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The Delphi Decision: A Case Study

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Introduction

Since the rise of the industrial age, manufacturing has been subject to a number of constraints and, likewise has been presented with a number of opportunities. Economic historians have documented the shifts that accompanied a demographic movement from rural eras into urban areas as factories raised the demand for concentrated labor forces, often in conditions ill-suited for all but the strongest. Literary figures including Dickens and Hugo recount in their works the trials and travails of these times. The industrial eras most symbolic representation is perhaps the automobile, combining the technology of the age, and in turn, converting society into a mobile force with what seemed to be an endless market for transportation which provides independence.

The automobile has led the way in global marketing, especially in the post World War II era. As such, as the twentieth century draws to a close, it has become one of the leading industries in globalization by using all the available labor and capital assets at its disposal in the most efficient fashion. This globalization, much discussed for years, has become reality and students of commerce must increasingly become aware of the forces that led to this trend. This involves multiple facets, including, but not limited to, questions of historical political and economic factors that created the friendly political climate for globalization? Put another way, why would an American industrial giant, such as the Big Three in the automotive field, move significant operations offshore? Are not multinational activities more subject to risk? From another perspective, in individuals instances what industrial units or components of the production process are likely to be placed into a global operations environment? What contributes to a decision to move one or more components offshore? Thirdly, are operations which have moved offshore in the past few years different in their perspective than those we associate with the multinational movement of the 1950s and 1960s, bringing with them a work environment than involves investment in human and communities as equal to concern for profits? Are contemporary globalizations likely to be different than a well-documented set of international ventures of the twentieth century in which corporate giants from western Europe and North America harvested and captured a vast array of resources in the name of the developed world. A set of actions that would stir the minds of the authors of *Les Miserables* or *Oliver* in no less a fashion than it did in the past?

This is a vast array of questions and concerns that while troublesome in their breath can be discussed in part through a case study of one component of the automobile industry. The Delphi Automotive Systems Group, a wholly-owned subsidiary of the General Motors Corporation, provides a setting for exploring how globalization has

occurred and if contemporary actions by these corporations are reflective of a new era in industrialization. The Delphi story is not an easy one to understand, unless one simply wants to focus on the bottom-line. It is a story that is tied to the rise of the maquiladora movement in Mexico, free trade and trade and investment incentive programs around the world, and a global labor force in which actions in one place effect the operations of another. This is really three case studies in one and can be viewed as such or used as a whole. In this first part, CASE A, the political and historical setting of Mexico is presented. Mexico worked diligently to improve conditions for foreign investors and the story as it is told provides students and teachers with an opportunity to ask the question, What would I have done in this instance? Regardless of whether or not one is interested in the automobile industry, the events that occurred will no doubt emerge in other locations around the world, and a lesson may be learned about how industries in developed countries can be induced into developing nations.

In the second part, CASE B, we discuss the particulars of Delphi and why it moved its North American design center and a significant part of its labor intensive activities to Mexico. This section deals with some of the specifics related to Delphi, and by sheer chance also includes discussion of the GMC strike at the Flint Michigan metal stamping factory in the summer of 1998. It suggests how an operation can be insulated from, as well as impacted by the contemporary corporate industrial process than has embraced globalization.

In the third part, CASE C, a more abstract approach is used that asks you to look at Delphi in light of its organizational typology. Recent literature has suggested that the post-industrial era should bring in a new form of organization with attributes that reflect the lessons learned in the twentieth century, especially the last half of the century. This conceptualization, which is linked to the literature of organizational theory, human resource management, and futures thinking, among others, is discussed and we ask you to apply it to the Delphi case. Students are asked what lessons can be learned and what can be improved as globalization becomes the norm in the next millenium.

Whether used as a single case or a set of cases, we have provided some learning tools. First, we have placed important words or phrases in *italics*. While no glossary is provided, we feel these are terms that students should become familiar with because their meaning bears heavily on decisions made in both the public and private sectors. Second, we have provided some study or discussion questions at the end of each sub-case, that can help direct inquiry into the topics discussed. Third, we have tried to document details using a combination of materials from primary and secondary sources, as well as traditional library references which we hope will assist students in

this and other activities by serving as an indicator of what is available to them. Fourth, we have supplemented the cases with figures and charts where appropriate, hoping students will begin to see the value that these lend to interpretation, but also how they are interpreted throughout the text.

Case A

The History and Politics Behind the Maquiladora Program on the U.S.-Mexico Border

Introduction

The political and economic climate that leads to corporate decision making relies extensively on the political process that has preceded any decision in the country under consideration for investment. Put simply, few investors are willing to invest in a high risk political setting that is marked by civil unrest, government instability and/or economic chaos. In this regard, a first step, that we believe many business students are not adequately prepared for, or even aware of, is an understanding of the political and economic conditions that led to the contemporary setting in which corporate decisions are made. In an era of increased *globalization* it is increasingly important that we understand the social and political setting in which we intend to invest our *capital*. Thus, we begin by discussing the development of the *maquiladora* program in Mexico, and while the *maquiladora* program is part of a larger Mexican economic and political history that is of great importance, its development is considered as one important component worthy of in-depth consideration in the Delphi case.

The Maquiladora Program

The maquiladora program was established in Mexico in 1966 as a preliminary step in the industrialization of the Mexican economy. To some it may be viewed as an expression of Mexico's *open trade* posture, however, Mexico still had major trade barriers until 1986. Prior to the peso devaluation in 1983, after which time the maquiladora program literally exploded, *Import Substitution Industrialization* allowed the government to subsidize otherwise inefficient domestic production. Primarily, the Mexican industry, which is demonstrated its offset imports, was subsidized by the government. In addition, the *bracero* program that had sent many Mexicans into the western United States to work in the agriculture sector, was scaled-back and the Mexican government sought new opportunities for employment in the northern border region. From this perspective, employment needs, as much if not more than free trade, may have provided the impetus for the maquiladora industry.

The maquiladora program allowed for 100 percent foreign capital participation in *in-bond companies*—with the exception of companies in the textile and garment industries. It also allowed for *free customs entry* and exit of machinery, equipment, consumables, parts and components. The maquiladora program was key in re-orienting

Mexico from a closed, largely agrarian society with a degree of isolation, toward foreign export markets, which in turn, produced new concepts in production management and technology important to the Mexican economy.¹

The United States automobile industry, along with electronics producers, was among the first to participate in Mexico's maquiladora program, and continue to be major participants in the program today. Although Mexico is a preferred location for automobile industry maquiladoras, the industry has also expanded worldwide. Practically all major producers (i.e. General Motors, Ford, Toyota, etc.) and component manufacturers have acquired a global perspective in defining strategies.²

More specifically, the U.S. auto industry today is actually a set of *multinational corporations* having interests not necessarily always in-line with overall American industrial objectives. Despite being U.S. companies from a legal perspective, namely articles of incorporation, firms requiring vast amounts of labor continue to move outside the U.S. to employ cheap labor, i.e., less costly labor than American Unions, and minimize *capital costs*.³ The maquiladora program, of which the U.S. automobile industry is an integral part, allows U.S. plants to establish operations in Mexico in order to take advantage of low cost labor, providing a *comparative advantage* in global production processes. The program had roots in several failed mid-twentieth century efforts by the Mexican government to provide border citizens with jobs such as the Bracero Program.⁴ Since its inception, the maquiladora program has been essential to border development on both the Mexican and American side. For example, in El Paso it is reported that 60 percent of El Paso's economy is tied to trade with Mexico, and 90 percent of that trade is maquiladora-related.⁵

In this section our study examines the historical development that led to the maquiladora program. Historic and economic trends are used to evaluate the program's results and impact on the U.S.-Mexico border and globalization. The information provided will assist in assessing a company's potential or future interests in participating in the maquiladora program and serve to compare those interests with current operations of the focus of this study—General Motors Delphi. The advantages of relocating to the El Paso, Texas-Ciudad Juarez, Chihuahua border will also be addressed as a sub-component of the case study, bringing the concern for geographic links to other phases of the modern production process into the decision calculus.

The Historical Context

In order to better understand how the maquiladora program developed, it is necessary to consider the historical context in Mexico through which the program emerged. Mexico created the first *free zone* on its northern

border in 1861 to deter migration from Mexico to Texas, a program that ended in 1896, but during its life also served as an important trade route during the U.S. Civil War.⁶ In the 1930's, Mexico created *duty free zones* in Baja California Norte and Sonora because it proved difficult for the Mexican government to service those remote areas from the interior; thereby, encouraging an *integration* of the U.S.-Mexico border that became the antecedent of what would develop in the decades to follow.⁷ Contemporary free zone policies can be traced to 1933, when the Mexican government drafted policies to protect Mexican markets and maintain a higher standard of living on the border under President Rodrigues.⁸ Mexican President Lazaro Cardenas made the first attempt to attract foreign investment to the border when, in 1939, he signed a presidential decree allowing manufacturing activities, as long as firm ownership was 100 percent Mexican, which although hampered by the ownership requirement was a step in the right direction.⁹ This action was for all intents and purposes the Import Substitution Industrialization program previously mentioned.

After World War II, American companies were found lacking in a number of areas in a post-war recession as a result of the shift away from manufacturing during the forties that solely supported the war effort. In the aftermath of the war, American industries faced three basic alternatives. First, American firms could develop more efficient, high technology production systems. Second, they could support *protectionist* policies at home; and third, they could export labor intensive operations abroad to lower overall production costs. As the historical record shows, the third alternative became the most viable option in the long run.¹⁰

During that time, Mexico, like other third world countries, was experiencing post-World War II conditions. In addition to the burgeoning population, poverty, and unemployment, there was a need to attract foreign investment. Third world countries were in a position to offer foreign firms free land, inexpensive *infrastructure*, low wage structures, cheap transportation costs, and unskilled workers, an environment in which Mexico competed well once it shifted away from Industrial Substitution to the maquiladora program.¹¹

Socio-economic conditions in Mexico had been worsened by the end of the Bracero Program, which the United States had created in 1942 to encourage temporary migrant workers to cross the border for the purpose of crop harvesting.¹² When the program ended in the mid-1960s, many Mexican workers relocated to the northern Mexican border, creating a new set of social and economic problems. Thus, there were large numbers of unemployed workers and a serious lack of potential employers. The northern border was in great need of attracting

foreign firms to alleviate these unexpected unemployment problems and to insure buying power stayed at home and did not migrate to the United States.

In response, a Ciudad Juarez resident, who had headed *Petroleos Mexicanos* since 1938, Antonio J. Bermudez was placed in charge of designing a program to develop the border by attracting multinational corporations to the region. The result was the creation of the National Frontier Program (PRONAF) in 1961. In addition to being designed to solve the unemployment and buying problems in the border areas, the PRONAF was aimed at integrating the border with the rest of Mexico and to improve its aesthetic appearance.¹³ The PRONAF served as the basis for the development of the *Border Industrialization Program* (BIP), which established the maquiladora program encouraging American corporations to relocate to the northern Mexican border. Not only were U. S. multinational corporations attracted by the cheap labor and manufacturing costs provided by Mexico, but the modern buildings and infrastructure that Mexico offered were greater than those offered by other third world nations. These factors were bolstered by that the restrictions requiring sole-Mexican ownership were removed which, subsequently, opened the door to multinationals. Hence, in order to compete with the Far East, American firms looked into Mexico's maquiladora program where they could not only enjoy, but also control, the corporate investment and structure throughout the border region.¹⁴

Development of the Maquiladora Program

The National Frontier Program (PRONAF) was established in 1961 under the leadership of Antonio J. Bermudez, a Ciudad Juarez business leader who had headed the Mexican public oil company *Petroleos Mexicanos* for over 20 years.¹⁵ In many regards, PRONAF served several economic and *nationalistic goals*. One of the more important goals of the program was to encourage the border population to *substitute* domestic – Mexican – for import products. A large proportion of the Mexican population in the region was crossing the border at the time for goods and services. To improve cash flow within the border cities, the PRONAF encouraged Mexicans to buy Mexican products. In order to discourage Mexicans from crossing the border to attend American schools, the program also disbursed funds to build schools in some border cities. To entice Americans to cross the border to the Mexican side, PRONAF allocated funds to improve the cities aesthetically, building new bridges and shopping centers to attract tourism.¹⁶

In 1964, Bermudez hired the American-owned consulting firm of Arthur D. Little de Mexico, SA to analyze how PRONAF could alleviate the unemployment problems at the border. The Little group identified the

presence of low cost, unskilled workers that they believed could greatly benefit the U.S. production sector. The company's report recommended the creation of industrial parks along the border coining the now well-known term "twin plants," which conveyed the idea of joint operations. Mexican workers would be hired to perform labor intensive work in Mexico, and high tech or capital intensive work would be performed a few miles away in the U.S. border cities, such as San Diego or El Paso. This would occur under a single American management team - an intent that, as this study will show, has changed over the last thirty years as high-tech positions increasingly find their way into the major concept, namely jobs in Mexico as a result of comparative advantage.

Bermudez discussed Arthur D. Little's recommendation with Gustavo Diaz Ordaz, who assumed the Mexican presidency in 1965. In addition to the consulting company's recommendations, Bermudez made some recommendations of his own to the President-elect. Bermudez suggested foreign companies should be allowed to import raw materials for processing duty free if they promised to export 100 percent of the finished products. Letters of understanding were exchanged between Secretary of Finance Antonio Ortiz Medina and Secretary of Industry and Commerce Octavio Campos Salas about this idea. After an unusually smooth bureaucratic process in Mexico, permission was granted to implement Bermudez's recommendations with no formal decree required.¹⁷

The result of the Arthur D. Little and Bermudez recommendations was the *Border Industrialization Program of 1965* (BIP), designed to stimulate industrial growth through investment.¹⁸ The BIP had three main objectives:

- 1) to solve the unemployment problem that resulted from the end of the Bracero Program in the U.S.;
- 2) to generate foreign exchange; and,
- 3) to infuse foreign capital and technology (ACCM).

Other secondary goals included developing the skills of Mexican workers and improving Mexico's technological structure.¹⁹

BIP was renamed the Maquiladora Program in the late 1960s when the *maquiladora* became a standard business classification in the Mexican Commerce Secretariat (SECOFI). The Maquiladora Program allowed 100 percent foreign ownership of in-bond companies, which were allowed to temporarily import materials, packaging, manufacturing equipment, and office supplies for assembly in Mexico. The in-bond companies would be taxed on the *value added* to the product by being assembled in Mexico, and would be required to share 10 percent of profits with their employees.²⁰ The Spanish term *maquila* refers to the portion of flour the miller keeps after grinding corn

for customers. In this regard, Mexican workers would keep money for serving U.S. clients. Formally, the maquiladora industry under SECOFI is a specialized manufacturing form of export processing zones designed to meet the needs of world economic expansion to a single market.

In addition to being facilitated by PRONAF in Mexico, Bermudez's BIP was facilitated by U.S. laws. The American government passed laws in 1962 allowing firms to assemble American components abroad.²¹ Specifically, U.S. Customs regulations passed to complement the Maquiladora Program include:

- 1) importing of metal products processed abroad with duties based on the value added abroad;
- 2) exempting from duty Mexican assembled products from American components; and,
- 3) treating products that are at least 35 percent Mexican in content under the U.S. *Generalized System of Preferences* that allows products to enter without duty being levied.²²

U.S. companies were enticed to take advantage of the new industry because maquiladoras could be 100 percent owned, operated, and controlled by Americans. Furthermore, American companies could take advantage of Mexico's geographical proximity to the U.S., duty free re-entry of American origin processed goods, and worldwide competitive labor costs. To American multinational companies relocating part of their production process in Mexico, the maquiladora industry became known as the "Twin Plant Industry" because firms would set a labor-intensive facility on the Mexican border and a management facility on the American border. The industry later became known as the "In-Bond Assembly Industry," a term that reflects the maquiladoras' main advantage: importing duty free under bond for further processing.²³ Although the creation of the maquiladora industry spurred mostly positive reactions, the industry also encountered negative reactions.

