth rates (measured in sales dollars) for both the gross domestic product of the United States and housing starts and is 3.0 percent for carpet and rugs, 7.0 percent for ceramic tile, 1.2 percent for resilient and rubber, 20.9 percent for laminate, and 7.9 percent for hardwood. The retail carpet industry remains fragmented and often requires a very high level of service. Flooring continues to represent a major expenditure for homeowners and is only replaced every six to ten years. A consumer with greater product knowledge can make choices that are more informed but this requires a well-trained and knowledgeable sales force. There are also on-going installation considerations that must be coordinated with the purchase, often making flooring a complex purchase. However, there are also favorable trends in the residential market as more people own homes, homes are larger, and there is more interest in home decorating due to popular redecorating, remodeling, and home improvement television programs. The move to shopping at "big-box" home improvement retailers reduces the number of retail locations for purchasing floorcovering.

In general, customers want longer lasting, better-looking floors. Customers are learning to "hate" carpet because many builders and installers use a base or entry-grade carpeting. Use of this product creates disappointments because it does not perform as well as more expensive, heavier weight carpeting that shows fewer wear patterns. If the FHA building standards change to include a better grade of carpet, this could reduce consumer's perceptions that broadloom carpet is "bad." However, consumers agree their next replacement purchases for their carpeting will be for a hard surface product. Customers want a choice of color and design and many are demanding personalization in their flooring. Today's floorcovering shopper is more informed and sophisticated

and willing to pay for quality but have higher expectations with a fashions and design focus. They are demanding new textures and styles as well as woven-look fabrics. The move is toward "mass customization" to offer customers a unique product.

Partnerships for branding, labeling, and merchandising are important to the industry as are ties to furniture collections. Designers and collections (Bob Mackie, Laura Ashley, Waverly, Ralph Lauren Home, Martha Stewart, Bernhardt, and Kathy Ireland) have lent their names to rugs and floorcovering products. Cooperative advertising programs often cross promote flooring products.

Globalization

While the large manufacturers have a strong foreign presence, smaller manufacturers find it challenging to develop export products. International trade shows such as the yearly Domotex show in Hanover, Germany, display small and mid-size mills and their products, but according to the American Floorcovering Association, an industry trade organization, participation at two or three shows is necessary to develop sales contacts. Travel costs too are often prohibitive for smaller companies. Industry officials, however, agree the export market is a growing one that companies should consider. U.S. carpet is currently exported to Canada, Mexico, the United Kingdom, Japan, Saudi Arabia and Hong Kong.

Social Responsibility, Recycling, and Reverse Supply Chain Logistics

The industry has been focused on recycling as well as reuse and carpet reclamation to reduce the amount of carpet waste entering landfills and reducing the production impact on both air and water resources. Plants are conserving energy and water and many specifiers are requiring that carpet have a recycled content. In some commercial accounts, customers are using carpet tiles and only replace the soiled tiles periodically. In other cases, institutions will "rent" carpet tiles and the installer will replace as needed, recycling soiled squares. However, difficult business conditions and higher than expected production costs have made recycling somewhat difficult. The industry is also working with the "big box" retailers to recover post-consumer wastes. Substitutes for current products that offer sustainability include both bamboo and cork flooring.

Each market is different in their environmental concerns, according to industry officials. In Europe, for example, buyers are concerned about whether products are made in an environmentally friendly manner and want to know if products are made with recycled material or through other sustainable processes. The entire industry is working to reduce energy and water consumption and has done so since the 1990s according to Werner Braun, president of the Dalton-based Carpet and Rug Institute. By 2010, the industry expects to divert 40 percent of all carpet currently entering landfills to other value recovery options (Jones, December 25, 2005).

International Imports

While the U.S. market remain focused on a higher end, higher style product than anywhere in the world, analysts fear threats from Chinese and other Asian imports within the next three to five years. Vance Bell, Executive Vice President at Shaw Industries, Inc. agree installation and after-sales functions are important in the marketplace. Mac Ryland of Kurt Salmon & Associates Consulting said the floorcovering imports have grown in the last decade. In 1994, imports made up 12 percent of a $13 billion American flooring market. Today, imports make up nearly a quarter of a $23 billion market. For example, some 70 percent of ceramic flooring sold in the U.S. is imported.

With a growing middle class, China is expected to form their own domestic flooring market. As China develops more capacity, the U.S. will no doubt see more imported products. Analysts agree the U.S. market cannot ignore China. Partnerships between American and Chinese floorcovering manufacturers might also occur in the future. Some industry leaders fear collaborating with China though and worry about a possible loss of U.S. customers and loss of trade secrets if they share production techniques and other knowledge with China. The Chinese take advantage of much lower wages and can afford the cost of shipping products to the U.S. and selling them at lower prices than American producers. The Chinese are not currently selling significant tufted broadloom carpet amounts in the U.S. but more tufting machines are being installed in China. Home Depot and other large retailers are also sourcing more products from China (Helm, December 2005).

If China is a competitor in the next decade, according to Jim Bethel, President of J & J Industries, he expects the Dalton region's response to be critical, depending on whether this is pursued as an opportunity or a threat. The Georgia Department of Labor reports some 22,200 residents of the five county area, which includes Dalton, work in floorcovering manufacturing and the prediction is these jobs will become more technology-oriented. Mr. Bethel further agreed the weight and bulk or value density of carpet makes it very expensive to move a long distance and the Chinese would have difficulty servicing an exported product. However, if foreign companies begin production of floorcovering within the U.S., these issues no longer apply. While few imports now originate in China, that could change. The carpet-making equipment industry reports from five to eight percent of their machines are sold to China and the Chinese are buying similar equipment from other countries (Gary, 2006).

Technology and Efficiency

Internally, technology has helped the floorcovering industry prosper and remain in the U.S. rather than move offshore. The industry, unlike other textile manufacturers, is not labor intensive and the tufting and processing machinery is continually automated. The larger carpet mills are vertically integrated – extruding their own yarn, dying the yarn, tufting and finishing it into carpet for the end user.

Distribution systems and a supporting infrastructure add value to all flooring products. Investments for the industry include specialized sales forces, product inventories, and automated distribution systems. With mergers and acquisitions, the industry leaders have worked to combine brand strategies, merge sales forces, and improve efficiency by realigning plants by product type, combining raw material components, reducing overlapping product offerings, and consolidating administrative functions.

THE FLOOR COVERING COMPETITORS

The carpet industry began when a young Dalton, Georgia woman, Catherine Evans Whitener, created a bedspread in a hand-crafted pattern by sewing colorful cotton yarns into unbleached muslin, clipping the ends of the yarn so they would fluff out, and finally, washing the spread in hot water to shrink the fabric and hold the yarns in place. Interest grew and by the 1930s, early entrepreneurial women and their families made the spreads on their front porches. Lower prices, new minimum wage laws, and the development of the mechanized tufting machine gradually made the handcrafted spreads too expensive. The industry began to pull workers into mills in Dalton, Georgia, beginning the rapid growth of the mechanized tufting industry and broadloom carpet production.

In the mid 1950s wool and manmade fibers -- polyester, nylon, olefin, rayon, and acrylics -- were gradually introduced to replace the cotton fibers. Most manufacturers agreed the single most important development in the industry was the introduction of bulk continuous filament nylon yarns. These yarns provided a quality, durable carpet, similar to wool but more economical to produce. In 1950, only ten percent of all carpet and rug products were tufted, and ninety percent were woven. Almost instantly, man-made fibers, new spinning techniques, and new dyeing equipment, printing processes, tufting equipment, and backing for different end uses appeared. Today tufted products accounted for more than 90 percent of the total production (less than two percent were woven) and 6.7 percent, comprised all other methods, such as knitted, braided, hooked, or needle- punched.

The industry broke the billion dollar sales mark in 1963. Through the years, the North Georgia area has remained the center of the tufted carpet industry and Dalton, Georgia has become known as the tufted “Carpet Capital of the World.” The region produced more than 80 percent of the total output of the worldwide industry of over $15 billion.

The big companies have continuously bought smaller ones and the number of carpet makers in the North Georgia (U.S.) area fell from more than 300 firms to three giants - Shaw Industries, Mohawk Industries, and Beaulieu of America, and about 100 small-to-mid sized operations. The local population could not meet the job growth of the 1990’s and a wave of immigration has kept the mills running. By 2004, Latino residents made up nearly half the city of Dalton’s population according to U.S. Census data.

Shaw and Beaulieu are headquartered in Dalton, while Mohawk is based nearby in Calhoun, GA. Several smaller companies such as the Tandus Group (Dalton, GA), J&J Industries (Dalton, GA) and the Dixie Group (Calhoun, GA) have been able to carve out lucrative niches in the industry. Other competitors in vinyl and laminate flooring include Armstrong and Mannington. The top five manufacturers are profiled by flooring category in Exhibit 1.

Exhibit 1: Top 5 Manufacturers Flooring Sales by Category (2004 data) - (in Millions of Dollars)

Company	Total U.S. Flooring Sales	Carpets & Rugs	Ceramic Floor Tile	Wood Flooring	Laminate Flooring	Resilient Flooring
Mohawk	5,217	3,779	1,207	90	40	101
Shaw	4,630	4,346	54	30	200	0
Armstrong	1,645	0	4	807	108	713
Beaulieu of America	1,115	1,115	0	0	0	0
Mannington	746	137	10	148	65	371

Source: *Floor Focus*, May 2005, p. 26. Data compiled by Market Insights/Torcivia and *Floor Focus Magazine*.

MOHAWK INDUSTRIES, INC.

Mohawk is the leading producer and distributor of flooring worldwide including all major flooring categories: carpet, rugs, hardwood, laminate, ceramic tile, and vinyl flooring. They also lead in yarn, ceramic tile, area rugs, and bath mats production. Their net sales increased 13 percent in 2005 to $6.620 billion from $5.880 billion in 2004 and the sales increase resulted primarily from the acquisition of Unilin (the European laminate company), internal growth and price increases. Also for 2005 their sales trends continued with the growth in the commercial and new residential construction business outpacing the residential replacement business. See Exhibit 2 for the composition of top management and the board of directors. The income statement and balance sheet are shown in Exhibits 3 and 4.

