A Strategic Case Analysis:
Waste Management Inc.

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1.0.0. Executive Summary

Although Waste Management Inc., has experienced its share of challenges on many levels, it appears as if the company is currently on an upward climb, and has been for the past several years. This is primarily due to the recent implementation of new systems which have helped the company to better organize its operations and more tightly manage its operational costs. Waste Management has made significant improvements over the past few years, and the company appears to aggressively seek out new and innovative ways to improve performance.

The company has a strategy that fits well for the organization; however, the company also has significant opportunities that deserve more attention. This study will provide; a high level overview of the entire market, followed by an industry analysis which introduces Waste Management's competitors, and discusses at length their current position compared to Waste Management. Directly following this external analysis is an internal analysis complete with financial ratio review for Waste Management as well as its top 5 competitors. This study is concluded with a review of the firm's strategy and its strategic fit with the firm, as well as current alternatives available to the company. The final piece of the analysis is the recommendations offered by our team as a result of the findings of the study.

2.0.0. Company History

2.1.0. Background

Waste Management was founded in 1968 by Dean L. Buntrock, then a small regional trash hauler with a three-person office in Oklahoma. Buntrock and his associate Phillip Rooney quickly created a massive waste-disposal empire through an aggressive acquisition program,

which involved the consolidation of hundreds of local haulers. The company's acquisitions later grew to include; hazardous waste companies, chemical treatment firms, waste-to-energy incinerators and environmental engineering firms (Goliath).

Waste Management grew from annual revenues of $17 million dollars in 1971 to $9 billion dollars in 1998. The same year the company merged with Houston based USA Waste Services, in a deal valued at $25 billion. This merger followed a period in which Waste Management Inc was investigated for significant tax irregularities and accusations of fraud, forcing the resignation of the founder Dean Buntrock, and later his partner Phillip Rooney.

Today the Houston based company's operations include; 429 collection operations, 366 transfer stations, 289 active landfill disposal sites, 17 waste-to-energy plants, 138 recycling plants and 85 beneficial-use landfill gas projects. This impressive list of assets allows Waste Management to offer a wide range of services to 21 million customers, with annual revenue in excess of 13 billion dollars (2005 10K).

2.2.0. Purpose of this study

The purpose of this study was to evaluate the current position of Waste Management, in order to develop a strategy that would not only improve the current position of the company, but one that could actually be implemented. To accomplish this task, it was necessary to identify the driving forces and key success factors of the industry, and then insure that the firm was in line with these benchmarks, therefore a strategic fit assessment was completed.

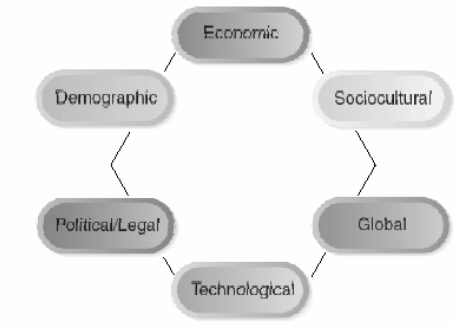
In order to isolate the driving forces of the industry a broad environmental study was conducted. The external environment was further explored through an investigation of five of Waste Management's biggest competitors. Several assessments were conducted including a full three-year ratio analysis, in order to isolate the key success factors, and identify what competitive advantage the firm had in today's market.

This study is concluded with a review of the firm's strategy and its strategic fit with the firm, as well as current alternatives available to the company. The final piece of the analysis includes recommendations offered as a result of the findings of the study.

3.0.0. External Analysis

3.1.0. General Environmental Analysis

The general environment is essentially comprised of the aspects of a broad societal perspective that significantly influence an industry and the firms within it. Although these areas are generally outside the control of the firm, it is important to understand these areas in order to have a better assessment of today and a more accurate prediction of tomorrow. The general environment consists of six segments; demographic, economic, political/legal, socio-cultural, technological, and global (Text).



3.1.1. Demographic Segment

Demographic characteristics are important for all firms in the waste management and remediation services industry (NAICS 56), as they allow firms to understand their potential

market share. There are three key elements in the demographic segment significant to the industry. These elements include; population size, age structure, and ethnic mix.

Population size

Population growth and distribution can have a significant impact on the management of resources, as the number of people, as well as their lifestyle and consumption patterns directly affect the environment. It is also argued that there is a direct link between population growth and environmental degradation. Obviously, more people demand more resources and subsequently generate more waste. The largest challenge of a growing population is the strain that is placed on the environment. This situation becomes even more complicated when considering the variety of government policies, technologies, and consumption patterns worldwide. In order to develop a more relevant base of information the demographics presented in this study are limited to those of the United States.

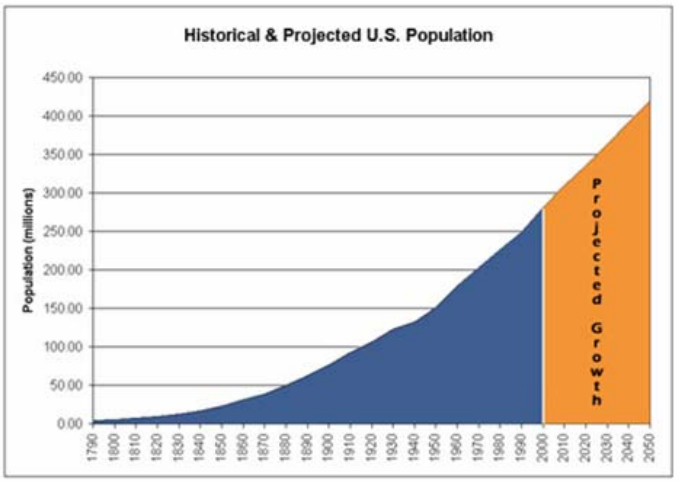


Chart obtained from: http://www.npg.org/popfacts.htm

The proposed link between population growth and the environment is found in the view that population growth is solely responsible for all environmental ills; however, more people equates to faster development of new technologies used to overcome environmental problems (Human Populations). As populations grow, competition for fertile land and the use of limited resources increases. The people living in the poor countries are also moving toward highly developed countries for greater standard of living whose current consumption patterns and resource use are not necessarily sustainable.

The United States has one of the highest growth rates of any industrialized country in the world. The United States Census Bureau reports that the population is growing by approximately 3.2 million people each year. According to the Census Bureau's medium projections, the population is expected to grow to 400 million by the year 2050. Also, eight of the country's fifty states have population growth rates in excess of 2.0 percent, which means that the population pf these states will double in less than 35 years (Human Populations). The United States also happens to be one of the most densely populated countries in the world, and the concern over potential landfills will continue to grow as the United States has converted more than 10 million acres of forest to suburban growth since 1990 (Geog). This certainly equates to an ever-increasing population, which will unquestionably yield a larger amount of waste requiring disposal.

Age structure

A slightly less relevant aspect of the demographic segment is the age structure of the population. Baby boomers (individuals born between 1946 and 1964) presently account for the majority of political, cultural, industrial and academic leadership positions in the United States. The fact that Baby Boomers are entering their fifties along with the increasing life expectancy of the population provides an interesting movement towards an increasingly older population. This may force the waste industry to seek creative ways to cater to a population that will become increasingly less mobile and potentially unable to make the trip down the driveway with those heavy trash containers (Wikipedia, boomer). Aside from this information, all age groups create waste that must be disposed of; therefore, additional detail regarding these groups was omitted due to irrelevancy.

Ethnic Mix

Changes in ethnic mix are an interesting factor in the United States. Due to the fact that immigration accounts for a sizable part of growth, the population and labor force will continue to diversify, as one interesting projection released by the Department of Labor suggests that the Latino and Asian percentage of the population will increase to 34 percent by 2050.

These Immigration trends, coupled with varied birth rates, will obviously bring more diversity to the American workforce. To further illustrate the impact of this change it is important to identify that in 1995, the United States was estimated to be 83 percent white, 13 percent black, 1 percent American Indian, Eskimo, and Aleut, and 4 percent Asian and Pacific Islander (US, Labor).

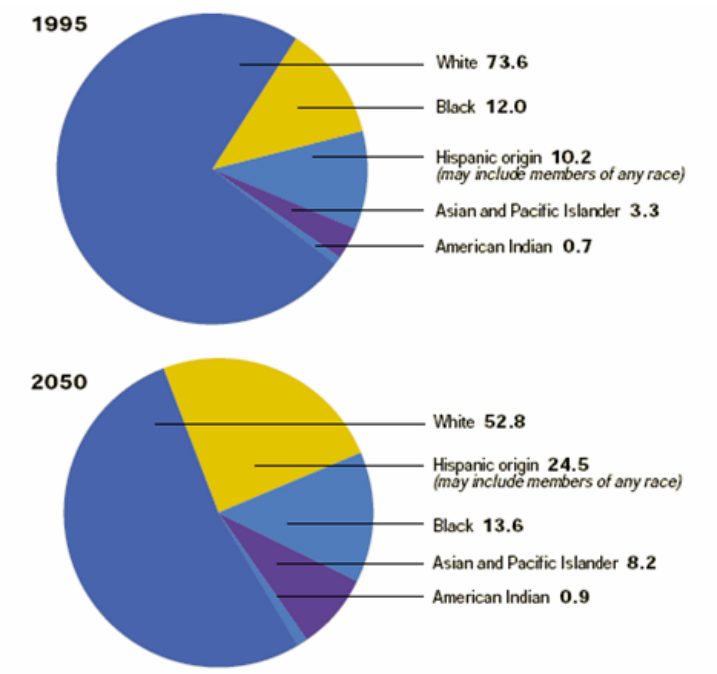


Chart obtained from: http://www.dol.gov/asp/programs/history/herman/reports

As per these charts, the future racial and ethnic makeup of America will be considerably different than it was in the past. These trends show that whites will be a declining share of the future total population while the Hispanic share will grow faster than that of non-Hispanic blacks.

By 2050, minorities are projected to rise from one in every four Americans to almost one in every two. Growth rates of both the Hispanic-origin and the Asian and Pacific Islander populations may exceed two percent per year until 2030. This is astonishing considering the fact that even at the peak of the baby-boom era, the total population never grew by two percent a year. By 2010, Hispanics are likely to become the largest minority group, as the

Hispanic population is projected to add more people to the United States every year than will all other groups combined.

Hispanic and Asian populations tend to be more conservative in consumption patterns; therefore it is arguable that there is potential for decreased waste production with the shift in ethnic mix. Despite this possibility, the potential net change in the production of waste requiring disposal would be minimal. Also, as mentioned above this shift in the labor force can have an impact on the production of the economy.

3.1.2. Economic Segment

The key economic factors which identify economic performance are; the unemployment rate, which is currently 4.7 percent; the rate of growth with respect to the GDP, which preliminary reports indicate was near 4.8 percent in the first quarter of 2006, as well as the rate of inflation, which was 3.7 percent unadjusted for 12 months ending March 2006 according to the Consumer Price Index. Although these general indicators are effective in providing insight as to the direction of the economy, they do not provide a good estimate of the direction of the waste management industry. The health of a nation's economy affects individual firms and industries; therefore, companies must scan, monitor, forecast, and assess the health of economies outside their host nations, as nations throughout the world are affected by the United States economy.

The United States is the world's only super power possessing the largest economy in the world, with a per capita GDP of $42,000. Private individuals make most decisions and business firms due to the fact that the federal and state governments buy needed goods and services the private marketplace. Companies and individuals enjoy more control over decisions to expand capital, lay off surplus workers, and develop new products; however, they face higher barriers

to enter markets outside of the United Stated than outside countries do when entering the United States (CIA Fact book).

- **Gas prices**

  Despite the number of armed conflicts that the United States is engaged in, which many speculate is motivated by concerns over oil (despite terrorist attacks made against the country), the rise in GDP in 2004 and 2005 was helped along by substantial gains in labor productivity. The economy continues to suffer from a sharp increase in energy prices which many fear will lead to higher inflation; however, these increased prices yield significant tax revenue to the government as well as record breaking profits to oil companies. Although there are several global political issues that have motivated an increase in the price of oil, the United States has not constructed a new oil refinery for over thirty years to increase supply of gas (although it has increased capacity of existing refineries). The country has also recently suffered significant damage from a sever hurricane season, as Katrina caused extensive damage in the Gulf Coast region in 2005 including several of the countries largest refineries. Despite the enormous reconstruction costs and relief funds, the storms had a small impact on overall GDP growth for the year (RBZGroup).

- **Interest rates**

  Interest rates in the United States reached almost record lows in 2003 as the Federal Reserve worked carefully to bring the economy out of a mild recession. As the economy started recovering in 2004, the Fed began increasing interest rates and has not stopped doing so even as recent as now. The current Fed rate is 4.5%.

- **Government's role in the economy**

  As previously mentioned, consumers and producers make most of the decisions that guide the economy; however, the government's efforts have a powerful effect on the economy as well. Listed below are four major areas where the government's decisions can be felt:

  1. *Stabilization and Growth*. Through the use of fiscal and monetary policy, the federal government guides the overall pace of the economy. This is done in order to maintain steady growth, high levels of employment, and price stability.
  2. *Regulation and Control*. The federal government also establishes agencies and offices, which provide establish control over certain activities that directly impact the safety of the nations citizens, such as environmental protection, food and drug administration, drug enforcement, etc.
  3. *Direct Services*. These services include the military, infrastructure, transportation, etc.
  4. *Direct Assistance*. Government also provides many kinds of help to businesses. It offers low-interest loans and technical assistance to small businesses.

The economy of the United States is of significant importance to the waste industry, as an economic downturn will most certainly result in lower consumption among consumers. As, the government is responsible for regulation and control it can also have a significant impact on the requirements of the industry as the next segment explains.

3.1.3. Political/Legal Segment

This segment represents how organizations try to influence government and how governments in turn reciprocate influence. Due to new legislation this segment is constantly changing which in turn impact the nature of competition. There has also been a significant recent trend toward deregulation of government-regulated industries. This is good for firms wishing to enter the

market, but not so good for larger firms that have managed to gain a foothold over a potentially expansive piece of territory.

The primary manner in which special interest groups and businesses attempt to shape the decisions of elected officials involves lobbying. The lobbying activities engaged in by environmental groups often results in influencing congress to pass environment friendly legislation. This in turn forces the waste management industry to navigate through new laws and regulations.

One such piece of legislation is the Resource Conservation and Recovery Act (RCRA), which is the nation's primary law governing the disposal of solid and hazardous waste. The Act was passed in 1976 to address the problems the country faced with the growing volume of municipal and industrial waste. RCRA, which amended the Solid Waste Disposal Act of 1965, set several national goals including (EPA):

- Protecting human health and the environment from the potential hazards of waste disposal.
- Conserving energy and natural resources.
- Reducing the amount of waste generated.
- Ensuring that wastes are managed in an environmentally sound manner.
- Banning all open dumping of waste.
- Encouraging source reduction and recycling.
- Promoting the safe disposal of municipal waste.
- Mandating strict controls over the treatment, storage, and disposal of hazardous waste.

RCRA was later amended and enhanced by Congress in 1984 with the passing of the Federal Hazardous and Solid Waste Amendments (HSWA), which required the phasing out land disposal of hazardous waste. The RCRA was amended on two occasions following HSWA; Federal Facility Compliance Act of 1992, which strengthened enforcement of RCRA at Federal facilities;

Land Disposal Program Flexibility Act of 1996 provided regulatory flexibility for land disposal of certain wastes.

As is evident from the information provided above, the political and legal segment provides a strictly regulated environment for the waste management industry in the United States. Most companies operate as good corporate citizens and follow government regulations; however, government regulations make it more expensive to mange waste, and more difficult to make a profit.

3.1.4. Socio-Cultural Segment

A significantly growing concern in the United States is the fear of increased pollution in air and water. People have become extremely health conscious, and believe that everything dispersed into the environment will directly affect their health. For example, air pollution produces acid rain. The United States is the single largest emitter of carbon dioxide due to the burning of fossil fuels, and water pollution from runoff of pesticides and fertilizers. This has also limited the natural fresh water resources in much of the western part of the country.

The waste management industry is often a focus of concern due to landfills leak, and the fact that incinerators generate toxic ash and gas. It is also argued that even the best pollution controls are never 100 percent effective, and end-of-pipe pollution control and disposal technologies do little to prevent global environmental contamination (Rachel).

In socio-cultural segments, people are more aware of preserving the environment. The current trend is to recycle more waste. This provides an opportunity to the recycling segment of this industry.

3.1.5. Technological Segment

Firms of the United States are at the forefront in technological advances, especially with respect to computers in medical, aerospace, and military equipment. This strong development of technology can help provide support to the argument of a gradual development of a "two-tier labor market." Essentially it is believed that individuals on the bottom lack the education and the professional skills of those at the top and fail to get comparable pay raises, and benefits as a result of their lack of skills. Since 1975, almost all the gains in household income have gone towards the top 20% of household incomes (People).

Technological advancements affect many Industries, as these changes occur primarily through new products, processes and materials. Technology development in the waste management industry can be characterized as a continuous improvement process. For the most part, companies are using and modifying existing and proven technologies to manage waste streams in a more energy efficient and cost effective manner.

The public and private sectors have recently united in order to improve air quality by forming a unique partnership, called the Clean Air Communities (CAC), which includes; Waste Management (WM), Local Development Corporation of East New York (LDCENY), Combustion Components Associates (CCA), and ENSR International (ENSR). These organizations are addressing the contribution of NOx (Oxides of Nitrogen) to ground level ozone pollution by demonstrating an innovative emissions reduction technology in Waste Management vehicles operating in Brooklyn and the Bronx (Clean Air).