Antonio J. Bermudez, founded and served as General Director of the National Frontier Program (PRONAF) from 1961 to 1965. Bermudez recalls that when the federal government asked him to design a strategy to develop the border, he thought of two names: PRONAF, which by virtue of the word program implies a study and time commitment, and Border Movement, which by virtue of the word movement implies political connotations. Because Bermudez wanted his program to be permanent and free of political implications, he selected the name National Frontier Program (PRONAF).²⁴ The program did, by Bermudez's own account, have nationalistic overtones. Due to the migration and economic phenomena caused by the end of the *Bracero Program*, Bermudez launched a campaign targeting Mexicans already residing on or near the border. Bermudez thought the BIP should help those in the borderland realize they were Mexican citizens with primary obligations to the Mexican nation.²⁵

Mexican federal officials had mixed responses to the BIP. Javier Garduno, an analyst at Secretaria de Hacienda y Credito Publico (SHCP) from 1958 to 1972, saw BIP as an opportunity for Mexico to experiment with the automotive industry in 1962, and use this industry to enter the international market.²⁶ Agustin Lopez Munguia, head of economic studies at SHCP from 1952-1976, thought of BIP as the primary instrument to achieve the domestic goal import substitution.²⁷ Yet other officials, such as Rodolfo Villarreal, who was Secretary of Industry and Commerce from 1958 to 1964, attributed BIP with nuances such as personal political conflicts.²⁸

On the border, Juarez businessmen also had different views about what BIP should accomplish. For example, Jaime Bermudez, the nephew of Antonio Bermudez, saw the BIP as an opportunity for greater cooperation between Mexican and American businesses. In fact, he disliked the term maquiladora, and lobbied unsuccessfully to have the name changed to "Production Sharing Industry," implying a more equal relationship.²⁹ Alfonso Munguia thought of the maquiladora industry as a remedy for social problems, which he attributed to Fort Bliss. To Munguia, workers should seek maquiladora employment, and quit soldier-catering jobs such as brothels, bars, and drug trafficking.³⁰ Juarez union leader, Luis Vidal of the Revolutionary Confederation of Farmers and Laborers of Ciudad Juarez expressed the bleakest opinion of BIP. Vidal did not see the Maquiladora Program as a nationalistic or border development strategy. It did not represent economic integration or globalization. In Vidal's words, BIP was created "to satisfy the American demand for cheap labor."³¹

Americans, as can be expected, had their own views. U.S. businessman Richard Bolin, the Arthur D. Little Consulting representative responsible for Bermudez's proposal, did not see the role of American multinational companies in the Border Industrialization Program as anti-nationalistic. His position rested on the fact that the firms would only temporarily import American products, none of which would be sold in Mexico.³² Jack Solon, from A. C. Nielsen in Laredo, noted that his company had been studying the possibility of relocating labor intensive operations to Mexico since the 1950s. Thus, the BIP more fully facilitated his company's plans to relocate to Mexico.³³

Richard Michel, General Manager for General Electric, best expresses American business interests in relocating to Mexico. The main reason GE relocated to Mexico, according to Michel, was geographical. Mexico's proximity to G.E.'s Kentucky manufacturing operations greatly decreased transportation costs. Other reasons that encouraged GE to open a plant in Ciudad Juarez, Chihuahua was the city's proximity to El Paso, Texas where upper level management could reside in an environment more familiar to them and their families. This geographic factor

will be revisited and should not be under-estimated as a primary variable that worked in favor of the border region on both sides. In addition, it can not be ignored that Ciudad Juarez offered a pool of cheap labor and the peso had been stable. The success of other American companies operating in Mexico, such as RCA, also served as catalyst and proved that the maquiladora concept worked. Finally, the availability of industrial parks rather than random company locations also encouraged GE to relocate. When the company was ready to select a location, GE decided to move into Juarez Industrial Park in order "to be the first and set the mode."³⁴

George Jensen, Vice President of Central Bank and Trust in Denver, Colorado, believed the BIP was good for the U.S. for both economic and immigration reasons. Specifically, Jensen believed the BIP offered the U.S. relief from illegal immigration. If American companies offered Mexican workers employment on the border, then it would seem to follow that Mexicans would have greater purchasing power and would cross to spend money at American businesses; and, that Mexican workers would be discouraged, or at least less likely to immigrate illegally into the U.S. for employment reasons.³⁵

The development of the maquiladora industry can be assessed in four stages. These are:

Phase I -- from 1965 to 1974;

Phase II -- from 1975 to 1977;

Phase III -- from 1977-1982; and,

Phase IV -- from 1983 to the present.

The first stage begins in 1965 with the inception of the Border Industrialization Program. Mexican President Gustavo Diaz Ordaz authorized the settlement of maquiladoras along a 20-kilometer strip along the border.³⁶ In 1966, the first industrial park was completed in Ciudad Juarez, Chihuahua. Named after the creator of the BIP, Antonio J. Bermudez, the park was privately owned by Bermudez's nephew. The BIP's laws, however, were unclear, yet under the precept that a privately owned park would be flexible and efficient, Radio Corporation of America (RCA) became the park's first client. The creation of the maquiladora industry brought with it the creation of support agencies. To aid in the development of the maquiladora industry amid the unclear and inefficient framework of the BIP, the Association of Maquilas, A.C. (AMAC) began operating informally in 1966. It was fully-chartered on February 20, 1974, and to this day continues pursuing its objective: "to assist and provide assurance to the maquiladora industry, its workers, and [the Juarez] community."³⁷

Two years after the first industrial park was built in Ciudad Juarez, Chihuahua, the first park in Nogales, Sonora was built. American businessman Richard Campbell completed the Parque Industrial De Nogales in 1968. Campbell drafted a shelter plan to attract investors to his park. The plan was designed to reduce the risk of foreign manufacturing by managing the whole plant location and maintenance process (with the exception of the production process itself) under one contract. The plan proved to be successful and now serves 50 export companies, six of which are in Mexico.³⁸ Overall, Bermudez and Campbell's greatest contribution to the maquiladora industry is the realization that Mexico had great potential and was a very attractive location for twin plants. In assessing these pioneer maquiladora industrialists, we see that they not only fathered techniques for attracting business, but they gave new confidence to the U.S. and Mexico border region, a confidence that made continued progress feasible.

By 1970, there were maquiladora operations in Mexicali, Reynosa, Matamoros, and throughout the State of Chihuahua, with some plants that were settled as far as 1,000 miles from the border.³⁹ Due to the growing number of assembly operations, by 1971 plants were allowed to import duty free 100 percent of materials that would subsequently be exported after production processing or assembly.⁴⁰ During this time, Mexican President Luis Echeverria further broadened BIP by granting small business loans for commercial projects, particularly those with a high percentage of Mexican ownership.⁴¹ While Gustavo Diaz Ordaz had institutionalized the Maquiladora Program, Luis Echeverria consolidated and sustained it by most accounts.⁴²

In 1973, the Foreign Investment Law was amended to attract further capital, but was hardly a wholesale reduction of restrictions on *direct foreign investment*. The amended law was, unfortunately, unable to attract foreign investment due to a major global recession in 1974, from which the "maquiladora crisis of 1974" resulted. As a result, the recession left a legacy that the maquiladora industry was unstable, too dependent on American economic conditions, and was victim of scarce fixed capital.⁴³

The second stage, 1975-1977, began with an enclave perspective about future development. In 1976, Mexican President Jose Lopez Portillo formulated a global development plan to break the peso's devaluation cycle by using oil revenues to spur more development on the border. The plan was never successful; however, Mexico experienced growth at the international level during the third stage until 1982.⁴⁴

The Presidential Decree of August 15, 1983 issued by Miguel de la Madrid Hurtado marks the modern era of the Maquiladora Program.⁴⁵ The *Decree for the Promotion and Operation of the Maquiladora Industry* allowed

maquiladora plants to sell up to 20 percent of their total production in Mexico.⁴⁶ The decree also clearly outlined the steps to establish maquiladora plants and required maquiladoras to pay taxes and related fees directly to recently nationalized banks, and followed the peso devaluation of the same year. Two years later, in 1985, President de la Madrid signed yet another decree which allows temporary importation of raw materials for products to be assembled for exportation.

In 1986, Mexico, under de la Madrid, joined the *General Agreement on Trade and Tariffs* (GATT) and encouraged foreign companies to relocate to Mexico. This step resulted in a 20 percent growth in employment from 1983-1988. Employment growth, however, was once again halted due to an economic slow-down in the U.S. The maquiladora industry found that just "[b]ecause maquiladoras manufacture parts and components for U.S. and foreign firms, recessions abroad produce unemployment in the maquiladora industry."⁴⁷

Beginning with the de la Madrid administration, although actually carried out under the Carlos Salinas de Gortari administration (1989-1994), Mexico completely revamped its economic program, eliminating most elements of the import substitution industrialization program and replacing it with economic neo-liberalism or, put another way, unrestricted capitalism. In terms of foreign trade and investment it meant opening up Mexico to both. This culminated with the signing of the North American Free Trade Agreement (NAFTA) in 1994. It also meant fiscal policy reform, including a more effective tax collection effort and privatization of banks. Another major plank was divestiture of public enterprises, resulting in the privatization of over a thousand businesses since 1990. Deregulation has also removed the omnipresent government from its previous active role in the economy. All-in-all, the changes have resulted in a far more welcoming atmosphere, especially for foreign companies and the maquiladoras. Further, the peso devaluation of 1994 and the continuing slide of the peso today (1998), makes Mexico a very attractive site for production facilities.

Since its inception, the maquiladora program has, nonetheless, had a relative steady growth. According to Mexico's National Institute of Geography and Statistics (INEGI), the number of maquiladora plants has grown from 12 in 1966 to 2939 in 1997, with 21 percent of all maquiladora plants currently in the automobile industry. The number of maquiladora employees has likewise grown from 3,000 in 1966, to 751,582 in 1997. In Ciudad Juarez, there were 119 plants in 1980, compared to 325 in 1997; and, 41,500 employees in 1980 compared to 198,000 in 1997. Statistics for Ciudad Juarez represent a large proportion of this national total. For example, the number of

maquiladora plants in Ciudad Juarez in 1997 represent 11 percent of the total number of maquiladora plants in Mexico. In addition, over one fourth (26 %) of all maquiladora employees work in Ciudad Juarez.⁴⁸

INEGI statistics also show that as of October 1995, Ciudad Juarez generates 24 percent of maquila related employment opportunities; it is the city with the greatest employment generation. Moreover, nationwide, women comprise 59 percent of maquiladora employees, yet in Ciudad Juarez, that percentage has risen to 70 percent. This is not surprising since maquiladora plants have traditionally targeted women. Today, 48.5 percent of all maquiladora jobs are listed as female-labor oriented occupations, 33.3 percent as male-labor oriented, 11.1 percent technical, and 7.1 percent administrative.⁴⁹

Of the Border Industrialization Program's three main objectives, decreasing unemployment, preventing migration into the U.S., and border development, only one has been met. The goal of reducing unemployment on the border was reportedly fully met in 1985.⁵⁰ Ciudad Juarez has a 2 percent unemployment rate, the smallest of any Mexican city, yet despite meeting the unemployment challenge, the BIP has not served as means to control migration, either legal or illegal, into the U.S. Furthermore, multinational companies operating in Mexico have failed to share their technology with local businesses at a rate many anticipated.⁵¹

Among the challenges facing the border as a direct result of the maquiladora industry are *fiscal centralism*, public services, and personnel management issues. Mexico has a rigid form of fiscal centralization, which is detrimental to border cities. This is because a border city must deliver all earnings to the federal government. The federal government reciprocates through a budget grant to the state, which in return grants each city a budget. For example, for the 25 million dollars Ciudad Juarez generated for the national treasury in 1996, the city received 650,000 dollars; a return of less than 3 percent. Perhaps the most severe problem of fiscal centralism translates in the lack of public services and infrastructure. Ciudad Juarez has one of the fastest growing population rates in the nation, of which only 25 percent is natural; the remaining coming from in-migration. It is estimated that there is an average of 600 arrivals per day of people from the Mexican interior in search of employment. Despite the increase in jobs available and taxes paid, the budget of the City of Juarez is insufficient to cover the demand for housing, infrastructure, and social services.⁵² Moreover, the large number of transient workers has created personnel management problems for maquiladora plants. Among the more notorious of these problems is the high degree of rotation and absenteeism.⁵³

At a time when less developed nations, like Mexico, were suffering from problems such as the lack of technology and slow development aggravated by an uneducated workforce,⁵⁴ American companies largely based their decision to relocate to Mexico on the opportunities afforded by maquiladora laws and the abundant cheap labor.⁵⁵ The conditions in the northern Mexican border area, where maquiladoras were lawfully required to settle in the early 1960s, was likewise struggling against backwardness and lower quality of life.⁵⁶ In addition to a population growth higher than the national mean, the border region suffered from insufficient basic services (particularly water), substandard levels of education and cultural diversity. Added to this, extreme hot weather accounted for high electricity bills. This situation largely continues today with only a few exceptions. While it is true that the maquiladora industry is the main employment source, that maquiladoras pay higher wages than the minimum wage, and that the level of unemployment at the border is very low, "it is also true that life on the border is more expensive."⁵⁷ Additionally, many of the services required to enhance quality of life and development still are non-existent because of the extreme degree of centralization.

The fact is that the history of the border is the history of a vicious cycle. A poor city attracts foreign business in search of cheap labor. Foreign businesses pay lower taxes, but at rates so low that host cities, more often than not, have no money to provide and improve public services. Thus, the quality of life does not improve significantly, so the city is then unable to attract better paying jobs. As a result, the city continues to only attract more business in search of cheap labor.⁵⁸ The maquiladora industry has, however, had some impact on some aspects of quality of life. Some of this impact has been the result of legal requirements, such as housing, healthcare, and wages, and, it can be argued, that the industry has informally impacted other areas such as the environment, women's issues, and economic interdependence.

In this regard, private corporations, such as maquilas in Mexico, are required by law to pay a small percentage of their earnings into a housing fund called *INFONAVIT* (Instituto del Fondo Nacional de la Vivienda para los Trabajadores). The fund is used to build housing complexes and finance down payment loans. Workers must meet certain minimum requirements to qualify for a housing unit (house or apartment) or a loan. Due to the housing demand, employers have different processes to determine which qualified candidates receive housing assistance. Some employees receive assistance on first come, first serve basis; others must go through a lottery or seniority system. Once selected, employers deduct a small fixed amount from employee's earnings to pay for their housing. Corporations may also choose to contribute to a secondary fund called *FONACOT* (Fondo de Fomento y

Garantía para el Consumo de los Trabajadores), which allows employees to purchase furniture and electrical appliances on credit. Like INFONAVIT, FONACOT also subtracts small fixed amounts from employee's paychecks.⁵⁹ To date, this has appeared to be most beneficial, nonetheless there remains a hint of a *company town* mentality in this form of operation. However, the Mexican government is in full support of these practices and clearly believes the benefits out-weigh any costs that bind employees to an individual firm.

Corporations are also legally required to pay into a healthcare fund, a first for most employees in Mexico's border regions. Most private corporations chose the state-run social security fund: *IMSS* (Instituto Mexicano del Seguro Social). Workers and families whose employer pays into the fund are eligible to receive health care services and treatment at no cost. The healthcare plan covers medical, dental, optical, laboratory, and surgical procedures. *IMSS* hospitals tend, unfortunately, to be understaffed, overcrowded, and severely lag behind in health and medical technology. As a result, patients can typically wait 6 months to one year for routine surgical procedures. Despite the long wait for medical or housing benefits, workers will often choose an employer that will pay into these funds, understandably preferring these options to no benefits at all. *Maquiladora* plants pay into these funds, not only because they are legally required to, but because they are more carefully monitored by comparison to domestic corporations in Mexico, making it more difficult for the multinationals to default.⁶⁰

Employers are also required to pay a nationally-established minimum wage. In March of 1998, the national minimum wage was 30 pesos a day or 600 pesos a month. In northern Mexico, *maquiladora* employees earn on average 50 pesos a day, 1000 pesos a month. In dollars (at 9 pesos to 1 USD—the effective exchange rate in July 1998), these monthly wages are on average \$66.67 in the interior and \$111.11 on the border, a better than 60 percent differential. While it is clear that the minimum wages on the border are significantly higher than in the interior, by comparison to their counterparts a few miles away in the United States, they are dramatically lower. In addition to offering higher salaries than the national minimum wage, competition for labor due to absenteeism and high-turnover presses corporations to offer incentive plans such as cafeteria assistance, attendance, punctuality, and production quota bonuses, as well as gift certificates redeemable at grocery stores and utility companies, relieving some of the financial disparity, vis a vis the U. S.'s counterparts, but resulting in further distancing of border workers from interior employment conditions. Although these incentives were created for recruitment and retention purposes, the incentives have contributed to the rotation problem, especially when the economy is good, as workers easily go to work for whoever "gives more."⁶¹

Externalities, occurring as a result of the maquiladora industry, include the high levels of environmental contamination they produce. Of the contaminants, the most critical is toxic and hazardous waste.⁶² The maquiladora industry is without question the principal toxic and hazardous waste producer on the border. While the maquiladora plants are theoretically contaminating land, air and water in Mexico, the environmental affects cities on both sides of the border. Because of the boundary location and multinational status of the corporations producing these wastes, the border contamination problem has been historically neglected. Although Mexico has environmental laws, there is poor enforcement at best. Put simply, governments on both sides of the border ignore their environmental responsibility, a situation further exacerbated by the lack of funding for legal enforcement. Furthermore, the lack of adequate places for disposal of toxic waste encourages illegal dumping within the fragile arid desert ecosystems that exist in the border region.⁶³

As previously mentioned, women have played an important role in the maquiladora industry's progress. Initially, female workers were targeted for employment in maquiladoras. At that time, female employees were preferred because they were considered to possess greater manual ability essential to production and assembly tasks, greater capacity to remain in one place for 8 hours or more, and greater labor docility. In the 1960s, the national average of female workers employed by maquiladoras exceeded 90 percent. Although male presence was not notable until the 1980s, women continue to comprise a greater percentage of maquiladora workforces to this day.⁶⁴ Reports from Mexico's National Institute of Geography and Statistics show that in 1997 there were an estimated 751,000 maquiladora employees, of which 198,000 worked in Ciudad Juarez. While nationally 60 percent of maquiladora employees were female, this percentage grew to 70 percent female in Ciudad Juarez.⁶⁵

Although employment in the maquiladora industry financially liberated many Mexican women, it also served to oppress their status as employees. The U.S. Department of Labor, for example, reported in 1998 that maquiladora plants in Mexico were biased against women. At the top of the list of complaints were dismissing female workers suspected of being pregnant to avoid the costs of maternity leave, testing female applicants for pregnancy, and inquiring about their sexual activity during interviews to determine the likelihood of becoming pregnant. The U.S. Department of Labor holds that it is illegal for American companies abroad to engage in such activities, and that sex discrimination on the job by American-owned companies is as illegal in Mexico as it is in the U.S. The Mexican government has placed itself on the multinationals' side, claiming that Mexican laws protect workers only after they have been hired, and therefore companies can discriminate against applicants prior to being

hired, defining a fine line in contractual agreements between corporations and their employers. For their part, human rights groups in Mexico are trying to fight this condition with the argument that pregnancy discrimination is sex discrimination, and men and women are constitutionally equal before Mexican law.⁶⁶

In addition, a recent article in the Mexico City English newspaper *The News* reported that in Ciudad Juarez, an average of two females per month are reported missing, later to be found dead. Kidnapping and rape, in addition to murder, have garnered little response. Juarez authorities have been lax about the situation, claiming that women should not dress provocatively or walk alone, otherwise they attract danger to themselves. “In many ways, Juarez was not made for women or children. Its endless rows of factories, grimy bars and brothels are as hospitable as the blazing sun overhead,” leading some to ask if Ciudad Juarez is facing some of the darker aspects of industrialization that accompanied factories in Detroit, Pittsburgh and other U.S. cities in the first half of the 20th century or mirrors the problems discussed by Dickens and Hugo alluded to in the introduction.

