1. Introduction

Mike Sutherlin, CEO of Joy Global Inc. (“JOY”), a global mining equipment manufacturer, was having lunch, in downtown Milwaukee, Wisconsin, with his wife, in November of 2010 when his cell phone began ringing. He hesitated answering, but recognizing the name, picked up to hear surprising news. It was a courtesy call from a friend at Caterpillar Inc. (“CAT”), the $85 Billion USD juggernaut, letting him know that CAT had just purchased JOY’s cross town rival, Bucyrus International, Inc. (“BI”), for $8.8B USD.

Joy Global, MBA Candidate Carlos E. Fonseca prepared this note under the supervision of Professor Ismael Oliva B. This case was developed for class discussion and is not intended to be an endorsement, source of primary data or an example of effective or ineffective management.
JOY and BI were 2 Milwaukee, Wisconsin based mining equipment manufacturers who competed head to head on a worldwide stage. Evenly matched, with a market cap around $7B USD each, these two companies had sparred in the surface and underground mining equipment market for heavy duty extraction mining equipment for over a hundred years since their founding in 1888 and 1889, respectively. All of a sudden, with this acquisition, what had always been a cross town rivalry would take on new proportions. CAT was the undisputed world wide heavy machinery giant with a market cap 10 times the size of JOY. Regarding the acquisition, Sutherlin comments, “Instead of a smaller competition across town all of a sudden this changed the world for us.” CAT brought to the table revenues which were 12 times larger than JOY, a global brand that stood for reliable heavy machinery, exceptional service through its army of worldwide distributors, and the ability to win deals by financing equipment through CAT financial.

Sutherlin's team had just put the finishing touches on their strategic plan for 2010. The exercise had reaffirmed some of JOY's strategies, such as a continued commitment to focus solely in the mining equipment industry (versus including construction and farming equipment markets like CAT), a direct sales and service go to market model (versus third party distributors like CAT), and a focus on premium products with premium pricing (versus wining deals on price like BI). The plan also called for some changes such as moving beyond the dependence on a single product for their surface mining division and a move beyond coal specific products for its underground division. Would this strategy need to be revised? Would the plan withstand this new challenge? Sutherlin knew it was time to get his leadership team together, circle the wagons, and figure out, what, if anything, JOY could do to respond to this new competitive threat from CAT.
2. Mining

JOY and BI manufactured, sold and provided maintenance and repair services, for mining equipment. As its name implies, mining equipment were machines used in mining, which is the extraction of valuable minerals or other geological material from the earth. The industrialized world requires minerals such as coal, iron ore, oil, copper, gold, silver, molybdenum, lithium, and others to generate the energy and to make the products that we consume. Coal is mostly used to generate the energy that produces steam to move turbines to generate electricity around the world. Iron ore is used mostly to produce steel which is the skeleton of all modern construction, from buildings, to bridges. Copper, due to its electrical and thermal conductivity properties is mainly used in electrical wires, plumbing and industrial machines. Gold and silver have for ages been used mainly for jewelry and as currency, but are also used in electronics and medicine. Molybdenum, often mined with Copper, is used mainly in alloys such as structural steel and stainless steel. Industrialization drives the need for these commodities, especially steel, coal and copper. In 2010 industrialization in China and India were driving the demand and the prices for these commodities. In 2009 China was the number one consumer of iron ore, copper, aluminum, nickel and coal (Exhibit 1, 2).

All these minerals were extracted from the earth either through underground mining or surface mining, often in some of the most remote and inhospitable areas of the world. One such example was the open pit copper mine Doña Ines de Collahuasi at almost 15,000 feet (4,500 meters) above sea level in the remote desert plateau of the Andes mountain range in northern Chile, where JOY and BI mining equipment operated 7 days a week, 365 days a year. A mine like Collahuasi was the result of years of exploration, undertaken at great risk and cost. Of the thousands of sites explored by a mining company, only a few were actually exploited. Once a mine was given the green light, profits were still years away.
Exhibit 1

China’s Share of Global Commodity Trade
(Net imports percent of world imports)\(^{1/}\)

Source: United Nations COMTRADE database

1/ Commodity groups are IMF Primary Commodity Price Index-weighted. Net imports are calculated as commodity imports less commodity exports as a percent of world commodity imports. A positive (negative) number indicates that China is a net importer (exporter).

Source: Excerpt from China’s Impact on World Commodities Markets. IMF Working Paper. Shaun K. Roache. May 2012.
Environmental impact studies and permits often took years and sometimes doomed an otherwise promising mine. Depending on the location, all of the infrastructure to exploit the mine, process the mineral, and transport it to the market, had to be built. Even before the mine owner purchased mining equipment, investment in the construction of processing facilities to transform the minerals for sale could cost billions of dollars. If the mine was remote, in order to take the mineral to market, roads, bridges, train tracks, airports and ports were needed to be built potentially costing more billions of dollars. All this investment even before the day to day operating cost of people and equipment took place. As a result, large scale mining operations were extremely capital intensive.

3. The Mining Equipment Industry

A. Mining Equipment

JOY estimated that in 2010 the global mining equipment market was around $53 billion USD. This number included the mining equipment which went hand in hand with the requirements of each stage of the mining process. (Exhibit 3) Ancillary construction and infrastructure equipment was not included. The mining process started with the exploration of the mineral resource. From there, the process moved into development of the ore body with modeling and drilling. Once the mine was ready, the first operational step was the extraction and mining of the ore body which was done with surface or underground mining techniques, using mining equipment like the kind offered by JOY and BI. (Exhibit 4.1 and 4.2) For surface mining, the equipment required at the extraction step were blast hole drills, draglines, electric rope shovels, hydraulic shovels, or large wheel loaders. For underground mining, the equipment required at the extraction step was continuous miners, roof bolters, scalers, road headers, or longwall systems.
Exhibit 4.1
Underground Mining Equipment offered by Joy Global's JMM Business (Joy Mining Machinery Inc.)

| Continuous miners | Longwall shearsers |
|-------------------|--------------------|
| Electric, self-propelled continuous miners cut material using carbide-tipped bits on a horizontal rotating drum. Once cut, the material is gathered onto an internal conveyor and loaded into a haulage vehicle or continuous haulage system for transportation to the main mine belt. | A longwall shearer moves back and forth on an armored face conveyor parallel to the material face. Using carbide-tipped bits on cutting drums at each end, the shearer cuts 1.2 to 6.5 meters of material on each pass and simultaneously loads the material onto the armored face conveyor for transport to the main mine belt. |

| Shuttle cars | Flexible conveyor trains (FCT) |
|-------------|--------------------------------|
| Shuttle cars, a type of rubber-tired haulage vehicle, are electric-powered with umbilical cable. They are used to transport material from continuous miners to the main mine belt where self-contained chain conveyors in the shuttle cars unload the material onto the belt. Some models of Joy shuttle cars can carry up to 22 metric tons of coal. | Flexible conveyor trains (FCT) - FCT’s are electric-powered, self-propelled conveyor systems that provide continuous haulage of material from a continuous miner to the main mine belt. Available in lengths of up to 570 feet, the FCT is able to negotiate multiple 90-degree turns in an underground mine infrastructure. |

(Continue)
**Conveyor systems** - Conveyor systems are used in both above- and under-ground applications. The primary component of a conveyor system is the terminal which itself comprises a drive, discharge, take-up and tail loading section.