The technology, ELIM-NOx, is designed to dramatically reduce emissions of NOx from diesel exhaust and help improve local air quality in communities suffering from asthma and other

related respiratory ailments. "By instituting a number of innovative measures, Waste Management has worked to reduce the impact of its facilities and operations on the surrounding community", said Tara Hemmer, Market Area Engineer, Waste Management. "This NOx reduction technology has the potential to enable us to retrofit existing diesel equipment in a minimum amount of time, cost-effectively and with little or no disruption to our operations." (Clean Air)

Industry's capacity for inventing new chemicals has overwhelmed the regulatory system's ability to study the potential harms caused to the environment, as the chemical industry introduces at least 1700 new chemicals into commerce each year. To illustrate how far regulators have fallen behind, the National Toxicology Program is only able to conduct assessments on 10 to 20 substances per year; this means that the regulators fall at least 90 years behind in knowledge with each year that passes.

Technological development brings opportunities as well as threats to this industry. New technology can help reduce costs through improving operational efficiency, and improve the level the environment through more advanced waste disposal methods. Unfortunately, new chemicals are created faster than they can be tested, which forces an unwanted delay in the implementation of newer technology.

3.1.6. Global Segment

Globalization and business markets create both opportunities and challenges for this industry. Advances in technology have not only increased the scope, speed, and efficiency of business operations worldwide, but they have also brought down the costs of distance by gradually eliminating the burdens of communications, geography, transportation, language and even

time. It is reported that the aggregate output growth rate has steadily increased an average of more than 3.6 percent annually in the last 25 years.

Chart obtained from: http://www.solidwaste.com/content/news/article.asp

Waste management firms have had success in bringing new disposal and collection systems to the global markets. The global market for waste remediation technologies was worth about $10.7 billion in 2005, and is expected to rise to $11.4 billion in 2006, according to a new technical market research report. According to this report, hazardous waste containment technologies have been highlighted as the largest segment of the global hazardous waste remediation market in 2005, with over 25 percent of the market, followed by separation 19 percent, chemical treatment 18 per cent, and recycling 15 percent. However, recycling is the fastest-growing market segment, with a projected growth rate of 19 percent by 2011 (Solid Waste).

The waste management industry outside the United States is growing rapidly. This offers opportunities for companies within the United States, and dilutes the available talent pool. On the other hand, global margins are lower than domestic commercial margins and companies are also slower to pay. These factors make safer for large companies to expand into new global markets, than small companies, where cash flow is a more imminent issue.

3.1.7. Summary of General Environment Analysis

In summary, the general environment offers more opportunities than threats to waste management companies. Most of the demographic segment factors except population have

little relevance to our analysis. The population growth projections support an increasing demand for waste management worldwide and hence an expanding market size for waste management companies.

Economically, speaking, the waste management industry table is not subject to wild swings with great depths of downside. The global recession does not affect this industry much due to the fact that waste is produced regardless of economic activities. As rapidly growing economies in Asia, Latin America, and Eastern Europe expand they provide more industrial and consumer waste.

Our political and legal analysis presents a mixed outlook, as the domestic and international markets face increasing regulations. Socio-culturally speaking, the growing antipathy towards big waste companies within certain sections of the society, increasing environmental activism, and the perceived shift in consumers' attitudes provides challenges for firms in the industry.

Technologically speaking, there is a strong demand for electronic recycling, as millions of cell phones are discarded annually, and new environmental regulations force waste management firms to pursue innovative next generation technology. From a global perspective, there appears to be strong potential for new recycling programs in the domestic and international markets.

3.2.0. Driving Forces

- **Increasing Fuel Cost**

  As we discussed in the economic section of the general environment, fuel costs have become a major concern in the United States and the rest of the industrialized world, as

gasoline is a vital fluid that powers the economy. The United States alone consumes approximately 18.9 million barrels of oil a day, and since the beginning of 2005, retail gasoline prices have continued to increase, with the average price of regular gasoline rising from $1.78 per gallon on January 3, 2005 to as high as $3.07 per gallon on September 5, 2005. This was motivated by a damaging hurricane season along the United States Gulf Coast, growing tensions in the Middle East, Africa, and Venezuela, increase demand from the massive population of China, all further tightening gasoline supplies.

Due to heavy reliance on waste hauling vehicles, the increasing fuel cost has become a burden to the waste management industry. Companies managing their fuel cost will do better in the long run, as economists forecast even higher costs in the future.

Recycling a Growing Trend

There is an ever-increasing trend for the collection of any and all types of materials for recycling. This process allows industries to often use waste as a means of energy, or alternative raw materials. In addition, the process preserves and protects the environment. More and more people are realizing that recycling is one way to minimize waste, and at the same time recycling can save energy and other precious resources.

Recycling also saves money for communities across America. For example, the experience of Madison, Wisconsin (population 201,000), illustrates the economic benefits curbside recycling can provide to midsized cities. In 8 years, the city more than tripled its diversion of residential solid waste while also decreasing the net annual cost of solid waste services from $158 per household to $139 (EPA).

Demand for recycling is growing at a rapid rate, and firms that are able to increase capacity will be able to expand their business in an industry where growth is mostly obtained through acquisition.

3.3.0. Industry Analysis

Firms engaged in the waste management industry are major contributors to the U.S. economy, and play a vital role in the well being and sanitary conditions of the nation. In order to better understand how firms within this industry compete, it was necessary to review several key factors including; dominant economic features, market size, market growth rate, and industry trends. As this section will reveal, the industry's environment has a greater impact on the success of the firm's strategic competitiveness than does the general environment.

3.3.1. Description of the Industry

This waste management industry is comprised of establishments primarily engaged in (Census):

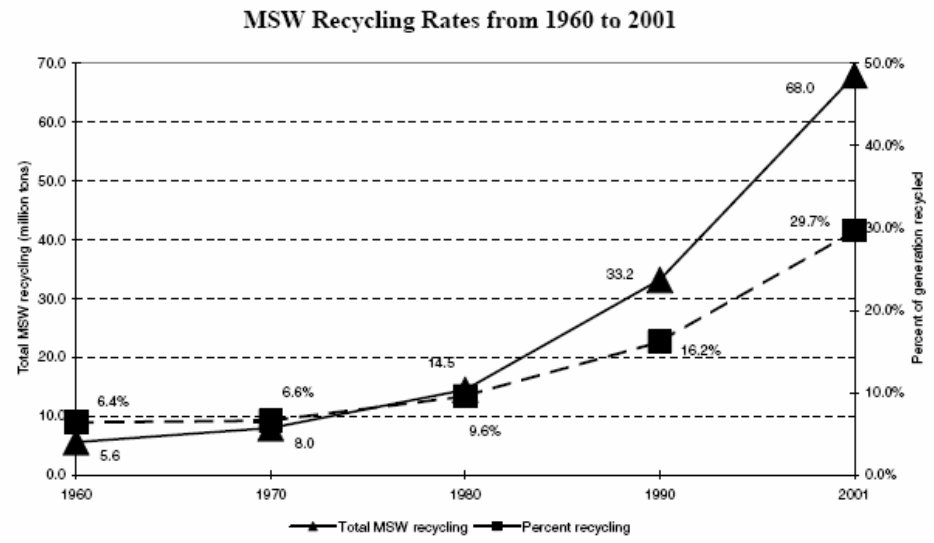
1) Operating waste treatment or disposal facilities (except sewer systems or sewage treatment facilities) or,
2) The combined activity of collecting and/or hauling of waste materials within a local area and operating waste treatment or disposal facilities; such as waste combustors or incinerators, solid waste landfills, and compost dumps.

The waste management industry is categorized in the industrial goods sector, which is very diverse in nature and includes many different types of companies including; small manufactories of proprietary technology, large companies with beginning-to-end waste management expertise, and engineering companies who specialize in environmental assessments and many others.

The waste management industry includes the process of collecting, treating, and disposing of solid and hazardous waste, as well as the operation of landfills and incinerators. Firms within the industry also provide recycling and waste remediation services. There are essentially two forms of waste to be managed; Municipal Hazardous Waste (MHW) and Municipal Solid Waste. Municipal Hazardous waste contains toxic substances that threaten human health or the environment, and is subject to strict regulations. Whereas, non-hazardous waste, or municipal solid waste, commonly referred to as "garbage" involves less scrutiny. There are many niche waste management areas in which companies compete, such as the collection and recycling of electronic products, which has become a growing trend.

Municipal Hazardous Waste (MHW)

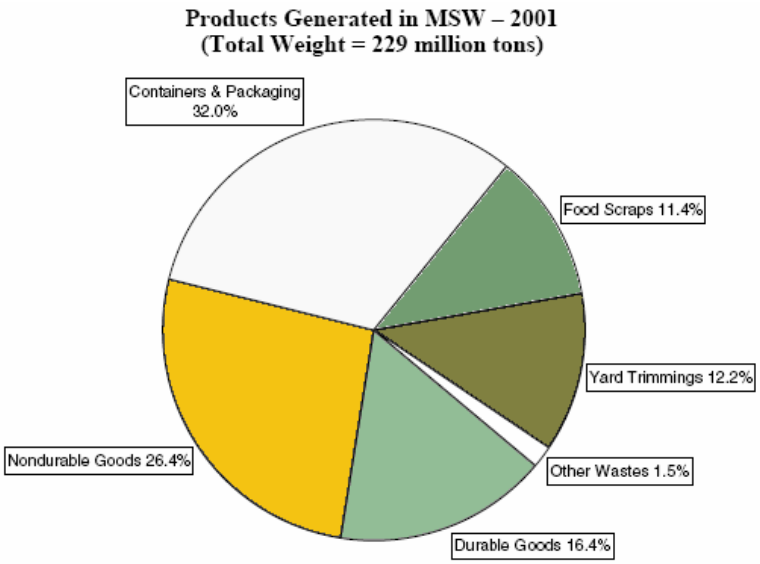
This segment includes the management of industrial hazardous waste, such as; medical waste, and nuclear waste. Industrial hazardous waste represents the largest component of this segment. The relative emphasis of the United States environmental policy regarding the regulation of hazardous waste, and remediation has clearly stimulated the creation of the worlds most technically competitive garbage persons. To date, little of this capacity has been exported as market demand has not been nearly as high as in other countries.



Considerable interest in United States remediation technology has recently emerged from numerous countries including Japan and Germany. These two nations in particular, have tended not to remediate contaminated property with as much vigor as the United States. Therefore, the United States has considerable potential to leverage its expertise in site remediation, hazardous waste management, and possibly nuclear waste management in the more advanced markets.

Municipal Solid Waste (MSW)

Municipal Solid wastes are more commonly referred to by laypersons as trash or garbage. These items consists of everyday waste such as; product packaging, grass clippings, furniture, clothing, bottles, food scraps, newspapers, appliances, paint, and batteries. In 2003, residents, businesses, and institutions of the United States produced more than 236 million tons of MSW, which is approximately 4.5 pounds of waste per person per day (EPA).



Solid waste management firms in the United States have had much success in bringing state of the art disposal and collection systems to global solid waste markets, largely due to keen awareness that has developed in the privatized domestic market. Several MSW management practices, such as source reduction, recycling, and composting, reduce the ever growing heap

at the dump. Source reduction involves altering the design, manufacture, or use of products and materials to reduce the amount and toxicity of what gets thrown away.

Recycling reintroduces items, such as paper, glass, plastic, and metals, from the monster pile, as these materials are sorted, collected, and processed and then manufactured, sold, and bought as new products. Recycling helps reduce greenhouse gas emissions that scientists believe affect the global climate. It is estimated that in 1996, recycling of solid waste in the United States prevented the release of 33 million tons of carbon into the air, this is roughly the amount emitted annually by 25 million cars.

3.3.2. Industry Dominant Economic Features

There are several features which cause market conditions to change rapidly in the waste management industry. These items have had a significant effect on the business strategies of waste management companies. In particular, these items are:

- **Changing market motivators:** Constantly changing market conditions have caused unusual uncertainties and complexities for waste management companies. For more than a decade, beginning in the early 1970s, new regulations stimulated markets and created strong business opportunities. Two difficult periods in the 1980s and 1990s, when enforcement policies appeared to slacken, led to significant market instability and reduced profitability.
- **Customer approaches to waste management:** Within the United States and worldwide, both private sector and public sector purchasers of waste services are exploring new ways to manage environmental and resource issues as a part of other core business decisions.

- **Environmental regulation and other policies related to technology**: Overall, current regulations and policies discourage the development and deployment of new technology based services that can strengthen the economy and benefit the industry.
- **International waste management markets:** U.S. companies face difficulties in a growing world market in which the nature of demand is significantly different than in the home market. In addition to that, regulatory and economic policies also vary.

3.3.3. Market Size

- **Number of Organizations**

An estimated 27,000 organizations (private sector companies and public sector governmental and quasi-governmental organizations) were operating in the industry as of 2000. More than 55 percent of these entities were in the public sector, and the remaining 45 percent were privately held, while only 0.1 percent was publicly traded. Solid waste organizations can be further segmented as follows (erefd):

- Hauling Operations: Approximately 15,500 solid waste industry organizations (57 percent) solely conducted hauling operations and did not own a solid waste facility.
- Solid Waste Facilities: Approximately 11,500 organizations owned an estimated 15,700 facilities that dispose, recycle, incinerate, or otherwise process solid waste in the United States. About 53 percent of these facilities were owned by the private sector. The vast majorities of these facilities handled very small quantities of solid waste or recyclable material, and have likely been undercounted in prior studies estimating the size of the solid waste industry.

- **Revenues** In 2000 the solid waste industry generated an estimated total revenue, net of intra-industry payments, in the neighborhood of $43.3 billion. Approximately 76 percent of this amount was generated by the private sector. Excluding the segment of the industry that is primarily engaged in the operation of scrap metal yards and recycling operations, total industry revenue was equal to $39.8 billion.

- **Relative Size of the Industry** The solid waste industry directly accounted for roughly one-half of one percent of the nation's gross domestic product (GDP). However, the industry's industrial output and employment were larger than the individual economics of several states, including North Dakota, Vermont, and Wyoming (erefdn).

- **Economic Impact** The solid waste industry contributed over $96 billion, 948,000 jobs, and just over one percent of U.S. GDP to the nation's economy. This included all direct, indirect and induced effects resulting from solid waste industry activities. For every dollar of revenues generated by the industry, a total of $1.23 in additional revenue was generated in the economy through the multiplier effect. Similarly, for every job in the solid waste industry, the multiplier effect created an additional 1.58 jobs outside the industry (erefdn).

- **Tax Impact** The solid waste industry contributed a total of $14.1 billion in direct, indirect, and induced taxes to federal, state, and local governments.

- **Employment and Compensation** Total industry compensation, including benefits, was estimated at $10.0 billion. Based on these figures, employees in the solid waste industry were paid an average of $27,200 per year, including benefits.

- **Waste Quantities** An estimated 544 million tons of solid waste were processed in the U.S. Approximately 370 million (68 percent) tons were land filled, 29 million tons (5 percent) were incinerated, and 146 million tons (27 percent) were recycled.

- **Equipment**The solid waste industry used approximately 206,000 pieces of motorized equipment in the U.S. This included approximately 148,000 vehicles dedicated to the collection and transfer of solid waste. The remainder of the vehicles included other mobile equipment, stationary and mobile compaction equipment, and other processing equipment (yahoo).

3.3.4. Market Growth Rate

The hazardous waste market has become highly concentrated through consolidation and facility closures, as the volume of hazardous waste handled off-site at commercial facilities has changed little in recent years. Of the facilities that remain, most still have more than adequate capacity to handle the volume, and the industry remains highly competitive.

Hazardous waste management has had a violent past of rapid growth followed by decline. According to Farkas Berkowitz, a premier management-consulting firm, the hazardous waste industry was born in May 1980 with the creation of the first set of enforceable federal regulations under RCRA. Firms present at the start of the new industry were well rewarded, at least initially. Then, the prospect of high growth and profitability, combined with relatively low barriers to entry, led to a buildup of capacity that greatly exceeded demand. By 1990, the industry growth rate began a sharp decline. Beginning in 1993, industry revenue declined on an absolute basis and has been declining ever since.

The Hazardous waste management segment continues its steady fall, from $5.7 billion in 1998, to $5.3 billion in 1999, $5.1 billion in 2000, and $4.9 billion in 2001. The total industry revenue attributed to hazardous waste management in 2001 is $12.8 billion or 6% of the $213.1 billion total environmental industry revenue.

The solid waste management industry continues its steady if not unremarkable growth, while recycling suffered in the slumping 2001 economy following strong growth in 2000. The solid waste management business is relatively resistant to fluctuations in the economy and continues to grow steadily as a function of population and GDP growth. By contrast, the recent slump in the U.S. economy has had a strong effect on the resource recovery industry. Resource recovery is struggling through tough times caused by leveling off of community recycling rates and the fluctuations in commodity prices in response to a wide range of economic variables including virgin material costs, energy prices, and international economic conditions.