Globalization

Less developed nations in Latin America became involved with the predominantly American-based automobile industry in the 1950s,⁶⁷ believing that the industry could potentially be adapted to local market demands and operational environments.⁶⁸ In the mid 1960s, for example, the price of vehicles was in-line with the purchasing power of Mexican maquiladora plant workers, a purchasing power greater than workers in either Argentina or Brazil.⁶⁹ As per capita income slowly increased throughout the rest of Latin America, so did the purchasing power of Latin Americans, such that by 1969, Latin America accounted for 5 percent of world demand for automobile products. By the 1970s in Latin America, as elsewhere, General Motors and other American auto makers were unable to compete with Japanese industry, resulting in decreased profits into and during the 1980s.⁷⁰ The recovery of GM and the automobile industry is partly related to globalization, including the increase in the number of maquiladora plants established in Mexico. As a consequence, the American automobile industry has greatly increased its presence in Mexico and other Latin American countries. Japan's Nissan, and Germany's Volkswagen are the only non-U.S. corporations to have major presence in Mexico and other parts of Latin America. Globalization within the industry is evident by the fact that Mexico along with Korea, Brazil, China, India and Taiwan accounted for 69 percent of all automobile production in less developed nations.⁷¹

Export processing zones, the technical classification of the maquiladora industry, have increased worldwide by 15 percent over the past 20 years. Combined with an estimated 5 to 6 million people living in less developed

countries, these data are significant for less developed nations, because trends may favor export processing zones in less developed nations. Since less developed nations account for almost one third of automobile production worldwide, this trend is also significant to the industry, but has implications for other industrial processes and production needs. As the trend towards globalization continues, favoring the mix of opportunities in export processing zones and available labor in developing nations, the North American Free Trade Agreement (NAFTA) shows "where the world thinks its going."⁷² Worldwide, the argument can be made that there seems to be a tendency toward three economic blocks: 1) Asia, 2) Europe and Africa, and 3) the Western Hemisphere. As export processing zones fuel the establishment of economic blocs, the Western Hemisphere will need to remain competitive with the other two blocs. Subsequently, the demand for products to be manufactured in maquiladora plants will, in all likelihood, increase.

In Mexico, the trend toward globalization will force multinational corporations to continue to seek cheaper labor supplies in central Mexico, shifting from the higher wages in border areas to lower wage areas in the interior. Mexican managers trained at border plants are expected to lead their companies in this effort. At the border, wages may be expected to remain higher than in the rest of Mexico as these jobs will be more technical in nature, a point to which we shall return. In the U.S., no doubt, labor unions and political opposition to multinational corporations relocating abroad will continue.

Returning to the discussion of Texas, the maquiladora industry will continue playing a vital role in the state's emergence as a North-South gateway. According to Canada's Department of Foreign Affairs and International Trade, the stimulation of manufacturing and export operations on the Texas border will benefit the U.S. and Mexico. For Canada, Texas is potentially the best business partner for increasing trade in Latin America.⁷³

The high degree of interdependence brought about by globalization, export processing zones, and the NAFTA suggest a *silent integration* between the U.S. and Mexico, especially since this neighboring nation is the US's third largest trading partner after Canada and Japan. However, the prospects for increased trade pose a challenging policy question as a consequence of the desire of Mexico and the U.S. to preserve national autonomy.⁷⁴ Even though, the U.S.-Mexico border is the most globalized region in the American continent, the interaction between border cities is so strong that bi-national metropolises evoke economic and environmental regions—all in direct challenge to national autonomy concerns.⁷⁵

On the El Paso, Texas-Ciudad Juarez, Chihuahua border, globalization is leading to demands that will require the cities to continue to adjust. In this regard, Ciudad Juarez is responsible for creation of about 20 percent of the jobs in El Paso, and 60 percent or more of the retail trade in downtown El Paso through *multiplier* and direct effects.⁷⁶ Despite the increasing level of integration, current integration is not so strong that it will render the border regions competitive in national politics, even in light of the general neglect of American and Mexican federal decision-makers on matters relating to the border. In spite of the important trade and immigration regulatory functions that are attributed to border cities, border problems are not considered national priorities. Consequently, the effort to solve border problems requires border cities to depend less on the federal government and more on each other.

As the globalization trend continues, multinational corporations will take advantage of the opportunity offered by the maquiladora industry on the border to apply the same technology at home and abroad, while managing corporate strategy from their home nation, whether there are American, Japanese or European multinationals.⁷⁷ It is reasonable to say that in the long run Mexico will probably not enjoy the high status of production-sharing employment it currently has—a 20 percent share—in relation to other competitive countries. Present maquiladora employment will, however, likely continue to increase because American multinationals will find Mexico attractive for several reasons: shelter plans, efficiently designed industrial parks, availability of finance options, and direct contact with customs. An example of this is the recent closing of four maquiladora plants in Nogales, one of which relocated to the interior of Mexico, one to the Dominican Republic, and two to Asia. The reality is that globalization has set new standards for international competition, and it has given multinational corporations greater ability than the state to influence the nation's production profile.⁷⁸

Conclusion to Case A

The primary factor in the decision to participate in the Maquiladora Program in Mexico is based on the comparative advantage of labor, which is a variable on both sides of the border. On one side, U.S. multinational corporations are in need of inexpensive labor. On the Mexican side, a less developed nation needs to attract foreign investment to generate employment. Of the 200 export processing zones worldwide, ten are in Mexico. Most of these zones are on Mexico's northern border, where wages are higher than in other Latin American countries, yet still lower than in most of Asia. American corporations can be expected to continue selecting Mexico at a rate higher than other Latin American or Asian nations for plant establishment for several reasons.

In addition to the incentives established by the maquiladora laws, geographical factors will continue to play an important role attracting multinational corporations to Mexico. When selecting a new establishment, corporations must take into account financial and time investments in communications, transportation, and training. For these reasons among others, Mexico is in preferred position for final assembly maquiladora plants. Moreover, as we shall see in discussing Delphi Automotive Systems, maquiladoras are centrally located between production facilities in both the U.S. and Mexico, a day's drive by truck that allows for *just-in-time* delivery to plants in the interior of both nations and as far away as Canada.

Within Mexico, the most common maquiladora location is Tijuana, Baja California Norte. Although Tijuana has the greatest number of factories, including the largest number of Asian-based companies, Ciudad Juarez has the greatest number of workers because of larger plants. Hence, the maquiladora industry in Ciudad Juarez has produced a reliable source for currency, employment, and border development. The Juarez maquiladora industry, in fact, generates about 5.5 billion dollars each year in foreign exchange and boasts 23 percent of the total manufacturing labor force. Such information suggests that it is likely that maquiladoras will tend to prefer the El Paso-Ciudad Juarez location for plant establishment at least for the next decade or more.

As globalization encourages the formation of economic blocs around the world, the Western Hemisphere should remain competitive with the other blocs. American corporations will continue to seek sources of inexpensive labor, a point that bodes well for Mexico due to its situated in immediate proximity to the U.S. Although the entrance of the former communist bloc into the world economy offers opportunities for corporations to increase competitiveness, the Eastern European wage is about 2 to 3 times higher than Mexican wages and also an ocean away from component manufacturers. Whereas inexpensive labor in Eastern Europe is likely to benefit countries like Germany where wages are much higher by European standards, In the long run, Eastern European countries will not be a viable source of inexpensive labor for American or Asian-based corporations. If Eastern European and Asian wages are greater than Mexican wages, then American maquiladoras will continue to prefer Mexico over these and Latin American countries for financial and geographical reasons.

For its part, Mexico will continue supplying a young and plentiful workforce. U.S. maquiladoras have been educating Mexican workers realizing it is to the corporations' advantage to have an educated workforce. Thus, as the education and technological training of Mexican workers increases, so do the value of Mexican workers. As the pool of experienced workers becomes larger, so does the interest of corporations in hiring these employees

without having to invest much in training.⁷⁹ Mexico's large pool of young, plentiful, and increasingly educated and technologically trained workforce will attract corporations to the border region; *demographic factors* provide another variable that cannot be dismissed.

The United States, for its part, must prepare itself to exchange goods, services, labor, capital, and technology with Mexico on a scale unprecedented outside its borders. Even with the extreme differences in the cultural, social and political systems between the U.S. and Mexico, the argument can be made that it is necessary for American maquiladoras to engage in such an exchange in order to contribute to the social justice and political stability of Mexico.⁸⁰ Because American maquiladora plants have the potential to alter the economic stability of the region, thereby altering social and political conditions, it is in the United States' best interest to promote foreign investment in Mexico. Maquiladora plants might indirectly be encouraged by the American government to settle in Mexico, and American corporations may be enticed to do business in Mexico because it has enjoyed *Most Favored Nation* status since 1974.⁸¹ Another means to achieving this goal is by illustrating the advantage of combining American technology with Mexican low wages. The results of this combination include competitive quality of goods, competitively priced items for local consumers, increased levels of employment, and assisting Mexico's development with a "trade, not aid strategy."⁸²

In this regard, American multinational corporations have been advised to settle in Mexico because of the legal advantages established by the Border Industrialization Program.⁸³ According to Bert Diamondstein and Arturo Torres, corporations are also advised to settle in Mexico for the following reasons:

- 1) land and construction opportunities;
- 2) infrastructure and labor availability;
- 3) the low level of unionization among maquiladora employees;
- 4) the receptivity to training of Mexican workers;
- 5) easy access to the United States; and,
- 6) a better quality of life than in other developing nations.⁸⁴

Bryan Williams offers other reasons why American companies should establish maquiladora operations on the Mexican border. Williams lists the following advantages:

- 1) low wages;
- 2) low custom brokerage fees and duties;

- 3) low freight and distribution costs;
- 4) low production costs;
- 5) industrial parks and management; and,
- 6) employee hiring consulting, something that has not been as completely developed in other developing nations.⁸⁵

Mexico offers corporate, employment, and tax laws that are maquiladora friendly. While corporations will enjoy these benefits in Ciudad Juarez, maquiladora management will enjoy a comfortable standard of living minutes away in El Paso. Ciudad Juarez offers quality infrastructure at its several industrial park location. Marketing services, such as business consultants, are also common in the area.

The greatest benefit remains unquestionably the issue of labor. There is vast supply of skilled and unskilled labor. In addition to workers being mostly young, Mexican workers score high on dexterity tests, which means they can be easily trained. Workers earn less than their American counterparts, but more than their counterparts in the interior of Mexico. Hence, the border region maintaining higher wages ensures a steady supply of labor as people migrate to the northern cities from the interior of Mexico.

Discussion Questions

1. What historical conditions are presented in Mexico that led to the development of maquiladoras? Do you think if the same, or similar, conditions existed in other parts of the world that multinationals would shift their investments into these areas? Can you think of any potential areas for this form of industrial development?
2. Discuss five factors that work to the benefit of maquiladoras vis-à-vis the United States.
3. To what extent do you feel maquiladoras are similar to and different than other eras of industrial development?
4. Have monetary effects played a role on maquiladora investment decisions? Do you see similar issues in the current international monetary environment in the late 1990s?

Glossary

Look up the definitions for the italicized words and phrases in the text.

Case B

Delphi Automotive Systems: History, Labor Issues and its Role in Ciudad Juarez

A Brief History of Delphi

This portion of the report represents an effort to present a historical accounting of the development of Delphi Automotive Systems. Though the researchers are cognizant of the fact that Delphi Automotive Systems is not a case that is necessarily representative of other *maquiladora* operations along the U. S./Mexico border, it is believed that the development of this type of enterprise is interesting in that it provides a possible prototype for similar developments in the borderlands. As such, the evolution of such enterprises is likely to have a significant impact on business operations in the region and in the global economy at large.

As mentioned, the focus of this report has been placed on the operations of Delphi Automotive Systems, which, until 1999, was a semi-autonomous division of the largest auto maker in the world, General Motors (GM).⁸⁶ As this report will demonstrate, Delphi has evolved into an autonomous entity; however, the proverbial umbilical cord to the parent company (GM) has not been cut altogether.

Once known as GM's Automotive Components Group Worldwide (ACGW), the parts division in question was renamed Delphi Automotive Systems in February of 1995. As the previous moniker of the division implies, ACGW was partially responsible for manufacturing parts for consumption by GM's automobile manufacturing plants. In effect, the parts division manufactured many of the parts necessary to build GM vehicles. Over time, however, ACGW took on an ever increasing number of sub-contracts to manufacture parts for auto-makers other than GM. As the number and volume of these sub-contracts continued to increase, GM deemed it necessary to initiate the 1995 name change. As ACGW developed contracts with GM's competitors, reasons for creating a separate identity for the parts division became more evident. Presumably, these included the ability of the division to increase business (i.e. profits) by lessening the relationship to GM, avoiding the appearance of a conflict of interest for GM and allowing GM to maintain a marketable difference from its competitors.

As part of the effort to create this separate identity, the name Delphi was adopted partially as attempt to capitalize on the phonic similarity of the 'new' brand and the old 'Delco' brand, which had to retain a high level of name recognition among potential customers.⁸⁷ Thus, because the old Delco divisions were part of the soon to be defunct ACGW, it could be argued that the use of the name Delphi was merely an attempt by GM to return to a well known *name brand*. In accordance with this strategy the various other divisions of ACWG were also renamed,

including Delphi Packard Electric Systems, Delphi Saginaw Steering Systems, Delphi Harrison Thermal Systems, and Delphi Energy and Engine Management Systems (formerly AC Delco).⁸⁸

As the evolution of the parts division continued, Delphi increased independence to operate outside its traditional corporate structure. An integral part of this strategy included the encouragement by GM for Delphi to secure contracts from other automakers. Delphi was been largely successful in these attempts, gaining contracts from Ford, Honda, Toyota, and Volkswagen, among others. As the number and volume of these contracts grew, Delphi continued to develop an identity more akin to that of an independent parts supplier than to that of a parts division which is merely a subsidiary of GM.

Another significant step towards organizational independence took place in the summer of 1997. It was during that time that Delphi moved into a new worldwide headquarters building in the Detroit suburb of Troy. Previously, Delphi's headquarters had been located within the Pontiac Motor Division building.⁸⁹ Though clearly a symbolic step, this was significant in that it provided a physical differential between Delphi and GM. Even though administrative ties could presumably be maintained despite the differences in locales, the psychological effect of being physically removed did not likely to have gone unnoticed by Delphi or GM employees and their prospective customers.

This psychological effect of the physical separation was heightened by continued efforts to separate GM and Delphi in other arenas. Among these was the fiscal separation of Delphi's financial performance from the rest of the GM's North American operations. By allowing Delphi to operate as a separate fiscal entity, GM took perhaps the most important step allowing Delphi to become a truly autonomous entity. Again, GM appeared to have strengthened its position for separating Delphi from GM when rumors that 20 percent of Delphi would be put up on a public offering to investors circulated in the summer of 1997.⁹⁰

As administrative maneuvering continued Delphi had become a massive organization by 1997. It consisted of six divisions with 208 manufacturing facilities, 46 joint ventures, 27 technical centers, and employed approximately 204,000 employees worldwide.⁹¹ Delphi operations were estimated to be worth \$32 billion a year.⁹² The formation of such a massive entity by GM is indicative of how much the automotive industry has changed over the past 30 years (see Table 1).