Exhibit 2 - Officers and Board of Directors

Officers
Jeffrey S. Lorberbaum, Chairman and Chief Executive Officer, Mohawk Industries, Inc.
Herbert M. Thornton, President – Mohawk Group
Frank H. Boykin, Vice President – Finance & CFO
William B. Kilbride, President – Mohawk Home
Christopher Wellborn, President - Dal-Tile

Exhibit 2 - Officers and Board of Directors
Board of Directors
David L. Kolb, Former Chairman, Mohawk Industries, Inc.
Jeffrey S. Lorberbaum, Chairman & CEO, Mohawk Industries, Inc.
Leo Benatar, Principal in Benatar and Associates
Bruce C. Bruckmann, Managing Director, Bruckmann, Rosser, Sherrill & Co., Inc. (a venture capital firm)
Larry W. McCurdy, Former President Dana Corporation's Automotive Aftermarket Group, (a worldwide manufacturer of motor vehicle parts)
Robert N. Pokelwaldt, Former Chairman & Chief Executive Officer York International Corporation, (a manufacturer of air conditioning and cooling systems)
S.H. "Jack" Sharpe, Executive Vice President, Mohawk Residential Business
John F. Fiedler, Former Chairman & CEO, BorgWarner, Inc.
Phyllis O. Bonanno, President & CEO, International Trade Solutions
Christopher Wellborn, President - Dal-Tile
Source: 2005 Mohawk, Inc. Annual Report

Exhibit 3 – Income Statement 2001-2005, Mohawk Industries, Inc					
	For the Years Ended December 31,				
	2005	2004	2003	2002 (c)	2001
	(In thousands, except per share data)				
Statement of earnings data:					
Net sales	$ 6,620,099	5,880,372	4,999,381	4,516,957	3,441,267
Cost of sales (a)	4,896,965	4,259,531	3,605,579	3,247,865	2,583,669
Gross profit	1,723,134	1,620,841	1,393,802	1,269,092	857,598
Selling, general and administrative					
expenses	1,095,862	985,251	851,773	747,027	530,441
Operating income	627,272	635,590	542,029	522,065	327,157
Interest expense (b)	66,791	53,392	55,575	68,972	29,787
Other expense (income), net	3,460	4,809	(1,980)	9,464	5,954
	70,251	58,201	53,595	78,436	35,741
Earnings before income taxes	557,021	577,389	488,434	443,629	291,416

Exhibit 3 – Income Statement 2001-2005, Mohawk Industries, Inc					
	For the Years Ended December 31,				
	2005	2004	2003	2002 (c)	2001
	(In thousands, except per share data)				
Income taxes	198,826	208,767	178,285	159,140	102,824
Net earnings	$ 358,195	368,622	310,149	284,489	188,592
Basic earnings per share	$ 5.35	5.53	4.68	4.46	3.60
Weighted-average common shares					
outstanding	66,932	66,682	66,251	63,723	52,418
Diluted earnings per share	$ 5.30	5.46	4.62	4.39	3.55
Weighted-average common and					
dilutive potential common shares					
outstanding	67,644	67,557	67,121	64,861	53,141
Balance sheet data:					
Working capital	$ 1,228,573	968,923	592,310	640,846	449,361
Total assets	7,991,523	4,403,118	4,163,575	3,596,743	1,768,485
Long-term debt (including					
current portion)	3,308,370	891,341	1,012,413	820,427	308,433
Stockholders' equity	3,027,120	2,666,337	2,297,801	1,982,879	948,551
(Source 2005 Mohawk Annual Report)					

Mohawk designs, manufactures and markets residential and commercial flooring products distributed through authorized Mohawk dealers. In 2005, Mohawk operated under four divisions with its own products, features, and brand names, providing goods for all significant market segments, distribution channels, and price points. Mohawk's family of well-known brands includes: Aladdin, Alexander Smith, American Olean, American Rug Craftsmen, American Weavers, Bigelow, Dal-Tile, Galaxy, Harbinger, Helios, Horizon, Image, Karastan, Lees Carpet, World, WundaWeve, Custom Weave, Mohawk, and Mohawk Home.

Mohawk Carpet Mills had its beginning in 1878 when four brothers from the Shuttleworth family brought 14 second hand looms from England to New York. By 1908, the fledging firm introduced a new carpet. Flooded with orders, the weavers worked five years without changing either the color or the pattern on their looms. In 1920, the Shuttleworth Brothers Company merged with the nearby firm of McCleary, Wallin and Crouse to form Mohawk Carpet Mills, Inc., names

for the Mohawk River Valley in upstate New York. Even in the 1920s, mergers were strategic and designed to give the company a competitive edge. In the 1950s Mohawk moved south, constructing manufacturing facilities in Mississippi and South Carolina. During the next fifteen years, Mohawk expanded its offerings through product innovations, market growth, mergers, and acquisitions. Beginning in 1992, a series of strategic mergers and acquisitions redefined not only Mohawk but also the entire floorcovering industry.

Each acquisition expanded Mohawk's presence in the floor-covering industry -- Horizon Industries in 1992; American Rug Craftsman and Karastan-Bigelow in 1993; Aladdin Mills in 1994; Galaxy Carpet Mills in 1995; certain assets from Diamond Carpet Mills in 1997; Newmark Rug Company, American Weavers & World Carpets/WundaWeve in 1998; Durkan Patterned Carpets and Image Industries in 1999; Alliance Pad in 2000; Dal-Tile and American Olean in 2001-a move that made Mohawk a leading supplier of ceramic and stone floor covering, Lees Carpets in 2003, Wayne-Tex in 2005 and Unilin in 2005. In early 2006, the firm purchased Propex Fabrics, a major supplier of secondary carpet backing in a backward integration strategy. Through aggressive acquisitions and internal growth, Mohawk's goal is to create a strong, diversified company - the world's largest floor covering supplier, the country's leading recycler of plastic soda bottles (which become polyester carpeting) and one of the country's largest and most efficient distribution and trucking companies. In 2005, they employed more than 34,000 employees, with half of them in Georgia.

Exhibit 4 Mohawk Industries Inc. and Subsidiaries
Consolidated Balance Sheets; December 31, 2005 and 2004
(In thousands, except per share data) *(Source 2005 Mohawk Annual Report)*

ASSETS	2005	2004
Current assets:		
Cash and cash equivalents	$ 134,585	
Receivables	848,666	660,650
Inventories	1,166,913	1,017,983
Prepaid expenses and other assets	140,789	49,381
Deferred income taxes	49,534	55,311
Total current assets	2,340,487	1,783,325
Property, plant and equipment, net	1,810,728	905,332
Goodwill	2,621,963	1,377,349
Tradenames	622,094	272,280
Other intangible assets	552,003	50,366
Other assets	44,248	14,466
	$ 7,991,523	4,403,118

Exhibit 4 Mohawk Industries Inc. and Subsidiaries **Consolidated Balance Sheets; December 31, 2005 and 2004** (In thousands, except per share data) *(Source 2005 Mohawk Annual Report)*		
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Current portion of long-term debt	$ 113,809	191,341
Accounts payable and accrued expenses	998,105	623,061
Total current liabilities	1,111,914	814,402
Deferred income taxes	625,887	191,761
Long-term debt, less current portion	3,194,561	700,000
Other long-term liabilities.	32,041	30,618
Total liabilities	4,964,403	1,736,781
Stockholders' equity:		
Preferred stock, $.01 par value; 60 shares authorized; no shares issued	-	-
Common stock, $.01 par value; 150,000 shares authorized; 78,478		
and 77,514 shares issued in 2005 and 2004, respectively	785	775
Additional paid-in capital	1,123,991	1,058,537
Retained earnings.	2,268,578	1,910,383
Accumulated other comprehensive loss	(47,433)	(2,441)
	3,345,921	2,967,254
Less treasury stock at cost; 10,981 and 10,755 shares in 2005		
And 2004, respectively	318,801	300,917
Total stockholders' equity	3,027,120	2,666,337
	$ 7,991,523	4,403,118

According to the *2005 Annual Report*, Mohawk sold floor covering and textiles for every room in the home and for every commercial application, hardwood flooring, laminate flooring, ceramic tile flooring, stone and marble flooring, via an exclusive distribution agreement with Congoleum, vinyl sheet flooring, woven bedspreads, tapestries, pillows, throws and window blinds. Mohawk products are in major retailers across the country and the world -- from Home Depot to Bloomingdales, from Lowe's to Macy's, from Target and Wal-Mart to specialty boutiques in large cities and small towns. The Unilin acquisition added the European company's wood flooring, shelving, chipboard, and roofing products.

Floorcovering companies have long sought partnerships that would increase their name recognition with the public. Looking to increase its brand presence, Mohawk partnered with Solutia Wear-Dated and 3M Scotchgard® in 2006 to bring together three of the most well-known brands in the floorcovering industry. More than 80 products are affected, many switching from other fiber

technologies to the Wear-Dated Fiber. A new line of carpets and hardwoods features the new Scotchgard® Protector Advanced Repel Technology for stain protection, available only through Mohawk.

Human Resources

Jeffrey S. Lorberbaum is the President, Chairman, and CEO of Mohawk. He was born in 1954 in Dalton and began his professional career with Aladdin Mills in 1976 after completing a B.S. from the University of Denver. In 1994, he was Vice President of operations at the time of Aladdin's merger with Mohawk Industries. In 1995, Lorberbaum was appointed President and was appointed CEO in 2001. In 2004, he assumed the Chair of Mohawk's Board of Directors. Mohawk's management and board are composed of executives from a number of their recently acquired companies.

Technology and Logistics

Backward and forward integration of manufacturing, distribution, and marketing operations provides advantages of scale. Fiber extrusion assets provides over 50 percent of Mohawk's carpet and rug fibers, including nylon, polyester, and olefin. Mohawk controls manufacturing for carpet, rug and carpet cushion products as well as a majority of ceramic tile. Real Time Visibility, their order tracking system, ensures on-time product delivery along with over 1,000 trucks, 300 distribution points, 15 regional warehouses, 20 factory warehouses and 42 satellite warehouses. As an example of information technology advances, Mohawk embraced e-commerce with its contract dealer community. By enabling specifiers (architects, designers) and dealer partners to check available inventory and place orders on-line, their Quick Ship program offered shipment of products within two days. Mohawk opened a new distribution center in Calhoun, Georiga in November 2005, adding 1.3 million square feet of distribution and manufacturing space at a cost of $33 million to increase company logistics efficiency.

Organization and Structure

In 2005, Mohawk Industries realigned its residential and commercial flooring businesses into two strategic business units (SBUs) designed to enhance operations and customer service. Jeff Lorberbaum, Chairman and CEO of Mohawk, said "Through better focus on our different customers, we will improve reliability, innovation, and service. Our intent is to develop a structure that allows Mohawk employees to best utilize their skills, increase responsiveness, and contribute to Mohawk's overall success. For the Residential SBU, Tom Lape will be responsible for sales and marketing functions. Frank Peters will lead carpet and yarn manufacturing, product development and planning.

This SBU will also include hard surfaces, customer operations, and other support functions. For the second SBU, Commercial Flooring, Jim McCallum will be head sales and marketing. Jim Prettyman will be responsible for carpet manufacturing, product development and planning. This SBU will also include customer operations as well as other support functions. Operations are responsible for extrusion, distribution, backing, and cushion. Operations will also include engineering, recycling, samples, purchasing, environmental, and other support functions.

Mohawk has two reporting segments, the Mohawk segment and the Dal-Tile segment. The Mohawk segment distributes its product lines through a network of 52 regional distribution centers and satellite warehouses using a fleet of company-operated trucks, common carrier or rail transportation. The segment product lines are sold to independent floor covering retailers, home centers, mass merchandisers, department stores, independent distributors, commercial dealers and commercial end users. The Dal-Tile segment product lines include ceramic tile, porcelain tile and stone products distributed through approximately 244 company-operated sales service centers and regional distribution centers using primarily common carriers and rail transportation. The segment product lines are purchased by tile specialty dealers, tile contractors, floor covering retailers, commercial end users, independent distributors and home centers.

Marketing

Mohawk has promoted its brands through national advertising in both television and print media as well as in the form of cooperative advertising, point-of-sale displays and marketing literature provided to assist in marketing various carpet and ceramic tile styles. Mohawk relies on the substantial brand name recognition of its product lines. The cost of producing display samples is a significant promotional expense and has been partially offset by sales of samples and support from suppliers.