The global market for hazardous waste remediation technologies was worth about $10.7-billion in 2005, and is expected to rise to $11.4-billion in 2006 and $16.6-billion by 2011, according to a new technical market research report (solid waste). The report, "The Global Market for Hazardous Waste Remediation (RE-152)" was released on March 21, 2006 by U.S.-based BCC Research. Hazardous waste containment technologies have been highlighted as the largest

segment of the global hazardous waste remediation market in 2005, with over 25 per cent of the market, followed by separation (19 per cent), chemical treatment (18 per cent), and recycling (15 per cent). However, recycling is the fastest-growing market segment, with a projected growth rate of 19 per cent by 2011

Table 1

Generation, Materials Recovery, Composting, and Discards of Municipal Solid Waste, 1960-2003
(In millions of tons)

	1960	1970	1980	1990	1995	2000	2001	2002	2003
Generation	88.1	121.1	151.6	205.2	213.7	234	231.2	235.5	236.2
Recovering for recycling	5.6	8	14.5	29	46.2	52.4	52.8	53.8	55.4
Recovery for composting	Neg.	Neg.	Neg.	4.2	9.6	16.5	16.6	16.7	16.9
Total material recovery	5.6	8	14.5	33.2	55.8	68.9	69.3	70.5	72.3
Discards after recovery	82.5	113	137.1	172	158	165.1	161.9	165	163.9

3.3.5. Industry Trends

There are four main industry trends that were identified when reviewing the waste management industry, the trends are listed below:

1) Industry demand for waste services is driven more by the need for cost effective solutions and the potential for cost reductions and increased profit, and less by regulatory compliance.
   - Regulations historically have largely established the characteristics of the industry including the structure and types of products and services. Private companies cannot depend on government regulations and legislation as the basis of a successful business.
   - There is an increasing trend whereby new toxins reduction, pollution prevention and recycling efforts are being implemented by industry on a voluntary basis, usually with government initiatives.

The 1998 Unites States Industry and Trade Outlook report published by McGraw-Hill/DRI in cooperation with the U.S. Department of Commerce/International Trade Administration notes that “perhaps more than any other segment of the environmental industry; the solid waste business is driven by economic and social forces more than regulatory pressures”.

2) Industry is evolving away from an orientation of pollution control to one of pollution prevention and waste minimization.

- Historically, environmental compliance efforts have focused primarily on treatment of waste once it has been released. This end-of-pipe approach looked at compliance as being a cost, with little emphasis focused on the opportunity for material and energy efficiency.
- Pollution prevention and on-site recovery systems can often not only lower energy and material usage but also reduce treatment costs and lower liability and insurance costs. Many companies are increasingly examining their raw material usage, waste management practices, manufacturing processes and products produced in a continuous effort to reduce environmental costs.
- Pollution prevention efforts by generators in certain industry sectors have led to a decline in the amount of as generated waste requiring third party management. This has contributed to industry consolidation and the emergence of niche players who provide specialized products and services to specific industry sectors (ene).

A major study conducted for the United States Congress made the following points on pollution prevention (wws):

- Compared to conventional treatment alone, pollution prevention and recycling investments are usually more cost-effective, often resulting in reduced energy and

material usage and lower end-of –pipe treatment costs. Pollution prevention can produce significant environmental benefits as well, including reduced cross-media transfers and reduces environmental impact from avoided energy and materials usage.

- While increased reliance on pollution prevention and recycling offers a means to reduce the conflict between environmental protection and industrial competitiveness, it does not eliminate it. While much pollution prevention and recycling options yield net positive rates of return equaling non-environmental investments, many others do not and often cost money.

3) Generators of waste are increasingly looking to outsource any environmental service that is not consistent with their core competencies. There are two main drivers:
   - Global competitive pressures create a focus on cost-effectiveness.
   - Outsourcing employs service specialists that reduce the cost of environmental compliance and improve overall profitability (ene).

4) The waste management supplier industry will continue to experience increasing consolidation
   - As the waste management industry matures there is less demand for third party waste management due to prevention efforts.
   - The industry will likely continue to be structured with a few very large companies and many smaller players addressing specific niches. Medium sized companies will be targets for acquisitions.

3.4.0. Five Forces Competitive Analysis

Porter's Five Forces model can lend some insight into the current situation in the waste management industry. The forces are (1) the threat of new entrants, (2) the power of suppliers, (3) the power of buyers, (4) the threat of product substitutes, and (5) the intensity of rivalries.

3.4.1 Threat of New Entrants

The threat of new entrants is low in the waste management industry. This is primarily due to the industry's size and the vast network of resources and assets required in order to be successful. The size and financial position are comparatively large with respect to most of the key competitors. Firms generally possess sound financial position which brings many benefits including cost reductions through economies of scale. These economies of scale make it difficult for new entrants to compete successfully, as they are unable to provide the same services at a competitive price. For this reason, size is a deterrent to new entrants in the waster management industry.

3.4.2 Power of Suppliers

The power of suppliers is high in the waste management industry; in particular the power of fuel suppliers in this industry is very significant. Waste management companies are heavily reliant on petroleum fuels to power there vast fleets of trucks. Fluctuations in fuel prices for such a large number of vehicles can have a significant impact on a company's bottom line. Additionally, many of the factors that influence these prices are out of the company's control.

In affect, most firms must accept whatever price its fuel suppliers offer, regardless of how it affects its business.

3.4.3 Power of Buyers

The power of buyers is moderate in the waste management industry. This is because residential and commercial customers must have some means of disposing of their wastes. The service that waste management companies offer is not a luxury, it is a necessity. Therefore, buyers have little say in whether to use a waste disposal company or not. At the same time, there are competitors in the market place that can offer cost advantages for customers to switch. However, most customers are on multi-year contracts so the threat of excessive switching is reduced. For these reasons, buyer power in this industry remains moderate.

3.4.4 Threat of Product Substitutes

The threat of product substitutes is low in the waste management industry. This is due primarily to the same reasons that the power of buyers is moderate. Waste disposal is not a luxury that customers can choose to have or not have. Customers need to have some means of waste disposal. At the same time, there really is no substitute for waste disposal services for most customers. The closest thing to a substitute is recycling, and Waste Management already owns the largest recycler in the country. For these reasons, the threat of substitutes is low.

3.4.5 Intensity of Rivalry

The intensity of rivalry is high in the waste management industry. Waste materials companies must compete not only with other national and regional private companies, but in many instances they must compete with governmental agencies that have decided financial advantages. Additionally, price-cutting techniques are a common practice in some regional

markets. So while Waste Management currently enjoys market leadership in its industry, there are many competitors that are continuously looking to make inroads into its customer base through whatever means are necessary.

3.5.0. Summary of Industry Analysis

The waste management industry is an industry subject to constant change and scrutiny. The general activities of firms engaged in this industry includes; the management of waste treatment facilities as well as the collection, hauling and disposal of trash. The industry itself is quite large accounting for 1 percent of the nations GDP; however, the history of the market is volatile as rapid growth is generally followed by periods of equal decline. The market shows signs of growth in the recycling segment, and is moving towards pollution control and waste reduction. Through the five forces analysis that was conducted, the overall market is favorable as threats of new entrants, and product substitutes are low. However, the industry is subject to fierce competition and the power of suppliers is high, while the power of buyers is moderate. With this in mind, it is important to evaluate the key players in the industry in order to identify key success factors required to obtain a competitive advantage in the market.

3.6.0. Competitive Analysis

As the demand within the industrial and customer waste business continues to increase, the emergence of new competitors is always a concern. In order to remain successful and ahead of its competition, it is important to understand who the competition is and what they are doing.

3.6.1. Industry Competitors

This section will introduce five of the primary competitors within the waste management industry. This section will also describe briefly each company's profile, and display their most

recent financial results for comparison.

Allied Waste Industries

Allied Waste Industries, Inc. operates as a non-hazardous solid waste management company in the United States. The company provides waste collection, transfer, recycling, and disposal services for residential, commercial, and industrial customers in the United States and Puerto Rico. Its collection operations include collecting and transporting non-hazardous waste from the point of generation to the site of disposal. The company's recycling collection services include curbside collection of recyclable materials for residential customers, as well as commercial and industrial collection of recyclable materials, including paper, glass, and plastics and reusable construction debris. Allied Waste also provides roll-off and customized consulting services. As of December 31, 2005, the company operated a network of 310 collection companies, 166 transfer stations, 169 landfills, and 57 recycling facilities. Allied Waste Industries was founded in 1987 and is headquartered in Scottsdale, Arizona (Biz.Yahoo).

Key Financial Statistics:

Operating Cash	Profit Margin	Gross Revenue	Income	Rev. Growth
$716.60 M	*3.55%*	*$5.73 B*	*$141.8 M*	*5.90%*

Republic Services Inc.

Republic Services, Inc. engages in the collection, recycling, transfer, and disposal of non-hazardous solid waste for commercial, industrial, municipal, and residential customers in the United States. Its residential collection operations involve the curbside collection of refuse from small containers into collection vehicles for transport to transfer stations or directly to landfills. The company rents waste containers to construction sites, as well as provides waste collection services to industrial and construction facilities on a contractual basis. It also provides recycling

services, including the curbside collection of residential recyclable waste, and the provision of a variety of recycling services to commercial and industrial customers. As of December 31, 2005, the company owned and operated 92 transfer stations, 59 solid waste landfills, and 32 recycling facilities, as well as operated approximately 6,100 collection vehicles. Republic Services was incorporated in 1996 and is headquartered in Fort Lauderdale, Florida (Biz.Yahoo).

Key Financial Statistics:

Operating Cash	Profit Margin	Gross Revenue	Income	Rev. Growth
$767.50 M	8.86%	$2.86 B	$253.7 M	7.30%

Stericycle, Inc.

Stericycle, Inc., together with its subsidiaries, provides medical waste management services, infection control, and pharmaceutical returns and related compliance services. Its products and services offerings include medical waste management services; bio systems sharps management services that reduce the risk of needle sticks in hospitals; products for infection control; and pharmaceutical returns and product recall management services. As of December 31, 2005, Stericycle operated 45 treatment and 105 additional transfer and collection facilities in the United States, Puerto Rico, Canada, Mexico, and the United Kingdom. In addition, the company offers occupational safety and health administration and HIPPA consulting and regulatory compliance services. Stericycle's customers include medical waste generators, such as outpatient clinics, medical and dental offices, and long-term and sub acute care facilities, as well as hospitals, blood banks, and pharmaceutical manufacturers. The company was incorporated in 1989 and is based in Lake Forest, Illinois (Biz.Yahoo).

Key Financial Statistics:

Operating Cash	Profit Margin	Gross Revenue	Income	Rev. Growth
$94.33 M	11.02%	$609.46 M	$67.15 M	19.90%

Waste Connections, Inc.

Waste Connections, Inc., an integrated solid waste services company, provides solid waste collection, transfer, disposal, and recycling services to the commercial, industrial, and residential customers in secondary markets in the western and southern United States. As of December 31, 2005, it served approximately 1 million commercial, industrial, and residential customers in 23 states. The company owned or operated a network of 114 solid waste collection operations, 36 transfer stations, 26 recycling operations, and 33 active landfills, as of the above date. Its transfer stations receive, compact, and load solid waste onto larger vehicles to be transported to landfills. The company offers municipal, commercial, industrial, and residential customers recycling services for various recyclable materials, including cardboard, office paper, plastic containers, glass bottles, and ferrous and aluminum metals. Waste Connections was founded in 1997 and is based in Folsom, California (Biz.Yahoo).

Key Financial Statistics:

Operating Cash	Profit Margin	Gross Revenue	Income	Rev. Growth
$199.81 M	11.63%	$721.90 M	$84.52 M	16.00%

Clean Harbors, Inc.

Clean Harbors, Inc. (CHI), through its subsidiaries, provides environmental and hazardous waste management services in the United States, Puerto Rico, Mexico, and Canada. It operates in two segments, Technical Services and Site Services. The Technical Services segment collects, transports, treats, and disposes hazardous and non-hazardous wastes; and offers physical treatment, resource recovery, fuels blending, incineration, landfill disposal, wastewater treatment, lab chemical disposal, and explosives management services. Its CleanPack services include the collection, identification, packaging, transportation, and disposal of laboratory chemicals and household hazardous wastes. The Site Services segment provide confined space

entry for tank cleaning, site decontamination, remediation projects, demolition, spill cleanup, railcar cleaning, product recovery and transfer, scarifying and media-blasting, and vacuum services, as well as used oil and oil products recycling, and polychlorinated biphenyls management and disposal services. Its industrial services include management of hazardous, non-hazardous, and wet and dry materials; chemical cleaning, hydro blasting, liquid/dry vacuuming, sodium bicarbonate blasting, boiler cleanouts, and steam cleaning ; and video inspection, dewatering, and onsite material processing. CHI markets its services through its internal sales organizations and through a network of service centers. It serves utility, chemical, petroleum, pharmaceutical, transportation, and industrial firms, as well as educational institutions, other environmental service companies, health care providers, and government agencies. As of December 31, 2005, CHI operated 48 hazardous waste management properties, including 5 incineration, 9 landfills, 7 wastewater treatment plants, and 20 transportation, storage, and disposal facilities, as well as 7 PCB management facilities. The company was founded by Alan S. McKim in 1980 and is based in Braintree, Massachusetts (Biz.Yahoo).

Key Financial Statistics:

Operating Cash	Profit Margin	Gross Revenue	Income	Rev. Growth
$29.67 M	3.60%	$711.17 M	$25.34 M	10.00%

3.6.2. Rivals Anticipated Strategic Moves

The demand in this industry depends on the volume of waste generated, which in turn depends on the level of economic activity and consumer spending. The profitability of individual companies depends on efficient operations, because the service provided acts as a commodity sold based solely on price. Therefore the smaller companies can compete by offering

specialized services or servicing local markets exclusively. The key to the larger companies is to have efficiency of scale for their operations.

The current trends amongst the rival companies currently are improving their vertical integration along the value chain. The majority of waste management companies, either own the collection process, or the disposable process, rarely do companies posses both, as does Waste Management. This vertical integration is a key component to sustaining competitive advantage, and increasing its customer base while at the same eliminating additional cost that would exist otherwise.

A few of the smaller competitors, Waste Connections for example, chooses to shy away from competitive areas. Instead they chose to focus on suburban or rural areas where they can create their own competitive advantage by exclusive arrangements with each municipality they are involved with. This model may work for some companies, but will limit its long term growth potential, since the majority of these markets are extremely small in size.

Improved Customer Service is the final area where the industry is seeing a trend amongst its rivals. Normally customer service in the waste management industry involves answering complaints or handling bill collection. However Stericycle has recently introduced a new service to its operation, similar to that of a consulting service. Part of their collection process will involve consultants to monitor and suggest improvements and best practices to its customers to either inform them of new technologies and regulations that may exist, or offer alternatives that the customers may not already be aware of when it come to disposal and recycling.

3.6.3. Summary of Competitive Analysis

The waste management industry in the United States includes over 10,000 companies total, with combined revenues of about $50 billion. The three largest national companies, Waste Management, Allied Waste and Republic Services together handle more than half the solid waste generated in the United States today. The future of the industry would seem to land in the place of the smaller companies, whose specialized services and exclusive local operating rights grant them impressive quarterly growth rates. While the larger companies maintain massive market share and overall revenue numbers, their growths are about 1/5 of the smaller companies, like Stericycle who is averaging close to 20 percent each quarter.

Almost all of the rivals within the waste management industry share the same common goals. In addition, each rival is looking for ways to enhance its market share, improve on its customer service relationships, and develop alternatives that will differentiate itself from its rivals.

3.7.0. Key Success Factors

There are several key success factors that firms must respond to in order to be successful in the future. These include decreasing costs, increasing recycling capacity, and cost effective compliance with governmental regulations.

Managing Operating Costs

Firms must further their efforts to reduce costs in response to:

1) increasing pressures from shareholders in the marketplace,
2) increasing levels of price competition in the industry,
3) rising regulatory compliance costs, and most importantly
4) manage the variability of fuel costs.

Many firms have made significant strides in this area through the implementation of new systems which result in savings in fleet routing costs and capital savings due to fleet reduction. Other systems include pricing tools that allow firms to increase monthly revenues through revenue management systems, and fleet maintenance management system. All of these systems work to maximize profitability by maximizing revenues and minimizing expenses. The implementation of these management systems is evidence that firms place a significant emphasis on decreasing costs in response to the driving forces in the industry.

As stated earlier, not complying with governmental regulations is no longer an option for waste management companies. Companies that fail to comply will leave themselves vulnerable to stiff penalties that could result in financial hardship and loss of reputation. If companies are to prosper in the current environment, they must find a way to comply with current and evolving regulations in a manner that does not damage profitability. The trend of increasingly stringent regulations is expected to continue into the future. As this occurs, companies must be able to off-set the additional compliance costs that will be incurred through increased revenues and cost savings in other areas of the business. Most firms make a significant effort to comply with governmental regulations, and in areas such as safety, they remain even more resolved. Continuous efforts to reduce costs will place firms in a good position to meet new regulations in the future in a cost effective manner.

The future success of waste management firms will be largely reliant on their ability to manage costs associated with the fuel on which their trucking fleet relies. Their collection of waste materials for all of the disposal and recycling operations is dependant on this fleet. In order for

firms to operate, they must have the fuel on which they so heavily rely. Minimizing the effects of fluctuating fuel costs to the firm's bottom line will be a key success factor in the future.

Meeting Recycling Demand

In recent years, the public has put increasing pressure on federal, state, and local governments to enact regulations and restrictions that mitigate the adverse effects of environmental pollution. Firms in the industry are vulnerable to trends such as this due to the large number of landfills that they operate. These landfills provide a potential source of environmental pollution. One of the trends in the current environment is the increased use of recycling as an environmentally friendly alternative to standard waster disposal. In the current recycling industry, demand far exceeds supply for recycling services. This represents a significant opportunity for firms as there are prospects for rapid growth in this market segment due to an increasing environmental awareness in the general public. Increasing investment in recycling capacity will be a key success factor in the future. In addition to presenting a provocative business opportunity, further investment into recycling activities would reduce firms reliance on landfills and the inherent vulnerabilities that are introduce in the way of environmental pollution. Firms will be in a good position if they act quickly to increase recycling operations in the future.