By contrast, in the 1960's, when GM commanded half of the automobile market, the company prided itself on the fact that it manufactured almost every part that went into GM vehicles.⁹³ By the 1970's, however, the market

had become increasingly competitive as Western European and Japanese automakers gained a greater share of the US. Market, especially in the aftermath of the OPEC induced oil crisis of 1973. This globalization of the market fundamentally changed the auto industry in various ways. Among these were the production and purchase of parts. Thus, where it was once more efficient to produce most items internally, many automakers found it more cost effective to outsource the manufacture of some automobile parts in the new globalized environment.

However, factors such as labor union resistance - a theme that will be discussed in more detail later - have prevented GM from outsourcing to the extent the company would like. General Motors, therefore, historically continued to obtain most of its parts from its own parts unit now known as Delphi, even though it had become a tremendous fiscal liability for the company to do so, given that labor costs for producing such parts were much lower abroad.⁹⁴

Another theoretical argument for outsourcing has been espoused by GM for decades: the lack of efficiency. Theoretically, an exclusive reliance on one source for parts can lead to inefficiencies in parts production. By unconditionally guaranteeing a parts supplier that their product will be purchased, GM maintains that the motivational effect of competition is lost. Lacking that motivation, GM has maintained that the impetus to be an efficient firm is too often lost, thereby affecting the efficiency of the whole corporation. With that position in mind, it is clear that a primary motivation for the formation of Delphi as a semi-autonomous unit was not organizational benevolence on the part of GM, but a desire to imbue competition - and thus, efficiency - into Delphi operations.

Table I

Delphi Operations (1998)

Divisions	6
Manufacturing Facilities	208
Technical Centers	27
Employees	204,000
Joint Ventures	46
Annual Revenue	\$32 Billion

As the parts division developed into an independent supplier, GM provided Delphi every opportunity to succeed as an independent entity. The allowance of this opportunity may be seen as double-edged, however, as it also allows for the possibility of failure. In allowing for Delphi's operation as an independent parts supplier, GM forced Delphi to compete directly with the parts divisions of other automakers. As an increasing share of its livelihood became dependent on contracts from other corporations, Delphi was forced to become increasingly efficient in its operations to garner additional contracts; being more inclined to lower costs, have faster delivery, and develop better technology.⁹⁵

This environment, the burden of the incentive to perform shifts to managers who become self-reliant and not part of the GM corporate fold. Ultimately, this will result in more efficient service for GM itself, as the efficiency of its own parts supplier - and presumably the efficiency of other parts suppliers - will increase in the more competitive environment. Such efficiency includes attempts to reduce costs, which would likely translate into the relocating of operations to more cost-effective locales. Thus, this would seem that the drive for efficiency is a contributing factor in Delphi's (and other corporations's) continued migration south and overseas.

Has this strategy borne the anticipated results thus far?

Delphi initially set a goal to have 30 percent of its sales go to sources other than GM by 1996: a figure the company easily exceeded.⁹⁶ In fact, Delphi boasted that by the end of 1997, 38 percent of its sales were to entities outside GM's North American operations, a figure that represents a doubling over the previous decade.⁹⁷ For example, GM's Automotive Components Group only provided 15 percent of its sales came to sources outside GM's North American Operations in 1988.⁹⁸ Current strategy calls for Delphi to have 50 percent of its sales outside General Motor's North American Operations by the year 2002.⁹⁹

As mentioned above, it would seem that the evolution of Delphi is a harbinger of things to come, and that the paradigm which GM appears to have foreseen, is already taking shape. For example, Ford Motor Company, launched its Automotive Products Operations in November 1996. Though not as large or diverse as Delphi, the GM subsidiary is obviously its model. In its 1997 infancy, the company claimed to have five percent of its sales from sources other than Ford Motor company, and set 20 percent as its outside sales goal (for an undisclosed future date). Automotive Products Operations had a sales figure of \$17.2 billion in 1997, compared to \$31.4 billion for Delphi.¹⁰⁰ Consequently, it would seem that the "spinning-off" of the parts divisions is a significant trend in the auto industry in the 1990's, and that Delphi is clearly one of the models for this phenomena.

The Downsizing Trend

The selling-off and/or closing of unprofitable operations and plants has been an integral part of Delphi's strategy to become more independent and efficient. Since 1988 Delphi sold off more than \$4 billion worth of its non-core operations and reduced its product portfolio to 167 products in 1996, down from over 300 products in 1988. In addition, the company has been reduced to six divisions, down from thirteen in 1988.¹⁰¹

Many of these reductions occurred in the U.S. Midwestern states; a geographical area with a long automobile producing history and parallel economic dependency on the auto industry. These states are also the stronghold of the automotive worker labor union movement, in the form of the *United Auto Workers* (UAW). Needless to say, the UAW has taken exception to Delphi's downsizing efforts. Whereas Delphi deems such measures necessary to successfully compete with other independent suppliers in a global economy, the UAW

perceives the downsizing as an impermissible loss of employment and decrease in quality of life for its members, a clear non-global perspective which some contend will be incompatible with production activities, regardless of industry, in the 21st Century. Consequently, the selling or closing of Delphi plants has been a constant source of labor friction for the company in the late 90's and may be expected to be such for some time. However, GM still retained control over Delphi until 1999, Delphi had to require prior approval of such measures and was not always successful in its attempts to sell or close plants. For example, Delphi labeled 12 plants as "troubled," in 1997, and targeted them for sale or closure. One of those factories - in Trenton, New Jersey - remained open after an attempted sale fell through.¹⁰² It is clear, however, that Delphi's efforts to become more efficient, and hence close or sell off more of its interests, will continue with definite negative economic ramifications in locations where closures occur, but likewise positive impact as operations shift to other locations.

A part of the relationship between Delphi and General Motors, prior to separation and obviously beyond, is a competitive process by which Delphi must attain GM contracts like other bidders. Put another way, it does not have a parts *monopoly* with GM. By forming Delphi and granting it considerable autonomy, General Motors hoped to be able to obtain more parts from independent suppliers, as its competitors do at a significantly higher rate than GM does. If Delphi is not GM's internal parts division, GM is able to obtain parts from other entities. General Motors position was and remains that the ability to outsource for parts is absolutely necessary for the company to prosper in the 21st Century. As GM outsources at greater levels, Delphi will presumably become more independent and more competitive in obtaining contracts from GM and other automakers in a more diverse auto-parts market.

In this environment, Delphi has had to compete with other parts suppliers for GM's business. In this light, Delphi has not only had to outbid its competitors, but it has also been compelled to produce better parts.¹⁰³ However, Delphi does have an advantage over many competitors as a result of union contracts. Under a provision known as Appendix L in the UAW's local working accords, Delphi plants that lose a parts contract to another company have the right to match the bid and then keep the contract.¹⁰⁴ Even so, this provision does not always provide enough of an advantage for Delphi to perpetually secure parts contracts from GM. In 1996, for example, Delphi Interiors failed to win a contract to supply seat adjusters to GM.¹⁰⁵

Taken together, all of these factors point to the notion that the *paradigm* under which automobiles are produced is changing. Whereas the American auto industry was once comprised of *vertically integrated* monolithic corporations that undertook all aspects of automobile production, the 1990's have been witness to the rise of newer,

leaner, automaking companies. Rather than producing the entirety of a vehicle, it appears that the parts units of the major automakers will increasingly become independent or semi-independent units that will compete amongst each other for the business of their own parent companies. Delphi, it would seem, is a clear example of this emerging paradigm.

After spending much of the 1990's laying the groundwork for the eventual independence of Delphi, GM announced in the summer of 1998 that its former parts subsidiary should be fully independent by the end of 1999. The long discussed *initial public offering* (IPO) was scheduled to take place in early 1999. The IPO consisted of 15 to 20 percent of the company is estimated valued between \$2 billion to \$3 billion. After the IPO, General Motors will temporarily leave its future options concerning Delphi open. The most likely avenues GM would pursue are to distribute the remaining 80 to 85 percent equity in Delphi to its shareholders through an exchange offering, a spin-off, or combination of the two. It is estimated that the total market *capitalization* of an independent Delphi would be approximately \$11 billion.¹⁰⁶

A totally independent Delphi would be able to make autonomous decisions. Decisions that are primarily made by GM at the present moment pertaining to what products and facilities to invest in would be made independently by Delphi in the future. The close ties between GM and Delphi, however, will probably continue for many years. GM will remain Delphi's largest customer for the foreseeable future, though independence should make Delphi more attractive to other companies. Labor problems that have plagued GM in the late 1990's, which Delphi has been an important player in, will most likely increase when Delphi becomes totally independent. The closure and/or sale of Delphi plants has been a source of labor friction. An independent Delphi will not only have to handle the questions of where to place future investments, but also the more controversial decisions of what operations to cut or close.

Delphi Automotive Systems in Ciudad Juarez, Mexico

Delphi Automotive Systems, like its parent, is a worldwide company, with operations in 37 different countries. It employs 204,000 workers in 208 plants and 27 technical centers. The company's worldwide investments amounted to \$1.26 billion in 1997.¹⁰⁷ Delphi has facilities and investments in locations as diverse as China, India, and Brazil. One nation in which Delphi has invested in heavily is Mexico. Mexico has been a focal point for automotive investment for at least the last decade. Since 1994, for example, Mexico has received \$7.7 billion in new auto-manufacturing or auto-parts facilities. Another \$8 billion is expected to be invested by the end

of the decade. As of 1998, Mexican made autos and trucks accounted for 15 percent of the U.S. market. Because of lower production costs and special low tariff advantages brought about by the North American Free Trade Agreement (NAFTA) in 1994, European auto companies are using Mexico as a launching pad to reach the vast U.S. consumer market.¹⁰⁸ Mexico's rapidly emerging middle class is a target for this investment as well. Delphi and its parent GM are no exception to this trend with both have long-standing investments in Mexico. Delphi has 53 plants in Mexico, employing approximately 72,000 workers.¹⁰⁹ In addition to this, approximately 20 percent of GM's North American manufacturing work force is located in Mexico.¹¹⁰

The U.S.-Mexico border is an especially appealing location for foreign investment in Mexico as seen in Case A. Under Mexican law formulated in the 1960's to foster economic development along the border, foreign companies can locate along the border and receive special tariff provisions. Maquiladoras, the factories on the U.S.-Mexico border, can bring raw materials into Mexico for assembly and then export the product and paying a tariff only on the value added to the product in Mexico. In most cases is usually only labor. Since this Mexican labor is not expensive, the value added is generally not a high monetary amount. Under NAFTA, the border may lose some of its special status because the agreement will eventually eliminate most tariffs between the U.S. and Mexico by the year 2009. Due to the requirements for North American content under NAFTA, nations outside of North America will have a harder time taking advantage of the agreement. As of the late 1990's, however, the border region generally has investment advantages that the rest of Mexico does not have, as discussed in the previous section of this case on maquiladoras.

Delphi Automotive Systems has invested heavily in the border region to take advantage of this special situation. Ciudad Juarez in the State of Chihuahua is a location where Delphi has especially invested a significant amount. Ciudad Juarez is centrally located along the U.S.-Mexico border across the Rio Bravo/Rio Grande from El Paso, Texas. The city's population is officially listed at about 800,000 in 1995, but unofficial estimates place the city's real population at well over one million inhabitants. In combination with El Paso, Texas, the region constitutes the largest metropolitan area directly located on the U.S.-Mexico border. Ciudad Juarez also has the largest maquila presence as well. Though Tijuana has more maquila factories, the industry employs more people in Ciudad Juarez than it does in Tijuana. In 1997, there were 288 maquila plants that employed 197,200 people in Ciudad Juarez, and in Tijuana there were 618 plants that employed 145,400 people.¹¹¹ Delphi's presence in Ciudad Juarez amounts to 18 factories that employ about 23,000 people, the largest maquila employer in the city.¹¹²

Delphi has also located one of its 27 technical centers in Ciudad Juarez. The center began operations in 1995 and employs approximately 1,000 engineers and technicians.¹¹³ One of the prime reasons for the location of this important facility in Ciudad Juarez is Delphi's large presence in Mexico, as well as its proximity to the United States. Thus, Delphi is close to both its manufacturing facilities and its markets. The Delphi Technical Center in Ciudad Juarez engages in a variety of design projects that service the facilities that the company has in Mexico, and for other Delphi facilities worldwide. Delphi managers in Ciudad Juarez boast that their facility is the only one outside of the various division headquarters that engages in process and product development, as opposed to only handling customer applications. In 1997, the Ciudad Juarez facility was working on approximately 120 projects, with no overlap from other technical centers.¹¹⁴



Map 1: The U.S.-Mexico Border Region

With the proximity of the University of Texas at El Paso and the location of an Instituto Tecnológico de Monterrey campus in Ciudad Juárez, along with numerous maquilas, the city has enough engineers warrant the location of a technical center in Ciudad Juárez. Seventy-five percent of the engineers employed in the technical center are Mexican nationals, with the remainder primarily from the United States.¹¹⁵ In addition to the presence of qualified engineers, the pay scale for those engineers, as in other professions, is lower in Mexico than it would be just across the border in the U.S, often one-half the rate paid in the U.S. From an efficiency standpoint, Delphi

saves money by locating the technical center in Ciudad Juarez, as opposed to El Paso, San Diego, or any other most developed nation locale. The Ciudad Juarez location also allows management or U.S. citizen employees the option of living in the United States in El Paso. With 18 facilities in Ciudad Juarez, the location of a technical center there allows these plants to become more efficient in terms of product development. In addition, the location of a General Motors manufacturing facility in Chihuahua City, 234 miles to the south, could not have hurt the decision to locate the technical center facility (or other Delphi facilities) in Ciudad Juarez either, as a result of the close proximity.

Delphi Automotive Systems impact on the region is significant. It is the largest private sector employer in Ciudad Juarez. Its influence, however, does not stop there. The company reported that its *direct economic impact* on El Paso, Texas is \$100 million annually, with an *indirect impact* of \$300 million based on Delphi projections of the *multiplier effect*. Part of indirect impact the company refers to includes items such as hotel stays and air travel by those visiting Delphi from other GM facilities. Delphi reports the purchase of 8,500 hotel nights and 17,000 air travel tickets in and out of El Paso annually.¹¹⁶ With Delphi becoming more independent and diverse, the company also has many suppliers of its own. With the numerous facilities it has in Ciudad Juarez, the company contracts with many local suppliers. The company claims that its goal is to contract with suppliers that are located as close as possible to its plants. For example, Delphi contracts with M&Q Plastics Products, a company that has been located in El Paso for 13 years. M&Q makes the plastic tubing that holds electrical wiring for cars. The company employs about 100 workers in El Paso, and it expects to increase its workforce by 30 percent in the near future. M&Q Plastics has also invested \$1.5 million to refurbish its El Paso facility.¹¹⁷ Moreover, Delphi is one of the biggest customers for trucking companies located in El Paso. Many of the parts produced at Delphi plants in Ciudad Juarez are shipped to automobile assembly facilities in the United States. Herman Miles Trucking Company of El Paso reports it hauled three to four loads of auto parts out of El Paso on a daily basis for Delphi in the 1996 time frame.¹¹⁸

From another perspective, one indicative of future trends that we will consider in Case C, Delphi has achieved QS-9000 and QS 14,000 standing. These standards, established by the European Union and agreed to by the United States, require that firms involved in international trade meet *worker safety standards* (QS 9000) and achieve *environmental quality standards* (QS 14000) throughout the production process. As a result, Delphi has received considerable accolades for its efforts, efforts in distinct contrast to industrial practices of the past. Delphi's innovations also have led to the rise of a number of patents stemming from work in the Ciudad Juarez complex, reversing a trend that saw almost all innovation coming from corporate-headquarters based research and

development facilities. In part, Delphi represents a move by which American companies now export white collar and service positions, in addition to industrial processes.

Delphi Automotive Systems presence in Ciudad Juarez, like the company as a whole, has worldwide implications that exceed the border region and General Motor's North American Operations. For example, when labor problems shut-down most GM assembly facilities in 1996 and 1998, Delphi's Ciudad Juarez operations were impacted. A majority of Ciudad Juarez plants and employees, however, still worked during these periods, a subject that will be returned to. In part, this is a testament about how diverse Delphi's operations are in Ciudad Juarez. General Motors North American Operations can be almost totally shut down, but, due to other customers, many Delphi facilities in Ciudad Juarez stay open. Delphi plants in Ciudad Juarez also have connections to other Delphi plants outside of North America. Some factories in Ciudad Juarez receive wiring harnesses from Delphi facilities in Shanghai, China, which are packaged into interior door modules in Ciudad Juarez. These are then shipped to U.S. and Canadian assembly facilities that build Chevy S-10 pickup trucks, Chevy Lumina's, and Buick Regals. Employees from Ciudad Juarez were even sent to Delphi plants in China to demonstrate *quality control* standards.¹¹⁹

In ongoing efforts to cut costs, Ciudad Juarez, and Mexico as a whole, is seen as a location where labor costs are much cheaper than in the United States or Canada. Many factors determine where Delphi locates its facilities, but less expensive labor had been one incentive for Delphi to locate in Mexico. It is not uncommon for a Delphi worker in Ciudad Juarez to earn one-tenth the amount his counterpart in Flint, Michigan would earn.¹²⁰ Though labor costs are low in Mexico, it is not uncommon for Delphi and other maquilas to provide additional benefits to employees that are not common in the United States, such as free transportation to work, subsidized meals, low cost loans for housing, furlough benefits, etc. In Ciudad Juarez, for example, Delphi helps its workers make down payments on home purchases by providing loans, which the company will forgive if the employee works a certain amount of years for Delphi. Turnover is also a problem for Delphi in Ciudad Juarez, as it is for all maquilas operating along the border, because some workers use Delphi employment as a launching pad for an eventual trip to the United States. Delphi estimates that about 50 percent of its workers along the U.S.-Mexico border will leave the company during any given year.¹²¹ The company, therefore, must provide some type of incentive for workers to remain at Delphi.