![Conveyor System Image]

**Underground Services** - Joy’s service and support infrastructure quickly and efficiently provides customers with high-quality parts, exchange components, repairs, rebuilds, whole machine exchanges, and services. Joy’s cost-per-ton programs allow its customers to pay fixed prices for each ton of material mined in order to match equipment costs with revenues, and its component exchange programs minimize production disruptions for repair or scheduled rebuilds. Both programs reduce customer capital requirements and ensure quality aftermarket parts and services for the life of the contract. Joy sells its products and services directly to its customers through a global network of sales and marketing personnel.
### Electric mining shovels

Mining shovels are primarily used to load copper ore, coal, iron ore, oil sands, gold, and other mineral-bearing materials and overburden into trucks or other conveyances. There are two basic types of mining loaders: electric shovels and hydraulic excavators. Electric mining shovels typically feature larger dippers, allowing them to load greater volumes of material, while hydraulic excavators are smaller and more maneuverable. The electric mining shovel offers the lowest cost per ton of mineral mined. Its use is determined by the size of the mining operation and the availability of electricity. Dippers can range in size from 12 to 82 cubic yards.

### Walking draglines

Draglines are primarily used to remove overburden to uncover coal or mineral deposits and then to replace the overburden as part of reclamation activities. P&H’s draglines are equipped with bucket sizes ranging from 30 to 160 cubic yards.
Blasthole drills - Most surface mines require breakage or blasting of rock, overburden, or ore using explosives. A blasthole drill creates a pattern of holes to contain the explosives. Drills are usually described in terms of the diameter of the hole they bore. Blasthole drills manufactured by P&H bore holes ranging in size from 9 7/8 to 17.5 inches in diameter and can exert a pull down force up to 150,000 lbs.

Surface Services - Joy Global Services provides life cycle management support, including equipment erections, relocations, inspections, service, repairs, rebuilds, upgrades, used equipment, new and used parts, enhancement kits, and training. The term “life cycle management” refers to our strategy to maximize the productivity of our equipment over the equipment’s entire operating life cycle through the optimization of the equipment, its operating and maintenance procedures, and its upgrade and refurbishment. Each life cycle management program is specifically designed for a particular customer and that customer’s application of our equipment. Under each program, we provide aftermarket products and services to support the equipment during its operating life cycle. Under some of the programs, the customer pays us an amount based upon hours of operation or units of production achieved by the equipment. The amount to be paid per unit is determined by the economic model developed on a case-by-case basis, and is set at a rate designed to include both the estimated costs and anticipated profit.

Source: From Joy Global 2010 10K Annual Report.
Once the mineral was extracted, the material needed to be handled which means transported to the processing site. For surface mining, at the material handling step, the mining equipment required were off road haul trucks, mining loaders, scrapers, water trucks, and conveyors. For underground mining, at the material handling step, the mining equipment required were underground trucks, underground loaders, haulage systems, utility vehicles, and underground conveyors. Material handling lead to the next step which was crushing, screening and grinding to allow the material particles to become as small as possible. The mining equipment at this stage both surface and underground was various sized crushers, screeners and grinders. The last two steps which were known as processing could be broken down into concentration and refining, where the minerals were purified through large scale Crushing, Screening and Grinding segments of the mining equipment market, which JOY estimated to be $32 billion USD in 2010.

B. Manufacturing

Most mining equipment, to simplify, is made of steel, metal alloys, motors, transmissions, gears, electronic control systems, a great deal of labor and the know how to put it all together. Steel plate, the second largest contributor to cost, after labor, is a commodity and most equipment manufacturers were not big enough consumers to negotiate prices. As a result, mining equipment manufacturers had to purchase steel at spot market prices which fluctuated over time, and could wipe out the margin on a machine. For instance, a dragline (for surface) or a longwall (for underground) could each cost over $150M to make and the lead time to build was over a year, and then many months to install onsite. Many mining equipment sales were made more than 2 years ahead of the date the customer required the equipment working at the mine site. Therefore, the price of steel involved in the quote to come up with the price to charge the
customer could vary significantly from the price of the steel actually purchased to make the equipment. Companies like JOY protected themselves from the risk associated with purchasing steel at market prices by including a steel surcharge in contracts with customers. The steel surcharge would take the price of the equipment agreed to with the customer and add a surcharge based on the price at the time of manufacture, protecting the margin. JOY and BI had developed their own electric motors and transmissions. Mining Equipment companies were experts at manufacturing, but not at software and electronics. Most mining equipment companies had to work closely with suppliers such as ABB Ltd., Siemens AG, or General Electric to develop the electronic control systems to operate and run their machines. Once you developed the control system with one supplier you were basically stuck with them, as the control systems were the brains and nervous system of the machines, and the cost and complexity associated with switching was considerable.

Fixed assets required for mining equipment manufacture were substantial. Cavernous manufacturing facilities with state of the art machining tools and hundreds of workers were the norm. However, the largest barriers to entry were know how and economies of learning built over decades which if properly calibrated would result in rugged hard working equipment which would make a brand. Mining equipment is critical to the operation of a customer and most would find it difficult to experiment with a new untested supplier.

C. Aftermarket

For both JOY and BI the sale of the mining equipment was only the first step in a long term commitment with the customer. The repair and maintenance of the mining equipment is where the real earnings were, and this was referred to as the aftermarket. Although mining equipment is rugged, the working conditions are extremely
rough and maintenance and repairs are a must. To keep customers happy and mines producing, mining equipment required the right kind of aftermarket support, which consisted of both service and replacement part sales. Companies like JOY and BI handled the aftermarket through wholly owned subsidiaries and thereby kept strict controls over this part of their business and kept the margin to themselves. On the other hand, companies like CAT gave away the aftermarket to distributors, thereby sharing some of the margin, but ensuring worldwide coverage.

D. Customers

By 2010, years of consolidation in the mining industry had resulted in a few major multinational players, and fewer national or regional players. The top 40 mining companies, by revenue, were all the main customers of JOY and BI in 2010. According to consulting firm Price Waterhouse, for 2010 the combined revenue of the top 40 mining companies increased 32% since 2009, breaking $400 billion. Net profits were up 156% to $110 billion. Operating cash flows grew 59%, leaving more than $100 billion cash in their coffers. Total assets of the top 40 mining companies in 2010 approached $1 trillion (Exhibit 5).