4.0.0. Internal Analysis

To gain a broader understanding of the strategic landscape, it is first necessary to analyze the external environment and then analyze the internal structures and characteristics of the firm. Internal analysis provides a better insight to the firm's strengths and weaknesses and helps define how the firm can and will react to inside and outside events. Internal analysis is a

complex process that takes a critical look at every level of the organization from its guiding principals, mission and vision statements to its capabilities, all the way through the firms current and long-term objectives and core competencies.

This section systematically studies the firms leadership, organizational structure, resources, financial health, and the strategies the organization employs to differentiate it self from competitors. Based on all this information, a SWOT analysis is conducted. The SWOT analysis combines the external and internal analysis information and maps the company's activities with the internal and external environment. Strengths and Weakness of SWOT are derived from the internal analysis, and the internal challenges that the company is prepared for are categorized as Strengths. On the other hand, a challenge the company is not yet ready for will fall in the category of potential Weakness. Similarly from the external analysis section we will define the challenges posed to company from any external sources. Any of the challenges that company is prepared for will fall in the category of Opportunities and the ones the company is not prepared for will fall in the category of Threats.

4.1.0. Organizational Analysis

This section analyzes Waste Management's organizational structure. To briefly discuss the organization of the company, Waste Management Inc, (WMI) is a publicly owned waste management company, providing integrated waste management services to approximately 25 million residential and 2 million commercial customers.

Waste Management's organization is divided into seven operating groups. These groups are defined by geographical presence of company as well as its functional areas. Five of the seven groups are organized by geographic area and two groups are based on organizations functions.

Geographic operating groups are Eastern, Midwest, Southern, Western and Canadian groups. These groups are designed and defined by the area of North America where WMI has a presence. In terms of functional division the two groups are Recycling and Weehabrator groups.

As the Key success factors in the industry analysis identified, recycling is likely to be a dominant force in the future. RECYCLY America group, a subsidiary of WMI, manages the recycling facility as an independent group and coordinates efforts with each geographical location. Recycle America, also a subsidiary of WMI, is the largest collector of recyclable materials from businesses and households in North America with more than 3000 employees. It operates 160 material recovery facilities that process more than five million tons of recyclable commodities each year. From the Wheelabrator group comes the responsibility of the use of municipal solid waste for fuel in the generation of electrical power. The Wheelabrator group manages the technology for waste to fuel and provide support and expertise to organization. This group is currently responsible for 17 plants that convert solid waste into energy.

In terms of collection services, Waste Management operates the sixth largest trucking fleet in North America. Solid waste collection services are performed for municipal, commercial, industrial, and residential customers across North America. For commercial and industrial collection services, the company operates one to three year service agreements. Collection fees are a function of many factors including collection frequency, type and volume or weight of the waste collected and labor costs. Residential collection is done in coordination with local franchising or thru local municipalities.

4.1.1. Corporate Mission

From the WMI website (www.wm.com) the Vision Statement of the firm, “Our goal is to have a focused, world-class supply base firmly in place and readily accessible, producing a sustainable competitive advantage in every corner of our business.”

From same site their Mission Statement is:

Our mission is to develop and deliver meaningful business results. We will do so by:

- Building partnerships with the Field and Functions to identify and pursue real business opportunities and solve business problems.
- Developing and involving a loyal, skilled, productive and innovative supplier base.
- Implementing and continually upgrading the best processes, systems and tools available.
- Designing, aligning and building an organization of highly skilled, business-oriented procurement professionals.

4.1.2. Products and Services

WMI’s services include solid waste collection, recycling, and disposal options for residential customers. For business and industry, the company offers section and disposal according to local laws. WMI covers operations from curbside collection to hazardous waste disposal and it manages municipal recycling and landfill operations. Following is the list of operations WMI offers in its operations:

- **For Business**

  WMI offers collection, recycling and temporary waste services available for businesses of all sizes. The firm’s services are offered to various size businesses. WMI can provide

businesses with efficient, dependable, and responsive waste disposal service that supports helps bottom line of all types of organizations.

- **For Industry**

  Waste Management's Landfill & Industrial Services (LIS) Group has the knowledge, resources and expertise to help the industry manage its waste streams. The group has both cost-effective and environmentally responsible ways to collect and dispose solid waste. WMI's clients include factories, refineries, and chemical plants with various hazardous and toxic wastes.

- **For National Accounts**

  The WMI National Accounts Sales and Service team provides comprehensive waste and recycling services for national and regional multi location companies requiring services as simple as solid waste removal and as complex as hazardous waste disposal. WMI has developed this National Accounts staff to services customers in various industries.

- **For Homes**

  With more than 25 million satisfied residential customers, WMI is a leader in providing curbside collection and recycling services to homes all across the United States, Canada and Puerto Rico. Most of staff in curbside operations and its support customer services is trained to manage their jobs very effectively and efficiently.

- **For the Public Sector**

  Many clients of WMI include cities, towns, villages, parishes, counties, and solid waste management districts. From dependable collection to permanent landfill disposal, WMI

offers services in waste stream management and environmental preservation.

- **For Disposal**

Waste disposal challenges of businesses, manufacturers, and municipalities are unique and growing as technologies and regulations continue to change. With the industry's largest network of Subtitle C and Subtitle D disposal facilities, WMI has acquired capabilities of disposing any kind of waste - municipal, industrial or hazardous - in a way that is permanent, environmentally responsible, and economical.

- **For Waste-to-Energy**

WMI has pioneered in creating alternative energy solutions. Through the network of waste-to-energy facilities developed first by its subsidiary, “Wheelabrator” division, and breakthrough landfill gas-to-energy projects, WMI is creating a sustainable energy system. These technologies are processing 110 million tons of municipal solid waste into energy, saving more than 160 million barrels of oil while generating nearly 60 billion kilowatt hours of electricity.

- **For Safe Needle Disposal**

WMI’s partnership with Sharps Compliance, Inc. provides individuals, companies, and institutions with a way of disposing of used hypodermic needles, lancets, test strips and other small quantities of medical waste safely and economically.

- **Fluorescent lamps Disposal**

Fluorescent lamps contain mercury, which is a regulated waste at the Federal and State levels of government. When lamps are broken during handling and storage, they

release mercury and may put the company's employees as well as the company itself at risk. When even a single green-tipped low mercury lamp is broken, the resulting level of mercury in the air may exceed occupational-exposure limits. The Lamptracker recycling program available to WMI customers is safe and cost-effective. Self-sealing containers are provided to reduce the risk of mercury exposure for employees and carriers during collection, storage, and shipment, thus reducing customer's liability.

National Accounts

Waste Management's National Account Sales and Service team provides streamlined waste services for national and regional multi-location companies, with customers in industries that vary from retail to petrochemical. As a provider of comprehensive waste management services, WMI has generated methods and means to provide multi-location accounts with service that are claimed to be easy to use and unified.

While customers' needs range from conventional containers to complex industrial waste-stream management, WMI's National Account team provides a single point-of-contact, dedicated account and experienced with customer's industry needs. WMI's professional team has access to the resources and local specialists within North America's largest integrated network of hauling, recycling, and disposal sites, all of which operate with the industry's only national service standard. With special services such as full-time In-Plant Services to manage environmental audits and reporting and Third Party Management agreements, Waste Management National Sales and Service can provide the special level of service that builds long-term relationships.

- **Third Party Management**

  Waste Management can handle most national service contracts within their own system due to a large network of hauling, recycling and disposal operations in North America. When clients have a location or a specific service need that cannot be accommodated within the Waste Management systems, it can contract and manage relationships with third party suppliers to fill in the gap seamlessly. Streamlined billing and reporting offers the same single point-of-contact to manage all waste needs, and makes these operations simple to use for its wide range of customers.

4.1.3. Leadership

Waste managements key leadership team consists of a diverse group by business professionals from a variety of backgrounds. The company believes in strong leadership and dedication to its vision and mission. In its 2004 annual report, WMI's CEO Mr. Steiner mentioned his belief and dedication to putting right people to right place (www.wm.com). Management leadership sets the tone for rest of the company, and provides the framework for the company culture. WMI leadership is working hard to promote an open channel of communication and a culture of innovation at every level.

The company has selected top leaders in the key policy forming position and has very good communication system to communicate its policies, values, and ideas throughout the company. The open communication in the company helps promote idea development and fuels innovation within the company. WMI has taken initiative to promote independent thinking within the culture. It has created a think tank of the top 200 leaders to come up with a framework and management structure to facilitate better decision making and open new avenues of communication. The management team travels to various customers, employees, operations,

and line-mangers in order to continue the flow of communication and generate newer, better ideas. The management team also creates small teams to tackle the ideas generated in the process. Recommendations from all teams are evaluated and if selected, implemented. This practice is incorporated into the culture by various orientations and promotional events in the company. The new programs are instituted for employees whose ideas are selected and implemented.

4.1.4. Organizational Culture

Maury Myers, Chairman of the Board of Waste Management, Inc. said, "Great companies are admired for their products, services, people and integrity. We want to be a great company" (www.wm.com). WMI has an evolving culture of getting things done through innovation and alliances with firms outside the industry. The company maintains good relationship with its suppliers, customers, and also the regulatory agencies. To maintain a highly motivated team of employee's, leadership takes effort to provide its employees with tools and training to do their job well. WMI has begun to cultivate leaders through programs of mentoring and development, by selecting 200 employees from various segments of the organization.

According to the company's ethics policies currently in place, WMI is strongly committed to upholding ethical standards and promoting diversity and inclusion. The Company has established a Business Ethics and Diversity Department to oversee the implementation of a comprehensive corporate Ethics and Diversity program.

One of the goals of the WMI organization is to simplify the process of obtaining goods and services and to bring greater value to the company through higher levels of quality and service, as well as savings. In the past, WMI operated as a company with thousands of independent

purchasers, as each site was independently responsible for finding its own suppliers and negotiating individual prices for goods and services. As a result, the company was conducting business with more than 500,000 suppliers.

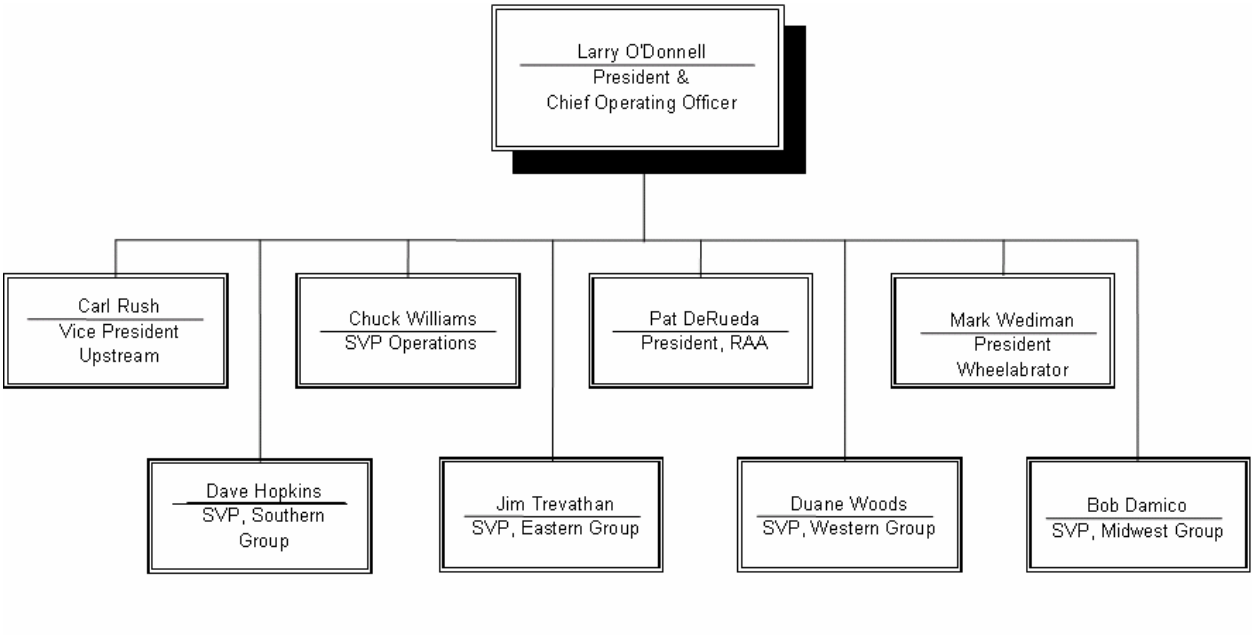
WMI has sense incorporates a one-company, collaborative approach to procurement. The company has invested nearly $5 billion in goods and services, which translates into a buyer's advantage. WMI leverages this position to pick and choose its suppliers and implement uniform standards for procurement throughout the company. This translates into significant savings and cost control for the company.

"We pick our suppliers on purpose," as WMI executives like to say (www.wm.com). Responsibility of the Procurement organization is to ensure that company gets its supplies regularly and consistently. The overall organization culture is to provide services in the most economical and customer specific manner. Innovation and alliance are essential parts of the underlying work ethic principles.

4.1.5. Structure

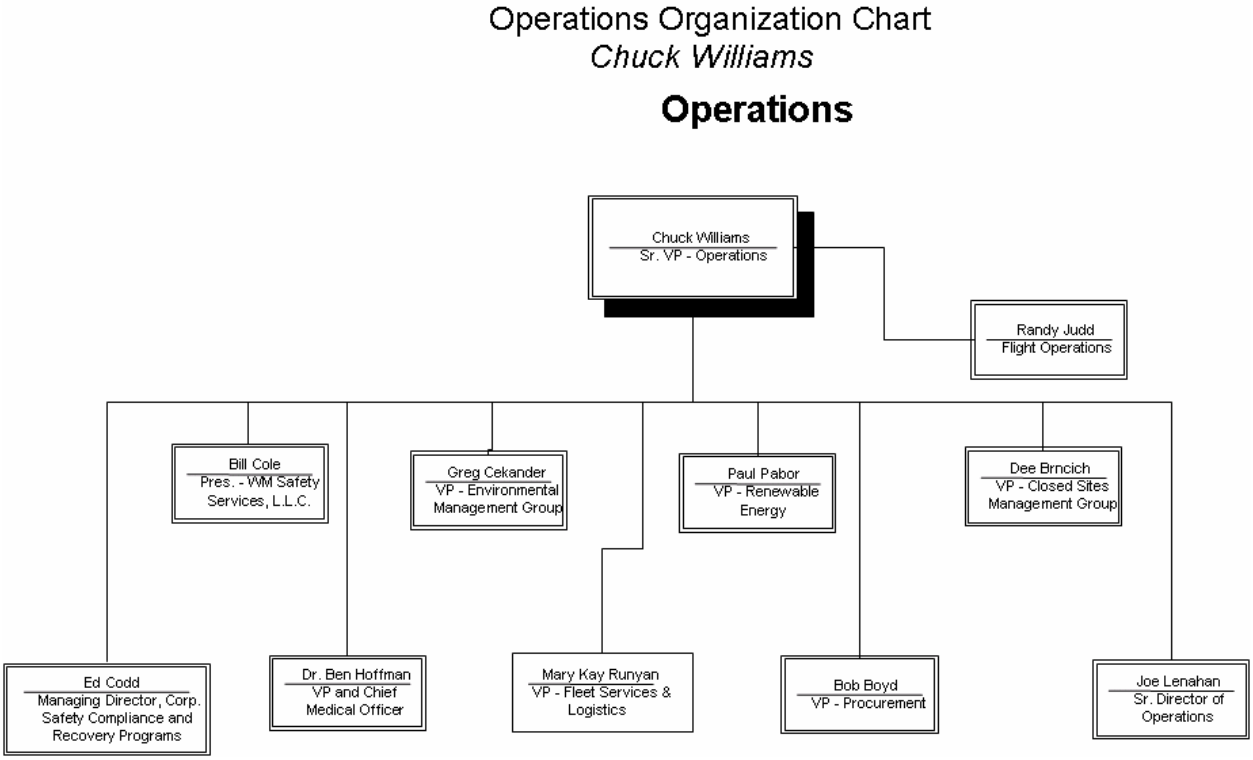
Structure of the firm is constructed through three internal structures, namely Infrastructure, Social Structure, and Superstructure.

Infrastructure is defined by the organization's framework. This can be investigated by studying the company's organizational chart and chain of command. This structure defines how the company has been set up by its leaders and how the values and culture of the company is designed and communicated to everyone in the company. Looking at the organizational chart, we can easily see that WMI wants to strengthen its geographical diversity while maintaining a centralized management style.



From PPT presentation of organization

In addition, the organizational chart of operations sheds light on the importance of operations management with WMI's overall strategy. As WMI aligns its operations with new strategies, it is important to cover all bases of operational management such as; site monitoring, safety, fleet operations, compliance, and environment management.



From PPT presentation of organization

The two organizational charts above show that chain of command and strength of operation are the key factors in management's point of view. However, WMI is also committed to its geographical operations and consider this a core strategy as well.

The social structure of the company is how its human interactions are devised and implemented. WMI stresses its human resources as a valuable ingredient of the company, hence management has an open interaction between the teams and across the various groups. Formal communication structures are lowered to allow free interactions and the generation of new ideas as well as innovation and communication.

The third and most important part of the overall structure of firm is its culture or value guiding system. The culture within WMI is driven by its upper management which guides the whole company through its mission statement. Customer centric culture has taken over the every aspect of daily operations and functioning is driven towards total customer satisfaction.

Organization structure is still emerging after the restructuring efforts which have occurred for the last 5 years. Currently the structure of the company consists of centralized governance as the company wants to keep uniformity in service and dose not want to dilute its service quality by too much decentralization. In fact, the organizational structure is gravitating towards meeting financial strategies.

As the waste management industry attempts to swap assets in order to achieve alignment and yield mutually complimentary balance, WMI is also moving its operations based on its assets and strengths.