Though wages and benefits paid by Delphi in Ciudad Juarez are low compared to U.S. standards, they are above average by Mexican standards. Many Mexican workers look to employment by Delphi Automotive Systems

and GM as a way in which they can enter the middle class, and several Delphi workers do so. The role of allowing workers to enter the middle class is similar to the one that was played by auto companies in the United States during the first part of the 20th Century.¹²² As Delphi has expanded around the world, however, it has found locations that have less expensive labor than Mexico. The facilities in China that have been mentioned have even lower wage rates than Mexico. It is possible that Delphi could choose to produce more labor-intensive products such as wiring harnesses in China, as opposed to Ciudad Juarez.¹²³ As is the case with the United States, Delphi may find it more efficient to produce products in countries other than Mexico as wages and benefits in that nation rise. An issue of comparative advantage that will, no doubt, be continuously explored by Delphi management.

Delphi's Ciudad Juarez facilities are not exempt from being sold off either. Older facilities in the U.S. have received most of the publicity in this regard. However, in early 1998, Delphi announced that three plants in Ciudad Juarez were among those in its seating business that would probably be sold to the Lear Corporation, a Detroit based automotive interior supplier. These three facilities alone employ 3,200 people.¹²⁴ As the global economy changes, so will Delphi's presence in Ciudad Juarez. The city will always benefit from its proximity to the United States, as well as a history of Delphi facilities in the community. With the emergence of the North American Free Trade Agreement, it will be more feasible to locate in the interior of Mexico, possibly at the expense of locating in Ciudad Juarez. The eventuality has already arrived that it may be more cost effective for Delphi to produce parts at other locations or to sell facilities to other parts producers, demonstrating that Delphi's presence in Ciudad Juarez is affected by worldwide and company-wide economic trends and not a given.

Delphi Automotive Systems has established a large presence in Ciudad Juarez. Trends in the automotive industry, however, are rapidly changing in the 1990's. The Midwestern U.S., for example, has a long history of automobile manufacturing activity, inasmuch as the industry was born there. Events of the 1990's (and other recent decades) have shown that, despite history, many automobile manufacturing facilities are no longer secure in this geographic locale, which could possibly be the case in the future for Ciudad Juarez. This point is perhaps best illustrated by a discussion of the strikes by Delphi and GM workers in the latter half of the 1990's. The issues involved in these strikes are extremely pertinent to the future of Delphi Automotive Systems, General Motors, and the automobile industry in general.

Strikes at Delphi Facilities in 1996

Labor problems that emerged at Delphi facilities in the late 1990's show how the company still impacts its parent General Motors. These problems also demonstrate the resistance, especially by the United Auto Workers (UAW), to changes that are being made in the wake of events such as the formation of Delphi Automotive Systems from the previous GM Automotive Component Group. Strikes by United Auto Workers unions in 1996 were the beginning of problems that would be replicated in 1998. These strikes in the later half of the 1990's constituted the worst labor problems for General Motors since 1970, when a UAW strike lasted 67 days. At the time, General Motors commanded 50 percent of the automotive market in the United States, and according to many the long strike was powerful enough to lead the nation into a recession.¹²⁵ Though not as powerful as the 1970 strike, the problems in the later half of the 1990's have had impacts on all involved. The issues involved are very important ones for both GM and Delphi, as well as the UAW. The eventual outcome of the labor problems could help decide the future of the major actors involved and could have a direct impact on this industry for some time to come.

The first strike in question was in March 1996. Approximately 3,000 workers at two Delphi plants in Dayton, Ohio that produce brakes for GM vehicles went on a strike that lasted 17 days. The issues involved were long-term disputes over outsourcing, staffing levels, and investments, ones that would emerge two years later in the Flint, Michigan strikes. Union officials claimed that GM had not lived up to promises made in 1994 to drop plans to outsource for brakes, invest \$160 million into the Dayton plants, and bring in an additional 500 new jobs. Prior to the 1996 strike, the Delphi plants produced more than 90 percent of the braking components that were used in GM vehicles. GM had plans to contract with the German brake supplier Robert Bosch for anti-lock brakes in some future models, rather than awarding a new contract to Delphi. General Motors said that the company needed to find more efficient ways of securing vehicle parts to stay competitive in a dog-eat-dog global auto market. The union, on the other hand, claimed that the work would have enabled GM to add 128 jobs at the plants in question.¹²⁶

The strike was resolved after 17 days with a series of compromises. The company obtained the right to continue with its plans to send brake work to Bosch by not changing contract language that allows GM to outsource parts production. On the other hand, GM agreed to hire an unspecified amount of additional workers at the Dayton plant to ease some of the overtime burden of current workers, and the UAW retained the right to strike over local issues, another future source of controversy.¹²⁷

The cost of the Dayton strikes for GM was significant. The strike idled 175,800 GM workers in North America.¹²⁸ Since the Dayton plant produced 90 percent of GM's brake parts, the company was forced to shut down 26 of its 29 assembly plants, at a total cost of \$900 million.¹²⁹ Many claim the UAW targets plants for strikes that will have the maximum effect on GM. Parts facilities that supply multiple assembly plants or factories that produce top selling vehicles are common targets. Similarly, some also say that the UAW often targets GM's best selling vehicles to protect some of the least defensible plants from an efficiency standpoint. A prime example of this is when the UAW pitted the old Lordstown, Ohio facility against the popular Saturn plant.¹³⁰ Many ask if a price tag of \$900 million was worth it for GM? The answer to this question is not clear. However, GM won the right to continue outsourcing, a major victory for the company. Since the strike, it has outsourced more brake work from the Dayton plants. If there were a strike at the same plants today, it would not be as devastating as the 1996 strikes. GM feels that if the settlement in this particular strike leads to an eventuality of a greater amount of outsourcing, the cost of this strike, and perhaps future ones, will have been worth it. Parts are the key component in outsourcing, thus making Delphi Automotive Systems a key player. Delphi continues to be a source of labor problems, however, because parts production is the area that union jobs are most threatened. In this light, it is not surprising that other Delphi plants would be the targets of other UAW strikes.

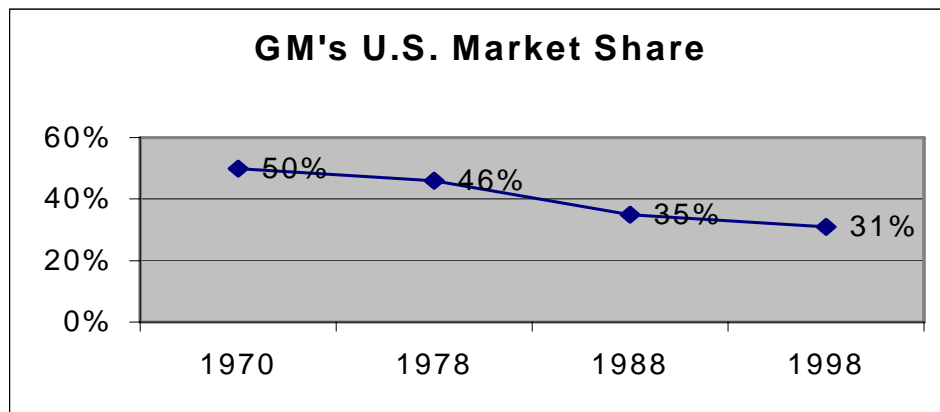
Labor problems have continued since the end of the Dayton strikes. In the 1996 to 1998 time frame, UAW locals have gone on strike nine times, because the Dayton agreements gave locals this right. Since 1996 strikes have cost GM a total of \$2.87 billion.¹³¹ While the company won more outsourcing ability, labor settlements have not stopped the UAW from striking time-and-time again. It seems as if the 1996 Dayton strike, and others that followed, were only precursors to the events of the summer of 1998. Strikes at GM and Delphi plants in Flint, Michigan, brought all the same issues involved in the previous strikes to the forefront with strikes that eventually had a far greater impact than the Dayton ones.

The 1998 Flint Strikes

On June 5, 1998 the GM metal-stamping plant in Flint, Michigan went on strike. Thus, as is becoming common for UAW strikes, all of GM's operations were affected. Stamped steel parts include such items as hoods, fenders, and doors, parts essential for auto assembly.¹³² Less than a week later, a strike followed at the Delphi Automotive Systems plant in Flint that manufactures spark plugs, air filters, and dashboard instrument panels for nearly all GM cars and trucks. The strikes had the potential to shutdown all of GM's North American operations

because of the essential parts produced at the striking plants. Issues involved were familiar ones. The UAW has charged GM with a wide range of health and safety violations, as well as renegeing on promises to invest more in the Flint plants.¹³³ GM, on the other hand, claimed that it could no longer tolerate long-standing inefficiencies at the plants, and will not invest in them until these inefficiencies are eliminated. In particular the company wanted to eliminate work rules that allow workers at these plants to go home after a half-day of work by completing a production quota but, in turn, still receiving a full day's pay. Then if a worker stays on for a full shift, the company is required to pay overtime.¹³⁴ At the outset, both parties seemed determined to hold out for a long period of time, making these strikes longer and more widespread than the 1996 strikes.

Figure 1



General Motors has struggled for quite some time to become more efficient in an ever-competitive automotive market. The corporation has seen its share of the auto market drop significantly in the last quarter century. As previously alluded to, at the time of the famous auto strike in 1970, GM commanded about 50 percent of the auto market in the U.S. Since then, however, GM's market share has been declining steadily. Imports, especially from Japan, have become more prominent in the U.S. auto market since the 1970's. By 1978 sales by GM still accounted for 46 percent of all vehicles sold in the U.S. By 1988 their share had dropped to 35 percent, and in 1998 it is 31 percent and falling. In this time frame, General Motors cut the number of workers it employs dramatically. Since 1978, GM has trimmed its workforce by 297,000 workers: from 520,000 in 1978 to 223,000 in 1998.¹³⁵ The company has cut 64,000 of these jobs since 1992, and to become as competitive as its rivals, it is said that GM will need to cut another 50,000 hourly positions, or 22 percent of its workforce. In a testament to its shrinking workforce, recently General Motors was surpassed by the WalMart Stores Inc. and the U.S. Postal Service as the largest U.S. employer; this was a position that GM held for most of the 20th Century.¹³⁶

Though General Motors has significantly reduced its workforce, the *reduction does not mean that the corporation has become more efficient*, at least not in comparison to its global competitors. Critics have claimed that GM has a long history of buying labor peace at the expense of efficiency.¹³⁷ From an overall standpoint, when UAW strikes over GM's productivity demands, the company usually backs down.¹³⁸ Instead of real cuts in employees, GM usually trims its workforce by attrition. Current workers generally have obtained extensive job protection provisions through the UAW. When workers quit or retire, however, their slots may never be filled. This is called "riding the attrition curve." The corporation hired tens of thousands of workers in the 1960's, and when they retire, GM has vowed to restructure the company to run with fewer employees.¹³⁹ Some wonder if GM can continue to ride this attrition curve and still be as efficient as it needs to be.

Table 2.
Productivity at GM and Ford
Vehicles Produced per Hourly Worker (Yearly)

	1993	1997	Percent Change
General Motors	24.2	27.6	14
Ford Motor Co.	31.9	33.2	4

Efficiency and productivity have improved at General Motors, but GM still has problems in these regards; the company is still *significantly* behind its competitors. In 1993, GM built 24.2 vehicles per hourly worker, and Ford built 31.9. Since then, both have improved their productivity. By 1997, GM had raised its productivity 14 percent, as it produced 27.6 vehicles per hourly worker. Ford showed a slower improvement of four percent to raise its productivity to 33.2 vehicles per hourly worker, still well ahead of GM's figure.¹⁴⁰ Another example of GM's lack of efficiency is that it takes 34,000 parts workers (Delphi) to make one million GM cars, a figure that is nearly twice as large as the totals at Ford and Chrysler.¹⁴¹ One reason for the lack of efficiency at GM is that the company has an abundant supply of factories with many \$40-an-hour workers. For example, GM has 14 stamping plants, like the one in Flint that was involved in the most recent controversy. Critics claim that the corporation probably only needs ten stamping facilities.¹⁴² The Flint Metal Center plant that was on strike lost \$50 million in 1997.¹⁴³ Furthermore, the Delphi plant in Flint claims that it loses \$5 for every instrument panel it makes.¹⁴⁴ In light of these efficiency and productivity problems, it is not surprising that profit is another area that GM lags behind its major

competitors. In 1997, General Motors earned an average of \$850 on each vehicle it made, compared to an average of \$1,520 for Ford and \$1,336 for Chrysler. Similarly, it costs GM \$2,000 in labor costs for assembly, metal stamping, and powertrain assembly per vehicle. The costs for Chrysler and Ford are \$1,957 and \$1,493 respectively.¹⁴⁵ Some of these concerns are at the very heart of the labor problems of the late 1990's.

General Motors also lags behind its competitors in outsourcing. The lack of outsourcing is not as common as current mythology would lead one to believe. It is not uncommon to hear people speak of a 70-50-30 ratio, meaning that GM purchases 70 percent of its parts from Delphi Automotive Systems, Ford produces 50 percent of parts in-house and Chrysler 30 percent. The real numbers in 1996, however, were closer to 45 percent for GM, 39 percent for Ford, and 36 percent for Chrysler.¹⁴⁶ Outsourcing numbers are constantly changing, and GM is continually outsourcing more. Critics, nevertheless, claim that GM needs to obtain key parts from more than one source, not only from an efficiency standpoint, but so the company will not be as devastated by strikes at parts facilities. There are several problems involved in outsourcing, and it is not as easy to accomplish as one might think. Just the sheer magnitude of GM's operations makes finding suppliers capable of handling the volume required difficult. Also, there is the ever-present obstacle of labor problems, as the UAW tends to resist GM's efforts at outsourcing parts away from Delphi's U.S. operations. Furthermore, many labor agreements stipulate that Delphi plants have the right to match the lowest bid for the parts contract and keep the work. This makes it difficult for GM to wean itself from reliance on a single source for parts.¹⁴⁷ Increasingly, however, Delphi has to compete with smaller, leaner suppliers to win GM contracts, making efficiency at Delphi more important than ever.

Connected with the issue of outsourcing is wages. Beneath the surface, this may be the real key issue and has direct implications for maquiladora investment. GM claims the work rules at Flint allow workers to collect eight hours pay for doing four hours work. Employees at the Delphi plant in Flint earn \$43 an hour in wages and benefits.

Table 3
In-House Parts Production

<u>Company</u>	<u>Percentage of Parts Produced In-House (1996)</u>
General Motors	45
Ford Motor Co.	39
Chrysler Corp.	36

Most outside parts suppliers pay between \$12 and \$20 an hour.¹⁴⁸ On average, UAW autoworkers make between \$60,000 and \$80,000 a year with benefits, equivalent to a full-professor at an American university who generally has four to ten years more of formal education than a UAW member.¹⁴⁹ More outsourcing would not only allow GM to prevent massive shutdowns by having more than one parts supplier, but it would also allow them to save in labor costs, in as much as most parts companies pay lower wages than Delphi must pay because of UAW contracts. Delphi has spoken of imposing a two-tier wage system at its 14 money-losing plants in the U.S. as a way to make them profitable again. Delphi admitted, however, the system would be difficult if not impossible to impose.¹⁵⁰ From the union's perspective, it feels that wages, and not productivity, is the real issue. If its members lose these jobs, replacement jobs will probably pay far less than \$43 an hour. Many UAW members, therefore, see the issues involved effecting their whole livelihood. One can see the incentive that GM has to pursue more outsourcing and the motive that the UAW has to preserve jobs.

It was obvious during the summer of 1998 that neither side was going to back down easily in the 1998 strikes. General Motors clearly stated that the company was looking at the long-haul. Many asked what benefits could GM obtain from the strike that would be worth the over \$1 billion that the strike eventually cost the company. After the first month of the strike, GM incurred 20 times more in losses than the Flint metal stamping plant lost in a whole year due to inefficiencies. GM claimed it wanted to eliminate the inefficient work rules at the striking plants and obtain more leeway to outsource parts work, issues that have significant long-term financial implications for the company. Furthermore, GM sought to have the strikes declared illegal, possibly laying the groundwork to make it more difficult for UAW locals to strike in the next national contract with the UAW. This later possibility, company officials claim, would make every penny the company lost during the 1998 strikes money well spent.¹⁵¹ In the past GM's board has indicated a willingness to spend a couple of billion dollars to obtain cuts in long-term labor costs. The changes being resisted at the Flint metal stamping plant cost GM about \$500 million a year.¹⁵² In order to prepare itself for a long holdout, in late June 1998 GM's Chief North American Executive ordered discretionary spending to be cut by 50 percent.¹⁵³ While history suggested that GM could hold out for awhile and still not receive most of what it set out to obtain, in contrast some claim GM usually backs down in labor disputes. Moreover, this reputation usually prompts the UAW to be patient in an attempt to receive what it wants out of a strike. The strike eventually lasted for 54 days, and during most of the duration, both sides seemed unwilling to compromise on the

issue of investments at the Flint plants.¹⁵⁴ The UAW was adamant that investments should be made regardless of work rules; whereas GM said there would be no investments without work rule changes.