No one customer of JOY or BI accounted for more than 10% of their revenue, but the number of customers was finite since large scale mining operations capable of purchasing JOY or BI mining equipment were a known variable. These were large multinational companies like BHP Billiton, Rio Tinto, Anglo, Xtrata, Glencore and Freeport-McMoRan which had both surface and underground mines. For example, Australian based BHP Billiton (BHP) owned over 70 different mines in 25 different countries, both surface and underground, and extracted 20 different commodities including Iron Ore, Coal, Copper, Aluminum, Lead, Zinc, Diamonds and Uranium. In 2009 BHP had revenues of $53 billion dollars and an operating
profit of $12 billion dollars. London based, Rio Tinto owned more than 50 surface and underground mines in 40 different countries and extracted iron ore, coal, copper, gold, lead, uranium and zinc. In 2010 Rio Tinto’s results were $55 billion dollars in revenue and an operating profit of $14 billion dollars. The smallest customer mentioned here, United States based Freeport-McMoRan owned over 15 mines in 5 different countries, both surface and underground, where it extracted copper, gold and molybdenum. In 2010 revenues were $19 billion and net income $4.2 billion.

Even though JOY and BI were small compared with their customers, mining equipment purchases were undertaken with great care by these customers and the purchasing drivers were the same for surface mining equipment as they were for underground mining equipment. A drill, and electric mining shovel, which were surface
mining equipment and a continuous miner or longwall system, which were underground equipment, were at the front lines of production removing the mineral from the ground 24 hours a day, 365 days a year. The equipment’s production capacity, speed, reliability and maintenance cost were very important to meet production targets. For instance, Minera Escondida, in Chile, the largest copper producing mine in the world, had only 10 operating electric mining shovels in operation. If one of these shovels had a catastrophic failure and was inoperable, this meant a loss of production whose consequences were in the millions of dollars. Customers also knew that an underperforming piece of equipment, over the long run, could also cost millions of dollars in lost production. Customers based their mining equipment purchases (mining capex) on the most reliable piece of equipment, the most productive piece of equipment, with the best support infrastructure at the lowest price.

Customer mining equipment purchasing decisions were driven by the price of commodities. (Exhibit 6 and 7) When there was an increased demand for commodities, such as copper, typically driven by industrialization, the prices of such commodities rose. When commodity prices rose and especially when the projection was for prices to remain high, customers invested in expanding production to sell more commodities. This meant that in anticipation of an increase in commodities demand customers would purchase additional mining equipment to increase production. In response to increased prices and increased production, customers would push equipment to its maximum capacity resulting which resulted in increased parts sales and maintenance work for the aftermarket service side. The same was also true in the reverse. When commodity prices were falling, customers would postpone new or expansion projects and would even close down unproductive mines. Customers slowing down production and not expanding reduced equipment sales and reduced parts and service dollars because equipment was not being used as much.
Exhibit 6

**DNB global mining capex model (USDbn) and YOY change (%)**

Exhibit 7

**World Mining Capex (USD millions) vs. Copper Price (USD cents/lb)**
Customers had different purchasing strategies, both for original equipment and for aftermarket services. For equipment purchases, some customers made all decisions at the local mine site level. In this case sales were targeted at the local mine site level, in country. Other customers had implemented different versions of strategic sourcing initiatives to consolidate purchases in a corporate sourcing group who would take local input but ultimately make a decision. With corporate sourcing, sales had to be targeted both at the corporate level and at the local level to convince two stakeholders. It was often the case that when the purchasing decision was undertaken at the local level, the mine managers wanted the most productive piece of equipment and the customer was willing to pay a premium for it, which favored JOY products. However, when a centralized sourcing organization was involved in making the decision, if this group was focused only on price, this is where JOY could lose deals to the competition.

On the service and aftermarket parts side, customers made these purchasing decisions at the local mine site level. Some customers internalized all their service, purchasing only the replacement parts from the mining equipment manufacturer, and other customers were open to externalizing the entire maintenance service to the same manufacturer. The decision to internalize or outsource was a pendulum and historically customers would go back and forth every few years on doing the service themselves and then outsourcing. Some customers had a strategy to focus on mining and leave the maintenance to the equipment manufacturer, while others felt they could do a better job at maintenance themselves, or were restricted by their labor unions to prevent the outsourcing of maintenance.
E. Competitors

Competition in the mining equipment industry was product dependent (Exhibit 8). The more specialized the product, the less competition and as a result, the less specialized a product was there were more competitors. In some of its product lines, for instance the large sized electric mining shovels and the monstrous draglines, JOY only had one competitor, BI. However, for the smaller electric mining shovel sizes, hydraulic excavators could be a substitute, and there were a handful of companies that produced these. In others products, like drills, JOY had many competitors, and in the less specialized conveying equipment, there were hundreds of competitors. On the underground side, JOY had only a couple competitors when it came to continuous miners and long wall systems, mainly BI. However, when it came to shuttle cars, and road headers there were hundreds of competitors.

Once the equipment is sold, aftermarket parts and services sales become the dividend. On the aftermarket side, however, a number of companies had reverse engineered many of the hundreds of parts that were required to be replaced in the mining equipment. These companies were referred to as “pirates” by the original equipment manufacturers, and their parts as “pirate parts”. These companies, claimed to offer customers the exact same part for a fraction of the cost. The “pirates” also offered services at the mine sites around the world. On the service side, a significant part of the business, equipment manufacturers competed against every mom and pop machining repair facility throughout the world. With some machining tools, welding equipment, and the knowledge of the product, many companies had popped up near mine sites to offer repair services to the customers. These local companies had lower overhead, were nimble, and could offer cheaper prices on repairs. With the mom and pops and the pirates, on the service side, mining equipment manufacturers had to compete with higher quality and customer service.
**Exhibit 8**

*Mining Equipment Suppliers Product Offerings*

| Company            | Dozers & Loaders | Wheel Loaders | Mining Trucks | Hydraulic Shovels | Surface Drills | Draglines | Surface Belt Systems | Crushers & Grinders | Belt Systems | Roof Supports | Armored Face Conveyors | Shearers | Drills | Trucks & Loaders | Continuous Miners | Diesel Transport |
|--------------------|------------------|---------------|---------------|-------------------|-----------------|------------|----------------------|---------------------|--------------|----------------|------------------------|-----------|--------|-------------------|---------------------|------------------|
| Caterpillar        |                  |               |               |                   |                 |            |                      |                     |              |                |                        |           |        |                   |                     |                  |
| Joy Global         |                  |               |               |                   |                 |            |                      |                     |              |                |                        |           |        |                   |                     |                  |
| Komatsu            |                  |               |               |                   |                 |            |                      |                     |              |                |                        |           |        |                   |                     |                  |
| Hitachi            |                  |               |               |                   |                 |            |                      |                     |              |                |                        |           |        |                   |                     |                  |
| Liebherr           |                  |               |               |                   |                 |            |                      |                     |              |                |                        |           |        |                   |                     |                  |
| Sandvik            |                  |               |               |                   |                 |            |                      |                     |              |                |                        |           |        |                   |                     |                  |
| Atlas Copco        |                  |               |               |                   |                 |            |                      |                     |              |                |                        |           |        |                   |                     |                  |
| Metso              |                  |               |               |                   |                 |            |                      |                     |              |                |                        |           |        |                   |                     |                  |
| Beart Longyear     |                  |               |               |                   |                 |            |                      |                     |              |                |                        |           |        |                   |                     |                  |
| ERA                |                  |               |               |                   |                 |            |                      |                     |              |                |                        |           |        |                   |                     |                  |
| Lonking            |                  |               |               |                   |                 |            |                      |                     |              |                |                        |           |        |                   |                     |                  |
| Sany Int.          |                  |               |               |                   |                 |            |                      |                     |              |                |                        |           |        |                   |                     |                  |
| ZZ Mining          |                  |               |               |                   |                 |            |                      |                     |              |                |                        |           |        |                   |                     |                  |
| Tiandi S&T         |                  |               |               |                   |                 |            |                      |                     |              |                |                        |           |        |                   |                     |                  |

*Note: Outotec develops concentration and refining products and is not included above.*

*Source: Morgan Stanley Research, Company Data*

**SOURCE:** Morgan Stanley Global Mining machinery Handbook, November 1, 2012, modified by author

*Wheel Loaders were distributed by Joy for Letourneau Technologies Inc. the manufacturer Caterpillar Product Portfolio Post Bucyrus Acquisition.*
a. Bucyrus International Inc.