4.1.6. Summary of Organizational Analysis

WMI has a centralized organization with a unique blend of service-oriented people. From the company's customer support staff to the pickup crew, employees are committed to the success of the organization. At the core of the company, is total value to customers and shareholders. All of the processes, systems, employees, and leadership are dedicated to full service and satisfaction. Innovation in the field of waste disposal and the understanding of a diverse customer needs has improved its marketability and helped the bottom line of company by providing comprehensive waste disposal solutions.

4.2.0. Analysis of Firm Resources

Analyzing the internal environment is just as significant as examining the external environment in which firms compete. Resources, capabilities, and core competencies are three distinctive characteristics that make up a firm's competitive advantage. Resources consist of a broad range of tangible and intangible assets that are uniquely combined to create competitive advantages. Capabilities are the firm's competency at cultivating and communicating information and knowledge through human capital, particularly through employee expertise. Core competencies are the culmination of the firm's most valuable resources and capabilities that differentiate the firm from rivals. To create a competitive advantage, the firm must decide on external environmental opportunities that are drawn from its strongest resources, capabilities, and core competencies.

4.2.1. Tangible Resources

Tangible resources are assets that can be seen and quantified. Tangible assets can sometime hold intangible qualities. Financial resources, organizational resources, physical resources, and technological resources are the four types of tangible resources.

Financial: STRONG

WMI's financials are strong and continue to improve as new strategies emerge. As discussed in the financial analysis section, the company has low leverage, as compared to the industry, which indicates that new projects to improve the performance can be financed by leverage financing. The ROI and revenue have increased through an observable upswing, indicating that projects put in place for cost reduction and strategy shift to high margin operation is making an impact on the company's bottom line.

Organizational: MODERATELY STRONG

The firm's organizational structure is flexible in order to meet future challenges. Most of the business units are focused on the day-to-day business efficiencies; however, planning, procurement, billing, and reporting have been streamlined allowing the organization's outside contacts to be a single point. With asset swapping, as well as buying and selling assets, the company has modified the organization to achieve better organizational fit.

Physical: MODERATELY STRONG

The physical resources of the company include landfill sites, operating trucks, recycling facilities, incinerators, and waste to gas facilities. With 432 vehicles now converted from diesel fuel to clean-burning natural gas, the company operates one of the nation's largest fleets of heavy-duty trucks powered exclusively by natural gas. Through its waste-to-energy plants, WMI uses solid municipal waste to generate power. This reduces the volume of the waste by 90 percent and saves space in local landfills while providing an economical alternative to the use of fossil and nuclear fuels. WMI has improved its physical resources that complement its operations.

Technological: MODERATE

Technological resources include waste to energy resources, Information Technology, and a clean burning fuel fleet of trucks. These represent a good source for the business operations and provide WMI with a competitive edge. However the competition knocking at the backdoor as they are catching up to these technologies.

4.2.2. Intangible Resources

Intangible resources are at the heart of capabilities and core competencies for the firm. Unlike tangible assets, intangible assets are difficult to identify, measure, mimic, or substitute. This

type of resource develops over time and is deeply embedded in an organization's history and culture. Because of its uniqueness, intangible assets are relied upon more so than tangible assets as the groundwork for core competencies. Human resources, innovation resources, and reputation resources are the three types of intangible resources.

Human Resources: STRONG

Waste Management Inc. has a very well trained and motivated workforce that work in tandem with its assets and business plan. The employees are also well compensated by industry standards.

Innovation Resources: MODERATELY STRONG

WMI has innovative ways of managing its operations and solving problems. In last few years it has implemented solutions to almost all aspects of business. From IT solutions, procurement, and business plans the company aligns collection and disposal operations. These innovative resources are the company's core strength.

Reputation Resources: MODERATE

WMI is associated with an industry that is continuously monitored and criticized by environmental organizations. As such, any mistake the company makes becomes a negative media exposure risk. However, WMI is actively working with all of its stakeholders to promote a healthy and environmentally friendly image. The company has initiated partnerships with big media events to promote its image and reputation. WMI has a reputation of getting things done in innovative ways.

4.2.3. Capabilities

WMI has very strong capabilities of achieving its corporate goals and successes with its business operations. The firm's physical assets and intangible assets are well matched for forward-looking prospects of the company. These capabilities include; managing various sizes of operations, specialized solutions for waste management in various industries, the capability to charge a premium on specialized services, and its single point customer contact and billing information, as well as integrated supply chain systems and underlying IT systems.

4.2.4. Core Competencies and Sustainable Advantages

Core competencies are "unique jewels of a company" which distinguish the company competitively and reflect its personality. They are the activities the company performs especially well compared to competitors and through which the firm adds unique value to its goods and services over a long period of time. In order to function as a core competency and be a source of competitive advantage, capabilities must satisfy all four criteria of being valuable, rare, costly-to-imitate, and non-substitutable. Only those capabilities that meet these four measures can be a core competency.

Valuable: MODERATE YES

Valuable capabilities help a firm neutralize threats or exploit opportunities in its external Environment. WMI's waste to energy operations, collection and disposal operations, and integration of various systems are very valuable competencies.

Rare: YES

Rare capabilities are characteristics that are unique to an organization and are not possessed by many others. WMI's Information technology, single point customer support, and streamlined billing ad reporting are unique and rare in the industry.

Costly to Imitate: YES

Costly-to-imitate capabilities are not easily developed by other firms. This type of capability is a result of unique historical conditions, ambiguous causes, and social complexities. For WMI, these capabilities are its IT solutions and comprehensive integration of various operations resulting from years of preparations and implementations. The company's central billing systems, supply chain system, and waste to energy programs are costly to imitate.

Non-substitutable: MODERATE YES

Non-substitutable capabilities or those which have no strategically equivalent valuable resources that are either common or easy to imitate. Again, these items include; operations management, Fleet routing, IT solutions, and landfill to energy program. All of which are non substitutable within the communities the company serves.

4.2.5. Summary of Firm Resources

Based on the discussions above it is clear that WMI has core competencies which are more related to its intangible recourses than tangible resources. The firm's IT solutions, fleet routing, billing, and its vast resources are all sources of the firm's competitive strength.

4.3.0. Analysis of Objectives

Waste Management has skillfully framed its short-term, long-term and financial objectives around its mission statement. After years of required turn around through hard work and labor in all aspects of business, WMI's objective has changed quite a bit.

WMI realizes that its business is about serving customers and shareholders, which certainly demands that they make money. In order to serve customers better than anyone else, WMI needs the best equipment, from the garbage trucks and bulldozers they drive, to the containers on the street and in the mall, to the uniforms and safety gear field employees wear, to the IT service providers who help develop WMI systems. In order to be competitive, all of these things have to be standardized to support WMI's brand name and quality image.

4.3.1. Short-Term Objectives

Short-term objectives identified for WMI are:

(1) Information Systems,

(2) Market Business Strategy,

(3) Service Machine – which was WMI customer-facing initiative, and

(4) Procurement.

In order to improve upon these objectives the company is continuously working on various projects. Over the past few years, these objectives have been partly achieved as most of them are still in progress. WMI is spending heavily on information systems to support operational effectiveness, truck routing, billing, procurement, and supply chain management. WMI has fully integrated systems in many business areas and improve on many others simultaneously.

In terms of market business strategy the company has identified many business units that are under performing financially and many that are too geographically segregated to achieve any synergy with the core operations. The company needs to implement the process of continuously evaluating their business strategy and making alliances wherever there is an opportunity. The objective of service machine is key for this success. WMI is deriving big business from its own customer service due to strong institutional knowledge in terms of waste disposal. This factor combined with its waste recycling and recovery knowledge puts WMI in a position of leveraging better business and better prices thus acting as a product differentiator.

In terms of procurement purchasing practices, these initiatives were previously fragmented and un-leveraged. Over six hundred operating divisions had their own methods of buying everything, and each of them used their own favorite suppliers. That's where "making money" comes into play. It was estimated in 2000 that WMI spent between $4 and $5 billion each year with suppliers, and it set a goal of reducing supply costs by $350 million. Information systems were so poor that the company did not know how many trucks or containers they had. At one point in time the firm issued 10,000 incorrect paychecks. In order to improve these areas, WMI appointed Brad Holcomb, who had been an accomplished procurement executive at Eastman Kodak, Praxair and American Precision Industries. Brad joined the company in September of 2000. The first order of business was to conduct a detailed spend analysis to determine how much the company spent, and where. After the determination of expenses and procurement process the WMI procurement team established procurement's vision that still drives the program today: "… goal is to have a focused, world-class supply base firmly in place and readily accessible – producing a sustainable competitive advantage in every corner of the business." WMI also established Guiding Principles that included

(1) Using competition to drive results,

(2) Leveraging spending by dramatically reducing the supply base,

(3) Consistently applying cross-functional teamwork, and

(4) Having suppliers drive toward what we call *Total Customer Satisfaction.*

4.3.2. Long-Term Objectives

The long-term objective of a company is to continue restructuring and improvement in order to be more efficient in operations and yield a higher return on investment to the shareholders. We can classify the long-term objectives as;

(1) Improve ROI,

(2) Attain operational effectiveness,

(3) Set principals to guide total customer satisfaction and

(4) Continue to innovate in waste disposal technology.

Improve ROI In order to improve the ROI objective, management reviews capital spending and market development efforts along lines of business where ROI is higher. With return on invested capital objectives in mind, the company is continuing to exit the under performing markets and lines of business. WMI has shed under performing business/assets with revenue totaling about $400 million. WMI is also evaluating markets to determine where shareholder value can be derived through various alternatives including; divestitures, buy-sell transactions, reinvestment or other means. Another big initiative currently underway is to shift from a revenue centric mindset to profit centric strategies. Most of the waste management companies chase volume (Tonnage) in order to improve the cost effectiveness of operations; however, WMI is walking away from this low margin business to a more profitable business.

Operational effectiveness has been underway for the last 5 years, the results of which have begun to materialize. The procedures to better manage supply chain through a highly integrated supply chain management system, as well as a standard procurement philosophy, and operational efficiencies through the use of programs, has cut costs and wastage in numerous places.

Total Customer Satisfaction is a long-term objective that will lead the company to long-term sustainability. This objective will help improve the visibility and demand for WMI's services thereby improving profitability.

Innovation of waste disposal includes investing in newer technologies for waste disposal, recovery and recycling. This is accomplished through the use of landfill gases for energy, recycling paper and plastic for industrial usage, and the technologies which will pay dividends in coming years. Apart from investing in technologies WMI also needs to manage regulatory agencies and scan the external environment for further regulation changes.

4.3.3. Financial Objectives

The financial objective of WMI is to increase its profit by exiting from under performing markets, and enter or expand in the markets which have a better return on investment model. Also the firm intends to shift from revenue centric to a profit centric approach. These objects will allow the company to enter into the high profit low tonnage markets of specialized disposal and waste management, such as; industrial, medical and toxic wastes. To fulfill these objectives the company is investing in new technologies and is improving existing methods to manage waste disposal.

4.4.0. Financial Analysis

The financial analysis presented below was complied based on consolidated financial statements for a three year period. The financial statements were obtained from finance.yahoo.com. Most of the ratios were calculated independently. The most recent 10K from each of the companies was reviewed in order to insure accuracy of the information provided.

All of the competitors assessed in the competitive analysis section of the project were included in this analysis. Although a full three year ratio analysis was completed on all competitors, only the most recent year (2005) is presented, with the exception of WMI which includes all three years in order to illustrate the changes the company has undergone.

The financial analysis includes seven critical segments; valuation, growth, profitability, financial strength, dividend, management efficiency and stock price. It is our collective assessment that the financial analysis provides consistency with the information presented throughout this analysis, and also quantifies the recommendations presented.

4.4.1. Valuation Analysis

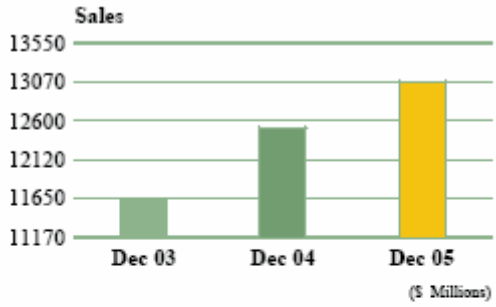
The process of valuation is an attempt to estimate the market value of a financial asset. There are several ratios used by financial analyst in determining value. Price-to-earnings is a simple calculation which divides the price per share by the earnings per share. The result is essentially how much money you are paying for every one dollar of earnings the company makes. As identified in the table below, WMI has the lowest P/E ratio among its major competitors. This

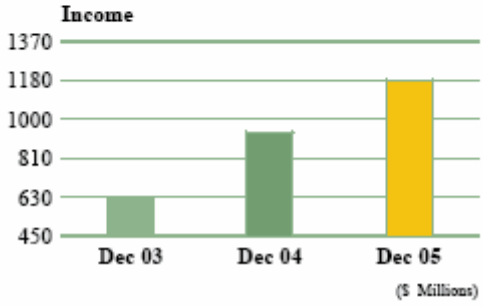
makes the stock of WMI very attractive in comparison. The Price-to-sales ratio is slightly less useful than the P/E ratio, but is a good tool to compare firms among the same industry, yet it is also necessary to include the review of the profit margins of the firm at the same time. Typically a P/S of less than 1 identifies a good opportunity, and to get the full affect, a company with a low P/S and a high profit margin is very attractive. The Price/Book ratio simply compares the firm's stock market price to the total assets less liabilities (book value) of the firm, and in this case the lower the ratio the better. The Value/EBITDA ratio compares the firm's market value to the purified earnings of the firm.

	2005					
Valuation Ratios	**Republic Services**	**Allied Waste**	**Stericycle**	**Waste Connection**	**Clean Harbors**	**Waste Management**
Price/Earnings	25.07	30.22	43.73	22.61	20.07	17.50
Price/Sales	2.10	0.78	4.69	2.51	0.80	1.55
Price/Book	3.77	1.76	5.50	2.52	4.88	3.32
Value/EBITDA	9.76	8.63	16.76	10.34	7.46	9.06

4.4.2. Growth Analysis

As the company's most recent 10K announces, "We have been working to improve our organization by concentrating on operational excellence and profitability rather than on revenue growth" (2005 10K). This is certainly reflected in the numbers provided in the company's financial statements. WMI also boasts of increasing revenue through a more disciplined approach to pricing which the company calls "pricing excellence strategy."





Presented below is the change in sales, gross profit, and net income for WMI from 2003 to 2005. WMI's revenues increased by 4 percent from 2004 to 2005. Although this is relatively normal for a mature firm, the company's net income increased 26 percent to $1.18 billion. The company claims that their current success lies in internal revenue growth. To elaborate, rather than focusing on market growth the company is looking at ways to increase revenues from its existing customer base, and also reduce costs and improve operational efficiencies.

	Waste Mangement				
Growth	**2005**		**2004**		**2003**
Sales	13,074	4%	12,516	7%	11,648
Gross Profit	4,443	4%	4,288	6%	4,057
Income	1,182	26%	939	49%	630

4.4.3. Profitability Analysis

Investors and Managers are obviously very interested in the profitability of a firm and how it compares to others in the industry. Profitability ratios are probably the simplest ratios to analyze, as the higher the number the better. As evident from the information provided below, WMI has experienced a consistent decline over the past three years with respect to gross profit. Subsequently the company has the second to the lowest gross profit margin among its top five competitors.

The operating margin of the firm also appears to be of concern, as the 2005 percentage is lower than it was in 2003 despite marginal growth in 2004. This indicates the company may be having problems managing its costs. This is somewhat the case as the company's annual report explains that new systems were implemented in 2005, which temporarily increases costs, but yielded immediate savings. Also the reduction from 2004 to 2005 was reportedly due to additional costs associated with asset impairments, unusual items, and restructuring. The

company claims that cost reductions will be more evident in 2006, due to these initiatives as well as its divestiture program.

It is not until we review the net profit margin that we see the accomplishments that WMI has been able to accomplish over the past three years. Despite the less than stellar performance with the other margins WMI has not only been able to increase net profit year over year, it has almost doubled this percentage since 2003. This is important as net profit is the most significant margin to investors, because it represents the percentage of sales that remains for the shareholders of the firm after all expenses have been paid. This would also indicate that the firm's stock price has most likely increased over the past few years.

	2005						2004	2003
Profitability Ratios	Republic Services	Allied Waste	Stericycle	Waste Connection	Clean Harbors	Waste Management		
Gross Profit Margin	37.01%	34.68%	43.98%	42.25%	27.92%	33.98%	34.26%	35.05%
Operating Profit Margin	16.66%	15.96%	27.62%	23.28%	7.21%	13.08%	13.57%	13.31%
Net Profit Margin	8.86%	3.55%	11.02%	11.63%	3.60%	9.04%	7.50%	5.44%

4.4.4. Financial Strength Analysis

The financial strength segment of the analysis covers a multitude of factors, including; liquidity, and coverage.

The liquidity ratios compare the firm's current assets to its current liabilities in order to determine whether or not the firm is able to pay its bills. The only difference between the current ratio and the quick ratio is that the latter reduces the numerator by the value of the firm's inventory, as inventory is often difficult to convert to cash. Several of the firms listed below do not have any values associated with inventory on their balance sheet; therefore, the current and quick ratios are the same. WMI has improved these ratios over the past three years.

Leverage allows a firm to multiply the impact of increased revenue into net income. The more debt the firm uses the more leveraged it is. This can ultimately become a concern to creditors as they fear the firm may eventually be unable to repay its creditors. Leverage ratios identify how much debt the firm uses in its capital structure. WMI is clearly not the highest leveraged firm among its competitors and has also taken steps to improve its debt position over the past three years. The ratios below associated with leverage include; Debt to Equity, LTD to Equity, Total Debt Ratio, Long-term Debt Ratio, and LTD to Total Capitalization.