Mohawk has provided a premium level of service, maintaining its own trucking fleet and over 250 local distribution locations. Eighty-five percent of Mohawk's sales are made to independently owned dealers, contractors, and distributors. The balance has been sold to large national chains, home centers, and mass merchants. End-use purchases of Mohawk's products have been broad and varied. Today, residential replacement accounts for over half (56 percent) of their sales with commercial (27 percent) and new residential construction (17 percent) representing other major purchasing categories. According to Mohawk's *2005 Annual Report*, this diversity in customer groups brings increased stability of the business and balanced business cycles in each area. Mohawk stayed connected to the retail marketing of their products through various merchandising programs.

SHAW INDUSTRIES, INC.

Shaw's earnings and revenues increased in 2005, according to Warren Buffet, Chairman of the board of Berkshire Hathaway, Shaw's parent company. In 2005, Shaw Industries' pre-tax earnings were $485 million up from $466 million in 2004 and $436 million in 2003. The company's revenues rose to $5.72 billion in 2005, up from $5.17 billion in 2004 and $4.66 billion in 2003 and $4.33 billion in 2002. Buffet also indicated, like other building products companies, Shaw continues to face rising costs for raw materials and energy and has raised prices on many products but these price increases often have lags before they become effective (Jones, March 7, 2006).

The increase in 2005 reflected increases in average net selling prices for carpet and a very small increase in yards of carpet sold. During 2005, sales of rugs also increased over the 2004 level. Pre-tax earnings in 2005 increased $19 million (4%) over 2004. Despite the increases in selling prices, operating margins in 2005 were adversely affected by repeated increases in petroleum-based raw material costs. Increases in production costs have outpaced increases in average net selling prices over the past two years. In addition, product sample costs pertaining to the introduction of new products increased approximately $29 million in 2005 as compared to 2004.

Revenues generated by Shaw Industries in 2004 increased $514 million (11%) over 2003 due to a 9% increase in square yards of carpet sold, higher net selling prices and increased hard surface and rug sales. In addition, sales in 2004 include two businesses acquired by Shaw in 2003 (Georgia Tufters and the North Georgia operations of the Dixie Group). These acquisitions contributed sales of $240 million in 2004 and $50 million in 2003. Pre-tax earnings in 2004 totaled $466 million, an increase of $30 million (7%) over 2003. Raw material price increases came faster than sales price increases could keep up, resulting in a decline in gross margins during 2004 as compared to 2003. Shaw's biggest news for the start of 2006 was spending $20 million to convert a yarn facility in South Pittsburg, Tennessee closed three years ago due to reduced demand for spun nylon yarn into the company's first engineered hardwood flooring plant. Formerly the company sold wood flooring purchased from a third party. This plant conversion represents the company's first entry into hardwood manufacturing (Shaw only manufactured laminated "wood-look" flooring before). Shaw could have entered this market through acquisitions but decided to start a plant themselves. The company was pressured to enter this segment given Mohawk's increased hard surface production (Jones, March 8, 2006).

Shaw got its start in 1946 as Star Dye Company, a small business that dyed tufted scatter rugs. Numerous events transformed Shaw into the world's largest carpet manufacturer. The philosophy guiding those events has not changed much through the years. "Our business is about meeting customers, figuring out what they need, and supplying that need," said Robert E. (Bob) Shaw, the only CEO Shaw has ever known. "That's been our commitment from the beginning." Clarence Shaw, father of Chairman and CEO Robert E. (Bob) Shaw and former Chairman J.C. (Bud)

Shaw, bought Star Dye Company in 1946. In 1958, Bob Shaw became CEO of the company, which is jointly owned by the two brothers.

In 1967, J.C. Shaw organized a holding company to acquire Philadelphia Carpet Company, which originated in 1846. The holding company added Star Finishing to the fold one year later, marking Shaw's first move into carpet manufacturing. The holding company went public as Shaw Industries, Inc. in 1971 with approximately $43 million in sales and 900 employees. In 1985, Shaw made its first appearance on the Fortune 500 with more than $500 million in sales and close to 5,000 employees.

With a goal of differentiation and adding value, in 1972 Shaw purchased a yarn plant, acquired a continuous dye plant in 1973, created a trucking subsidiary to improve shipments and expand direct sales to retailers 1982, and established regional U.S. distribution centers and modernized plants and equipment in the early 1980s. Other tactics allowed Shaw to quickly respond to breakthroughs including stain resistant carpet, decrease their fuel, water, and electricity consumption, and recycle manufacturing waste. In 1992, Shaw acquired Amoco's production facility for polypropylene fibers. This added another source of raw materials. In 1993, they began producing the popular Berber styles and began the rug division followed by the hard surfaces division in 1998 with the launch of ceramics.

The desire to be the industry's low-cost provider was also a determining factor in Shaw's decisions, namely the acquisitions that brought such respected names as Cabin Crafts and Sutton under the Shaw umbrella. It also played a role in one of the largest and most significant moves in the company's history: the merger of Shaw and Queen Carpets in 1998. Queen's own legacy started when Harry and Helen Saul, parents of Shaw's current president Julian Saul, expanded their part time business into the full-time venture, Queen Chenilles. The year was 1946, the same year Clarence Shaw started Star Dye.

On January 4, 2001, Shaw began a new chapter with the completion of its sale to Berkshire Hathaway Inc., for $2 billion. Berkshire Hathaway has always been known for buying and holding businesses that had a dominant market share, had strong management teams, and were considered undervalued in the stock market. With the move, Shaw was no longer a public company. In 2001, Shaw began work on their new laminate plant in Georgia. In 2002, Berkshire Hathaway acquired the rest of Shaw owned primarily by CEO Bob Shaw and President Julian Saul for $354.6 million in stock. Bob Shaw, when asked about the Berkshire Hathaway sale commented, "Now we can make better five-year decisions. With a public company, you make 90-day decisions. And we don't have to put up with Wall Street." Mr. Shaw continued, "Business was great when Buffet bought the company, now it is even better in spite of a barrage of price increases that added more costs for the company. After all, when you walk on carpet you're basically stepping on processed oil."

Shaw continues to grow by acquisition and in 2003 acquired Georgia Tufters and the North Georgia operations of the Dixie Group. Shaw Industries, Inc. purchased the U.S. Nylon Carpet Fibers Business from Honeywell International in fall 2005. (Honeywell had swapped assets with

BASF and sold all their American fiber production facilities). This acquisition moved Shaw further into raw material production (backward vertical integration) (www.floordaily.net). Mr. Shaw agrees, "the industry went through rapid change 20 years ago. During an era of great consolidation, Shaw was the primary consolidator. We went from being one of 20 or 30 companies of similar size, none of us having more than three or four percent of the industry, to the point where in soft flooring (carpet) we had about 45 percent of the industry. That was our go-go period, when we went from revenues of a couple hundred million to about $2 billion." Mr. Shaw attributed his size growth to the purchase of the top three competitors at the time in the mid 1980's – Cabin Crafts, E & B Carpet, and Salem. "It was the maturing of the carpet industry," and "we are on the leading edge of that," he said. Shaw used credit to purchase the competitors. Shaw did admit mistakes including the company's ill-fated move into the retail business. "Manufacturers and retail are two entirely different entities, and one was in conflict with the other," he said. "We found ourselves in competition with some of our customers. Even Home Depot wouldn't do business with us as long as we were in retail."

Today Shaw is a full-service flooring company with approximately 30,192 employees. . Shaw's residential carpet brands include Philadelphia Carpets, Cabin Crafts Carpets, Queen Carpets, Shaw Mark Carpets, Sutton Carpets, Tuftex, Home Foundations (sold through home builders), Kathy Ireland Shades of America, Couture by Sutton, Expressive Designs (wool and wool-blends), and Inside Out. Additional residential brands include Shaw Living rug designs, Shaw Ceramics, Shaw Laminates, and Shaw Hardwoods. Their commercial brands are Philadelphia Commercial Carpets and Queen Commercial. They sell flooring for specified commercial and contract applications throughout the world. Shaw Contract Group remains the leading flooring provider to the commercial market including health care, education, corporate office, government, and retail sectors. Other contract brands are Patcraft Commercial, Designweave, Shaw Hospitality, Design Origins, and Commercial Hard Surfaces.

BEAULIEU, INC.

Roger De Clerck, founded Beaulieu Belgium, and Mieke and Carl Bouckaert established their U.S. operations, Beaulieu of America, in 1978 as the first producer of polypropylene oriental rugs. As the company grew the Bouckaert brothers invested in yarn extrusion in 1981 becoming the first manufacturer in the carpet and rug industry to produce their own yarn. With continued growth, the company diversified into tufting carpet in 1984, establishing Beaulieu Commercial in Chatsworth, Georgia. In 1987, the firm's U.S. extrusion capacity increased with the addition of a facility in Bridgeport, Alabama, which produces nylon polymers and nylon yarns. In 1990, Beaulieu continued its vertical integration with the addition of another facility, also in Bridgeport, Alabama, for the extrusion of polypropylene staple fiber; polypropylene slit film, and weaving of primary and

secondary backing. Like their competitors, the growth of carpet and rug manufacturing drives the expansion in yarn extrusion and polymer capacity.

From the first carpet manufactured in 1984 to the acquisition of Conquest Carpet Mills, Interloom, Coronet Industries, Grass More and D&W Carpets, as well as the addition of Murray Fabrics, Beaulieu of America is the world's third largest carpet producer behind Mohawk and Shaw. Recent additions include Marglen Industries, Columbus Carpet Mills, and Peerless Carpet Corporation. Beaulieu of America also looks outside the U.S. borders for growth opportunities. In 1980, Beaulieu Canada was founded. The 1990 purchase of Coronet yielded Coronet Canada, the second largest manufacturer in Canada. Overseas production expanded in 1995 when Beaulieu acquired an Australian Manufacturer, Sterling Carpet Mills, creating Beaulieu Australia.

In 1998, Beaulieu acquired Peerless Carpet Corporation, then the number one carpet producer in Canada. In 2002, Beaulieu of America decided to concentrate strictly on high quality, affordable broadloom carpet, and sold its rugs and hard surfaces divisions. Their residential brands include Beaulieu & Coronet, Laura Ashley, and Hollytex while their three commercial and design brands are BOLYU, Cambridge, and Aqua, which serve the office, hospitality, retail, and institutional, educational and healthcare environments. The company is privately owned and no financial data is available.

THE ANALYSTS' VIEW

Dave Foster, Host of Floor Radio and the companion website (http://www.floordaily.net), when interviewed in late 2005 about the recent industry consolidation commented, "I've just returned from the NeoCon East Trade show in Baltimore, MD, a key trade show for all commercial floor covering with buyer representatives from the GSA (Government Service Administration). I talked with small manufacturers at the show and they are concentrating in the specialty areas where the large companies (Shaw and Mohawk) are not interested. Their products are not mainstream but are specialty or architectural products. If the major companies acquired these smaller manufacturers, it would only be to offer a broader width to their product line but these acquisitions would not represent a major addition." When asked about the reason for the mergers in this industry, Dave Foster replied, "Mohawk and Shaw have had strong logistical operations. When customers have placed orders, they have known they will get the products very soon, given the numerous warehouse locations. Even the B-to-B segment's growth had supported the logistical investments."