BI, which began in Bucyrus, Ohio in 1880 and moved its headquarters to South Milwaukee, Wisconsin in 1893, was JOY’s main competitor for many years. Historically, BI was an early producer of steam shovels, and in 1904 BI supplied 77 of the 102 steam shovels used to dig the Panama Canal. By early 2010, BI matched JOY product for product in both underground and surface mining. However, in February 2010, BI had acquired the mining division of Terex Corporation for $1.3 billion and had added hydraulic excavators and haul trucks, which were product lines that JOY did not have.

In 2010, BI developed, manufactured and serviced mining equipment for the extraction of coal, copper, oil sands, iron ore and other minerals throughout the world. Similar to JOY, it operated in two business segments, surface mining and underground mining and similar to JOY, over the past 10 years, around 60% percentage of its revenue derived from the aftermarket services and 40% derived from original equipment. BI had around 10,000 employees and also targeted the same customers as JOY and provided the same services through wholly owned subsidiaries in the local countries. BI had manufacturing facilities in Australia, China, the Czech Republic, Germany, Mexico, the United Kingdom and the United States, and service and sales centers in Australia, Brazil, Canada, Chile, China, India, Indonesia, Peru, Russia, South Africa, and the United States.

In 2010 BI reported that in 2009 it had combined revenues of $2.7 billion USD, which was a 5.5% increase from 2008, and net income of $313 million, which was a 25% increase from 2008. In 2009 Return on Sales (ROS) was at 18%, Return on Assets (ROA) was at 13%, and Return on Equity was at 23%. 2010 results for BI were no longer available once it was absorbed by CAT.

JOY and BI were very similar companies in size, operating structure, and products; however, BI was known in the
market for winning deals based on price. “We could normally beat BI on performance and reliability of our products. But if BI wanted to get a customer like a greenfield site, they dove in and discounted and could win the business,” said Sutherlin. Greenfield sites were new projects, while brownfield sites were established mining operations.

b. Caterpillar Inc.

Caterpillar Tractor Co. was incorporated in California in 1925, and soon moved to its headquarters to Peoria, Illinois, where it eventually reorganized as CAT.

In 2010 CAT was the world’s leading manufacturer of construction and mining equipment, diesel and natural gas engines, industrial gas turbines and diesel-electric locomotives. CAT was one of the world’s most valuable brands, and was so well known and respected, it even licensed its trademark for a line of clothes and boots. Although some products were sold directly by CAT, most construction and mining equipment was sold through a global network of independent dealers. In addition to designing, manufacturing and selling the equipment, CAT also provided financing for equipment purchases through Cat Financial, which was something neither JOY nor BI provided.

CAT operated in three separate divisions:

1) Machinery, included the design, manufacture and selling of machinery for construction, mining, and forestry such as rack and wheel tractors, track and wheel loaders, pipelayers, motor graders, wheel tractor-scrappers, track and wheel excavators, backhoe loaders, log skidders, log loaders, off-highway trucks, articulated trucks, paving products, skid steer loaders, underground mining equipment, tunnel boring equipment and related parts.
2) Engines, which included the design, manufacture, and selling of engines for Caterpillar machinery; electric power generation systems; marine, petroleum, construction, industrial, agricultural and other applications.

3) Financial Products, which was principally Cat Financial which provided financing and leasing for customers and dealers to purchase Cat machinery, engines, turbines, marine vessels and other equipment. This division also provided insurance services.

In 2010 CAT revenues were $42.5 billion USD. In 2010 Return on Sales (ROS) was at 9%, Return on Assets (ROA) was at 7%, and Return on Equity was at 35% (Exhibit 9.1, 9.2, 9.3).

A key differentiator between CAT on the one hand and JOY and BI on the other hand was that CAT equipment was mainly distributed through a worldwide network of third parties whereby JOY and BI sold and serviced their equipment directly. In 2010 CAT had 50 dealers in the US and 138 dealers internationally serving 182 countries and operating in 3,475 locations. Many of the CAT engines were sold through an entirely different dealer network. Since these dealers were third parties, they did not exclusively sell CAT equipment, but they did service the CAT equipment. These dealers were managed through contractual relationships where a dealer was given the right to use the trademarks and sell CAT equipment in a geographic territory in exchange for an obligation to properly exploit that territory. The dealer network sold both mining, construction, forestry and other equipment and related services. It is estimated that in 2010, mining equipment sales accounted for no more than 20% of CAT revenues. Another difference between CAT and JOY and BI was the level of customization of the equipment.
## Exhibit 9.1

### Caterpillar Financials 2010

| CONSOLIDATED RESULTS OF OPERATIONS (USD $) | 12 MONTHS ENDED |  |  |  |
|------------------------------------------|-----------------|---|---|---|
| **IN MILLIONS, EXCEPT PER SHARE DATA** | **DEC, 31, 2010** | **DEC, 31, 2009** | **DEC, 31, 2008** | **DEC, 31, 2008** |
| **Sales and revenues:** | | | | |
| Sales of Machinery and Engines | 239,367 | 329,540 | $48,040 |
| Revenues of Financial Products | 2,721 | 2,856 | 3,280 |
| Total sales and revenues | 42,558 | 22,396 | 51,324 |
| **Operation costs:** | | | | |
| Cost of goods sold | 30,367 | 23,886 | 38,415 |
| Selling, general and administrative expenses | 4,248 | 3,335 | 4,399 |
| Research and development expenses | 1,305 | 1,421 | 1,728 |
| Interest expense of Financial Products | 914 | 1,045 | 1,153 |
| Other operating (income) expenses | 1,191 | 1,522 | 1,181 |
| Total operating costs | 38,625 | 31,819 | 46,876 |
| Operating pre | 3,963 | 577 | 4,448 |
| Interest expense excluding Financial Products | 343 | 389 | 274 |
| Other income (expense) | 130 | 381 | 327 |
| Consolidated profit before taxes | 3,750 | 569 | 4,501 |
| Provision (benefit) for income taxes | 968 | (270) | 953 |
| Profit of consolidated companies | 2,782 | 3,548 | 839 |
| Equity in profit (loss) of unconsolidated affiliated companies | (24) | (12) | 37 |
| Profit of consolidated and affiliated companies | 2,758 | 827 | 3,585 |
| Less: Profit (loss) | | | |
| Attributable to non controlling interests | 55 | (68) | 28 |
| Profit | $2,750 [1] | $ 895 [1] | $ 3,557 [1] |
| **Profit per common share (in dollars per share)** | | | | |
| | $4.28 | $1.45 | $ 5.83 |
| **Profit per common share-diluted (in dollars per share)** | | | | |
| | $4.15 [2] | $ 1.43 [2] | $ 5.66 [2] |
| **Weighted-average common shares outstanding (millions)** | | | | |
| - Basic (in shares) | 631.5 | 615.2 | 610.5 |
| - Diluted (in shares) | 650.4 [2] | 626.0 [2] | 627.9 [2] |
| **Cash dividends declared per common share (in dollars per share)** | | | | |
| | $ 1.74 | $1.68 | $ 1.62 |

[1] Profit attributable to common stockholders.
[2] Diluted by assumed exercise of stockbased compensation awards, using the treasury stock method.