The coverage ratios identify a firm's ability to meet its interest requirements. A high ratio is favorable; however, a ratio that is too high may indicate a position in which a firm is underutilizing its debt capacity. The calculation simply involves comparing EBITDA to interest expense. WMI fluctuates in this area and appears to be slightly below the industry average.

	2005					2004	2003
Financial Strength Ratios	Republic Services	Allied Waste	Stericycle	Waste Connection	Clean Harbors	Waste Management	
Current Ratio	0.72	0.58	1.46	0.83	1.45	1.06	0.88	0.78
Quick Ratio	0.72	0.58	1.41	0.83	1.36	1.03	0.85	0.75
Debt to Equity	1.83	2.96	1.01	1.33	4.31	2.45	2.50	2.71
LTD to Equity	0.92	1.99	0.67	0.82	0.86	1.33	1.37	1.44
Total Debt Ratio	0.65	0.75	0.50	0.57	0.81	0.71	0.71	0.73
Long-term Debt Ratio	0.32	0.50	0.33	0.35	0.16	0.39	0.39	0.39
LTD to Total Capitalization	0.92	1.86	0.65	0.80	0.59	1.23	1.29	1.32
Times Interest Earned	5.89 x	1.56 x	12.94 x	7.15 x	2.25 x	3.45 x	3.73 x	3.51 x

4.4.5. Dividend Analysis

Dividends, if paid, represent the return an investor earns by purchasing the company's stock. A review of the dividends that Waste Management pays in comparison to its competitors, indicates that the company is one of only three which pays dividends, falling in the center with respect to payout ratio. The dividend yield is calculated by taking annual dividends divided by

current stock price. The payout ratio is the proportion of earnings paid to the shareholders as dividends.

	2005					
Dividend Analysis	Republic Services	Allied Waste	Stericycle	Waste Connection	Clean Harbors	Waste Management
Dividend Yield	1.20	-	-	-	-	2.20
Dividend/Per Share	0.54	-	-	-		0.82
Payout Ratio	29%	0%	0%	0%	69%	38%

4.4.6. Management Efficiency Ratios

Management efficiency ratios include; Return on Assets, Return on Equity, Inventory Turnover, A/R Turnover, Average Collection Period, Fixed Assets Turnover, and Total Asset Turnover. These ratios provide information about how well the company uses its assets to generate sales. It is also important to note that firms with lower inventories manage their assets more efficiently. In this area, WMI has mixed results. The company appears to have had an issue with receivables over the past year, and has also experienced a decrease in efficiency with its ability to turnover its inventory over the past three years. With respect to return on assets, and equity the company has improved its position over the past three years. The company's 10K confirmed this assessment as it was forced to borrow a large sum of money in association with one of its credit facilities.

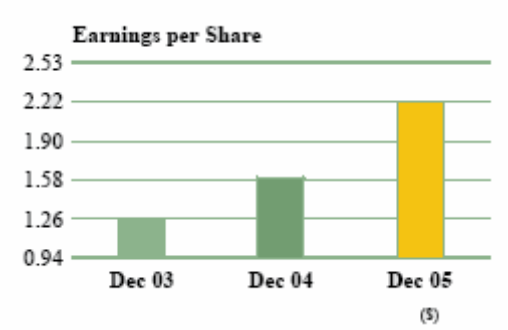
	2005					2004	2003
Management Efficiency	Republic Services	Allied Waste	Stericycle	Waste Connection	Clean Harbors	Waste Management	
Return on Total Assets	5.58%	1.50%	6.41%	5.01%	4.17%	5.59%	4.49%	3.05%
Return on Equity	15.80%	5.93%	12.87%	11.69%	22.15%	19.31%	15.73%	11.32%
Return on Common Equity	15.80%	5.93%	12.87%	11.69%	22.15%	19.31%	15.73%	11.32%
Inventory Turnover			64.87		25.14	87.18	91.42	91.67
A/R Turnover	9.91	7.32	5.07	7.25	4.55	6.23	6.24	5.19
Average Collection Period	36.32 days	49.20 days	71.07 days	49.66 days	79.17 days	57.77 days	57.73 days	69.42 days
Fixed Assets Turnover	0.70	0.45	0.67	0.47	2.45	0.74	0.69	0.64
Total Asset Turnover	0.63	0.42	0.58	0.43	1.16	0.62	0.60	0.56

4.4.7. Stock Price Analysis

The most important per share item is Earnings Per Share. The EPS is the company's profit divided by the total number of outstanding shares. The table below identifies the EPS for Waste Management from 2003 to 2005, and the graphs beside it, clearly shows how the company has continued to increase this number year over year.

Per Share Data

	12 M° Dec 03	12 M° Dec 04	12 M° Dec 05	TTM	3 Year Growth
Earnings Per Share	1.21	1.60	2.09	2.09	0.16
Sales Per Share	19.66	21.54	23.14	23.14	0.08
Book Value	9.72	10.47	11.08	11.08	0.07
Cash Flow	3.35	3.90	4.50	4.50	0.11
Cash Per Share	0.38	0.74	1.21	1.21	0.40



The results of this improvement are reflected in the stock price as indicated in the chart below. The stock price of WMI has almost doubled over the past three years.

4.4.8. Summary of Financial Analysis

In summary, Waste Management's stock price is an excellent value with respect to the valuation information presented in comparison with its competitors. The company's focus on improving net profit as opposed to gross profit shows that the company is focused on growing the business in a way in which shareholders will realize the full value. Growing the business is good, but increasing the company's profitability is excellent.

The company has launched initiatives towards reducing costs and improving operational efficiency. Some of the initiatives translated into increased costs in the first half of 2005; therefore, the improvement will most likely be recognized in 2006, through an increase in its operating profit margin. Through focusing on internal revenue growth the company has also made huge gains in its net profit margin.

The company has improved it position with respect to its financial strength over the past three years through a relatively aggressive use of debt. In 2005, the company borrowed $365 million dollars which were mostly related to the company's Canadian Credit Facility, and had to do with repatriation of accumulated earnings.

The company has also announced that it was increasing its quarterly dividend payments to $.22 per share in 2005. The first increased dividend payment was made on December 15, 2005, which allowed the company to pay a total of $449 million in dividends for the year.

Efficiency rations indicate an effectively run business as the company makes great use of its assets in order to generate cash. The company also holds minimal amounts of inventory which greatly improves its liquidity ratios and overall management of assets. It was clear and has been confirmed that the company had a few issues with managing receivables and credit collections, this issue has been addressed, and this position is expected to improve in 2006.

Finally the company has continued to increase its earnings per share which are reflected is reflected in the company's ever increasing stock price. With all of this being said, it is clear that WMI has made significant strides towards improving profitability, which is clearly the result of a well planned and executed strategy.

4.5.0. Strategic Analysis

In this section, an analysis of the current corporate, business and international strategies implemented at WMI will be analyzed and defined.

4.5.1. Corporate-Level Strategy

Waste Management is committed to a foundation of financial strength, operating excellence and superior customer service. Within the corporation, WMI strives to achieve the same level of success that is achieved outside in the real world. In essence WMI understands that both internal and external customers are equally as important. The two key elements that WMI focuses on within the company are; commitment to the environment, and dedication to a safe work environment.

Health & Safety

At Waste Management, safety is a core value, a cornerstone of operational excellence. It is a philosophy that is imbedded in the way they work, the decisions they make, and the actions they take. As a group of companies with more than 50,000 employees and over 26,000 trucks on the road every day, WMI fully recognizes the responsibility to hold themselves to impeccable standards for the protection of their employees, as well as their communities and their customers. The WMI goal is to attain world-class safety, and more importantly, to be among the safest companies in all of the industry. The plan of action is called Mission to Zero (M2Z). It means zero tolerance for unsafe actions, unsafe decisions, unsafe conditions, unsafe equipment, and unsafe attitudes.

- The cornerstone of M2Z is a Safety Certification Training, which provides classroom and on the job site instruction in safety fundamentals for supervisors, drivers and helpers.

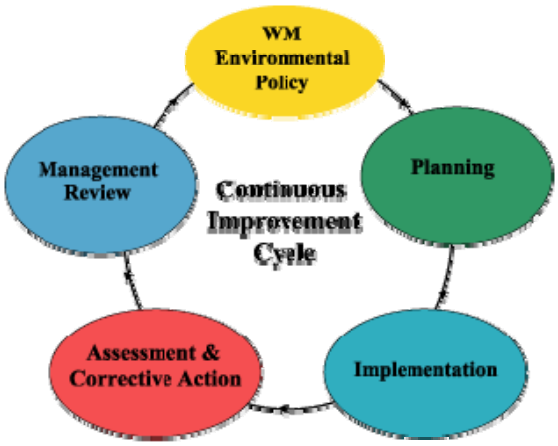
- M2Z seeks to enhance understanding, change behaviors, and develop company leaders who can make a difference and train and lead others.
- M2Z does not seek to find fault or punish people, as M2Z is about being hard on facts and easy on people.

WMI sites monitor and measure safety performance on a continuing basis. These measures reflect the reduced frequency and severity of safety incidents, improved employee satisfaction, and improved customer satisfaction.

Through the established Health and Safety processes and procedures, the goal of zero accidents and injuries is transformed into measurable results that have a positive impact on thousands of people.

Environment

Waste Management is committed to ensuring advanced protection of the environment, compliance with governmental regulations and implementation of state-of-the-art technology. These efforts distinguish WMI as the foremost leader in environmental protection and solid waste management excellence. The Environmental Management System (EMS) reflects the Company's emphasis on continuous improvement in operations by measuring and evaluating its environmental performance. WMI's Environmental Management System (EMS) is comprised of five integrated components including:



- Policy
- Planning

- Implementation
- Assessment and Corrective Action
- Management Review Processes

These components work in a continuous improvement cycle in order to achieve superior environmental performance. WMI also incorporates its "Think Green" program, which is a national program amongst its employees to continually remind them of the importance of the environment.

4.5.2. Business-Level Strategy

WMI is a service oriented company. It tailors its business around providing services to meet the needs of each of its customer groups, and to ensure superior service at each local level. The firm no longer engages heavily in mergers and acquisitions, instead it relies on growing its assets and expanding on those services and businesses that have gotten the company this far. However, WMI's financial picture will allow them the ability to make acquisitions if the company's assets being purchases fall closely in line with what WMI practices within its own company.

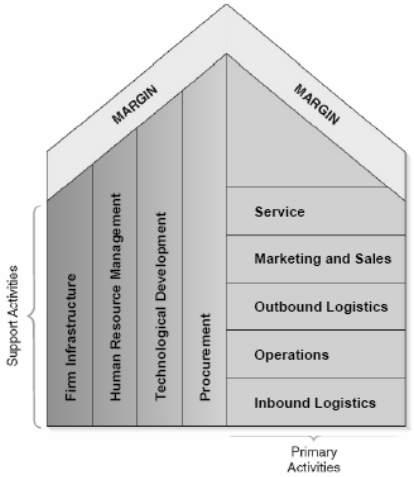
The company now chooses to focus on alliances with other companies, and businesses to achieve its financial goals. Various government agencies, school districts, and even other waste companies all ally with WMI to receive the highest quality and most cost effective method of waste management that is offered.

The primary focus is to maximize shareholder wealth by exceeding in all areas of the industry for which the company operates. WMI is the overall leader in this industry, including recycling,

landfill, waste disposable and removal, and continues to take measures to ensure to its shareholders and employees that it will remain in that position for years to come.

4.5.3. Value Chain Analysis

WMI's value chain concentrates on resources and capabilities of its operations that add value. WMI's corporate culture fosters innovation, safety, and strong environmental awareness. The company's human resource program attracts human talent through incentives, and various training programs. The company concentrates on joint ventures and alliances with national partnership programs. WMI has a well developed portfolio of complimentary services that it offers its customers which attribute to, and create value for itself and its customers.



The company diligently strives to ensure all operations are conducted with the utmost safety. The firm's well established programs ensure integrity and awareness within the organization and produce profitable results. The company possesses excellent internal communication with its various programs to foster safety and environmental awareness, as well as employee recognition and compensation. The WMI name alone has a reputation in the industry as being superior in quality and service and is one of the most recognizable brands in the country.

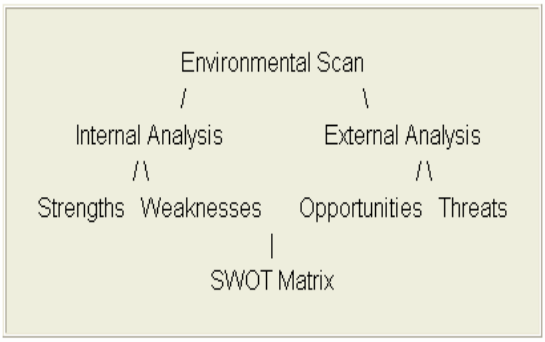
WMI's competitive advantages are due to its uniqueness in the industry, the innovative services it provides, and its high quality of service and safety. The company currently offers a focused differentiation strategy, which provides to most promising means of a sustained competitive advantage.

4.5.4. Summary of Strategic Analysis

Waste Management's business strategy is to create uniqueness in the industry by offering products and services that are both superior and unique from its competitors. The company creates value for its customers through this approach, and also by its continued efforts to ensure worker safety, improve the environment, and use innovation to provide the most superior products and services in the industry.

4.6.0. SWOT Analysis – Internal

SWOT Analysis Framework



WMI has several strengths and weakness that it must be aware of in order to compete effectively in the waste materials industry. In this industry, there are several new opportunities that have recently arisen that Waste Management may be able to capitalize on using its strengths. At the same time, there are several threats in the industry that it must be aware of in order to be successful. These strengths, weaknesses, opportunities, and threats are summarized in the SWOT analysis below.

4.6.1 Strengths

Waste Management's primary strengths include its vast resources, a progressive fleet routing system, and the development of new sales and pricing systems.

- **Vast Resources**

  Waste Management is the largest waste materials company in the world. It is a Fortune 200 company that brings in over $11.5 billion in annual revenues and has over $20

billion in total assets. The firm's size and financial position are comparatively large with respect to most of its competitors. The company's sound financial position brings many benefits including cost reductions through economies of scale. This also allows WMI to attract personnel with highly specialized skills. Additionally, WMI's large size and financial resources provide a significant deterrent entry into the market by new competitors.

WMI has a vast network of assets that includes, "429 collection operations, 366 transfer stations, 289 active landfill disposal sites, 17 waste-to-energy plants, 138 recycling plants, and 85 beneficial-use landfill gas projects." (Waste Management, Inc., 2005) Its large network of resources enables the company to offer the full range of waste management services to its 21 million residential, commercial, and governmental customers.

- **Progressive Fleet Routing System**

WMI has a truck routing system, "Fleet Route", which it uses to improve route density and eliminate redundant truck routes. Currently, the company operates 15,000 routes costing $120,000 each annually. "Fleet Route" should allow the company to reduce the number of routes to around 13,500 for a savings of $180 million. In addition to reducing the number of routes, the routing system will allow for the reduction of the number of trucks in its fleet by 1,500 which will result in $240 million in capital savings. The turnover rate of truck drivers should allow WMI to implement these changes without having to terminate any drivers. While the implementation costs of this routing system are high, $20 million, this expense should be off-set by savings of $40 million in the first year of implementation.

- **New sales and pricing systems**

  WMI is also implementing a new pricing tool that it intends to use to target and capture new commercial sales. Another pricing tool was also recently implemented that allows the company to analyze each customer account individually. Using this tool WMI has been able to increase monthly revenues by $9.8 million.

4.6.2 Weaknesses

WMI's primary weaknesses include fluctuating fuel costs and difficulty with driving volume growth in the waste materials industry.

- **Fluctuating Fuel Costs**

  WMI is highly dependant on petroleum fuels to operate its large fleet of motorized vehicles. The price and supply of fuel in the current economy is unpredictable and is largely determined by factors outside of the company's realm of control, including geopolitical developments, supply/demand for oil and gas, actions by OPEC and other oil and gas producers, war and unrest, regional political patterns, and increasing environmental concerns. In this environment, WMI's reliance on its fuel suppliers is a decided weakness as their actions can have a significant impact on company's bottom line.

- **Difficultly with Driving Volume Growth**

  The current economy in the United States has been improving in recent years. However, it is still recovering from the recession that began in 2000. In this environment, WMI has had difficulty driving volume growth, and this trend is likely to

continue unless the economy fully recovers. WMI will likely focus on growth in the industrial business sector, as growth in this area is critical to its long-term success.

4.6.3 Opportunities

WMI has several opportunities that it can pursue including new management systems, increasing demand for recycling, and its focus on safety.

- **New Management Systems**

  WMI has several management systems that it hopes to implement in the near future in order to improve business efficiencies. One of these is its new revenue management system that is currently in the pilot stage. This system should help waste management to more effectively manage and grow its revenue streams in response to arising market forces. Additionally, WMI has implemented its new fleet maintenance management system, "Compass". This system should further enable the company to reduce inefficient maintenance spending. Together these systems are working towards maximizing profitability by maximizing revenues and minimizing expenses.

- **Increasing Demand for Recycling**

  In the current recycling industry in the United States, demand far exceeds supply for recycling services. This represents a potential golden opportunity for WMI in the form of an industry segment that has not yet matured. There are prospects for rapid growth in the recycling industry. The company is well positioned to take advantage of this opportunity as it already owns the largest recycling company in the United States, Recycle America Alliance. This company was created when WMI combined its recycling assets with key domestic recycling processors with the goal of optimizing capacity and

improving profitability. The fact that most of the competition in the recycling industry is highly fragmented makes the prospects even brighter for the company.