"Customers are accustomed to receiving carpet as fast as possible, so it is easy for Shaw and Mohawk to put other flooring products, like laminate, on the same truck and ship the products together. Also the direct shipping makes the price more attractive to the retailer," said Foster. "In the past, laminate flooring had been sold through wholesalers. The second reason for the mergers is a hedge strategy. Over the last ten years, the market share of carpet fell and was replaced by other flooring options," replied Foster. He continued, "The industry decided to be more than just carpet

companies. With their logistical assets, they deliver more products to the same destination. Twenty years ago most carpet went through distributors. The major companies did not want to pay a profit margin to distributors for something they could do better. Mohawk decided the industry needed consolidation and bought "major players" in the industry.

Dave Foster is positive about the future role of small mills. "Lots of small mills have done well. Dixie Industries, Inc., for example sold their tufting and yarn operations and re-invented themselves to concentrate on higher end commercial and residential customers." "While dealers have liked the Shaw and Mohawk products, they wanted to offer other supplier's products as well," Foster continued, "Even though dealers purchase 80 percent of their products from either Shaw or Mohawk." "Retailers want flexibility and customers want choices. In the last five to eight years, there has been a concentration of various levels of dealer involvement in the industry."

In Dave Foster's radio interview with Keith Hughes, Director of Equity Research at Sun Trust Robinson Humphreys, Keith discussed the industry's movement of manufacturing facilities abroad. Keith mentioned the key question all firms considered whether the labor savings would be worth the investment. He added, quality standards are lower initially and shipment times averaged three to four months from Asia. In addition, inventory carrying costs increased with the longer delivery time. He agreed both domestic manufacturers and retailers asked these questions but noted manufacturing in Vietnam has recently been cheaper than manufacturing in China.

Wanda Ellis, President of the American Floorcovering Alliance commented, "with the current competition it has been tough to find sources of economical yarn for production since all the yarn is petroleum based. Ellis quoted Tim Booth of the British Wool Marketing Board who agreed, "the industry needs to develop a situation to move from petroleum based yarns and use a blend of fibers to make the nylon yarn go further." Europe is flooded with cheaper imported floorcovering from China. Unless a firm is a member of the EU, import duties and tariffs are assessed on imports. Ellis summarized by agreeing the US needed better trade laws and enforcement of those laws with China. When asked what the smaller carpet and flooring companies thought about being an acquisition target, Ellis agreed, "most would like to be acquired because it has become so difficult to find a niche for their products and a source for raw materials." Finding raw materials is complicated by Shaw's latest purchase of Honeywell's nylon group.

While many floorcovering products use raw materials derived from oil, the high-energy prices affect every level of the flooring supply chain in a multitude of ways. Companies are forced to allocate more funds to run their operations but the bigger expenses come from shipping and receiving products. The cost of gasoline forces many to absorb the expenses or to add a surcharge to cover the extra costs. Another major problem is the growing number of price hikes. Having so many increases has caused havoc at the retail level as dealers find themselves adjusting their prices rather than simply selling or marketing. To help counter the impact of higher oil prices on raw materials, mills and fiber suppliers are developing new fibers including Shaw's ClearTouch and Mohawk's Smartstrand, both made from polyester derivatives. With lower production costs and

recent innovations, the yarns could effectively compete with nylon and polypropylene in terms of durability, softness, coloring, and styling.

The floor covering industry is sensitive to changes in general economic conditions, such as consumer confidence and income, corporate and government spending, interest rate levels and demand for housing. Yet, industry analysts like Keith Hughes report adding flooring products does not increased the value of a residential home like additions to kitchens or bathrooms do. Hughes also reports the increase in raw material prices and other macro-environmental variables slow floorcovering replacement business.

The Carpet and Rug Institute (CRI), lobbies for the industry and offers educational programs about carpet cleaning and installation. They work to counter misinformation about dust-mite and asthma/allergy issues linked to wall-to-wall carpet. Carpet is often blamed for sick building syndrome. While the assumptions are not true, some consumers still believe carpet contains formaldehyde. Internationally, Japanese customers fear ticks and leeches live in carpet. They will only use wood flooring. CRI has programs in place to certify installers as well as to test vacuum cleaners. The training and education programs work to foster a more professional image for installers. Since most customers do not install floorcoverings themselves, this is important. In addition CRI's educational programs stress the benefits of carpet including noise reduction, temperature control (carpet is warmer than hard surfaces) and protection against falls (ideal for the elderly). Their web site provides further customer education and information about carpet and other floorcoverings.

What are the pros and cons of the industry leaders maintaining their rapid acquisition rate of competitors and consolidation of the carpet industry?

Will the recent acquisitions guarantee Shaw and Mohawk a strong position for further expansion within the flooring category? Should they consider other growth avenues like joint ventures, partnerships, or internal growth?

Are the top firms expanding too quickly? If so, what challenges face management?

How will smaller companies be able to carve out a lucrative niche in this industry?

Do these firms represent a threat or an opportunity to Shaw and Mohawk and why?
What are the pros and cons of diversifying outside the floorcovering industry?

How will raw material and energy price increases and the need to remain environmentally responsible continue to affect the industry?

Will sales of laminate and other hard surfaces continue to grow?

What effect will low-cost imports, particularly from Asia, have on the industry?

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DOTA'S SOFTWARE RE ENGINEERING GROUP: WHAT'S GOING ON IN YOUR DEPARTMENT, JIMMY?

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CASE DESCRIPTION

The primary subject matter of this case concerns the critical Human Resource Management issues that arise in organizations. Specifically, the case focuses on the role played by legal and ethical concerns in formulating and implementing sound Human Resource Management policies for recruiting and selecting employees as well as creating a professional work environment.

A related issue examined in this case explores the impact of globalization on human resource management practices of recruitment, selection, and retention. The importance for managers to engage in effective International Human Resource Management practices in the context of an outsourcing/offshoring strategy to countries like India is highlighted.

The case can be used to discuss a number of secondary issues such as, effective leadership from top management, Line vs. Staff issues, organizational culture, the power and influence of HR in organizations, group dynamics among top managers, and the need for effective communication of HR policies in organizations.

This case has a difficulty level of three or four and is best utilized with juniors and seniors in the latter half of the semester in a Human Resource Management course. It can be taught in two hours of class time and should require four to five hours of outside preparation by students.

CASE SYNOPSIS

This case describes events taking place at Digital Omega Tech Alpha (DOTA) Information Services. This company has been in business for 17 years and employs around 90 people in its Providence, Rhode Island headquarters. Senior DOTA managers actively work to identify organizations that are facing challenges in communicating and effectively interfacing with various stakeholders (typically employees, customers, clients, suppliers, and regulatory agencies, etc.). After doing a needs analysis, DOTA typically proposes software solutions to handle collection of the relevant data from important internal and external stakeholders for easy retrieval, analysis, and display for the decision makers in their client organization.

To continue expanding, DOTA opened an office in Delhi, India in 2002, and has been offshoring design and programming work to that office. However, the India office has been

experiencing high turnover among employees and managers, and several major projects for important clients are stalled there. Although top DOTA managers are keenly aware of what is happening in their India office and the need to address it, they have become distracted by an EEOC investigation of sexual harassment at DOTA. The EEOC representative has also been asking questions about DOTA's recruitment and hiring policies in the Providence, Rhode Island office and is poised to broaden the investigation into other HR practices in the company. Various Equal Employment Opportunity laws such as Title VII of the Civil Rights Act, American Disabilities Act, as well as Uniform Guidelines on Employee Selection Procedures issued jointly by the EEOC and other federal agencies are salient to the case.

The case raises a variety of legal and ethical HR issues and highlights the tension and difference in perspectives that can occur between top managers. The case suggests that neglecting HR issues can potentially undermine the overall strategy of a business. The case has been successfully used in HR class discussions as well as for take- home case analysis projects.

DOTA'S SOFTWARE ENGINEERING GROUP: WHAT'S GOING ON IN YOUR DEPARTMENT, JIMMY?

Mike Thompson experienced feelings of shock and dismay as he reflected on the very tense meeting with two of his key managers, James Applebee and Lisa Connors. As President and Co-Founder of Digital Omega Tech Alpha (DOTA), Thompson prided himself on creating a culture of professionalism, fairness, and equal opportunity in the company.

Thompson wondered where he had gone wrong. This morning he had learned that, a number of his female employees viewed the culture at DOTA as being hostile to women and a third female employee had filed charges of sexual harassment. In addition, the ongoing EEOC investigation appeared to be broadening to examine recruitment and selection practices at DOTA. "How could this be happening?" Thompson thought as he sat alone in his office. "DOTA is a great company. We hire the best people and pay them way above market. There have never been any problems before. We are expanding and have more business than we can handle. We simply don't need these types of problems."

Thompson had made plans to go visit the DOTA office in Delhi, India, next week to help recruit software engineers and a local manager for the office. Several critical projects for DOTA clients that had been outsourced to that office were stalled due to the recent high turnover there. Until today, Thompson had felt that that the instability in the Delhi office posed the most pressing strategic problem for DOTA because not completing those projects in time risked potential loss of some big clients. After speaking with Lisa Connors and James Applebee, Thompson was having second thoughts about going to the Delhi office. He felt he had to fix things at home first. But he was not sure how that could be done quickly.

BACKGROUND

Digital Omega Tech Alpha (DOTA) Information Services was created to fill a unique niche in the software industry. DOTA's customers included consulting companies who did not always have the time, expertise, or resources to provide needed software solutions to their clients. Instead of saying no to a client and risk losing the relationship and future business, a consulting company could turn to DOTA for help. So a significant part of DOTA's business involved taking on special software projects on behalf of consulting firms in order to provide the needed solutions for their clients. The consulting companies, in turn, compensated DOTA, and also retained its services to provide software support for their clients. In addition, through their contacts, senior DOTA managers actively sought to identify organizations (irrespective of the industry) that faced challenges in interfacing with their employees, customers, clients, suppliers, and regulatory agencies and proposed software solutions to handle collection, retrieval, and analysis of important streams of data in a user friendly way.

Since DOTA helped to manage information along the critical supply chain of a business, DOTA was looked upon as an important partner by many of its clients. DOTA employed over 90 people in their Providence, Rhode Island office. In 2002 DOTA opened up an office in Delhi, India, and started actively offshoring important design and programming work to that office. After the first successful year, some problems emerged in the office in India.

Because of many attractive opportunities for software engineers in Delhi, the turnover was high there among the local DOTA employees. Recently, the Indian manager for the Delhi office quit after a two-week notice and moved to Bangalore, India, to work for a European company, which outsourced to India. This was the third manager in the Delhi office to leave in four years. That vacant position needed to be filled quickly as DOTA had come to rely more and more on outsourcing some of the central programming applications for its clients to that office. Filling this position and coming up with a sound offshoring strategy had proven to be a headache for top DOTA management.

The annual net earnings of DOTA in 2002 exceeded 2 million dollars, far above expectations, given the post 9/11 weak nature of the economy of that time. As the economy recovered, DOTA's business soared, and in 2006, DOTA posted earnings of almost 5 million dollars. With a clear upward trend, DOTA's earnings were expected to continue growing at a steady rate.