*Source: Caterpillar Consolidated Financial Statements from Form 10-K, 2010.*
### Exhibit 9.2

| CONSOLIDATED FINANCIAL POSITION | 12 Months Ended |
|--------------------------------|-----------------|
| (USD SJ in Millions)           | DEC. 31, 2010   | DEC. 31, 2009 | DEC. 31, 2010 |
| **Current assets:**            |                 |               |
| Cash and short-term investments| 3,592           | 4,867         | 2,736         |
| Receivables - trade and other  | 8,494           | 5,611         | 9,397         |
| Receivables - Finance Deferred and Refundable income taxes | 8,298 | 8,301 | 8,731 |
| Prepaid expenses and other current assets | 908 | 862 | 1,017 |
| Inventories Total current assets | 9,587 | 8,360 | 8,781 |
| Property, plant and equipment - net | 31,810 | 27,217 | 31,885 |
| Long-term receivables - trade and | 12,539 | 12,386 | 12,524 |
| Other | 793 | 971 | 1,479 |
| **Long-term receivables – finance:** | | | |
| Investment in unconsolidated affiliated | 11,204 | 12,279 | 14,264 |
| Companies Noncurrent deferred and refundable | 164 | 105 | 94 |
| Income taxes | 2,493 | 2,714 | 3,311 |
| Intangible assets | 805 | 465 | 511 |
| Goodwill | 2,614 | 2,269 | 2,261 |
| Other assets | 1,538 | 1,632 | 1,453 |
| Total assets | 64,020 | 60,038 | 67,782 |
| **Short-term borrowings:** | | | |
| Machinery and Engines | 204 | 433 | 1,632 |
| Financial Products | 3,852 | 3,650 | 5,577 |
| Accounts payable | 5,856 | 2,993 | 4,827 |
| Accrued expenses | 2,280 | 2,641 | 3,254 |
| Accrued wages, salaries and employee benefits | 1,670 | 797 | 1,242 |
| Customer advances | 1,831 | 1,217 | 1,898 |
| Dividends payable | 281 | 262 | 253 |
| Other current liabilities | 1,521 | 1,281 | 1,450 |
| Long-term debt due within one year: | | | |
| Machinery and Engines | 495 | 302 | 456 |
| Financial Products | 3,430 | 5,399 | 5,036 |
| Total current liabilities | 22,020 | 18,975 | 25,625 |

(Continue)
| Long-term debt due after one year:                      | 2010   | 2009   | 2008   |
|--------------------------------------------------------|--------|--------|--------|
| Machinery and Engines Financial                        | 4,505  | 5,652  | 5,736  |
| Products Liability for postemployment                  | 15,932 | 16,195 | 17,098 |
| Benefits                                               | 7,584  | 7,420  | 9,975  |
| Other liabilities                                      | 2,654  | 2,496  | 2,634  |
| Total liabilities                                      | 52,695 | 50,738 | 61,068 |

| Commitments and contingencies                          |        |        |        |
|--------------------------------------------------------|--------|--------|--------|
| (Notes 20 and 21) Redeemable non controlling interest  | 461    | 477    | 524    |
| (note 24)                                              |        |        |        |
| Stockholders’ equity common stock of $1.00 par:        |        |        |        |
| Authorized shares:                                     | 3,888  | 3,439  | 3,057  |
| Shares: (2010, 2009 and 2008; 814,894,524) at paid-in  | -10,397| -10,646| -11,217|
| amount Treasury stock: (2010 * 176,071,910 Shares;    |        |        |        |
| 2009; 190,171,905 shares and 2008 -213,367,983 shares) |        |        |        |
| at cost                                                |        |        |        |
| Profit employed in the business                        | 21,384 | 19,711 | 19,826 |
| Accumulated other comprehensive income (loss)          | -4,051 | -3,764 | -5,579 |
| Non controlling                                        | 40     | 83     | 103    |
| Interests                                              |        |        |        |
| Total stod`holders equity                              | 10,864 | 8,823  | 6,190  |
| Total liabilities, redeemable Non controlling interest| 64,020 | 60,038 | 67,782 |
| interest and stockholders’ equity                      |        |        |        |

Source: Caterpillar Consolidated Financial Statements from Form 10-K, 2010.
### Exhibit 9.3

| STATEMENT 4                                      | CATERPILLAR INC. |
|-------------------------------------------------|-----------------|
| Consolidated Statement of Cash Flow For the Years Ended December 31 (Millions of dollar) |                 |
| Cash flow from operating activities             |                 |
| Profit of consolidated and affiliated companies  | 2,758 827 3,585 |
| Adjustments for non-cash items                  |                 |
| Depreciation and amortization                   | 2,296 2,336 1,980 |
| Other                                           | 469 137 355     |
| Changes in assets and liabilities, net of acquisitions: |                 |
| Receivables - trade and other                   | -2,320 4,014 -545 |
| Inventories                                     | -2,667 2,501 -833 |
| Accounts payable                                | 2,570 -1878 -129 |
| Accrued expenses                                | 117 -505 660    |
| Accrued wages, salaries and employee benefits   | 847 -534 154    |
| Customer advances                               | 604 -646 286    |
| Other assets – net                              | 358 235 -470    |
| Other liabilities - net                         | -23 12 -371     |
| Net Cash provided by (used for) operating activities | 5,009 6,499 4,672 |
| Cash flow from investing activities:            |                 |
| Capital Expenditures - excluding equipment leased to others | -1,575 -1,504 -2,320 |
| Expenditures for equipment leased to others     | -1,011 -968 -1,566 |
| Proceeds from disposals of leased assets and property, plant and equipment | 1,469 1,242 982 |
| Additions to finance receivables                | -8,498 -7,107 14,031 |
| Collections of finance receivables              | 8,987 9,288 9,717 |
| Proceeds from sale of finance receivables       | 16 100 949      |
| Investment and acquisitions (net of cash acquired) | -1,126 -19 -117 |
| Proceeds from sale of available-for-sale securities | 228 291 357 |
| Investments in available-for-sale securities    | 132 -128 197    |
| Net cash provided by (used for) investing activities | -1,595 846 -6,171 |