- **Focus on Safety**

  "Mission to Zero" is a safety program that has been implemented by WMI with the goal of improving the company's OSHA safety performance. This is one area in which the company hopes to excel in the realm of regulatory compliance. To this point, the program has yielded impressive results with a reduction of its OSHA recordable rate by 60%. Future plans for the program include the focusing on improving safety performance within specific business units.

4.6.4 Threats

WMI also has several threats that it must contend with including the seasonality of its business, governmental regulation, and strong competition.

- **Seasonality of Business**

  WMI's business is highly seasonal, as revenues typically take a significant dip in the winter. This is primarily due to decreased construction and demolition activity in the colder winter months, which results in a lower volume of wastes from these activities. In certain regions, residential and commercial waste volumes also decrease in the winter. The fact that many of its revenues are dependant on the activities of other industries represents a significant threat to the firm.

Governmental Regulation

The waste materials industry is often at the mercy of extensive and ever-changing regulatory pressures by federal, state, and local governments. Regulations range from those involving environmental concerns, safety concerns, and transportation concerns. Regulatory agencies often monitor companies to which the regulations apply, and in many cases they have the power to force compliance on the companies. Compliance with new regulations can be costly to the companies in the waste materials industry, and in some cases the additional expense to comply can affect the bottom line. In addition, enforcement of these regulations can include civil and criminal penalties that can also adversely affect the company.

Strong Competition

WMI faces intense competition with from commercial, governmental, and quasi-governmental competitors. It faces competition from large national companies that a looking to compete on a national level, as well as smaller companies that are looking to compete on a more regional or local level. Price-cutting techniques are always a threat from these private companies. In addition to these private companies, WMI must compete with local governments that maintain their own waste collection and disposal operations. In some cases, WMI is at a decided disadvantage with these local governments due to the fact that tax revenues and tax-exempt financing are at their disposal. Governmental competitors also have an advantage in that they can impose regulatory controls and restrictions that further their advantage in their region.

5.0.0. Current Strategy and Alternatives

5.1.0. Current Strategy and Strategic Fit

A firm's performance is defined by the fit of its strategy, structure and culture. A fit can be defined as a process of dynamic search to align organization with its environment and arrange its resources internally in support of that alignment. Strategy is the mechanism used to achieve the alignment of its resources through organization structure and management process.

As discussed in the company's structure and culture the company is geographically diverse and still it maintains the centralized management in order to keep its service quality unified. The structure of the organization as evident by its organization chart is geographically diverse however its management process is still unified by keeping the centralized management process. The company's operations are divided into Southern, Eastern, Midwestern and Western Group, but the organization chart also reflects a centralized theme across its operations by creating organizations distinction of Upstream, Operations and Wheelabrator. This geographical diversity in organization helps Waste Management to operate n various geographical areas more effectively and response to competitive pressures, regulations and effective management of assets. However the centralized theme of organization helps management with implementing core changes in its drive for efficient use of assets and resources.

Company's current strategy is to move to more profitable operations and it is strengthening it by its geographical locations. Another key strategy is to reduce costing. As more and more growth in the business leads to more assets it acquire the operational costs are rising significantly. In order to improve the operational efficiency and leverage the economies of scale WM has invested a lot of time, money and efforts in improving operational efficiency. Central

procurement systems, single point of customer contact, equipment maintenance systems, truck routing and performance improvement systems are some of the key steps towards improving the operation costs. As this internal arrangement of organizational structures towards its strategic goal of aligning with the external environment (competition/regulation/customer's demand) progressing the financial results are reflecting the importance of the strategy and strategic fit of company.

5.2.0. Alternatives

Through reviewing WMI's current strategic initiatives and potential market opportunities, our team identified several alternatives that would improve the current performance of the company, as is illustrated in the chart below:

	Current Product/Service	New Product/Service
New Market	MARKET PENETRATION ? Expand existing service to new markets **? Build New Recycling Facilities** ? Acquire Competitors Recycling Facilities	PRODUCT DEVELOPMENT ? Extend existing product line ? Produce energy from waste ? Waste Management Consulting
Current Market	MARKET DEVELOPMENT ? Focus on internal revenue ? Improve existing services ? Hedge with heating oil futures **? Implement alternative fuel sources** ? Upgrade existing recycling capacity	DIVERSIFICATION ? Improve alliances with competitors ? Acquire Stericycle ? Develop Nuclear Waste Management

As WMI takes an aggressive approach toward sharing ideas and developing innovative new solutions, many of the alternatives identified above are already being pursued by WMI. After

significant discussion and deliberation, the team was able to isolate two alternatives that appeared to hold more weight than any of the others; expediting the use of alternative fuel with its existing trucks, and increasing the firm's recycling capacity. Both of these alternatives will not only improve the performance of WMI financially, but they will improve how the firm is viewed in the marketplace as well. We begin our recommendations with the latter.

5.3.0. Recommendations

Again, to reiterate the importance of the selections recommended by our team, two of the many alternatives were consistently revisited out of interest and overall impact. With the increasing scrutiny imposed by the government regarding regulation over the industry, increasing recycling capacity and taking a more aggressive approach towards implementing alternative fuels were selected as our recommendations. Aside from the overall feasibility of these alternatives, they are appealing due to the positive impact they have on the overall environment and will naturally increase how Waste Management Inc is perceived by its customers and the general public.

5.3.1 Commission Recycling Facilities in New Markets

Due to the currently large and growing demand for recycling services in the United States, it is recommended that WMI pursue a strategy to increase its recycling capacity. Specifically, WMI should open three new recycling facilities in profitable geographic areas in which it currently does not have a recycling facilities: Atlanta, Seattle, and San Antonio. If enacted, this course of action would work towards satisfying one key success factor, Meeting Recycling Demand. The current recycling operations at Waste Management and the justification for this course of action are described in further detail below.

Recycling at Waste Management

Currently, WMI's wholly owned subsidiary, Waste Management Recycle America (commonly referred to as Recycle America), is the largest recycler in the United States. It markets recycling services to 27 million commercial, industrial, and residential customers. Overall, Recycle America currently operates 80 recycling plants and provides services for more than 140 locations in the U.S. and Canada. Additionally, it operates 11 container processing facilities, 1 plastics recycling facility, and 3 electronics recycling facilities. A map of recycling locations is shown in the figure below.

Figure 1 – Map of Recycle America Locations in the United States

*(Waste Management Recycle America, 2006)

WMI has led the way in developing new technologies to improve the convenience and efficiency of its recycling operations. "In 2001, Waste Management became the first major solid waste company to focus on residential single-stream recycling, which allows customers to mix recyclable paper, plastic and glass in one bin. Residential single stream programs have greatly increased the recycling rates, recovering as much as three times the amount of recyclable materials." (Waste Management Recycle America, 2006) This innovation has allowed WMI to process a greater volume of recyclable materials in an effort to meet the growing demand.

Objective

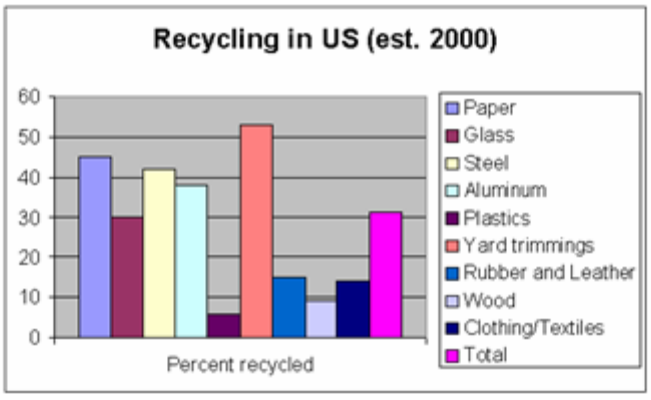
To increase recycling capacity of the company by building three new recycling plants, with an estimated initial capital outlay of $45MM. The economics for this project were developed bearing a 10 year project timeline, the first two years of which involve the construction of the new plants. The project will provide a $30MM NPV, 5.3 year payback, and 25% IRR.

Justification

Currently in the United States, demand for recycling is much larger than the available supply of recycling services. While overall growth of waste recovery demand is unlikely to grow at an exceptional rate in the near future, recycling is an industry in which companies can more easily drive up volume. This can be accomplished by positioning recycling services to meet the currently unsatisfied demand.

Additionally, demand for recycling is likely to grow in the future as new environmental regulations are put into place demanding more environmentally friendly operations. Recycling is generally seen to be an environmentally friendly alternative to traditional waste disposal, as it does not involve the creation or filling of landfills. For example, in 1999 recycling activities prevented approximately 64 million tons of material from ending up in landfills. The lack of landfills also makes companies involved in recycling less vulnerable to environmental

Figure 2 – Percentage of Total Material Waste that was Recycled in 2000
(The Economics of Recycling, 2006)



concerns that are inherent with landfills.

Finally, in general the American population is becoming gradually more and more environmentally conscious. More people are recycling each year in an effort to do their part for environmental conservation. This trend towards a more environmentally conscious population is likely to continue to drive the demand for recycling services. As the Environmental Protection Agency (EPA) website states, "today, this country recycles 28 percent of its waste, a rate that has almost doubled during the past 15 years" (Recycling, 2006). The growth rates of recycling for specific materials are even more impressive. Currently, "42 percent of all paper, 40 percent of all plastic soft drink bottles, 55 percent of all aluminum beer and soft drink cans, 57 percent of all steel packaging, and 52 percent of all major appliances are now recycled" (Recycling, 2006). Of the people that do not currently use recycling services, many do not do so because of the lack of availability of those services. It is likely that more and more people will use these services as they become available, which should further increase the demand for recycling. While the current size of the customer market for recycling services is large, the potential market is even larger.

For WMI, overall recycling volumes increased by 36% between 2004 and 2005. This trend is expected to continue into the future. Total operating revenues for WMI's recycling operations totaled $833 million in 2005. This accounted for 6.37% of Waste Management's total operating revenues.

Figure 3 - Operating Revenues by Operating Unit (in millions)

	Years Ended December 31,		
	2005	2004	2003
Eastern	$ 3,809	$ 3,744	$ 3,591
Midwest	3,054	2,971	2,840
Southern	3,590	3,480	3,149
Western	3,079	2,884	2,725
Wheelabrator	879	835	819
Recycling	833	745	567
Other	296	261	220
Intercompany	(2,466)	(2,404)	(2,263)
Total	$13,074	$12,516	$11,648

(Waste Management, Inc., 2006)

While recycling currently accounts for only a small proportion of WMI's total operating revenues, its revenues are growing more than twice as fast as total company revenues. Recycling related revenues grew by 31.40% in 2004 in comparison with a total company revenue growth of 7.43%. This also remained true in 2005 as recycling related revenues grew by 11.81% while total company revenues grew by only 4.46%. This contrast is indicative of where the demand is in the waste materials industry.

Figure 4 - Mix of Operating Revenues from Different Sources (in millions)

	Years Ended December 31,		
	2005	2004	2003
Collection	$ 8,633	$ 8,318	$ 7,782
Landfill	3,089	3,004	2,834
Transfer	1,756	1,680	1,582
Wheelabrator	879	835	819
Recycling and other	1,183	1,083	894
Intercompany	(2,466)	(2,404)	(2,263)
Total	$13,074	$12,516	$11,648

(Waste Management, Inc., 2006)

Demand for traditional waste disposal services is growing at a rate that is, while steady, extremely slow. In contrast, growth of demand in the recycling industry is increasing at a much

faster rate. For this reason, WMI should put effort into growing its recycling capacity in order to meet the current demand, and the demand forecasted for the future.

Deliverables

The construction of the three proposed recycling facilities in Atlanta, Seattle, and San Antonio should add $45 million to Recycle America's revenue stream, which should equate to an additional gross income of approximately $15 million after operating expenses are accounted for during the first year of operations following start-up of the three facilities.

Revenues are forecasted to increase by an additional 3% each year following start-up in response to general population growth in the three markets and operational efficiencies that are expected to occur as a result of more experienced management with each successive year. At the end of the 10th year following the project start date (the end of the 8th year following the startup of the facilities), the revenue generated by each individual facility will have increased to $18.45 million, resulting in total revenues of $55.35 million between the three facilities. After operating expenses are accounted for, the combined gross income for all three facilities at the end of the 10th year should be $18.45 million.

Implementation

In order to increase its recycling capacity, WMI can either build new recycling facilities, acquire existing companies that own recycling facilities, or it can expand its current operations at its existing recycling facilities. It is recommended that of these options, WMI should pursue a strategy of building new recycling facilities. Building new facilities would serve the goal of increasing capacity in two ways.

First, WMI would be able to install the latest recycling technology at its new facilities. Waste Management has been the leader in technological innovations in the recycling industry. It was the first to introduce the single stream system of recycling through which it was able to increase recycled material volumes three-fold. By building new facilities, WMI will incur the cost of implementing the new technologies with its initial capital expenditures. Were it to acquire existing facilities, it is likely that the acquired facilities would not have the same level of technology. To bring the acquired facilities up to the latest standard, Waste Management would have to incur an additional upgrade cost on top of the acquisition cost.

Also, in building new facilities Waste Management would be able to position itself in profitable markets in which it does not currently compete. While Waste Management Recycle America has obtained a solid foothold throughout much of the country, there are still regions and major population centers in which it does not have facilities. These new markets offer a slightly better opportunity for immediate volume growth than do those in which Recycle America already exists, since the markets there are untouched. By building new facilities, rather than upgrading existing facilities, WMI will be able to tap into new markets and set up a base of operations for future growth in those regions.

For these reasons, building new facilities is the best option for WMI as it allows the company to install the latest technology for optimum efficiency, and it allows the company to tap into markets in which it currently does not compete.

WMI typically spends between $1.2 billion to $1.5 billion a year in capital expenditures and acquisitions. A portion of this should directed towards building new recycling facilities. Within 2 years, WMI should build new recycling facilities in Atlanta, Seattle, and San Antonio. These are

three of the major population centers in the United States in which there are currently no Recycle America facilities. The population figures reveal while these specific locations are so enticing. Atlanta currently has a population of 419,122, but if the population of the surrounding areas are included the population spikes up to 4,708,297. Seattle (population 571,480) also has a large metropolitan area with a population totaling 3,810,856. San Antonio has a population of 1,236,149 that becomes 1,854,080 if the surrounding areas are included. These locations are enormous markets in which there is likely to be recycling demand far in excess of what is currently being provided which is what makes them attractive geographical locations. The opening of new facilities with the latest technologies would allow Waste Management to tap into this demand.

Milestones

New plant construction projects should be initiated immediately for each of the three locations. All design, procurement, construction, and start-up activities should be completed for each plant within two years (24 months) of the project start date. It is the recommendation of this analysis that all 3 plants be identical in design and engineering, and that all three projects begin simultaneously.

00 Months – Project Start Date

- Begin contract negotiations which local authorities in Atlanta, Seattle, and San Antonio

09 Months – Finalize contracts with local authorities

- Begin facility design and engineering (3rd Party)
- Begin site acquisition process, permitting, etc. in Atlanta, Seattle, and San Antonio
- Begin facility manager hiring process for the three facilities

13 Months – Complete facility design activities

- Begin procurement of facility processing equipment and trucking
- All permitting is completed or otherwise addressed

15 Months – Break ground at new facility site

16 Months – Complete equipment procurement activities

- All equipment must be onsite or otherwise addressed

18 Months – Begin facility employee and driver hiring process

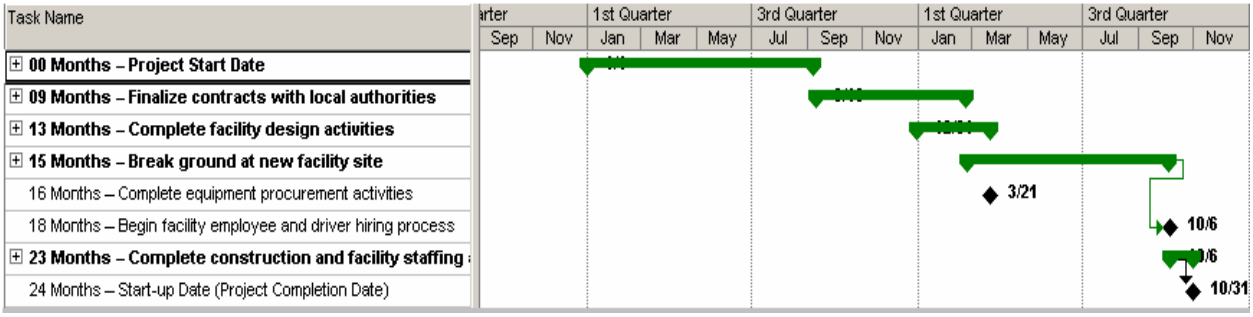
23 Months – Complete construction and facility staffing activities

- Complete any necessary final measures prior to start-up

24 Months – Start-up Date (Project Completion Date)

- Begin facility operations in Atlanta, Seattle, and San Antonio

The milestones shown are based on an estimated time needed to complete each step. Milestones completed prior to the estimated time will result in a start-up date that occurs prior to the estimated start-up date by an equal amount of time. Likewise, milestones completed after the estimated completion time will cause the start-up date to begin at an equally late time. The lone exception to this is the completion of the hiring of facility employees and truck drivers, as it will be possible to begin some facility operations even if facilities are not completely staffed.