The involved UAW locals quickly touted that they had the support of other unions in their struggle. Of course the national UAW was behind the locals. Early in the strikes, the Canadian Auto Workers declared their support of the strikers as well. The Canadians said that they would refuse any request by GM to handle strike-related parts in assembly.¹⁵⁵ Many feel that these strikes were, in fact, setting the stage for the re-negotiation of the GM-UAW national contract in 1999. How issues developed in the 1998 strikes will surely have an impact on the negotiation process.

UAW membership has been falling for years. Its current membership numbers 700,000, half of what it was in the late 1970s.¹⁵⁶ Delphi accounted for 67,000 UAW members in 1996.¹⁵⁷ The number fell to 51,000 by 1998, as a result of Delphi selling some facilities and shifting other work to Mexico.¹⁵⁸ In this light, due to the issues of outsourcing parts and two-tier wage structures, Delphi workers feel more vulnerable to job loss than others do. The UAW, therefore, has been applying a hard line in the late 1990's in an attempt to preserve these jobs. In fact, the issue of plant closure was on the table at Flint. The particular plants being discussed were the 14 money losing plants that Delphi Automotive Systems set out to fix or sell in the mid-1990's.¹⁵⁹ During the 1998 strikes, the UAW warned GM that it could see strikes in Dayton, Ohio again and in Indianapolis after the Flint strikes were over if issues were not resolved in the union's favor.¹⁶⁰ It seemed, therefore, that labor problems would continue even if the Flint strikes did not last long. With the national contract up for re-negotiation, both sides seemed to be drawing a line in the sand and positioning themselves for the 21st Century. The issues of the need to be more productive for competitive reasons vs. the desire to preserve membership for the UAW seems as if they will remain prominent in the coming years.

Once the strikes at the Flint plants began on June 5 and June 12, 1998, the impacts were fairly widespread. Both sides felt that they had some time to maneuver, as the model year change over was set to begin on June 29. During this two-week time frame, as GM does every year, all manufacturing facilities close for a two-week time period so machinery can be outfitted for the new model year automobiles. All involved knew at the outset that production would be closed down anyway during these two weeks regardless of a strike, therefore, softening a strike's impact. There were hopes that the strike could be settled during the model year change over the period, but these aspirations were not met. As of June 23, twenty-four of GM's twenty-nine North American assembly facilities

and 100 parts plants were impacted by the Flint strikes.¹⁶¹ On June 25, 146,400 of GM's 224,000 North American hourly workers were idled.¹⁶² When the two-week shutdown period began on June 27th, practically all of GM's North American vehicle production was shutdown.¹⁶³ During the two week shutdown it is typical for skilled and maintenance workers to remain at work to update the machinery for the new model year. Because of the strike conditions, GM even ordered that work be halted until the strike was over, a move that many feared could delay the start of production when the strike ended.¹⁶⁴

At the outset of the strikes GM attempted to keep its Oshawa, Ontario plant open. This plant produces its very important full-size pickups. GM was going to launch a brand new Silverado pickup to replace one of its best selling models in the C/K pickup line. The startup was considered one of the most important in decades.¹⁶⁵ Some accused the UAW of planning the strike at this time specifically to disrupt the startup, going along with the union's strategy to target GM's best selling vehicles for labor disruption. Initial production was not disrupted before the model year changeover however.¹⁶⁶ To show its determination to keep Silverado production going, GM re-opened the plant after the model year change over break, but the re-opening was to be short-lived (about one week) as the parts that were stockpiled in anticipation of the strike ran out on July 21.¹⁶⁷ Though the plant had to close, GM made no secret of the fact that it was exploring options to obtain parts from other sources to re-open this plant and others. There was talk late in the strike that GM was going to obtain the needed instrument panels at Delphi's plant in Reynosa, Mexico, as the plant was running 24 hours a day assembling the needed parts. There were questions, however, concerning the plant's ability to handle the needed amount.¹⁶⁸

After the two-week company-wide shutdown was complete, GM filed suit in federal court to have the strikes ruled illegal. The corporation claimed that the strikes were essentially over investment decisions, sourcing disputes, and the like, and these issues are covered by a no-strike clause in the national UAW contract. The UAW argued that the strikes were indeed local involving factory complaints concerning health, safety, and work rules. Experts pointed out, however, that it was unlikely the courts would intervene in the strikes.¹⁶⁹ For the strikes to be ruled illegal, GM would have had to prove that all of the reasons for the strikes were illegitimate. If the UAW could have proven that legitimate local issues were at least part of the reason for the strikes, then the strikes probably would have been ruled as legal.¹⁷⁰ In the 1996 strikes, GM tried to challenge the payment of unemployment benefits, but the challenge was unsuccessful.¹⁷¹ Similarly, GM cut off the health benefits of striking workers in late June and was contemplating doing the same for other workers idled by the strike.¹⁷² The UAW and GM agreed

shortly after the company filed suit, and a federal judge later mandated, that an independent arbitrator should decide the legality of the strikes.¹⁷³ A decision from the arbitrator never came before an agreement to end the strikes was reached.

The 54-day strikes came to an end on July 28, 1998. The 9,200 workers striking at the two Flint plants eventually idled 193,100 of GM's 224,000 North American workers at 27 of 29 assembly facilities and more than 100 parts facilities.¹⁷⁴ The settlement that ended the strike gave each side a little of what they wanted. GM agreed to invest \$300 million in the Flint metal stamping plant by 2001. The UAW agreed to increase productivity in the engine-cradle section of the metal stamping plant by 15 percent. The work rules that allow workers to go home after half-a-day, however, were not changed.¹⁷⁵ The UAW also promised labor peace until the turn of the century. Therefore, rumblings of future strikes in Dayton and Indianapolis will not come to be. GM also agreed not to sell the Delphi plants in Flint or Dayton until January 2000. Last, both parties agreed to develop a new process for averting future labor disputes.¹⁷⁶ It seems, however, that the large issues were not resolved for the long-term, perhaps as indicated earlier, setting the stage for the issues of productivity, investments, and jobs to be sources of conflict when the national agreement is re-negotiated in the latter part of 1999. Both parties took a very tough stance at the outset of the strikes, indicating they would not compromise. In the end each had to grant concessions to the other, thus both GM and the UAW did not gain everything they claimed to be seeking from the strike situation.

The 1998 Flint strikes cost GM substantially. When the strikes ended on July 28, the cost to the company was estimated at \$2.6 billion and rising.¹⁷⁷ Each day the strike continued, GM lost \$80 million in production, a number that seemed to rise each day.¹⁷⁸ Analysts say that the strike cost GM \$1.2 billion in profit during the second quarter of 1998, and earnings fell by 81 percent.¹⁷⁹ Since 1996, labor problems have cost GM \$4 billion.¹⁸⁰ Delphi Automotive Systems, naturally, has also been significantly impacted by the strikes. Most reported losses for GM included Delphi as well. Numbers broken down after the first month of the strike reported that losses totaled \$290 million for Delphi, 25 percent of GM's total.¹⁸¹ Delphi's second quarter earnings in 1998 were \$374 million, down from \$522 in the second quarter of 1997.¹⁸² It was estimated that if the strike dragged on for longer than a month, which it did, the impact could reduce the gross domestic product (GDP) by 0.3 percent.¹⁸³ The strike did significantly contribute to a decline in total U.S. industrial output in June 1998 of 0.6 percent,¹⁸⁴ and has been linked to a mounting trade deficit in Mexico in the last half of 1998.¹⁸⁵

Many wonder what the strikes will do to the momentum that GM has built up over the last several years. The company had finally begun to regain some of the market share it had lost to its rivals. Some say the prolonged strikes could threaten this. GM went into the strikes with its dealers having a low supply of cars.¹⁸⁶ At the end of June 1998, the company reported that it had a 45-day supply of vehicles, compared to a 77-day supply at the end of June 1997.¹⁸⁷ GM also missed most of the lucrative summer sales market, costing the company about 21,000 vehicles per-day in sales.¹⁸⁸ Analysts commented that GM's market share in July, 1998 could sink to well under 25 percent.¹⁸⁹ Though its momentum will be hurt, most feel that GM will make up for the lost time. It will simply increase production until numbers are back to normal. The company reported that most factories quickly began production after the strike settlements. Each facility will reach pre-strike production levels at different times depending on the involved models, some fairly quickly and others not. Most dealers indicated immediately after the strike that they were told by GM officials that inventories would be up to pre-strike levels within two to three weeks.¹⁹⁰ Lost sales opportunities, however, may not be able to be recovered. Company officials said, however, that the strike ended just in time to save the all important launch of its new Silverado pickup, which seemed to have been threatened.¹⁹¹

There seems to have been no clear-cut winners or losers in the strikes. The union can claim that, for the most part, work rules were preserved, investments were promised again, and no jobs will be lost in the short-term. GM will point out that it garnered some promised improvement in productivity. Though it cannot close plants for the next few years, the company did not have to make any guarantees concerning hiring new workers. GM still wants to eliminate 50,000 jobs in the next several years. An estimated 100,000 of GM's 220,000 hourly workers will reach the age of retirement over the next few years. The normal rate of attrition is about five percent a year. Due to the high retirement rate, attrition will increase to 10 percent, possibly making desired job reductions viable by simply not hiring replacements when workers retire.¹⁹²

Of course, it will take GM and Delphi some time to normalize production after the strikes. GM had announced plans to have 10 assembly plants running by mid-October if the strike happened to drag on, as it made attempts to find other suppliers.¹⁹³ One could make the assumption that because strikes at Delphi parts plants can shut down GM operations, the company would like to spread out its parts contracts, especially away from Delphi's U.S. operations. This is one reason why outsourcing is important to GM. Perhaps by granting Delphi independence,

GM's ability to outsource will increase. The UAW realizes that Delphi jobs are those most at stake, so Delphi will probably be a source of labor problems in the future.

The Impact of U.S. Labor Problems on Delphi in Ciudad Juarez

A question of vital importance for the Ciudad Juarez region is how these strikes in the United States affect Delphi operations in the city and Mexico as a whole? This is a question that is also important for the Delphi Automotive Systems Worldwide. Due to the specific parts targeted in the strikes, the impact on Delphi's operations were significant because Delphi's Mexican operations are an integral part of Delphi's overall operations in North America. The strikes, however, did not impact Delphi's Ciudad Juarez operations to the same degree that GM's operations were stalled in North America, which is a testament to the diversity of Delphi's presence in the region. At the time of the Dayton strikes in 1996, Delphi Automotive Systems employed 18,000 people in Ciudad Juarez, and 8,000 employees were laid off as a result of the strikes, a figure representing 44 percent of its Ciudad Juarez workforce.¹⁹⁴

Table 4

The Impact of Strikes on Delphi Operations in Ciudad Juarez

	Number of Delphi Ciudad Juarez Employees	Number of Employees Impacted by Strikes	Percentage of Workforce Impacted by Strikes
1996	18,000	8,000	44
1998	23,000	3,980	17

The 1998 strikes had a broad impact on Delphi operations in Ciudad Juarez as well. The affects, however, were not quite as severe as in 1996, possibly due to Delphi becoming more diverse in who it supplies. By 1998, Delphi operated 18 plants that employed approximately 23,000 workers. Right before GM went on its two-week summer shutdown, Delphi claimed that the strike had affected 3 of its 18 plants.¹⁹⁵ Only 2,841 of its 23,000 workers were affected, 12 percent of employees. By the end of the strike on July 28, Delphi reported that 3,980 (17%) of its Ciudad Juarez employees had been impacted at 4 of its 18 plants.¹⁹⁶ Delphi did say, however, that half of its 18 Ciudad Juarez facilities showed at least a small degree of effect.¹⁹⁷ Due to Mexican law, the impacted workers can not be entirely laid-off or furloughed. Delphi has the option of letting the worker stay home at half pay or having the workers report for training sessions at full pay.¹⁹⁸ When strikes occur and these plants are affected,

the no furlough provision in Mexican law may blunt the advantages of employing cheaper Mexican labor. Strike situations, however, are not the norm, and similarly impacted workers in the United States would be eligible for unemployment, which the company has to partially fund. The idled workers at almost all U.S. GM and Delphi assembly and parts plants clearly cost the company far more than the idled Ciudad Juarez workers that stayed home for half pay. The fact that only 17 percent of Delphi's Ciudad Juarez workers, and only 4 of 18 facilities, were affected is a testament to the diversity of Delphi's presence in the city over the last several years. When GM's North American operations were essentially shutdown, Delphi Automotive Systems in Ciudad Juarez was still going relatively strong.

Elsewhere in Mexico, Delphi's operations overall were more impacted by the 1998 Flint strike than in Ciudad Juarez. General Motors and its affiliates have a very wide presence in Mexico. With 85,000 full-time workers it is Mexico's largest private sector employer.¹⁹⁹ The Delphi portion of these numbers is substantial. Delphi employs 72,000 workers in Mexico, 85 percent of the GM family presence in Mexico. During the strike 29,905 Delphi workers were impacted, about 42 percent of Delphi workers in Mexico.²⁰⁰ Reduced orders by GM for parts cut output at 25 of Delphi's 53 Mexican factories.²⁰¹ Ciudad Juarez's Delphi workers account for about 32 percent of the company's employment in Mexico. If only 17 percent of Delphi's Ciudad Juarez workforce was impacted, one can imagine the affect on Delphi's Mexican operations outside of Ciudad Juarez, probably over 50 percent were impacted. Therefore, though numbers in Ciudad Juarez do not seem extremely high, the impacts of the Flint strikes to Delphi's Mexican operations were in fact very significant and indicate the downside of economic integration, namely the *domino effects* of production shutdowns.

Delphi's presence in Mexico was a secondary issue in the Flint strikes. Delphi has mentioned that it would like to move more of its North American work to Mexico. The labor savings is obvious. The UAW has been afraid of this reality for quite some time. The union sees Delphi as an outfit that GM uses to ship union jobs away. GM's presence in Mexico is a case in point. Looking at the Mexico numbers, as said before, Delphi employs 85 percent of the GM family's workers in Mexico. GM often argues that foreign investment is geared at foreign, and not U.S. markets. This may be generally true. Mexico, however, may be an exception. Many of the parts manufactured in Delphi's Mexican plants are used in GM assembly facilities in the United States. Delphi and GM officials have mentioned that items made at the striking Delphi plant in Flint such as spark plugs and instrument clusters are ones that the company wants to move to Mexico.²⁰² Intentions such as these and past history suggests that the striking

workers in Flint have legitimate worries. GM and Delphi, on the other hand, feel that they must do as their rivals do to stay competitive. For GM, this means to cut costs in obtaining parts for its automobiles. Some in the auto industry claim that in the 1990's GM is having to take the harsh measures to stay competitive the way that Ford and Chrysler did in the late 1970's and early 1980's.

The Future?

What does the strike mean for the future of Delphi and its presence in Ciudad Juarez? Some in the company fear that the strikes may have injured Delphi's ability to sell off more plants, thus hurting Delphi's ability to be more competitive. If this scenario occurs, Delphi's attempt to secure more business outside of GM may be impaired.²⁰³ Another question raised, is Delphi simply a pawn in the overall strategy of General Motors? Of course, GM is the parent body of Delphi. The formation of Delphi may have partially been a result of GM's desire to obtain parts in a less costly manner, and, through Delphi, a fair amount of parts manufacturing has moved to Mexico. Though many of the recent strikes have been at Delphi plants, it was obvious that GM, and not Delphi, was calling the shots in labor negotiations. Independence for Delphi through its initial public offering may dramatically change this equation. Full independence is hoped for by the end of 1999. In 1998, however, as the strikes demonstrated, Delphi is still a very integral component of the GM family. If GM continues to outsource more in the future, and Delphi is allowed to sell off more plants, etc., GM may one day become simply a customer for Delphi. If this ever happens, Delphi Automotive Systems' presence in Ciudad Juarez could fundamentally change.

Discussion Questions

1. Delphi has a direct and indirect impact on the El Paso/Juarez economy. What does this mean? How are impacts measured? What problems might exist in these measurements?
2. Are the jobs being transferred to maquiladoras new forms of industrial positions or a transfer from previously union positions in the traditional areas of the auto industry?
3. Is Delphi likely to stay in Juarez and under what conditions, or will it chase comparative advantage into other parts of Mexico?
4. Does the issue of strikes relate to globalization? How?
5. In the aftermath of the strike, GM is expected to drastically re-structure all of its operations. This challenges the original ideas of a vertically-integrated company. What does this trend mean? Why is it occurring? What global trends are moving major corporations away from an integrated mode?
6. What advantages and disadvantages exist for Delphi if it is separated from GM?