THE SOFTWARE ENGINEERING GROUP

The Software Engineering Group, often referred to as *SEG* within the company, was central to DOTA as all the code for client software was either written or tested in that department. In addition, the group offered on-line and telephone based software support to many of the clients. SEG

managers also interfaced with the Delhi office in India and made decisions about what work needed to be outsourced. Once every six months, a senior SEG manager visited the Delhi office to help set up quality controls and to assist in recruitment of local software engineers. The individuals in the Software Engineering department in Providence were well paid. The median expected salary for software engineers in Rhode Island in 2007 was around $85,000 annually. SEG employees earned significantly more, with an average base salary of around 95,000 dollars. In addition, end of the year bonuses could add up to 25% more to the annual pay for the programmers in that department. The salaries of the local software engineers at the Delhi office were much lower and were tied to the markets in India. Due to rapid increases in wages of software engineers in India over the last five years, it had become critical for DOTA to keep up with information on the labor markets and wage rates in that country.

The SEG was by far the biggest department at the DOTA's Providence office. Out of the 90 people in DOTA's Providence office, there were 64 people in the Software Engineering group (53 males and 11 females). Forty-seven of the males were white and six were minority males (Of the 6 minority males, three were Asian, one was African-American, and two were Hispanic). In addition, there were 11 females in the department (five were white, three were Asian, two were African-American, and one was Hispanic). In order to be selected to work in the Software Engineering Group, an applicant had to score over 95% on a special programming aptitude and problem-solving test.

The Software Engineering Group in Providence had been very productive and was responsible for the excellent reputation DOTA had developed about completing projects on time and keeping the major clients satisfied and coming back. Because of DOTA's reputation for technical excellence, business had been growing as new clients came on board. However, the Software Engineering Group had experienced some internal problems recently that were bewildering the President of the company.

THE CRISIS AT DOTA

During the meeting, Mike Thompson could not believe his ears. Lisa Connors, the HR director at DOTA, had just informed him that a third woman in the Software Engineering group had filed charges of sexual harassment with the EEOC.

Mike Thompson had hired Lisa Connors seven years ago right out of college. Because of the excellent work Lisa had done, she had been promoted to the position of the HR director after the last HR director retired. Lisa was energetic and very current about HR issues and had developed a solid reputation with most of the upper managers.

With Lisa watching, Mike picked up the phone and called James Applebee, the Vice President of Information Services, who also served as the senior manager of the Software Engineering Group. "Jimmy, come to my office right away. Lisa is here and we all need to talk."

"What is going on Jimmy?" shouted Mike to James Applebee, the senior manager of the Software Engineering Group, as he walked in. Mike Thompson and James Applebee started DOTA in 1990. Both, now in their late 40s, went to school together and could speak frankly with each other. James looked at Lisa and said, "How are you doing sweetheart. Sorry for all the trouble my boys are causing."

Mike Thompson: "Jimmy, this is serious stuff. We are doing great this year because of the excellent work you and your programmers are doing. But I am feeling nervous about all this EEOC stuff. This is the third sexual harassment complaint in one month! The guys in your department may see affectionate names and playful touches as harmless, but obviously the women in your department don't. Honestly, Jimmy, what's going on?"

James Applebee: "Same thing that has been going on for the last 16 years since we started the company. We are totally focused and our main goal is to make sure that the DOTA clients are getting their money's worth. The Software Engineering Group comes up with high quality solutions to the problems of our clients and that's why we have the big boys coming back to us year after year. The word of mouth gets around about our commitment to the customers. We get the job done Mikey and everyone in the business knows it."

Mike Thompson: "Jimmy, I know that. Right now, we need to talk about what's going on in your department."

James Applebee: "Well, there is some horse playing, nude posters, and some loose jokes and humor. However, that has been going on ever since we started the company and no one has said anything. You know these creative types, these programmers. Someone under a disguised e-mail address forwarded a very graphic clip art and cartoons to everyone in the department. There was a video attachment that showed a couple in the final stages of a romantic evening on their honeymoon, if you know what I mean. I thought it was funny and so do most others who work here but a couple of the Asian girls in the office have had their noses bent out of joint. We have had 11 female software programmers join in the last 2 years and my boys are still not used to it. It's going to take some time, Mikey, to adjust. We hired these women so rapidly over the last year because Lisa here, with HR, has been on our backs to diversify. Now we have the usual problems!"

Lisa Connors: "You call these the "usual" problems!"

James Applebee: "Let me finish Lisa. This stuff goes on in every company. So let's not blow it out of proportion and get all uptight. Boys will be boys, and pardon my French, but that's how God made us. I agree Mikey that we do need to regain some control here. We have a department of 53 men and 11 women and there is a lot of tension now because of all this. The men in my department see this as a harmless and funny prank. I don't think most of the girls care either but a few are unhappy. Frankly, I think with some time, they will adjust to our culture. It's really too bad because all this has had a chilling effect on social interaction here. One of my guys, Willie Smith, is in love with the new blond that just came on board, and he is too scared to ask her out because he does not want to be accused of sexual harassment. I told Willie, 'Take a chance buddy. You only live once!' Maybe Mikey, what we need is an office social to cool things down and get people warmed up to each other."

Lisa Connors: "Jimmy, an office social is not a good idea given the current complaints. Frankly, Mike, we could be heading for serious trouble. In their investigation, EEOC has been asking us a lot of questions about our other practices. They are asking us why there are only 11 women but 53 men in Jimmy's department and I don't know what to tell them."

James Applebee: "I know what you can tell the EEOC honey, and they won't be able to even touch us. We give an aptitude exam for programmers before we hire them. We hire only those applicants who score above 95% percent. That's why our department is so productive. Women just don't do well on that exam and that's why we have so few. I got to tell you that we have hired 11 women in the last 2 years and they are great programmers. So there is no bias in the department. I mean some women we've hired are a little uptight and don't understand the culture here, that's all. Maybe we need a special orientation for the new women to loosen them up a bit. Orientation is an HR issue. That's why I suggested a company social."

Lisa Connors: "Jimmy, I am worried about all this. I have no information on this aptitude test that you use to hire programmers. Is it any good? I mean does it have validity? How do you know that it relates to how well people actually do on the job? The EEOC could see the test as having adverse impact against women."

James Applebee: "It's a great test Lisa! Look how productive we are. We have been using this test for 10 years, long before you got here. It has a solid history of success. Smart people make good programmers. The test screens out the poor performers right away. It's obvious that it's a good test if you go through the items. Just common sense, that's all. It's not having any adverse impact on anyone but those who don't get hired and we don't want them in the first place!"

Lisa Connors: "Jimmy, one of the applicants Mary Adamson, came and spoke to me after you interviewed her. She had done very well on the test you gave her but did not get hired. She told me that you thought she was too overweight for the job. What does that mean?"

Mike Thompson: "You said that to her Jimmy?"

James Applebee: "Oh, for goodness sake. I said nothing like that at all! What I tried to tell Mary was that she would have to walk up three flights of stairs often because we have an old elevator, which goes out of service every few weeks. The elevator was not working today. This woman was so sweaty by the time she made it up here. She was huffing and puffing and couldn't speak for 5 minutes. I was afraid she would have a heart attack! The thing is we don't just look at the test scores of people but also their overall personality before we hire them. Mary is also one very aggressive woman. I can't believe she went and talked to you Lisa. She is not even working here yet! Let me tell you something about Mary. Once she caught her breath, she was very abrasive with a sharp tongue. When I asked her whether she was married and had small kids, she told me that she preferred to talk about the job requirements. Talk about being unfriendly! By the way, my secretary told me she heard Mary swear at the candy machine when it ate her quarter. I mean, is that really professional and lady like behavior to use swear words? Do we really need someone like that in the Department? She would probably hire a lawyer and charge us with something the first week she was here!"

Lisa Connors (turning to Mike): "As your HR director, I have to tell you that there are some serious legal and ethical concerns here. We can't deny someone a job because the person is overweight and it's not just the……..……"

James Applebee (interrupting Lisa Connors): "Look honey. Don't tell me what I can or can't do in my department, OK. We started this company. We make the money. We work hard for the money. Give us some respect. My department generates the revenues. Do you know the difference between line managers and staff managers? I am a line manager. You are staff Lisa. Your job is to assist and advise and then keep quiet, OK."

Lisa Connors (now getting angry): "I am not paid to keep quiet! As long as Mike is here, I want to make him aware that you have been refusing to even give tests to and interview people that are being sent to us by the state employment agency. Some of these applicants are disabled and others belong to minority groups. This is getting back to the State employment agency and the director has been calling asking for an explanation. What am I supposed to tell the agency director? Don't send us your poor and downtrodden?"

James Applebee: "This is unbelievable, Lisa! You are throwing everything but the kitchen sink at me. I know what you are implying and it is all baseless. I hired Ed Mason who is hearing impaired 3 years ago and he is working out beautifully. Frankly, the state employment service has been sending us real losers and I don't want to waste time with giving them tests. Two weeks ago, they sent this Vietnam War Veteran. He is over 55 and is in a wheelchair. Sure he has a good programming background, but how is he going to work out here? We could give him an office on the first floor but it still would not work. First, he can't reach any of the higher shelves to get the paper reports. He would need his own personal secretary to get him things! Second, where is he going to go to the bathroom around here? I sympathize with these people Mikey, but we just don't have the facilities here. I mean that's just the way it is. My focus is on getting the projects done for our clients and not on rearranging the furniture and layout of the building. The bottom line is that if we don't produce high quality code and provide effective solutions to our clients, the company won't survive."

Lisa Connors: "I am also talking about the company doing well in the future. My concern is that……."

James Applebee (Interrupting): "We have big problems right now in our Delhi office in India. If HR wants to help and provide ideas, that's where they need to focus. I want to be sending more mission critical projects to the Delhi office. They have some talented software programmers there. But with the turnover in that office, I don't know who is going to be around next month. Three of our projects are nearly two months away from the client deadlines and I don't know how we are going to do it. The programmers working on these projects have left and moved on. The manager of the Delhi office quit and left for Bangalore last week. I heard that they tripled his salary! We are in trouble in terms of meeting our obligations to some very important clients and here we are talking about someone sending some graphic and sexy e-mails. Give me a break. It's crazy for us to be even discussing this stuff!"

Mike Thompson: "Jimmy, I know you and your department have done an outstanding job and our revenues from the Software Engineering department have skyrocketed over the last 5 years. You guys are the backbone of the company. You are right that we need to straighten things out in the Delhi office and get the stalled projects back on track. That is critical. However, these HR issues here in Providence are very important to take care of. Jimmy, I am afraid we could undermine our success if we get sued over all this. I heard Coca Cola paid almost 200 million dollars in fines and Texaco paid around 176 million dollars to settle charges of discrimination. That's the reality today and we can't ignore it. I don't want DOTA to get into a bad situation. We need to be proactive and take action to set things straight."

James Applebee: "What do you suggest we do Mikey? The EEOC investigation does not scare me. We have not done anything wrong. I can look anyone in the eye and say that. We can't stop anyone from suing us. This is America. Anyone can sue. But I can defend every single policy in place in my department as being job related.

Lisa Connors: "I am not sure about that at all!"

James Applebee: "You are way out of line Lisa."

Lisa Connors: "Am I? The EEOC is going to ask much tougher questions!"

James Applebee: "Whose side are you on? Are you with DOTA or the EEOC? Who signs your paycheck honey? Ever think about that!"

Lisa Connors: "Jimmy, I am not your honey! So stop calling me that!"