(Continue)
### Cash flow from operating activities:

| Description                                                                 | 2010  | 2009  | 2008  |
|----------------------------------------------------------------------------|-------|-------|-------|
| Dividends paid                                                            | -1,084| -1,029| -953  |
| Distribution to noncontrolling interests                                   | -     | -10   | -10   |
| Common stock issued, including treasury shares reissued                    | 296   | 89    | 135   |
| Payment for stock repurchase derivative contracts                          | -     | -     | -38   |
| Treasury shares purchased                                                  | -     | -     | -1,800|
| Excess tax benefit from stock-based compensation                           | 183   | 21    | 56    |
| Acquisitions of noncontrolling interests                                    | -132  | -6    | -     |
| Proceeds from debt issued (original maturities greater than three months)  |       |       |       |
| Machinery and Engines                                                      | 216   | 458   | 1,673 |
| Financial Products                                                         | 8,108 | 11,833| 16,257|
| Payments on debt (original maturities greater than three months)           |       |       |       |
| Machinery and Engines                                                      | -1,298| -918  | -296  |
| Financial Products                                                         | 8,108 | 11,833| 16,257|
| Short-term borrowings (original maturities, three months or less) – net     | 291   | -3,884| 2,074 |
| Net cash provided by (used for) financing activities                       | -4,613| -5,215| 2,955 |
| Effect of exchange rate changes on cash                                    | -76   | 1     | 158   |
| Increase (decrease) in cash and short-term investments                    | -1,275| 2,131 | 1,614 |
| Cash and short-term investments at beginning of period                     | 4,867 | 2,736 | 1,122 |
| Cash and short-term investments at end of period                           | $3,592| $4,867| $2,736|

All short-term investments, which consist primarily of highly liquid investments with original maturities of three months or less, are considered to be cash equivalent. Non cash activities: During 2010 and 2009, we contributed 1.5 million and 19.6 million shares of company stock with a fair value of $94 million and $718 million respectively, to our U.S benefit plans.

SOURCE: Caterpillar Consolidated Financial Statements from Form 10-K, 2010.
CAT had a wide selection of products, but each individual model was not customizable. Customization would be counterproductive to the manufacturing and supply chain efficiencies CAT gained through product standardization. On the other hand JOY and BI equipment was standard but in large part customized to fit each mine and customers’ requirements.

Regarding the different go to market models, Sutherlin said, “mining is 200 customers and construction is thousands of customers.... that is why CAT has the distributor network. We have a different business model, we live and breathe the direct model ... distributor model is against our core competency”. JOY’s strategy was to sell premium mining equipment directly through wholly owned subsidiaries without distributors and to provide direct service.

c. **Joy Global Inc.**

JOY was the publicly traded holding company of two separate but related companies, P&H Mining Equipment Inc. (“P&H”) and Joy Mining Machinery (“JMM”). P&H, based in Milwaukee Wisconsin, made surface mining equipment. JMM based in Lancaster, Pennsylvania, made underground mining equipment. P&H and JMM were the operating entities while JOY served as a holding company dealing with shareholders, investors and providing strategic guidance to the Presidents of P&H and JMM (Figure 1).
Mike Sutherlin was the JOY CEO in 2010. Reporting to him were Randy Baker, the President of P&H, and Ted Doheny the President of JMM. Each of the presidents ran their own independent company, with separate engineering, manufacturing, marketing, sales, finance, human resources and legal departments. On the one side you had “surface people” and on the other side you had “underground people” and internally they were considered different businesses. Although each segment claimed to have a different business model and customer concerns, the fundamentals of both businesses were the same. They had the same customers with the same concerns and faced the same challenges. Joint customers of P&H and JMM bemoaned the separate nature of the business lines and once at a meeting, in Australia, Sutherlin recalls that “we looked like a NASCAR racing team” when everyone put down their business cards with different logos and companies on them. There were those within JOY that called for a combined go to market strategy and felt that corporate synergies could be gained from consolidating both P&H and JMM.
Notwithstanding the costs associated with running two separate businesses, JOY was doing well and in 2010 JOY had combined revenues of $3.5 billion USD, which was a 2% increase from 2009, and net income of $461 million, which was a 1.5% increase from 2009. In 2010 Return on Sales (ROS) was at 20%, Return on Assets (ROA) was at 15%, and Return on Equity (ROE) was at 34% (Exhibit 10.1, 10.2, 10.3, 10.4).

JOY was headquartered in Milwaukee, Wisconsin, where the P&H main offices and manufacturing facility was. JMM was headquartered in Lancaster Pennsylvania. In 2010 JOY had 11,900 combined employees and approximately 50% of the employees were in the United States and the rest were spread out throughout the world, at the foreign subsidiaries, close to customers, many times within the customer mine sites. JOY serviced equipment though wholly owned subsidiaries in Australia, Botswana, Brazil, Canada, Chile, China, India, Indonesia, Mexico, Peru, Poland, Russia, South Africa, United Kingdom, United States, Venezuela and Zambia. In some countries, P&H and JMM had their own legal entity and operation, completely independent, and in some places, like South Africa, both P&H and JMM had combined into a single operation. In many of these countries, in addition to a sales and service office, JOY had built Service Centers where equipment could be repaired. Overall strategy, manufacturing and equipment sales decisions were centralized either in Wisconsin, for surface equipment, or in Pennsylvania, for underground equipment. Headquarters in the United States also controlled the capital expenditure purse strings. If a region required a capital investment to build a service center or acquire a competitor, these decisions were taken at the corporate level.
### Exhibit 10.1

*Joy Global Inc.*

*Consolidated Statement of Income*

(In thousands, except share data)

|                                | Fiscal Year Ended          |
|--------------------------------|-----------------------------|
|                                | OCT 29, Oct 30, OCT 31,    |
| Net Sales                      | 3,524,334 3,598,314 3,418,934 |
| Cost of sales                  | 2,350,708 2,445,514 2,428,929 |
| Product development, selling and administrative | 480,636 454,522 441,527 |
| Other income                   | -4,113 -4,034 -2,726 |
| Operating income               | 697,103 702,312 551,204 |
| Interest income                | 13,195 7,485 12,539 |
| Interest expense               | (29,964) (32,217) (34,237) |
| Reorganization items           | (1,310) 5,060 (2,419) |
| Income from continuing operations | 679,024 682,640 527,087 |
| before income taxes            |                             |
| Provision for income taxes     | 217,525 227,990 153,950 |
| Income from continuing operations | 461,499 454,650 373,137 |
| Income from discontinued operations, net of income taxes | 1,141 |
| Net income                     | $461,499 $454,650 $374,278 |

Basic earnings per share:

|                                |                             |
| Income from continuing operations | $4.47 $4.44 $3.47 |
| Income from discontinued operations | - - 0.01 |
| Net income                       | $4.47 $4.44 $3.48 |

Diluted earnings per share:

|                                |                             |
| Income from continuing operations | $4.40 $4.41 $3.44 |
| Income from discontinued operations | - - 0.01 |
| Net income                       | $4.40 $4.41 $3.45 |