Glossary and Terms

Look up the terms and words in this Case and consider how they are used in other areas.

Case C

Delphi, Maquiladoras and the 21st Century Organization

Introduction

In this case study we explore what future organizations may look like based on the extant literature. As we shift away from industrial economies in some locales to a post-industrial world,²⁰⁴ the paradigm for organizations is likewise expected to change and reflect the demands of a new era. Workers as assets will take on a different perspective, and likewise they will view their employment opportunities under a new set of parameters. Using Delphi and the maquiladora setting as a stepping stone, you are asked to assess the prospects for organizations in the new millennium.

The 21st Century Organization

What the organization of the future will look like is debated by a number of different scholars from a variety of backgrounds. Within this debate exists a group, whether they term themselves futurists, innovative or fifth generation managers, or proponents of the "21st Century Organization," who all hold several basic tenets in common. The future of organizations, they argue, is one that is vastly different from what exists today. In the future, organizations will further develop some of today's most innovative programs and emerging structures to the extent that they will permeate and be critical to an organization's success. While there is some debate within these groups, the organization of the future, "The 21st Century Organization,"²⁰⁵ will have to incorporate some of the ideas in which all theorists within this vein believe. Consensus primarily resides in the belief that the human condition, education, goals, capability for innovation, and the social function of organizations must all evolve.

The Human Condition

For this revolution in organizational structures to take place, there is one major obstacle that must be overcome -- the human condition. The world these theorists would create might be considered by many to be a practical *Utopia* or a benevolent *1984*. While these works use a negative view of human behavior; in fact, this view of human behavior is one that tends to pervade the traditional views, especially of employees of the present and future. This can be seen in a number of countless works that discuss society or organizations such as those written by Anthony Downs, Sigmund Freud, Max Weber, Fredrick Taylor, and the Founders of the United States.

Proponents of the 21st Century Organization, instead, work from the assumption that people are not entirely self-interested and do not need the rigid limits of control that can be found in the majority of the above mentioned authors' works. One such scholar notes that this evolution will be spurred by increasing numbers of women in the workplace, making the "trust, support, . . . participation"²⁰⁶ affection, appreciation, and understanding every individual must have "necessary to maintain organizational cohesion."²⁰⁷ This belief, whether aimed at women or not, exists in all of the literature within this genre, because if the world these scholars have in mind is to exist traditional views of human behavior must also change.

Education

Humans, unfortunately, never change their behavior as quickly as theorists would like, which begs the question of *how can the organization of the future evolve if people are unwilling?* The answer to this question resides in education, but not in the common sense of the word. Traditional education as it exists within modern day schools cannot possibly prepare students for the rigors that will be demanded of them in the future.²⁰⁸ This might make it seem like futurists are asking for more than can be provided by public education, but themes found within both current education theory and that of the 21st Century Organization, demand that education progress as quickly as demanded by society. These themes primarily include the ability of public schools to prepare students for the almost daily evolution of technology, the ability of students to function within an increasingly diverse workforce, and the desire to achieve more advanced credentials (degrees or certifications).

Technology is probably the most promising and most difficult of these themes that students will have to master. It is the most promising because a vast number of studies have shown that the implementation of technology in programs such as distance learning and computer aided instruction all tend to have a positive effect on students' learning.²⁰⁹ Exposing students to the most modern technology also prepares students to enter the workforce without having to undergo extensive retraining.

The degree to which this is possible, however, remains a constant problem for those who study education. Vast differences in funding and availability of persons to oversee such programs, which are both often directly related to the kind of community in which the schools reside, hinder wide-scale implementation. So while the idea has been accepted by the great majority of scholars, the road to schools actually being prepared to meet the challenge of the future is an uncertain one.

The divergent communities who fund schools and perpetuate this inequality are also the second major theme held in common by education and 21st Century Organization theorists. The world of the future is most certainly going to be a diverse one, and few, if any, dispute this. Yet the ability of diverse groups to be able to work with each other is a central tenet of the future organization, and schools are the logical starting place for this belief to take hold. Despite differing ethnic, socioeconomic, or national backgrounds, students trained by public schools must be taught to work with each other. Sonia Nieto, in *Affirming Diversity*, argues this noting that schools currently do not provide students with a "multicultural" education that will allow them to understand or be sensitive to people from backgrounds different from their own. Current education, for example, simply teaches one history and ignores the vast number of peoples who contributed to it, negating the influence of certain groups on the formation of the United States.²¹⁰

The ability of schools to institute this kind of understanding is only the first part of a larger wholesale change in American and worldwide education. Students must also become increasingly competitive by pursuing advanced certifications and degrees. This might seem implausible but one need only consider what is happening in today's world. As little as twenty years ago, students graduating from high school might be able to expect a decent living with only so much as a trade. Today, however, many of the same trades require technical school or other certifications because of the proliferation of technology in every field, and if one expects to find a place in a skill occupation or in the upper echelons of the service industry, college degrees have become the norm. If this is the case now, the world of 2050 imagined by futurists does not seem extreme at all. They suggest that management positions will be much harder to find because of the coming autonomy of individuals and work teams within organizations.²¹¹ Anyone wishing to advance in such an organization must distinguish him or herself in the only possible standardized way, an advanced degree. Advanced training of this kind, when coupled with management of autonomous work teams, is perceived to provide the "better and faster integration of expertise" that all future organizations will need to be competitive and successful.²¹² Guy Benveniste describes the same process when he discusses the course one followed in the past to be successful. Class structures in Europe allowed generation after generation of those born into wealthy families to remain so because of inheritance laws, but as land became less important and expertise took over, larger numbers of people began seeking "bachlots."²¹³ The continuation of this process described in Europe is the same as that described above for the United States. Education has been able to do this in Europe and the United States, although, admittedly, there are a number of problems that still must be addressed. Thus, education

will be able to narrow the gap in other developing countries as multinational corporations who move there initially for cheap labor must eventually look to the local population for skilled and educated employees. While this point will be discussed at greater length later, it is suggested that multinational corporations are doing just this by investing more in multitasking for employees involved in “systemofacture.”²¹⁴

Goals: Outputs to Outcomes

The end result of improved education will have those who make it into management apply their goal structures to the organizations for which they work. Employees in labor pools and within work teams will typically have at least bachelor's degrees, which no doubt they will view as long-term investments for future payoffs. Those who aspire after even more advanced degrees or certifications will view continuing education in the same way, because the above mentioned management positions will be scarce. The only logical choice for such managers to make is to treat the corporations for which they work with the same goal structure they apply to themselves. This means, especially considering the Japanese economic expansion during the 1970s and '80s that severely damaged American technology and automobile manufacturers, that educated individuals will be the catalyst in making organizations change the scope of their goals.

This one step is what 21st Century theorists argue will create “a new breed of professional”²¹⁵ whose effect will begin to pervade organizations. If the above holds true, organizations will be filled with a large number of people who are either highly skilled and/or highly educated. As also mentioned above, because of new methods of teaching within schools and the diversity that one normally finds within universities, these people will soon realize that cultures aside from that in the United States can be looked to for strength. The fact that education will have this effect is supported by a number of works. One in particular shows how advanced education makes images and stereotypes associated with perceptions of national identity far less important within the workplace.²¹⁶ This understanding and attention to long-term goals will further globalize organizations and demand that government entities with the same numbers of educated people begin to become involved in how organizations function within their borders.

In addition, 21st Century Organizations are filled with large numbers of qualified and skilled people around the globe, yet aside from long-term goals which are supposed to supplant the short-term goals that were common in American industry in the 1980s,²¹⁷ the picture of the future organization is not very clear. Many of these theorists do, however, provide some picture of what organizations will look like within the framework of a few common

themes. Mentioned briefly above, goals for organizations in the U.S. have been largely short-term until only recently, and the shift towards thinking in terms of the distant future is vitally important in changing the face of organizations. A number of other factors become important if organizations intend to make this a reality. The most common belief is that organizations will have to take on a largely social role where the part they play in society -- not just the marketplace -- is going to become far more important. To do this they must change their overall focus from outputs to outcomes, foster innovation, globalize, and become social entities.

Changing an organization's focus from outputs to outcomes is probably the most difficult of any of the innovations that must be implemented. *Outputs* count tangible products produced, and increases and decreases in production are easily quantified. This might pertain to something like counting the number of door handles a Ford component plant is able to produce in one year. Increasing production from 35,000 handles per year to 70,000, each at a lower overall cost, is a formula that an executive would easily be able to understand. Unfortunately, the profits gained by this advance might come at the cost of cutting jobs, reducing the wages of remaining employees, and being less environmentally conscious than a host country might expect. This is exactly what outcomes are intended to measure; they do not only look at increased production or lowered operating costs but the overall effect an organization has on an area. This includes looking at the total amount of capital a corporation contributes to a local economy or how many qualified employees it is able to demand from local universities.

Benveniste argues that this is precisely how Japan was able to surpass the United States in several areas of manufacturing.²¹⁸ While U.S. organizations were more interested in lowering costs from year to year, large-scale mergers to reduce mid-level management, and working with as few employees as possible while increasing production, Japan was working in a very different direction. Their organizational culture, heavily influenced by samurai philosophy and the work ethic of the rice field, was such that, as Gareth Morgan suggests, teamwork and fostering the relationship between organizations and employees was more important than higher profits.²¹⁹ Their government worked with large corporations by subsidizing research and development, which also fostered the link between universities and corporations, and provided tax relief. The outcome was a society that was able to advance technologically and demand highly skilled workers, a fact that is separate from the economic and financial woes of the last few years of the 1990s. These two forces in conjunction improved the overall economy, as those with expertise were able to demand a higher wage and in turn put more money back into the economy. Simultaneously, the cost of shortsightedness by American corporations during the same time period went far beyond the number of

people laid off. College graduates found it harder to find work, and the work that was available in many specialized fields was low paying, further reducing the amount of money put back into an already declining economy.

Innovation

In a setting, when both organizations and the economy were prospering, the face of overall organizational structures can be reworked. The new breed of highly skilled professionals will have the autonomy they need to innovate primarily because of the successful setting in which they work. The literature surrounding "*innovation management*" teaches this exact lesson. Its proponents argue that if organizations are to be successful innovation is of paramount importance to organizational success. Uncertainty and complexity at all levels can be channeled through the appropriate use of work teams. A number of studies suggest that when people are faced with complex and changing situations, they are much more successful at quality innovation:

"the process . . . includes an initial shock to propel the innovation idea into being, proliferation of the original idea, setbacks and surprises along the way that provide numerous opportunities for trial and error learning [thus] blending . . . old and new ideas as the innovation process is implemented and diffused."²²⁰

In essence, these scholars are asserting that present-day organizations attempt to reduce uncertainty to the point that innovation within a narrowly defined position is almost impossible because free thought has no place.²²¹

The alternative to fostering innovation is a setting where the organization is forced into a steady decline because no one is willing to take risks. Several 21st Century theorists argue that such organizations breed mistrust because ideas that fail are perceived to be part of the reason the organization is in decline.²²² People who are not vocal or innovative in this kind of setting are viewed as safe by their superiors, whereas someone who attempts to implement a new idea that fails is viewed as a liability. It is not hard to see why this mindset can often immerse itself within an entire organization. When the economy is not doing well or sales are low, the cost of innovation must be weighed against the contingency that the necessary funding could be better spent somewhere else, and often times, there is greater need at other points within an organization. When someone is finally allowed to implement a new idea and it fails, the squandered resources are often viewed as a judgement of that person's competence. In a setting such as this one, it is not difficult to see who management might look towards first when the next wave of layoffs must be announced. Fortunately, innovation does not quite work in the way that it is often viewed in struggling organizations. Innovation breeds innovation and should be fostered even if some ideas fail.²²³ Ideas that fail do drain resources, but they may also have a beneficial effect. They teach those around them what works, in part

due to an organizational socialization process,²²⁴ and often ideas that are good enough to be tested have enough merit to evolve into something else that holds promise.²²⁵ Bit-by-bit, other employees will begin to see that innovation does not only have negative consequences, and management can nurture this philosophy by making those who innovate well resources within their organizations.

The tools these new professionals will need are also well addressed in the literature surrounding future organizations. Futurists and those who study the effects of technology on organizations agree—technology is vitally important if organizations expect to grow. Goodman and Sproull have shown that technology has dramatic effects on individuals within organizations. Giving employees technology with the ability to provide them information from a number of sources "informs" them and increases their capability for innovation, as the judgements they make to innovate are far better informed than they would be otherwise.²²⁶ George Huber goes even further, saying that technology improves organizational communication, decision making, and intelligence.²²⁷ Taken as a group, scholars within this field show that the more tools employees have at their disposal to inform them, of which technology is clearly one, the better their ability to innovate and contribute to the overall organization.

That innovation is vital is made clear by this point, but the ability of organizations to foster innovation is not. The way current organizations are structured does not breed the kind of change innovation managers have in mind, even if organizations are staffed with "a new breed of professional." For the solution to this problem, innovation managers, students of the 21st Century, and futurists alike all look to organizational theorists for the model of an organization that can best utilize a new corps of professionals. Within this genre, two organizational metaphors seem to fit best: 1.) organizations as organisms, and 2) organizations as brains. According to Gareth Morgan, the organismic metaphor for organizations holds that organizations must react to the world that surrounds them much as do individual living beings,²²⁸ with which Benveniste would clearly agree since he calls his organization "adaptive and non-routinized."²²⁹ While this metaphor could paint an unusual picture of what organizations are supposed to do, its strengths suggest that organizations must continually be able to adapt from within to the problems that they might encounter. *Adaptation*, just as it works with living beings, is essential if organizations are to stay alive. The way this begins to become appropriate for future organizations is that the organism metaphor is really no more than basic contingency theory. The metaphor, just like contingency theory, demands that organizations be prepared to handle and react to change. Organizations who keep their new

professionals isolated clearly are not prepared for the uncertain and complex world that permeates both contingency theory and the organism metaphor.

The portrait of the future organization thus far still has its employees working apart from each other, and authors such as Benveniste and Drucker never really address this problem in the same detail as organizational theorists. Although Drucker and his cohort speak of “work teams,”²³⁰ they never provide an overall structure for what might work best in the world they envision. The best possible alternative to what futurists describe in broad terms is what organizational theorists call *brain like organizations*.²³¹ These organizations are unique not only in their structure, but in what they demand from employees. Their overarching structure is one where individuals come in contact with each other and form a “neural net.” The schema this provides is an organization where individuals work in small teams, and each of these teams is linked to other teams via the “net.” This allows for various groups to contact each other and work together to solve common problems just as a brain would. The obvious link to the world of the futurists is that Benveniste and Coates and Jarratt see such groups in essentially the same manner,²³² with professionals being able to work in one group while having a connection and relationship with several others. The rewards brought on by individual relationships like this have been well documented in the literature surrounding inter-organizational relationships. Such scholars argue that when relationships across work teams and corporations are fostered; the end result is one where all sides benefit.²³³ Hierarchy within this metaphor is also somewhat unique. Discussed above is the idea that future organizations will not have the number of management positions as currently exist. The reason futurists see the coming world this way is that much of the autonomy and potential for innovation that currently resides only in management will be transferred to work teams who understand their positions best. Once this happens, futurists and human resource management innovators argue, there will be no need for the managers who were once placed in organizations to ensure that lower level employees did not drift outside their narrowly defined job descriptions.²³⁴ Another facet of the brain metaphor is that employees are competent, and they *learn* so long as the organizations for which they work make these skills a priority, which is no less than identifying persons with this ability as a “new breed” of professionals.

The above trends is taking place slowly in small parts of the organizational landscape, but more importantly, they are taking place globally.²³⁵ The evolution described herein has been aided in part by the emergence of multinational corporations who originally sought out only cheap labor,²³⁶ but are now finding that the modern world requires that they find more qualified people and train the ones they already have. The world that is

emerging is also one where the above process, which describes improved education, is producing more and more qualified people on a daily basis, and in the future when these people begin to staff organizations around the world, organizations will realize that competition will rise to a much higher level than at which it currently exists. Thus, globalization also means that individuals and corporations will not be the only ones competing with each other for prosperity. The amount of capital that multinationals can provide to developing nations will also be in high demand. This scenario would have governments competing to bring multinationals within their borders for the capital, improved technology, and jobs they can provide.²³⁷ Knowing this, nations will behave very much like Japan did in the 1970s and 1980s by forming partnerships with organizations to assist in research and development, especially that which can incorporate, for example, local universities,²³⁸ and provide tax relief. There is also a good deal of literature which discusses inter-organizational relationships at a number of different levels, one of which is the relationship that corporations can have with host countries. These relationships, if nurtured properly, can be mutually beneficial to both parties.²³⁹ If this holds true, organizations might also have much more autonomy in governing themselves since governments will be wary of imposing regulations upon corporations that are too strict, realizing that an organization which is displeased with the operating environment has the option of choosing another nation for its home.²⁴⁰ In addition, the technology that multinationals often bring with them, in addition to the benefits mentioned above, makes them more competitive within the global marketplace and actually lessens the effects of national identity that might be counterproductive to a corporation's goals.²⁴¹

This kind of vast investment by multinationals cannot be made easily. Consequently, from the multinational perspective, they will begin to look more and more at keeping the employees and countries they are partnered with happy, thereby remaking themselves as quasi-social institutions. This is by far the most controversial idea amongst those who try to describe what the organization of the future will look like. Some contend, under the global domination model,²⁴² that organizations will move continually in search of cheap labor. What the theorists described here have in mind is something very different. They believe that since education will expand across the globe, the number of markets where one can find low-cost labor will steadily decline, not to mention the fact that as global markets expand corporations will not be looking to alienate entire countries by using them and then simply moving away for benefits elsewhere. If this happens, organizations will have to protect the investments they have made in physical facilities, technology, training, and the possible negative effects of breaking off relations with

certain markets. The only way organizations can do this is to provide a number of social services to ensure that efficiency and productivity is maintained.