Mike Thompson: "Look, we have to cool down. This is not about taking sides but thinking clearly. Jimmy, you remember that Human Resource course we took at Bryant University 12 years ago from Professor Smith in the MBA program. I think we both need to retake his course because I have forgotten most things I learned. Things have changed a lot in HR over the last 12-15 years. Anyway, the point is that Lisa is the HR Manager and she knows exactly what we need to do. This is not a line vs. staff issue. We have to work together in the best interest of DOTA. So let's not get all defensive about this."

James Applebee: "I am not defensive, Mike. I am just saying it the way I see it. We have so many other important issues right now in the company to deal with and we are wasting our time on this. By the way, the HR class was the worst class I took. I seldom went to Smith's HR classes and so thankfully have nothing to forget! Ha. Ha. Ha. Smith was boring, boring, boring, and so full of himself. I still got a C in the course. That guy is so easy. I bet Smith never knew you were signing my name on his attendance sheets."

Lisa Connors: "Well, Jimmy that sort of explains everything! You skipped your HR classes and almost flunked the course and now you are giving lectures on how we should treat people at DOTA. I never took any HR classes with Professor Smith but do see him once a month at the SHRM chapter meetings. He is very nice and helpful and the last talk he gave on outsourcing to India and China was excellent. Mike, we need some outside person to take an objective look at our situation because frankly, I am not taken seriously here in my role as the HR director."

Mike Thompson: "Lisa, I take you very seriously and appreciate your recognizing the gravity of the situation. I also agree that we have some big problems. Give Professor Smith a call. Unlike Jimmy, I went to all his HR classes and learned a lot from him. He and I live in the same town. I run into him at the Super Stop and Shop every couple of weeks. We are on good terms and he is very

knowledgeable about all these issues. Maybe, he and his HR students can help us come to grips with what is going on and what we should do next."

James Applebee: "Yeah, while you are at it, Lisa, ask Smith about what we can do in the Delhi office to reduce turnover of software engineers. If he has any bright ideas, which I doubt, feel free to pass them on."

TOM BROWN INC.: SURVIVING IN THE OIL AND GAS INDUSTRY

William T. Jackson, University of South Florida at St. Petersburg
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CASE DESCRIPTION

This case was developed through the use of secondary research material. The case has a difficulty level of five and is appropriate to be analyzed and discussed by advanced undergraduate and graduate students in a strategic management class.

The case allows the instructor the flexibility of concentrating on one strategic issue, or as a means of examining the entire strategic management process. The major focus within the strategic analysis as well as excellent stand alone modules is in the area of legal/political influence, economic, and as a means of discussing owner succession.

The instructor should allow approximately one class period for each element addressed. Using a cooperative learning method, student groups should require about two hours of outside research on each element researched. The case also provides an impetus to explore a critical industry in our world economy, yet one that has received minimal attention in most course coverage.

CASE SYNOPSIS

This case is a library, popular press and internet case which examines Tom Brown Inc. The review of annual reports, trade journals, government documents and proposed and enacted regulations must be accomplished carefully. While most students have a general understanding of the oil and gas industry, few have the current knowledge to compare this industry against more traditional production operations. A review of these resources should lead students in determining the future of the company and the current CEO, Tom Brown.

INTRODUCTION

Tom Brown sat at his desk staring out the window into the west Texas sky as a typical dust storm blew through the area. Brown could not begin to count the number of these storms he had endured over his near fifty years in the oil business in the Permian Basin. But, he really wasn't

thinking too much about the weather right then, he was focused more on other storms that he had experienced in this industry, and how the horizon for the industry was as dark and uncertain as the Midland skyline had become.

With the industry experiencing a drastic slow down in prices what would the future hold for Tom Brown and his company. Was fifty years enough to ride the highs and lows of this ever changing industry, or was there one more wave to ride?

COMPANY HISTORY

> *"Tom Brown, Inc. is an independent energy company engaged in the exploration for, and the development, acquisition, production, and marketing of natural gas, natural gas liquids, and crude oil primarily in the gas-prone basins of the North American Rocky Mountains and Texas."*

Tom Brown Inc.'s (TBI) beginnings date back to 1955 when Tom Brown and Droyle Scarber partnered to purchase a trailer mounted drilling rig under the name Brown and Scarber Drilling. After one year of operation, Tom Brown bought out Scarber's interest in the company. In 1959, Brown offered half the company, assets and debt to his rig supervisor, Joe Roper, for $2500. This established a partnership that grew to 12 rigs in the next ten years. In 1969, the partnership purchased an established corporation, the Gold Metal Consolidated Company. Under the corporate umbrella, the name was changed to Tom Brown Drilling Co., Inc. and it became one of the first publicly traded oil companies of the Permian Basin of West Texas.

The 1970's marked an important era in the company's history. They increased diversification and investments in oil and gas properties ultimately dropping the "Drilling" from their name and becoming Tom Brown, Inc. in 1971. A partnership with Adobe Oil & Gas developed significant oil reserves and gave the company a valuable cash stream used to finance additional gas exploration. A major oil find was made in 1975 when TBI discovered the Muddy Ridge Field. This field, part of the Wind River Basin of Wyoming, ultimately grew into the companies primary reserve base.

In 1979, TBI formed Oncor, a wholly owned subsidiary specializing in down-hole drilling tools. Oncor was profitable through 1981, but the beginning of the oil bust the following year led to a net loss of $25 million. This loss, along with increasing expenses due to rig purchases and continued oil and gas exploration, contributed to the $200 million debt TBI recorded in 1982. The company was forced to sell Oncor and interests in various oil fields during the next three years as they settled their debt.

Their willingness to honor their financial commitments earned TBI the reputation as a trustworthy company in the Permian Basin. But it also impacted the degree of risk the company would be willing to assume in the future. Fearful of debt exposure in the cyclical oil and gas

industry, the company subsequently operated with minimal leverage and followed an unwritten policy to finance operations and acquisitions with the issuance of equity.

During this time, TBI also underwent a corporate restructuring. The drilling operations were spun off from the exploration and production activities and began operation as the "Tom Brown Drilling Company". The drilling company purchased Sharp Drilling Company in 1986, forming TMBR/Sharp Drilling, a nationally recognized leader in the drilling business. Joe Roper served as President and CEO of TMBR/Sharp Drilling until his death in 2001. At that time, Tom Brown replaced him as CEO.

The exploration and production activities remained under the "Tom Brown Inc." organization. Tom Brown Served as President until 1987, Chairman of the Board from 1987 to 1995, and as Director from 1995 until the present. Tom Brown Inc changed its state of incorporation from Nevada to Delaware in 1987. At this time, declining stock prices due to the industry bust in the 1980's forced the company to offer a 20 – 1 stock split. It was not until 1990 that the company reported positive operating revenues.

The vast majority of TBI's growth that relates to its current operations has taken place over the past decade. To understand and appreciate the magnitude of this growth and the changes that have taken place, a year-by-year breakdown of operations and activities is given below.

Table 1: Tom Brown Inc. Activity: 1992-2002

Year	Investment	Divestment	Source of Funds	Amount
1992		Willingston Basin (ND, Montana)		($7.0 M)
	Arkoma Basin (AR)			$1.6 M
	Wyoming's Wind River Pavilion Field			$3.4 M
1993	Wind River Pipeline			$2.2 M
			Stock Issuance	($38.6 M)
	Val Verde Basin of South West Texas			$1.6 M
1995	Presidio Oil & Gas Index notes		Bank Loan	$56.0 M ($56.0 M)
			Renegotiated bank loan	($65.0 M) $56.0 M
		Arkoma		($9.0 M)
			Stock Issuance and paid loan	($47.0 M) $65.0 M
1996	K. N. Production Co.			$36.25 M
			Preferred Stock Issuance Common Stock Issuance	($25.0 M) ($11.25 M)
	Finalized remaining purchase of Presidio			$206.6 M
			Stock Issuance	($46.4 M)

Table 1: Tom Brown Inc. Activity: 1992-2002				
Year	**Investment**	**Divestment**	**Source of Funds**	**Amount**
1997			ND Properties	($11 M)
			Stock Issuance	($121 M)
	Genesis Gas & Oil			$35 M
	Interenergy Corp			$23.4 M
1998	Sauer Drilling Co.			$8.1 M
1999	Relocation to CO			$2.1 M
	Unocal Rocky Mountain assets			$60.9 M
			Stock Issuance	($55.9 M)
	Greater Green River Basin of WY			$7.7 M
		DJ Basin of NE Colorado		($2.3 M)
2000	Wind River Pavilion field			$15.2 M
2001	Stellarton Energy Inc.			$94.8 M
			Canadian Loan	($94.8 M)
	Don Evans (CEO) resigned to become Sec. of Commerce and receives bonus and non-cash stock option charge of $3.8 M			$1.5 M
		Oklahoma Assets		($24.5 M)
		Wildhorse		($24 M)
	Deep Valley Project			$8 M
2002		Wyoming Power River Basin		($7.2 M)
		Louisiana Holdings		($2.0 M)
		Colorado Holdings		($1.6 M)
	Green River Basin			$14.9 M

As is evident from the table above, TBI engaged in considerable exploration and investment in land and other assets during the 1990's and early 2000's. Prices began to fall drastically during the end of 2002 and early 2003. Even during these times, the company's financial standing remained strong.

Table 2: TOM BROWN, INC. BALANCE SHEET
($ thousand)

	2002	2001	2000	1999
Cash & Equivalents	13,555	15,196	17,534	12,510
Accounts Receivable	47,414	63,745	95,878	53,646
Inventories	1,808	1,689	521	829
Other	3,988	2,332	2,307	1,625
Total Current Assets	66,765	82,962	116,240	68,609
Property & Equipment, at cost				
Gas and Oil Properties	959,807	849,628	575,991	470,461
Gather & Process & Plant	101,054	89,343	81,873	71,657
Other	35,930	33,689	28,746	23,027
Depreciation	-320,306	-234,134	-176,848	-133,342
Net P&E	776,485	738,526	509,762	431,803
Other Assets				
Deferred Income Taxes, net	0	0	0	28,625
Goodwill, net	0	18,125	0	0
Other Assets	7,702	5,362	3,533	35,887
Net Other Assets	7,702	23,487	3,533	64,512
Total Assets	850,952	844,975	629,535	564,924
Accounts Payable	42,773	59,172	55,982	39,489
Accrued Expenses	21,993	12,512	22,119	9,763
Fair Value of Derivative Instruments	10,886	0	0	0
Total Current Liabilities	75,652	71,684	78,101	49,252
Bank Debt	133,172	120,570	54,000	81,000
Deferred Income Tax	73,967	75,194	5,475	0
Other Non-Current Liabilities	4,543	2,299	3,066	3,950
Total Liabilities	287,334	269,747	140,642	134,202
Stockholder's Equity				
Convertible Preferred Stock	0	0	0	100
Common Stock, ($0.10 par value)	3,926	3,913	3,835	3,531
Additional Paid-in Capital	537,449	534,790	516,911	495,817
Retained Earnings	29,678	37,855	-31,648	-97,351
Accumulated Other Comp. Loss	-7,435	-1,330	-205	0
Total Stockholder's Equity	563,618	575,228	488,893	402,097
Equity & Liabilities	850,952	844,975	629,535	536,299