Dividends per share

|                                |                             |
|                                | $0.70 $0.70 $0.625 |

Weighted average shares outstanding: Basic

|                                |                             |
|                                | 103,196 102,450 107,472 |

Diluted

|                                |                             |
|                                | 104,905 103,104 108,425 |

**Source:** Joy Global Consolidated Financial Statements from Form 10-K, 2010.
## Exhibit 10.2

*Joy Global Inc.*

### Consolidated Balance Sheet

(In thousands, except share data)

| ASSETS                              | October 29, 2010 | October 30, 2009 |
|-------------------------------------|------------------|------------------|
| **Current Assets:**                 |                  |                  |
| Cash and cash equivalents           | 815,581          | 471,685          |
| Accounts receivable, net            | 674,135          | 580,629          |
| Inventories                         | 764,945          | 769,783          |
| Other current assets                | 107,266          | 127,930          |
| Total Current Assets                | 2,361,927        | 1,950,027        |
| **Property, Plant and Equipment:**  |                  |                  |
| Land and improvements               | 23,478           | 24,971           |
| Buildings                           | 141,671          | 119,654          |
| Machinery and equipment             | 521,366          | 455,894          |
| Accumulated depreciation            | 686,515          | 600,519          |
| Total Property, Plant and Equipment| 378,024          | 347,058          |
| **Other Assets**                    |                  |                  |
| Other intangible assets, net        | 178,831          | 187,037          |
| Goodwill                            | 125,686          | 127,732          |
| Deferred income taxes               | 162,682          | 334,589          |
| Other non-current assets            | 76,891           | 61,836           |
| Total other assets                  | 544,090          | 711,194          |
| **Total Assets**                    | 3,284,041        | 3,008,279        |

(Continue)
LIABILITIES AND SHAREHOLDERS’ EQUITY

| Current liabilities | October 29, 2010 | October 30, 2009 |
|---------------------|------------------|------------------|
| Short-term payable, including current portion of long-term obligation | 1,550 | 19,791 |
| Trade accounts payable | 291,74 | 206,770 |
| Employee compensation and benefits | 128,13 | 116,149 |
| Advance payments and progress billings | 376,30 | 321,629 |
| Accrued warranties | 62,35 | 58,947 |
| Other accrued liabilities | 163,24 | 203,498 |
| **Total Current Liabilities** | 1,023,324 | 926,784 |
| Long-term Obligations | 396,32 | 523,890 |
| **Other Non-current Liabilities:** | | |
| Liabilities for postretirement benefits | 26,53 | 27,817 |
| Accrued pension costs | 428,34 | 576,140 |
| Other | 54,11 | 139,909 |
| **Total Other Non-current Liabilities** | 508,997 | 743,866 |
| **Commitments and Contingencies** | | |
| Shareholders’ Equity:Common stock, S1 par value (authorized 150,000,000 shares; 127,402,894 and 126,285,641 shares issued at October 29, 2010 and October 30, 2009, respectively) | 127,403 | 126,286 |
| Capital in excess of par value | 1,002,1 | 943,046 |
| Retained earnings | 1,722,0 | 1,333,254 |
| Treasury stock (23,873,159 shares) | (1,116,62) | (1,116,623) |
| Accumulated other comprehensive loss | (379,64) | (472,224) |
| **Total Shareholders’ Equity** | 1,355,394 | 813,739 |
| **Total Liabilities and Shareholders' Equity** | $ 3,284,041 | $ 3,008,279 |

SOURCE: Joy Global Consolidated Financial Statements from Form 10-K, 2010.
## Exhibit 10.3

*Joy Global Inc.*

Notes to Consolidated Financial Statements

October 29, 2010

| IN THOUSANDS | UNDERGROUND MINING MACHINERY | SURFACE MINING EQUIPMENT | CORPORATE | ELIMINATIONS | TOTAL |
|--------------|-------------------------------|--------------------------|-----------|--------------|-------|
| **Fiscal 2010** |                               |                          |           |              |       |
| Net sales    | 2,126,788                     | 1,518,605                 | –         | -121,059     | 3,524,334 |
| Operating income (loss) | 433,902                     | 336,236                   | -43,126   | -29,909     | 697,103 |
| Interest Income | –                           | –                        | 13,195    |             | 13,195 |
| Interest Expense | –                           | –                        | -29,964   |             | -29,964 |
| Reorganization items | –                           | –                        | -1,310    |             | -1,310 |
| Income before income taxes | 433,902                     | 336,236                   | -61,205   | -29,909     | 679,024 |
| Depreciation and Amortization | 39,192                     | 20,472                    | 1,865     | –           | 61,479 |
| Capital Expenditure | 37,273                     | 35,380                    | 821       |             | 73,474 |
| Total Assets | 1,803,141                     | 856,764                   | 624,136   | –           | 3,284,041 |
| **Fiscal 2009** |                               |                          |           |              |       |
| Net sales    | 2,278,691                     | 1,460,445                 | –         | -140,822     | 3,598,314 |
| Operating income (loss) | 461,019                     | 322,170                   | -41,759   | -39118      | 702,312 |
| Interest Income | –                           | –                        | 7,485     | –           | 7,485 |
| Interest Expense | –                           | –                        | -32,217   | –           | -32,217 |
| Reorganization items | –                           | –                        | 5,060     | –           | 5,060 |
| Income before income taxes | 461,019                     | 322,170                   | -61,431   | -39118      | 682,640 |
| Depreciation and Amortization | 39,689                     | 18,846                    | 1,079     | –           | 59,614 |
| Capital Expenditure | 54,903                     | 39,054                    | 171       | –           | 94,128 |
| Total Assets | 1,661,642                     | 791,480                   | 555,157   | –           | 3,008,279 |
| **Fiscal 2008** |                               |                          |           |              |       |
| Net sales    | 2,001,166                     | 1,540,987                 | –         | -123,219     | 3,418,934 |
| Operating income (loss) | 364,747                     | 250,093                   | -34,897   | -28,739     | 521,204 |
| Interest Income | –                           | –                        | 12,539    | –           | 12,539 |
| Interest Expense | –                           | –                        | -34,237   | –           | -34,237 |
| Reorganization items | –                           | –                        | -2,419    | –           | -2,419 |
| Income before income taxes | 364,747                     | 250,093                   | -59,014   | -28739      | 527,087 |
| Depreciation and Amortization | 52,207                     | 19,181                    | 960       | –           | 72348 |
| Capital Expenditure | 36,431                     | 47,774                    | –         | –           | 84,205 |
| Total Assets | 1,542,936                     | 744,888                   | 356,489   | –           | 2,644,313 |