Organizations as Social Institutions

Several social functions are addressed and include improving training (high quality training that is portable and of use to other organizations) and increased access to technology. There is one side note to the organization created above. A cycle where people seek more and more education and give more and more to their employers does come at a cost, and technology can only reduce to certain limits. At some point, the effect will be visible in human terms. Family development will be taxed and leisure time will be almost non-existent. A social contract that meets the basic needs between organizations and the people they employ will become a necessity. If organizations are to demand this amount of human time and energy, they must play a role in the maintenance of families and provide health care so that employees can expect to be at work regularly and be productive while they are there.

The area that receives the most attention within this vein is the role that women will play in the future. Currently, there are still pay and advancement inequities that most women have to deal with as a reality of the workplace. However, as more and more women begin to enter the workforce, organizations will no longer be able to treat them as they do currently. Part of the reason for this is that the female management style, which is perceived to be more nurturing and trusting,²⁴³ is already making its way into current work settings.²⁴⁴ Because of this, organizations have had to increasingly allow for women within their organizations, and this includes a number of services such as maternity leave, flexible work schedules due to family responsibilities, child care, and the ability to leave work because of family illnesses.²⁴⁵ Once women gain this mobility, it can be argued that men will not be far behind in asking for the same benefits, because to date they have not chosen such incentives due to the fact that they might be seen as weak by upper management.²⁴⁶ The most important factor that will contribute to organizations trying to keep women within their ranks is the amount of money they spend on training. Much of the money spent on training for women is spent early in their careers, and when women decide they want families, organizations simply let them leave without a second thought.²⁴⁷ What organizations will begin to do to recoup the money they invest in initial training is provide many of the incentives mentioned above. This in turn will show other women within the organization that they are valued and have a place if they remain, further lowering the money management might lose in training if other women stay.

Obstacles

Education, goals (both individual and organizational), innovation, technology, a new organizational structure, globalization, competition, and a societal function all combine to create the 21st Century Organization. If any of this is to happen there are a few fundamental problems 21st Century theorists must address which could very well shake the entire foundation upon which they build their society—doubts about the evolution of the human condition and the reduction of regulations governing multinational corporations.

The first change mentioned above is that of the human condition. Futurists who believe in the 21st Century Organization trust that improvements in education are enough to begin the inertia towards a new world, assuming that humans will not take advantage when quick advantage is available. This is made abundantly clear when these scholars argue that education will create an amount of sensitivity that can lessen conflict, even political conflict, within organizations. They expect that work teams will be able to function smoothly enough to be able to both accomplish the tasks required of them and be innovative and creative as well.

Unfortunately, there is a great deal of literature within the realm of human resource management which suggests that the 21st Century is far more a myth than possible reality. Such works go as far back as Samuel Krislov's notion of "representative bureaucracy" where he argues that there are not enough qualified people within society to fill the ranks of public service, much less all organizations.²⁴⁸ Granted Krislov wrote far before the authors discussed here, but the idea he presents is an important one. Futurists believe that organizations can be staffed by qualified people from all backgrounds, but if Krislov is correct such backgrounds also suggest differences in cognitive ability. If so, such people are not represented in the 21st Century, and this essentially creates a two-tiered system where one group of people is a new breed of professionals and others without advanced levels of cognitive ability work in the service industry. The door this opens for abuse if certain groups are not well represented within the educational process is frightening. More contemporary authors such as Klingner and Nalbandian, authors of the standard textbook, suggest problems that might arise in trying to evaluate the work done in such a system. The evaluation of work arises because futurists never address how the employees who float within and between work teams would be evaluated. This is not to say that the idea is a bad one, but it allows for "*free riding*" that "results oriented job descriptions"²⁴⁹ are intended to reduce. This also goes back to the assumption that all people will be motivated and not seek advantage when it is there. "Free riding" is clearly one of the areas where people who might choose to take advantage of the future organization might be successful.

The second problem, which also relates to advantage, is that of the behavior of multinational corporations within developing countries. Proponents of the 21st Century like to suggest that pure benevolence and widespread education are enough to make organizations treat host countries as if they were valuable; unfortunately, a number of works written about the behavior of multinationals to this point in history is antithetical to this broad vision of change. Multinationals are accused of a broad range of crimes such as keeping important technology away from smaller components plants and extracting vast amounts of raw materials without ever truly compensating host countries for such exploitation.²⁵⁰ The issue of technology is an important one since developing nations assume that multinationals will bring in technology that will help them advance. Often, however, such technology remains in the multinational's parent country.²⁵¹ In fact, this issue was of enough importance for Canada to include it in its "Twelve Good Corporate Behavior Principles,"²⁵² stating that "inclusion of R&D and product development" stay at least in part within the Canadian border. The misuse of a country's raw materials is a far broader issue that mainly addresses how developing countries often become more dependent on multinationals than the same corporations become on their host countries. These corporations often set up only assembly plants that often do not require vast amounts of technical skill. The end is a process where the corporation will hire a huge number of locals, drawing them away from previous primary means of support, and then leave when a better opportunity arises in another developing country. The local economy of the host country is left devastated as the money the corporation brought with it is gone and a huge number of people are left out of work.²⁵³ This case is further perpetuated by multinationals who often manipulate profit statements and have subsidiaries in countries with the lowest tax rates be the most profitable, while developing countries with higher tax rates may have the corporation actually report a loss to avoid paying many of the taxes owed.²⁵⁴

In the final analysis, the case for the 21st Century Organization is a strong one, and there are indeed a number of current trends within education, technology, innovation and a number of other fields which support the idea that the world will evolve in the way these futurists envision. The very premises upon which their theory is built also paint the portrait of a world that anyone would like to live in, a place where education is almost perfect, where everyone has higher cognitive skills, and where there are vast numbers of quality jobs within the ranks of organizations all over the globe. Unfortunately, there do exist a number of problems that futurists must address if their vision of the future is to develop any further.

Six Trends

Organizational theorists provide us a significant set of issues that reflect on global business and management practices.²⁵⁵ In Table 5, these ideas are summarized, and serve as a concluding point for this case study, suggesting a challenging direction for assessing Delphi and other organizations, both private, public and non-profit, that work in the cross-cultural setting of contemporary enterprises. In looking at these trends, ask yourself, to what extent they are useful as students and future managers, and the degree to which Delphi exhibits these trends, thereby serving as an exemplar for future studies. Also, ask yourself, if, in a globalized work environment these trends will be positive or negative, increasing or decreasing. We purposely do not discuss these in great detail, leaving them for the reader to explore in the context of their expertise and research. In addition, does the evidence presented about Delphi or other organizations you know of seem counter-intuitive to these proposed trends?

Table 5

Six Trends Shaping Organizations for the 21st Century²⁵⁶

1. International Competition for Ideas

- ✓ Internationalization of Research and Development
 - a) Increasing cooperation between the public and private sectors
 - b) Growing cooperation among researchers in different parts of the world
 - c) Accelerating geographical concentrations of talent and capabilities
 - d) Tightening of linkages between corporate and non-corporate research and development
 - e) Increased difficulty in defining human capital
 - f) Growing importance of long-term strategy
- ✓ Greater Public and Private Cooperation
- ✓ Regional Economies and Trade Relationships
- ✓ Highly Stratified Economic and Social Development

2. Education of the Workforce

- ✓ Greater demand for credential and life-long learning
- ✓ Possible alienation between those with credentials and those without
- ✓ Greater social and economic mobility among the best educated throughout the world

- ✓ Greater demands for re-education and re-training
- ✓ Higher levels of education may lead to more demands for discretion among workers

3. The Feminization of the Organizational Culture

- ✓ The search for gender equality
- ✓ Pay Inequities
- ✓ Sexual harassment
- ✓ Gender differences in management styles

4. The New Technologies

- ✓ Technologies will force organizational change
- ✓ Enhanced communications abilities
- ✓ Decentralization
- ✓ Change in worker skills
- ✓ Interdependent organizations

5. Institutionalization of Rapid Change

- ✓ Prioritizing items for change
- ✓ Anxiety among U.S. managers
- ✓ Japanese cultural artifacts
- ✓ Intense efforts to reduce time for effecting institutional changes

6. New Understanding of Organizations

- ✓ Long-term versus short-term thinking
- ✓ Collective versus individual advantage
- ✓ Trust
- ✓ Adaptability
- ✓ Informal Discussions
- ✓ Organizational scanning and boundary definition
- ✓ Democratization and professional participation
- ✓ Constant change with continuity

Delphi as a 21st Century Organization

“The establishment of Delphi-Juarez is of great significance for Mexico. It is a new type of company that generates more taxes and salaries, integrates productively with other plants (even if the Mexican supplies continue to be limited), generates economies of scale, and promotes the creation of *clusters*” (Carrillo and Hualde, 1998: 92).²⁵⁷ In the case of Delphi, as with studies of other purported 21st century organizations, it must be considered within the larger context of wide-scale globalization. This is the primary factor that forces corporations in the last half of the 20th century to continually evolve, whether that evolution be by force or because of the need to foster goodwill. There is no doubt that Delphi is a huge multinational corporation, maintaining 208 manufacturing facilities and employing 204,000 people worldwide. As such, the above discussion outlines five areas that define the 21st Century Organization:

- the human condition;
- education;
- changing outputs to outcomes;
- innovation; and,
- organizations as social institutions.

While many organizations have incorporated a few of these themes to a limited extent, Delphi serves as a prime example among its contemporaries since it has been able to incorporate several more. Viewing these innovations outside the context of a corporation is somewhat difficult because changes under one theme often have repercussions on several other areas. Thus, for Delphi the themes which seem to work in combination are:

- 1) improvement in the human condition and education and innovation; and,
- 2) change outputs to outcomes and organizations serving as social institutions.

Education and innovation are grouped together because they have often been referred to as the primary factors that begin a wholesale change in human nature. Under the umbrella of globalization, Delphi has had to improve in these areas because of the high degree of competitiveness in the automotive industry. What is interesting for Delphi is that these wholesale changes in human nature have not come about due to improvements in education or training. Instead, the above mentioned competition that forces positive change in a 21st Century Organization has brought about the opposite at Delphi ---- fear of downsizing or unemployment as the most likely key impetus of change. This was made abundantly clear during the strike at the Flint, Michigan plant, where employees went off the job under

the auspices of complaints ranging from health conditions to plant improvements. Many outside observers, however, claim that the United Auto Workers target facilities such as the Flint, Michigan plant to exact the most damage. They do this not for the narrow reasons often cited in the media such as health care, but to protect union members from the overall downsizing trend in the automotive industry. And to be fair, unions have reason to worry; Delphi reduced its product portfolio by almost one-half in 1996 and reduced its number of overall divisions by more (see page 27). If this is in fact the case, it seems that innovation is brought about more by necessity than benevolence or employee loyalty. In fact, employee loyalty is one of the things that seems to be most lacking at the moment. The 21st century theory suggests that improvements in training and benefits would increase employee loyalty; however, employees in Juarez are only at the very beginning stages of becoming what these theorists envision because they often move from one job to another in search of higher pay and better benefits. Being at an early stage of development does not suggest that there is no hope for maquiladoras. Many of the trends along the border suggest that the well-trained and educated workforce of the future is not far from becoming a reality in Mexico. Although workers move repeatedly, corporations are beginning to realize that they must train their workers if they hope to gain and retain competitive advantage. Fortunately, this is not the only trend currently working in Mexico. Because of the efforts of the government, many young people are also receiving a better education, which in turn attracts more business to Mexico, especially in the border region. This point is made clearer when one considers the hiring practices of Delphi in Juarez.

As the 21st Century organizational theory requires, Delphi Mexico hires from its immediate surroundings, which is evidenced in part by seventy-five percent of their engineers being Mexican nationals. Theoretically, this should force local education to produce more-and-more qualified applicants. The situation at Delphi, however, is only partially what futurists had in mind because the pay levels for engineers, much less the assembly line employees, is far below what their American counterparts would make, although the above mentioned improvements would be expected to gradually change this.

This suggests that reducing costs is slightly more important than focusing on outcomes because while change is happening it is coming about for reasons only remotely similar to that proposed by these futurists. The room that this leaves for innovation is not the panacea envisioned by futurists. Instead of bringing about innovation through corporate dedication, it is driven by fear that part of the market share might be lost or that people might be

fired. For just such an example, one need only look to what happened when Delphi lost the contract to supply seat adjusters to GM.

Innovation at Delphi is happening, but not for the same reasons outlined in this third case study. It is happening out of sheer necessity, although driven in part by the same reasons as in the 21st Century organization. This does not necessarily mean that the 21st Century context is lost to Delphi; it simply means that innovation is present but is not forced by quite the proper circumstances. Part of the reason for this is the fact that Delphi is still largely output driven, and in the “vertically driven monolithic” automobile industry that relies on systemofacture this is still a necessity. Other options, at this point in time, would probably cause losses unless other organizations made the same changes in favor of benevolence. There is, however, some hope in that some factors seem to suggest that change is happening. The first of the factors is addressed above in the decision of Delphi to hire a huge number of engineers from within Mexico. This is only a first step since hiring locals can only improve the local economy, despite some of the problems that currently exist due to low wages. There are also some doubts concerning the future professional development of Mexican engineers. In spite of their great possibilities for learning and apprenticeship, the GM center in Ciudad Juarez does not establish possibilities for good professional careers, it is probable that the most skilled and creative engineers will emigrate to the United States. With respect to this matter, it is surprising that until now Delphi-Juarez has not established contacts with local Mexican institutions that train engineers, although they have connections with neighboring Texas universities (Carrillo and Hualde, 1998: 93).²⁵⁸

For the future, Delphi must make the decision to change the end of its hiring decisions from cheaper labor to maintaining employee and community loyalty. Once this is done, as it has been to some degree, the path to a 21st Century Organization becomes much shorter since organizations begin to fulfil some social function. That this has happened to some degree is exemplified by a number of laws passed in Mexico. Many organizations help employees make down payments on homes, purchase furniture and appliances, and all organizations must pay into the national healthcare plan and adhere to the national minimum wage. At Delphi, for example, if an employee works for a certain number of years, the loan Delphi helped provide is forgiven. Other decisions made by Delphi include improved health benefits, free transportation to work, and subsidized meals. While it seems like much of this is done only to improve profits, the nature of some of these decisions seems to lean more towards benevolence since they are somewhat above the local average and not entirely suited to outputs.

The portrait of Delphi as a 21st Century Organization is still an unfinished one since many of the required innovations have not been made as of yet. In fact, globalization, rather than spark corporate goodwill, has forced education and innovation to grow out of fear. This might cause some to say that the vision of futurists is dreadfully wrong. But, when one considers how organizations such as Delphi are beginning to support local economies by demanding qualified employees from host countries and improving the benefits of current workers—although at a very slow pace—no one can deny that the organization of the 21st Century is on its way. Given the brief discussion here, the discussion questions below look at several other issues that Delphi must address if it is to complete its transition.

Discussion Questions

1. New organizations will be largely based in technology. Based on the cases, do you think technological change may be easier to implement in a maquiladora setting than in a setting where union contracts prevail?
2. Do you feel developing nations will be significantly affected by the lag in technology in the industrial sector?
3. Do you feel maquiladoras are committed to life-long education for their work force?
4. How can outputs and outcomes be portrayed based on the case studies?
5. Is the maquiladora sector likely to use information as a human resource enhancement?
6. Are Delphi and other maquiladoras better prepared for change than traditional 20th century organizations?
7. Does Delphi and other maquiladoras seem able to lend itself to work teams and brain-like research and development or is it based on a traditional production process favoring a line approach?
8. If organizations are to become social institutions, is the social contract likely to resemble the union contracts of the past where certain quality of life expectations were built in?
9. What social contributions do you see Delphi making in the Ciudad Juarez area in addition to employment?
10. Is there a role for woman in the future of maquiladoras that is different than the one they have today?
11. Do you feel Mexico is likely to demand more from maquiladoras in the future, including more about profits, value-added and employee benefits?
12. Would you say Delphi is an organization leaning towards a 21st Century organization construct?
13. Look at the Six Trends and discuss how Delphi, and other organizations, are reflective of these trends, or why they are not.

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