Table 3: TOM BROWN, INC. INCOME STATEMENT ($ thousands)				
	2002	2001	2000	1999
Oil, Gas & Liquid Sales	194,276	274,031	216,968	104,431
Gathering & Processing	20,467	23,245	18,283	11,968
Marketing & Trading	5,276	1,891	5,841	-786
Drilling	14,347	14,828	11,472	5,645
Gain on Sale of Property	4,114	10,078	0	1,265
Change in Derivative Fair Value	-2,406	897	0	0
Loss on Marketable Securities	-600	0	0	0
Interest Income & Other	171	1,345	1,346	888
Total Revenues	235,645	326,324	253,910	123,411
Costs and Expenses				
Gas and Oil Production	32,151	32,060	25,488	18,446
Taxes on gas & oil	16,621	21,020	22,105	9,934
Gathering & Processing Costs	6,918	10,855	7,212	5,853
Drilling	13,763	11,851	9,715	5,237
Exploration Costs	22,824	34,195	11,001	10,013
Impairment of Leasehold Costs	5,564	5,236	3,900	3,600
General & Administrative	18,413	22,742	11,614	9,203
Depreciation, Depletion, & Amor.	91,307	74,371	50,417	44,215
Bad Debts	5,222	1,043	133	n/a
Interest Expense & Other	9,726	7,347	5,967	5,860
Total costs and expenses	222,509	220,720	147,552	112,361
Income Before Taxes & Cum Effect of Change in Acct. Principle	13,136	105,604	106,358	11,050
Current Income Tax Provision	229	1,200	1,968	903
Deferred Income Tax Provision	2,981	36,927	37,812	3,390
Cum Effect of Change in Acct. Principle	-18,103	2,026	0	0
Net Income	-8,177	69,503	66,578	6,757
Preferred Stock Dividends	0	0	875	1,750
N.I. Attributable to Common Stock	-8,177	69,503	65,703	5,007
Weighted Average # of Shares outstanding				
Basic	39,217	38,943	36,664	32,228
Diluted	40,327	40,227	37,897	32,466
Net Income/Share (Basic)	-0.21	1.78	1.79	0.16
Net Income/Share (Diluted)	-0.20	1.73	1.73	0.15
Earnings/Share (Basic)	0.25	1.73	1.82	0.21
Earnings/Share (Diluted)	0.25	1.68	1.76	0.21
**Note: Earnings/Share strips out the cumulative effect of accounting change.				

INDUSTRY ENVIRONMENT

Natural gas is one of the most versatile energy sources in the world. It is a clean burning, safe, and useful fossil fuel extracted from within the earth's crust to help power the world's economy. This gaseous fossil fuel is composed of a combustible mixture of hydrocarbons—primarily methane, but also to a lesser extent ethane, propane, butane, pentane, and variable amounts of inert gases including CO2 and nitrogen.

Once it is extracted from the ground, natural gas is processed such that the inert gases are removed and the pure forms of methane, ethane, propane, butane and pentane are separated from one another. Each of these gases, in their pure forms, has their own different applications. For example, methane is the primary component used to heat houses as well as to generate electricity at gas-fired power plants. The heavier components of natural gas (i.e. propane) are used in specialty applications including barbeques, industrial engines, and specialty home furnaces.

The production of natural gas has occurred for centuries dating back as far as 500 B.C. when the Chinese first built a small pipeline out of bamboo shoots to transport natural gas seeping from the surface to a seawater distillery. The first well in the U.S. was drilled in 1821. However, it wasn't until 1859 that commercialization of this gas was developed. Colonel Edward Drake drilled this famous Pennsylvania well that year and piped the gas 5 ½ miles to the city of Titusville, where it was used to light houses and streets.

For the most part, unfortunately, many of the natural gas discoveries made while drilling for oil wells in the 1800's and early 1900's were capped (flared). In those days, very few pipelines existed to transport this energy source to areas where it could be used. As a result, this gas was essentially worthless to oil producers.

It wasn't until the 1920's that significant effort was put into developing the natural gas pipeline infrastructure. Welding technologies resulting after World War II added to the ability to advance the construction of reliable pipelines even more. In addition, the advent of better compressors allowed gas to be transferred over long distances through these pipelines. During the 1960's, thousands of miles of pipeline were laid. These lines created the backbone of the natural gas infrastructure that our country enjoys today.

The history of the natural gas industry is filled with market regulation. Possessing significant competitive advantage and the ability to monopolize markets, capital intensive pipelines were recognized early on as a threat to vital public interests. In fact, local governments regulated the sale of natural gas as early as the mid-1800's. Sales eventually grew out of local jurisdiction districts and into the state arenas. As such, states began regulating natural gas sales in 1907. As pipelines grew to incorporate interstate dealings, it was only a matter of time before the federal government took complete control.

In 1938, the Natural Gas Act was passed, which gave the Federal Power Commission (FPC) jurisdiction to regulate interstate natural gas sales as well as new pipeline construction. Even though

regulating the sales price that pipelines could charge consumers, the NGA did not regulate the price in which gas producers could sell their commodity to pipelines. But this changed in 1954 with the passing of the Phillips Act.

The Phillips Act called for a maximum price on what producers could charge based on the producing company's cost to extract the gas. Due to the paperwork and manpower nightmares that this created, the FPC decided to institute regional price ceilings in 1960. Unfortunately, these price ceilings were extremely low and were not increased between 1960 and 1974. As such, producers stopped developing natural gas reserves, which instigated the natural gas shortage in the 1970's.

In an attempt to change the system, the Natural Gas Policy Act of 1978 was passed in an attempt to deregulate the industry and to bring supply and demand into equilibrium. Around this time, pipeline companies were also allowed to change their business scope and charge a "transportation fee" for use of their pipelines, instead of purchasing gas from the producer and selling it to the customer. This allowed the consumer and producer to come into better contact with one another and negotiate delivery contracts on a direct and personal level.

Deregulation was completed with the passing of the Natural Gas Wellhead Decontrol Act of 1989. This act called for all remaining areas of regulation to be freed from constraints and subjected to market forces in their respective regions, effective January 1, 1993. Therefore, all natural gas producers operating in today's industry are subject to no government regulation, rather to the forces of supply and demand that exist in their respective areas of operation.

While the industry is relatively free of government intervention today, it is difficult to predict forthcoming legislation and changes in governmental regulations that may impact the industry. Both the President and Congress see the need for a change in U.S. energy policy. The U.S.'s dependence on foreign oil has adverse economic and geopolitical consequences. Government and industry view natural gas as an alternative to fuel oil and a clean fuel for the generation of electricity.

The natural gas production industry sells a relatively undifferentiated commodity. There is no proprietary product difference or brand identity associated with natural gas. Depending upon the nature of the project, capital requirements associated with domestic natural gas production are also fairly low. Because single-person independent exploration companies can purchase most undeveloped acres for around $50/acre, drill a single well for $300,000 to $5,000,000 (depending on the area and targeted depth), prove the reserves and then sell those reserves to other parties, they represent real and legitimate forms of competition.

THE ENVIRONMENT

Throughout the history of the oil and natural gas industry, the market value of the commodity has been the single most important determinant of a firm's profitability and market capitalization. Stock prices generally follow very closely natural gas wellhead prices. Although the correlation is

not exact, evidence from most companies within the industry point to the fact that spikes in gas prices do correspond to general increases in most stock valuation.

The correlation is exemplified starting in 1998 when Wall Street suddenly realized that low-cost natural gas reserves were no longer being discovered in North America and that demand for natural gas is continually increasing. The shortage of natural gas in 2000 sent prices, and thus profits for companies producing natural gas, skyward. Realizing natural gas's increased value as a limited resource; the stock market deservingly increased most companies' market capitalization value.

There is no dispute that natural gas prices impact the performance of companies producing this commodity—that relationship would be apparent to any onlooker. However, the real economic analysis revolves around what factors influence the price of natural gas.

Long-term commodity prices are subject to basic supply and demand economic principles. Therefore, when determining industry attractiveness, it is important to analyze both the production and consumption characteristics affecting the industry in order to estimate long-term commodity prices. As the North American economy grows, there is a direct increase in the demand for natural gas, either in the form of raw methane to fire industrial engines and to heat homes or in the form of electricity needed to build new products. In fact, according to the Department of Energy, consumption of natural gas in the U.S. is expected to increase from 24.6 TCF (trillion cubic feet) in 2005 to 32 TCF in 2020, representing an annual growth rate of 1.8 % per year.

Natural gas reserves are plentiful when looking at worldwide volumes. It was estimated by the *Oil and Gas Journal* that in 2001 the worldwide gas reserves equaled 5,288 trillion cubic feet of gas (TCF). During the same year, worldwide consumption totaled 90.27 TCF. This equals a reserve life of 58.6 years. With new discoveries in the Middle East, Nigeria, and the Former Soviet Republic (FSU), this figure is expected to grow. However, these gas reserves are concentrated mainly in the FSU and Middle East countries. Of the 5,288 TCF of gas reserves, North America represents only 5.3% of the total (281 TCF).

The current problem with the world's supply of natural gas is the mismatch between reserves and consumption. Although North America only accounts for 5.3% of the reserve base across the world, it currently consumes 29.8% of the world's produced gas. Whereas the world has a reserve life in 2001 of 58.6 years, North America has a reserve life of only 10.0 years. (Reserve Life is a measure of the total developed reserves compared to current production rates—assuming an absence of future drilling. Therefore, reserve life = reserve base/current production rate).

Unlike oil, natural gas is not easily transferred across long distances. Naturally, gas occupies more space than oil in its natural form and cannot be economically shipped by tanker in conventional means. Currently pipelines are the most economical form of transporting natural gas, but this method is not economically feasible for trans-oceanic transport.

The only means of transporting natural gas from the oil-rich regions to the U.S. is via Liquefied Natural Gas (LNG) tankers. LNG is created via a freezing and condensing process, whereas the impurities of the gas and the majority of heavy hydrocarbons are removed to obtain a

near 100% methane mixture. The methane is then condensed by freezing it to minus 280 degrees Fahrenheit. Then the LNG would be shipped via the special tankers to regasification facilities to convert back to gaseous methane. This entire process is not typically economically feasible. Currently there are only four such plants in the U.S. These plants exist in Everett MA, Lake Charles LA, Elba Island GA and Cove Point MA.

The current plan for meeting U.S. demand will come from three sources. First, Canadian exports to the U.S. are expected to increase drastically from 3.69 TCF in 2001 to 5.08 TCF in 2020. Canada relies primarily on hydroelectric plants for its energy needs and has an over abundance of supply. Secondly, actual production in the U.S. is expected to increase through 2012. Finally, unconventional sources of energy such as coal bed methane, shales, and tight sands are expected to increase. Much of the increase, however, is directly related to the escalation of prices.

Drilling activity becomes more economical when natural gas prices increase, as was evident during the early months of 2000 when the number of rigs increased from around 300 to upwards of 1,000 when natural gas increased from $2.00/mcf (million cubic feet) to $8.00/mcf. As prices reached these historic levels, unconventional gas reserves suddenly became economical to develop, sparking a rapid increase in drilling activity.

Because both quantities supplied and quantities demanded change in direct response to the price of natural gas, each tends to be very dynamic. It is this dynamic behavior that leads to the cyclical nature of energy prices. As prices fall due to an existence of excess supply or a decreased level of demand, exploration and development companies stop or slow down their drilling programs. This decrease in drilling causes a decrease in production (supply). As the demand side exceeds supply prices increase. After analyzing whether prices will remain high, drilling increases—most companies follow this approach and thus supply quickly exceeds demand and drilling slows. Thus, the cycle begins again.