SOURCE: Joy Global Consolidated Financial Statements from Form 10-K, 2010.
Geographical Segment Information

| IN THOUSANDS | TOTAL sales | INTERAREA SALES | UNAFILIATED CUSTOMERS | OPERATING INCOME (LOSS) | LOUG LIVED ASSTS |
|--------------|-------------|-----------------|-----------------------|------------------------|-----------------|
| **2010**     |             |                 |                       |                        |                 |
| United States| 2,135,032   | -601,475        | 1,533,537             | 397,966                | 235,021         |
| Europe       | 315,836     | -68,293         | 247,543               | 31,371                 | 53,190          |
| Australia    | 527,663     | -20,151         | 507,512               | 91,911                 | 38,783          |
| Other Foreign| 1,290,191   | -54,469         | 1,235,722             | 279,703                | 120,557         |
| Interarea Eliminations | -744,388 | 744,388 | -60,722 | - | |
| **Total**    | 3,524,334   | -                        | 740,229               | 447,551                |                 |
| **2009**     |             |                 |                       |                        |                 |
| United States| 2,333,354   | -550,105        | 1,783,549             | 524,576                | 217,758         |
| Europe       | 520,012     | -260,731        | 259,281               | 82,678                 | 44,682          |
| Australia    | 597,160     | -32,906         | 546,254               | 96,928                 | 41,233          |
| Other Foreign| 1,071,284   | -62,054         | 1,009,230             | 227,124                | 96,458          |
| Interarea Eliminations | -905,796 | 905,796 | -187,235 | - | |
| **Total**    | 3,598,314   | -                        | 744,071               | 400,141                |                 |
| **2008**     |             |                 |                       |                        |                 |
| United States| 2,155,911   | -523,378        | 1,632,533             | 393,837                | 213,998         |
| Europe       | 573,234     | -210,045        | 363,189               | 93,591                 | 32,268          |
| Australia    | 522,828     | -52,278         | 470,550               | 54,334                 | 28,179          |
| Other Foreign| 966,830     | -44,168         | 952,662               | 189,662                | 45,804          |
| Interarea Eliminations | -829,869 | 829,869 | -145,323 | - | |
| **Total**    | 3,418,934   | -                        | 586,101               | 324,249                |                 |

Product Information

| IN THOUSANDS | 2010     | 2009     | 2008     |
|--------------|----------|----------|----------|
| Original Equipment | 1,426,744 | 1,628,375 | 1,439,493 |
| Aftermarket   | 2,097,590 | 1,969,939 | 1,979,441 |
| Total revenue | 3,524,334 | 3,598,314 | 3,418,934 |

SOURCE: Joy Global Consolidated Financial Statements from Form 10-K, 2010.
Decisions on how to properly support customers in the field were handled at the regional level and were decentralized. For example, the Americas South region which stretched from the South Western United States to the tip of South America was run by a Regional Vice President based in Santiago, Chile. Reporting to this person were the country managers of Chile/Argentina, Peru/Colombia, Brazil/Venezuela, Mexico and the South West manager. Each of these country managers managed their own P&L and had complete control to how local sales of service and parts sales were handled. For instance in Chile, the general manager had 1,300 people working for him throughout the country, working at mine sites, in Santiago at the regional headquarters and in Antofagasta at the Distribution Center and at the Service Center, where component were warehoused and repairs were made. In addition to supporting the JOY products, country managers could decide to distribute ancillary equipment or parts that customers required. For example, the ground engaging tools, the teeth of a shovel or loader bucket, were not JOY products, were made by third parties, and these were sold locally and could be different in each country.

P&H had been founded by Alonso Pauling and Henry Harnischfeger as a machining shop in Milwaukee in 1898. Initially it was a machine and pattern shop which then began to build factory cranes and developed a specialty in electric powered motors and heavy industry cranes. Eventually Pauling and Harnischfeger began making excavators and earth moving equipment and as a result of their rugged nature, the mining industry became their target market. Around the same time, in Pennsylvania, after working in a coal mine as a boy, Joseph Francis JOY began tinkering with automated underground mining equipment and later in 1920 he formed the company that became JMM.

Over a number of years, JOY grew organically through product line extensions and through acquisitions, adding new product lines, (Exhibit 11). In 1988 P&H acquires the Page Engineering Company to add a new product, the walking dragline, extremely large capacity machines used to remove overburden. In
1991 P&H acquires Gardner-Denver to add a new product line of drilling rigs to its surface portfolio of mining products. At the same time, P&H grows its product line organically through developing and launching new shovels such as the 2800 electric mining shovel in 1969, and the 4100XPC in 2008. In 1995, P&H acquires JMM for its underground suite of products and the modern day JOY Global is born. The JMM side of the business had also grown through acquisition, adding new product lines and organically through product line extensions. Organic expansion also took place in underground products throughout the years, as in 1975, when JMM develops its first longwall shearer (model 1LS) and in 2002 JMM develops a high production flexible conveyor train (model 4FCT). In 1997, the combined P&H and JMM, now called JOY, acquire Longwall International, adding the longwall as a new product and merges it into JMM. In 2006 JOY purchases the Stamler Group adding feeder-breakers, continuous haulage, and battery haulers to its underground product lines. In 2008 JOY acquires Continental Crushing and Conveying Inc. adding a new product line, conveyor systems, capable of carrying minerals over a long distance on conveyors.

Unlike some of its competitors like Komatsu Ltd. and CAT, which make standardized farming and construction equipment as well as mining equipment, JOY focused exclusively on making, selling and servicing specialized mining equipment which was customized to an extent. JOY’s equipment, both surface and underground was built to order. JOY had its main product models, but prided itself on its ability to provide hundreds of options which were driven, in part, by a specific mine’s requirements, such as elevation, voltage (for the electric machines), and abrasiveness of the mineral, and also driven by customer requirements, such as safety features. This meant one customer's machine could be significantly different from another customer's same machine. These were huge machines which sometimes took a year to build. There was no stock of finished equipment. There was no dealership one could visit to
see the machines lined up for sale. The only way a customer could see the machines was in operation or on the factory floor as production took place. Exhibit 3 shows the main products that JOY produced for its underground and surface mining customers in 2010. Equipment sales accounted for approximately 40% of revenues in 2010. For surface mining, these included mainly electric mining shovels, drills and conveyors. For underground mining, these included continuous miners, long wall systems and armored faced conveyors. Equipment production was generally centered in one plant, and JOY’s manufacturing footprint was heavily tilted to the United States, but it also manufactured in the United Kingdom and Australia.

**Exhibit 11**

*JOY and CAT sample growth through acquisitions and internal development*

| YEAR | JOY | CAT | CAT |
|------|-----|-----|-----|
|      | Product Acquisition | Internal Product Development | Product Acquisition | Internal Product Development |
| 1951 | Tracked loaders and pipelayers | - | - | - |
| 1965 | forklifts | - | - | - |
| 1969 | 2800 Shovel | - | - | - |
| 1975 | Longwall Shearer | - | - | - |
| 1981 | Industrial gas turbines | - | - | - |
| 1986 | D11 Mining Dozer | - | - | - |
| 1988 | Walking Dragline | - | - | - |
| 1991 | Drills | - | - | - |
| 1997 | Longwall | - | - | - |
| 1998 | Electric generators | 797 Mining Haul Trucks | - | - |
| 2002 | Flexibe Conveyor Train | - | - | - |
| 2006 | Conveyors | - | - | - |
| 2008 | 4100XPC Shovel | Wheel Loaders Tunnel Boring | 797F Mining Haul Truck | - |

**SOURCE:** Author’s research on Wikipedia and company websites