Long-Term Consequences

Each plant will cost approximately $15 million to build and equip with processing equipment and trucking. Therefore the total cost to build these three plant will be approximately $45 million. Average revenues for Recycle America facilities are approximately $10 million per year for each facility ($833 million in total revenues for 80 facilities). Forecasted revenues in the first year of operations for the new facilities are $15 million each due to the new technology that will be installed in the facilities, and due to the fact that the locations are in new markets.

From a long-term financial perspective, the project justifies itself. For accounting purposes, the construction of the three new facilities in Atlanta, Seattle, and San Antonio will be a 10 year project. The first two years of the project will be the design and construction phase, and the final eight years will be those in which the facilities are in operation. This is a 10 year project because a major overhaul of facility operating equipment and trucking will be required at each facility following the 8th year of operation. After an initial capital outlay of $45 million for the three facilities, operating revenues totaling $15 million will begin at Year 2 and increase at a rate of 3% with each successive year. For the purpose of financial analysis, cost of capital is 15%. Taking this into account, the project has a Net Present Value (NPV) of $30.1 million and an Internal Rate of Return (IRR) of 25%. Overall, the project has a payback of 5.31 years.

In addition to gaining a foothold in new markets, this action plan will give Waste Management Recycle America a base from which to grow operations in these regions in the future. Once the facilities are built, WMI can always expand the facilities to meet rising population and the corresponding rise in demand for recycling in those markets.

A potential negative consequence of pursuing the construction of new facilities is that it will take resources away from other initiatives, including recycling plant upgrades at existing facilities, acquisition of competitors' facilities, and other project involving capital expenditures. However, while some capital spending will have to be put on hold to fund the new ventures, the upside to the new facilities should outweigh this opportunity cost.

Risk Analysis

The construction of new recycling facilities is based on the assumption that demand for recycling will not decrease from its current level in the near future, and that demand for recycling will rise in the coming years. This forecasted rise in demand is expected to coincide with the rising environmental consciousness in the general public. With most recycling facilities currently running at full capacity, there is solid basis on which to believe that recycling facilities in major population centers such as Atlanta, Seattle, and San Antonio will be successful.

The primary risk involved in the commissioning of new facilities is that they will not pay themselves back within a period of time that justifies the capital expenditure. The current estimate for the facilities to break even is 5.31 years. This is an acceptable period of time for such an investment. However, should there be a sudden decrease in the demand for recycling services this interval may turn out to be a longer period of time. Additionally, factors such as fluctuating fuel costs, global politics, and local economies can have a significant impact on the construction costs of new buildings. Should events occur on one of these fronts that affect the cost of building materials, the cost to transport materials or equipment, or the cost of labor, it could have a significant impact on the final construction cost of the new facilities. An increase in construction cost, assuming the same level of revenue, would mean that the facility may not pay itself back in an acceptable period of time.

Conclusion

As discussed earlier, the total amount of $45 million that it will take to build new facilities in Atlanta, Seattle, and San Antonio is a small fraction of WMI's total capital expenditure each year. The facilities should add $15 million to Recycle America's gross income following start-up, a figure that should increase to $18.45 million in the project's 10th year. By constructing new recycling facilities, WMI would be investing in the side of its business that is in the most rapid stage of growth. This makes it likely that the facilities will not only be profitable ventures in the near term, but that they will also be lucrative profit centers for Recycle America into the future.

5.3.1 Expand on use of Alternative Fuel sources

Due to the rising cost of oil across the globe, companies are feeling the effects in various ways. WMI operates one of the largest trucking fleets in the industry, approximately 22,000, and with their heavy reliance on diesel fuel as their source of operation, the cost of oil has an even greater impact to WMI. Today, WMI operates close to 500 trucks fueled completely by Liquefied Natural Gas (LNG) instead of Diesel Fuel. This use of alternative fuels has an enormous impact on their cost of operations, as well as an enormous impact to the environment. By utilizing this existing technology Waste Management will satisfy one of the Key Success factors we have identified; Managing Operating Costs.

Objective

The objective of this project is to replace all diesel trucks with LNG trucks within 10 years. While the company is in the implementation phase of the project, they will experience a total savings in fuel costs of $738 million over the first five years (years 1-5), and $3.2 billion over

the second five years (6-10). Although the company will increase annual capital spending by approximately $550 million dollars per year throughout the project, the company will reduce capital spending ($31 million) after the project is implemented due to the useful life of the new trucks extending the required replacement time by 2 years.

Justification

Currently in the United States the demand for alternative fuel sources is at an all time high. The recent economic conditions with respect to the price of oil, have taken a negative impact on WMI most recent operating expenses. In an effort to re-shape their costs, and help control the current dependency of oil by US corporations, a large scale effort must be taken to convert their existing diesel powered fleet to utilize Liquid Natural Gas. Liquefied Natural Gas is a naturally occurring mixture of hydrocarbons (usually methane) that has been purified and condensed to a liquid form by cooling cryogenically to -260ºF. At normal atmospheric pressure, it occupies only 1/600th the volume of natural gas in vapor form. Its primary purpose is as a long term transportation alternative to imported natural gas. Because of its volume reduction capabilities, its transportability makes it very economical to ship overseas before it's de-liquefied and sent through the regular US pipeline system.

Since LNG is imported from other countries it must be received at one of 5 US receiving ports. At that time it can be either de-liquefied or stored on tankers and delivered to LNG distribution centers used for alternative purposes. They centers are where it can be purchased and delivered to Waste Management's new LNG fueling stations. Compared to conventional fuel sources, LNG's flammability is limited. It is nontoxic, odorless, non-corrosive, and non-carcinogenic. It presents no threat to soil, surface water, or groundwater.

The purpose of undertaking this project has many two main benefits. First, it will ultimately lower the firms operating costs by replacing their need for costlier oil based diesel fuel. Second, it will fall into line with recently discussed federal regulation to support alternative fuel sources for major US corporations. Tax incentives will be given to companies that can use alternative fuel sources, while at the same lower the amount of emissions being produced. This will result in additional income in respect to their tax relief, while at the same time lower their overall operating costs.

Deliverables

The deliverables for this project will include a conversion of approximately ½ of their 22,000 truck fleet by the year 2011. Included in this conversion are the following detailed items:

- 22,000 new LNG fueled trucks within 10 years.
- 100 regionally located LNG pumping stations used for refueling.
- A Partnership with existing natural gas pipelines to receive the gas wherever it's imported.

Implementation

In order for Waste Management to better manage some of its operating costs, they must implement a massive conversion of their line of diesel fuel trucks. In order to operate these alternatively fueled vehicles, they must also build LNG pumping stations, and build networks for distribution across the country.

The first step in the implementation would be to begin purchasing the new LNG fueled trucks. The plan would be to convert 22,000 in 10 years across the country, so each year they expect

to successfully convert 2,200. This modest approach, will allow them time to correct any errors or procedural problems they have within the first year, to correct for the following years. The estimated cost of a new LNG fueled truck costs about $200,000.

The 2nd phase of the project would involve the building of 100 LNG pumping, or refueling stations regionally located across the country. These stations are what stores the LNG fuel, keeps it cool and protected, and allows extremely fast refueling to either tanker trucks for transport, or to the operating vehicles themselves. These stations also provide the means to store large amounts of LNG, to keep in reserve, in case of times where economic conditions do not warrant frequent purchases on the open market. The estimated cost of each LNG pumping station ranges from $300,000 to $500,000 depending on its size, and storage capacity. The plan is to begin building 10 immediately in the first year, with an estimated 11 month construction time for completion. The plan will be to continue 10 per year for the remaining 9 years of the project.

The 3rd phase of the project involves logistics and distribution of the supply for the LNG stations developed in Phase II. A cooperative partnership agreement will be created with Columbia Natural Gas Pipeline Company where as they will be responsible for receiving the LNG from overseas and transportation to the various regional LNG stations Waste Management will be constructing.

The implementation of this project will involve a substantial financial investment at the beginning. Each year an investment of $45 million will be required to construct that year's phase of the project. The project timeline, long term effects, and risk associated with this project will be discussed in the later sections.

Diesel										
Curent annual diesel costs	$ 500,000,000	550,000,000	605,000,000	665,500,000	732,050,000	805,255,000	885,780,500	974,358,550	1,071,794,405	1,178,973,846
Current trucks in the fleet	$ 22,000									
Fuel cost per diesel truck	$ 22,727	$ 25,000	$ 27,500	$ 30,250	$ 33,275	$ 36,603	$ 40,263	$ 44,289	$ 48,718	$ 53,590
Anticpated annual increase in diesel	10%									
LNG										
Fuel costs per LNG Truck	$ 6,250	$ 6,563	$ 6,891	$ 7,235	$ 7,597	$ 7,977	$ 8,376	$ 8,794	$ 9,234	$ 9,696
Anticipated annual increase in LNG	5%									
Operating costs (fuels)		15%								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
New LNG trucks	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200
Fleet LNG	2,200	4,400	6,600	8,800	11,000	13,200	15,400	17,600	19,800	22,000
Diesel fleet	19,800	17,600	15,400	13,200	11,000	8,800	6,600	4,400	2,200	-
LNG Price	13,750,000	28,875,000	45,478,125	63,669,375	83,566,055	105,293,229	128,984,205	154,781,046	182,835,111	213,307,630
Diesel	450,000,000	440,000,000	423,500,000	399,300,000	366,025,000	322,102,000	265,734,150	194,871,710	107,179,441	-
	463,750,000	468,875,000	468,978,125	462,969,375	449,591,055	427,395,229	394,718,355	349,652,756	290,014,552	213,307,630
Savings	36,250,000	81,125,000	136,021,875	202,530,625	282,458,945	377,859,771	491,062,145	624,705,794	781,779,853	965,666,216
		61,342,155	89,436,591	115,797,542	140,432,016	163,359,206	184,608,449	204,217,432	222,230,627	238,697,920
					738,386,445					3,241,073,778

Milestones

The project timeline is constructed based on the assumption that all necessary contracts have been signed, engineering specs have been developed and approved, and any necessary construction sites have been decided on. This project begins at year 1 when ground breaking begins, and when the first inventory is purchased.

Year 1 – Project Start Date

- Initial purchase of 2,200 LNG trucks begins.
- Location of the 10 US locations where these trucks will operate begins
- Ground Breaking on the first 10 LNG stations
- Logistics and negotiations with Pipeline Company begin.

Year 2 – Phase I complete – begin Phase II

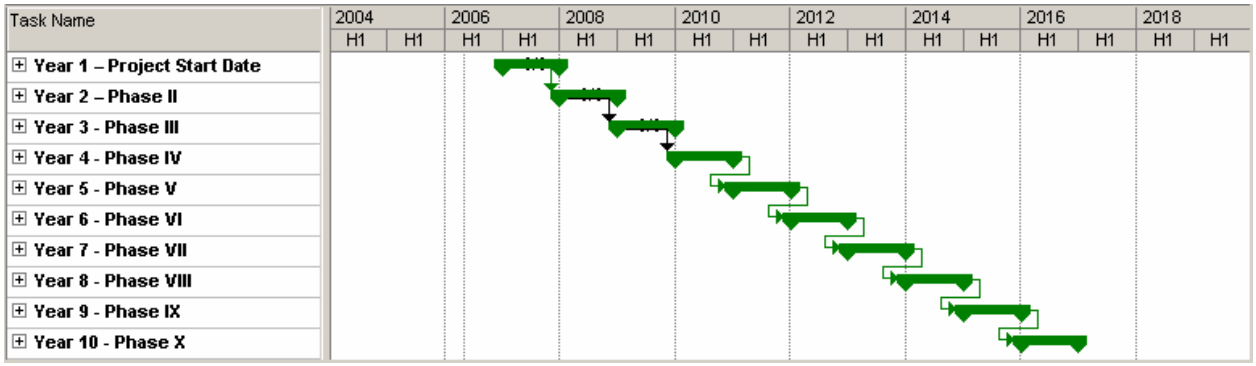
- 10 LNG stations are in operation.

- 2,200 LNG trucks are up and running on normal business routes.
- Begin purchase of next 2,200 LNG trucks
- Begin ground breaking on next 10 LNG stations

Year 3-10 – Phase III -X

- Remaining 8 years repeats the same operation as Phase II
- End of year 10 all 22,000 trucks are in operation
- End of year 10 all 100 stations are fully operational

This timeline is a very high level estimate used to show a standard schedule that can be used as a guide for the project overall. Deviations in supply or materials, weather, or other unknown factors could delay certain sections of this project. Part of the yearly time table for each phase of the project will also involve training drivers and maintenance workers to care for the new LNG vehicles.



Long Term Effects

Considering that each trucks costs $200,000, and each LNG station costs $400,000 to build, WMI is looking at a total cost of capital to pursue this operation at around $1.2 billion per year; however, the company currently spends $660 million in capital replacement of their existing trucks, and will receive grants due to the emission reductions. Considering this large of an

investment, WMI does not expect to recognize a return on this investment immediately. The long term effects of this vehicle conversion reaches far beyond financial improvements.

Lesson Oil Dependency

The return on this investment comes in different forms. First, obviously WMI will lesson its dependency on oil. This eliminates one of the key economic conditions that drive their cost of operations. Current industry trends and federal government regulations are making it more difficult for many companies to continue operating in their current form. While the price of oil continues to rise affecting the price of diesel fuel, the federal government is also placing restrictions on suppliers to use new, less pollutant additives. These additives are difficult to find, and will eventually exhaust the supply to a point where the price of a single gallon of diesel fuel could be 3 times as much as current prices.

Cleaner Burning

LNG fueled vehicles produce potentially 1/6th the emissions that standard oil based fuel engines produce. This has an obvious benefit to the environment. In addition, the federal government has begun a program of offering incentives, and possibly tax credits to companies who can exceed emissions limits that are soon to be imposed. When Waste Management implements this plan, they will far and away exceed all governmental regulations on producing emissions. Because of the clean burning fuel, drivers, maintenance workers and customers alike, will comment on the low noise factor and lack of odor from these vehicles while in operation.

Reduce Operational Costs

It is estimated that Waste Management spent over $500 million in diesel fuel last year alone in order to operate their trucks that recover and transport waste products. As the price of oil, and

thus diesel fuel continues to rise, companies will most likely see the affects on their overall bottom line. Those companies, such as Waste Management, that act quickly and prepare for such an economic situation will most likely prosper. Considering that on average the cost per gallon of LNG is 25% less than that of diesel fuel, Waste Management expects to see a similar increase to their net income as a result of this project.

Risk Analysis

The suggestion for this conversion away from diesel fuel is based on the assumption that oil prices will continue to be high or potential rise higher for the next 3 to 5 years. One risk is that the oil market may adjust itself or crash to a point where Waste Management would be paying more for LNG then it would have paid for diesel fuel.

Another risk is that delays and problems may exist that would extend the duration of the construction of the LNG pumping stations. If these stations are not operational when they are ready to roll out the new fleet, the trucks would have to wait until such time they are ready since they are the primary source of fuel being provided to these new vehicles.

A final risk is of course financial. Considering the substantial financial investment required for this project, and that the returns are based on the result of a speculative commodity market, the estimated reduction in operating expense may not be as significant as expected.

As with all investing there is always risk, and careful consideration and planning must be taken to make sure most risk is eliminated. Watching the project plan carefully, and making adjustments early enough as to not postpone key milestones is very important. Risk analysts should be employed to monitor the oil markets and natural gas markets to make sure prices are still in line with their proposed strategy.

If changes in any of these conditions do occur, the project can always be stopped or postponed, that is the reason for the phased approach, instead of the “all at once” approach.

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7.0.0. Appendices I

EXHIBIT I

Consolidated Financial Statements

Waste Management			
Income Statement			
	2005	**2004**	**2003**
Total Revenue	13,074,000	12,516,000	11,574,000
Cost of Revenue	8,631,000	8,228,000	7,517,000
Gross Profit	4,443,000	4,288,000	4,057,000
Operating Expense			
Research and Development	-	-	-
SG&A	1,276,000	1,267,000	1,216,000
Other	1,457,000	1,322,000	1,301,000
Depreciation Expense	-	-	-
Total	2,733,000	2,589,000	2,517,000
Earnings Before Interest and Taxes	1,710,000	1,699,000	1,540,000
Total Other Income	(74,000)	(30,000)	28,000
Interest Expense	496,000	455,000	439,000
Earnings Before Taxes	1,140,000	1,214,000	1,129,000
Taxes	(90,000)	247,000	404,000
Net Income	1,182,000	939,000	630,000
Balance Sheet			
	2005	**2004**	**2003**
Assets			
Cash	666,000	443,000	135,000
Short Term Investments	-	-	-
Accounts Receivable	2,098,000	2,007,000	2,232,000
Other Current Assets	588,000	279,000	139,000
Inventory	99,000	90,000	82,000
Total Current Assets	3,451,000	2,819,000	2,588,000
Long Term Investments	-	-	-
Deffered long term asset charges	-	-	-
Buildings and Equipment	11,221,000	11,476,000	11,411,000
Goodwill & Intangibles	5,514,000	5,453,000	5,422,000
Accumulated Amoritization	-	-	-
Total Fixed Assets	17,684,000	18,086,000	18,068,000
Total Assets	21,135,000	20,905,000	20,656,000
Liabilities and Owner's Equity			
Accounts Payable	2,252,000	2,358,000	2,389,000
Short-term Bank Notes	522,000	384,000	514,000
Total Current Liabilities	3,257,000	3,205,000	3,332,000
Long-term Debt	8,165,000	8,182,000	7,997,000
Other Liabilities	3,592,000	3,547,000	3,764,000
Common Stock	6,000	6,000	6,000
Retained Earnings & Other Equity	6,115,000	5,965,000	5,557,000
Total Liabilities and Owner's Equity	21,135,000	20,905,000	20,656,000