As the natural gas industry continues into the 21st century, these cycles will be even more pronounced. Instead of the average fluctuation of +/-$1.00/per mcf, fluctuations similar to those witnessed from 1999 to the present will be the norm.

For independent natural gas producers the projections for future growth are encouraging. Major integrated companies such as ExxonMobil, BP, ChevronTexaco, ConocoPhillips, and Marathon Oil Company continue to exit the domestic energy market in search of the high-volume, low-cost oil reserves found abroad. Therefore, while the exact figure is not known, market increases for independent natural gas producers are expected to increase at a rate significantly higher than the 3.51% average for the industry as a whole.

Fixed cost as a percentage of value added is negligible for natural gas producers. Unlike manufacturing industries, where firms battle each other for market share in order to capitalize on their high fixed-cost structures, the natural gas production industry realizes relatively low fixed costs. Because these firms sell a commodity product, market share is of little consideration and price wars are never witnessed. Although independent natural gas producers do have fixed costs in terms

of company overhead, these costs are relatively insignificant compared to the variable costs associated with drilling, completing, and producing wells.

Natural gas is a non-branded product that has little to no product difference. As such, competition between firms to differentiate their products and gain market share is of no concern. Again, natural gas is a traded commodity, in which prices are dictated by simple supply and demand principles. Therefore, competition between firms is negligible with respect to sales volumes and prices of natural gas.

The complex nature of the natural gas industry does lead to competition amongst firms with respect to industry-specific knowledge. Competition, in general, exists only in regard to leasing new lands and employing the expertise necessary to develop those projects.

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SUNNY VIEW MEMORIAL HOSPITAL: A DAY IN THE LIFE OF A BUSY HOSPITAL PHARMACY MEDICATION ERRORS, MANAGERS, AND MISSING MEDICATIONS, OH MY!

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CASE DESCRIPTION

The primary subject matter of this case is concerning the managerial and personnel issues in a hospital pharmacy. Focus is on the implications of mismanagement leading to localized medication errors, dissatisfied employees and a global endangerment of patient wellbeing. The case also provides insight into the behind-the-scenes of a hospital pharmacy atmosphere.

Secondary subject matter includes issues of organization and cooperation of the work force that increase the problems in the hospital. The case can be used to assist in specifically improving and understanding the function of management in a regulated healthcare setting or to generally illustrate the importance of proper leadership and organization to prevent local and global issues in the workplace.

This case has a difficulty level of two to three. The case is designed to be taught in two class hour(s), requiring three hours of preparation.

CASE SYNOPSIS

Time is 11:30am. Date is October 15, 2006. Location is Sunny View Memorial Hospital Centralized Pharmacy. Phone line 1: Emergency Room needs IV morphine STAT! Phone line 2: Surgical Room 3 still needs the syringes that were ordered three hours ago!

The incessant requests and ringing of the telephone exhaust the overworked pharmacists of the small city hospital. To add to the chaos, the hospital pharmacy manager has been insisting that the pharmacists must work even harder to prevent the errors and medication problems that have been steadily increasing over the past weeks in the hospital.

In a hectic work environment without effective guidance to reach any goals to decrease these errors is leading Sunny View Memorial Hospital down a path of destruction and failure. With an inefficient dictator-like pharmacy manager placing the blame on others and not taking control, medication orders pile up and life-threatening errors are occurring in the pharmacy and putting

patient's lives at risk. The over-stressed, but experienced pharmacists are too busy to use their knowledge to correct the blatant issues that are ruining the hospital's reputation.

This case, which focuses on the local and global implications of poor management in a hospital pharmacy setting provides insight into the utility of proper management techniques in the healthcare system to enhance patient safety. Real life medication errors that have occurred in a hospital are included to further stress the importance of proper management, organization, and personnel unity and cooperation that are necessary to prevent both employee dissatisfaction and patient emergencies.

Discussion of this case will allow students to understand and diagnose the local and global problems in the pharmacy workplace environment, create goals to help reduce medication errors, and develop specific solutions to these problems using management theories and techniques.

SATURDAY OCTOBER 14, 2006: PM SHIFT

Ami Triptyline, PharmD walks into her windowless concrete cubicle known as her office just as her weekend shift begins at seven o'clock in the evening. She looks onto her desk covered in stacks of papers and files. A pink "IMPORTANT" paper sits atop the rest of her day's work:

From the Desk of Sunny View Memorial Hospital's Pharmacy Manager:
Memorandum

To: Hospital Pharmacists
From: Hospital Pharmacy Manager
Date: October 14, 2006
Re: Errors and More Errors

I have become disappointed with all of you once again. After attending this month's Pharmacy and Therapeutics Committee meeting, you have had more errors this month than any other month before. I told you all at our last meeting that these errors must stop. You all need to pay attention to what is going on around you. There are lives that are in danger because of your lack of care. Next month, the centralized pharmacy is expected to make less medication errors and deliver the STAT medications within the 15-minute timeframe that is our hospital's standard. Make yourselves productive, stop the 20-minute coffee breaks and make fewer mistakes. My job is on the line to get you all to work like you are supposed to work. You all did not go to pharmacy school to make mistakes and cause problems. Show the hospital you are capable.

By the way, I will also need a few of you to work overtime next week again due to lack of pharmacist coverage in the centralized pharmacy.

I will be out of town at a manager's conference. Direct all problems to my secretary. I expect to come back and hear that there have been no errors.

SUNDAY OCTOBER 15, 2006

Centralized Pharmacy in the basement of Sunny View Memorial

2:58….2:59…..3:00a.m….

The shift is finally over. After working eight hours in the centralized pharmacy at Sunny View Memorial Hospital, Ami Triptyline, PharmD can finally go home. She has worked (over-worked) at Sunny View Memorial Hospital for ten years now: "That was one of the most stressful eight hours on a Sunday shift! The phone has not stopped ringing and the notice I received this morning from the pharmacy manager has driven me to the edge."

Her colleague Connie Dean, PharmD., agrees: "He incessantly tells us that we are making 'unacceptable errors' and 'lives are in danger', but nothing is ever done to improve our routine except make us work longer shifts! I'll see you tomorrow for your weekly fourteen-hour shift. You need some sleep."

As Ami exits the pharmacy, she notices a new pink memo from the Hospital Pharmacy Manager in her mailbox…

10:45 a.m.

Pharmacy Manager's Office (behind an always closed door)

"I cannot believe they are making more and more errors in that centralized pharmacy. Don't they ever listen to me when I talk to them? I have told them numerous times to think clearly, work harder, and make fewer errors. We are the busiest hospital in the county. They are putting lives in danger. What more can I do?"

11:30 a.m.

Centralized Pharmacy

Fax after fax, phone call after phone call… "ER needs morphine STAT, pediatrics need insulin STAT…Surgical Room 3 is still out of syringes that they asked for 3 hours ago…"
The demand is overwhelming for the two clinical pharmacists on duty, Al Prazolam and Val Sartan. After six phone calls in a row, exasperated, Al complains, "This is simply too much work for two pharmacists in a busy community hospital. I haven't gotten off the phone since I got here two hours ago." *(ring…ring…)*

Val adds, "The hospital needs to change, but our Pharmacy Manager won't even meet with us to discuss progress and improvements. He only meets with us to tell us how we are not acting as clinical pharmacists and everything we do is wrong or it's the infamous pink paper in our mailboxes." *(ring…ring…)* "All I feel I do is answer the phone and get yelled at. I did not go to pharmacy school for four years to be a telephone operator."

After being berated over the phone by a nurse for sending up yet another incorrect medication to the ICU, Al continues the conversation, "All our Pharmacy Manager ever talks about is the obvious-- there are more errors occurring in this hospital. To top it off, he is *proud* of how Sunny View is the busiest hospital in the county, what the…"
"BOOM!"

The two overworked pharmacists' complaints are cut short as the pharmacy door slams and the Pharmacy Manager storms into the pharmacy, "Why was *morphine* instead of *saline* sent up to the Critical Care Unit…didn't you three get my last memo? Stop making errors, patient's lives are in danger…"

Sunny View Memorial Hospital Stats:

1. 250 bed hospital
2. Equipped with Emergency Room and Outpatient facilities
3. Built in 1973
4. No renovations since 1990
5. Centralized pharmacy only (no automatic dispensing machines on any of the floors or any decentralized pharmacies

The following are confidential documents obtained from the Medical Records office at the Sunny View Memorial Hospital.

Earlier in the month: P&T Meeting, In Attendance: Hospital Pharmacy Manager, Hospital CEO, Charge Nurses and Pharmacy Staff
Meeting called to order at 15:30.

The Pharmacy and Therapeutics Committee has examined the types of medication variances that were occurring in the Sunny View Memorial Hospital Pharmacy over the past 4 weeks. Each case was examined to figure out the severity and the party at fault. Each case has been confirmed for its validity and responsible parties have been notified.

Case #234

Newborn boy given two Hepatitis B vaccines in the Neonatal Intensive Care Unit (NICU) Protocol is one dose Hepatitis B to be given as necessary. Medical records do not record the first dosage, pharmacy records indicate ordering of two dosages. Patient risk level: moderate

The party at fault was between the pharmacy and charge nurse who were to have monitored vaccine distribution and administration.

Case #367

Medical Resident infuses patient IV with Potassium Chloride. Patient consequently goes Code Blue. Patient risk level: severe

The party at fault was deemed to be the medical resident and pharmacy. Pharmacy requires proper paperwork before delivery of Potassium Chloride to the respective floors.

Case #633

Complaint by charge nurse on the 5th floor that pharmacist hung up on them when they were trying to order patient medication. Patient risk level: low

Party at fault determined to be the pharmacy, disciplinary actions to be taken. All phone calls must be taken seriously no matter how busy the pharmacy is.

Case #752

Post-surgery patient was not given Heparin drip that was required after surgical procedure. Patient risk level: moderate

The party at fault was determined to be the pharmacy. Records indicate that the pharmacy was contacted 6 times to deliver the medication to the patient. Errors such as these put patients at risk.

Case #913

The wrong size IV bag was sent to the patient. Order stated 25 ml, actual bag contained 50 ml. Patient not a risk because error caught before administration. Patient risk level: low

Party at fault determined to be the IV pharmacist who must double check medication orders against compounded IV bags.

The above selected cases are the unique cases that have been brought to the committee's attention over the past month. Overall, pharmacy is responsible for 55% of the medication errors,

nursing is responsible for 40% of medication errors, and 5% is a combination of multiple contributory factors.

Other statistics completed by the Pharmacy and Therapeutics Committee included the time elapsed on STAT orders. It was determined that the average STAT order was delivered within 15 minutes 35% of the time. The Sunny View Hospital standard goal is to have STAT orders to the floors at least 85% of the time within the 15-minute time frame. Over the period of 24 months, the STAT order delivery percentages have been decreasing by an average of 4.3% per month. The average time of delivery was calculated to be 75 minutes.

The Hospital Pharmacy Manager will be in charge of ensuring better STAT delivery and less medication errors for the next four week time period. It is his responsibility to get the pharmacy under control. The pharmacy was determined to be the root cause of the hospital's declining statistics.

Meeting Adjourned 16:45