# DIRT BIKES USA REPORT 

# DATABASE/INFORMATION MANAGEMENT \& USA DIRT BIKES CASE STUDY 

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## ABSTRACT

This report contains the findings and analysis on the behalf of Kevin Conrad, T.J. Murphy, Vinnie Rodriguez, and Brian Appel in relation to the company of USA Dirt Bikes and the company's various managerial, strategic and financial challenges.

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From: Vinnie Rodriguez, Brian Appel, T.J. Murphy, and Kevin Conrad
Date: April 9, 2008
Subject: Dirt Bikes USA Case Study

## Management Analysis Dirt Bikes USA

Dirt Bikes USA is a company that strives for perfection. This company has been developing and manufacturing the best off-road, racing motorcycles possible. They look for performance and style made with genuine, quality parts. Dirt Bikes USA offers four different types of motorcycles; two endurance racing models and two motocross racing models. To sell their product, they have over 40 distributers, mostly in the Midwest, with some in Europe. They often advertise their products in local and nationwide motorcycle magazines.

Dirt Bikes USA employ's over 120 people to work in production for their many different branches. There are three full-time product designers and engineers, as well as a marketing manager, accountant, and administrative assistant. They have also employed two human resource managers to handle the hiring and three secretaries. There are also two information system specialists that run the information systems for the company.

There are several levels of management within the company. At the top are the Chief Executive Officer (CEO) and the Chief Operating Officer (COO). Beneath them are the divisions of Production, Administration, and Sales/Marketing divisions. There are several departments that report to the Production division. These are Parts, Shipping and Receiving, Manufacturing, Service, and Design and Engineering. All of these departments function directly under the division of Production.

Because of the wonderful structure of the company, Dirt Bikes USA has a very friendly, family atmosphere filled with teamwork, attention to detail and quality, and continuous learning and innovation. This allows for a much needed, good flow of communication within the company.

To compete with the demand for motorcycles, Dirt Bikes USA will need numerous information systems. They will need database systems to track parts, completed bikes, suppliers, vendors, advertisers, and the financial part of the business. They will also need networking systems to keep the lines of communication open between Dirt Bikes, its departments, its suppliers, and its vendors. They will also need a department system completely dedicated to the assimilation of data. Hence why having a department solely for management information systems is so vital to the success of the company. Without this it would be very difficult to make decisions and keep up with the most modern technology available for making the best motorcycles.

Examples of how MIS systems can be used can be seen below in the Sales History Section.

## Sales History



Figure 1 Sales History
Seen above is a chart of the Sales History ranging from 2001 to 2005. Dirt Bikes had continuously increased in total sales over the past five years.


Figure 2 Domestic Vs. International

Seen above is a chart of the Domestic sales and the International sales from 2001 to 2005. If you look at the graph above you will see that the Domestic sales greatly overwhelm the International sales for the past five years.

There has been a great range of gross margin and net margins from 2003 to 2005. Starting in 2003, the Gross Margin was $33.2 \%$ while the Net Margin was 15\%. Then in 2004 the Gross Margin went down slightly to $32.6 \%$ and the Net Margin went to $11 \%$. Finally in 2005 the Gross Margin went down even more to $23.8 \%$ while the Net Margin hit at $-2 \%$. As you can see the Gross Margins and Net Margins has gone down over the past three years.

The Enduro 550 has proven to be the most successful bike that Dirt Bikes has been selling, while the Moto 450 has been the worst selling product for the company. The domestic sales have outweighed the international sales approximately 9-1. However International Sales have risen as Domestic Sales have also gone up. Over the past five years the revenues have continued to increase at a steady pace of at least $\$ 1,000,000$ increase every year. The only problem is that Dirt Bikes seemed to peak in 2004 and have suddenly decreased by about half a million in 2005. There has been a consistency in regard to net sales vs. cost of goods sold. There is about a 60 to 40 ratio meaning that for every 60 million in net sales there is about 40 million in costs of goods sold. This amount has been decreasing over the past three years. The firms Gross Margins and Net margins have also been decreasing over the past three years. This is not good for the company as it shows inconsistency and a decrease in total sales. The firms operating expenses have been increasing at a steady pace over the past three years meaning that everything is now more expensive to produce. This is not good because while the operating expenses are increasing the total revenue is decreasing, making it hard to stay in business. A good part of the company is that they have enough assets to cover all their expenses and costs. With the assets available they are still able to introduce new products and ideas for the future.

In conclusion it would be in the best interest of the company to invest in new ideas and methods to help produce cheaper so that they can create more revenue for Dirt Bikes. This could help them introduce new bikes that are demanded so that they could make more money. To expand upon what we have just said, lets take a look at Dirk Bikes USA's Sales.

## Sales Analysis

Figure 3 Sales by Model

|  | Sales by Model |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Model | $\mathbf{2 0 0 1}$ | $\mathbf{2 0 0 2}$ | $\mathbf{2 0 0 3}$ | $\mathbf{2 0 0 4}$ | $\mathbf{2 0 0 5}$ | Total |
| Enduro 250 | $\$ 1,201.00$ | $\$ 1,663.00$ | $\$ 2,291.00$ | $\$ 2,312.00$ | $\$ 2,195.00$ | $\$ 9,662.00$ |
| Enduro 550 | $\$ 2,832.00$ | $\$ 3,290.00$ | $\$ 3,759.00$ | $\$ 4,078.00$ | $\$ 3,647.00$ | $\$ 17,606.00$ |
| Moto 300 | $\$ 1,755.00$ | $\$ 1,932.00$ | $\$ 2,454.00$ | $\$ 2,615.00$ | $\$ 2,627.00$ | $\$ 11,383.00$ |
| Moto 450 | $\underline{\$ 463.00}$ | $\underline{\$ 598.00}$ | $\underline{\$ 661.00}$ | $\underline{\$ 773.00}$ | $\underline{\$ 823.00}$ | $\underline{\$ 3,318.00}$ |
| TOTAL | $\$ 6,251.00$ | $\$ 7,483.00$ | $\$ 9,165.00$ | $\$ 9,778.00$ | $\$ 9,292.00$ | $\$ 41,969.00$ |

The motorcycle that Dirt Bikes U.S.A. uses to create the most value is the Enduro 550. From 2001 to 2005 they sold almost $\$ 18,000$ worth of Enduro 550 units (Figure 3). This is their most sold bike. Dirt Bikes U.S.A. provide value to their customers by using the best parts that are available on the market. Since they use only the best parts, the motorcycles will last longer, and be faster and lighter then their competitor's motorcycles. The motorcycles are around the same price as other companies, but the other companies are using lesser quality parts.

Dirt Bikes U.S.A. has many competitors. Two of the major competitors are Suzuki and Kawasaki. Suzuki has three 2008 dirt bike models that range in price from $\$ 1,499.00$ to $\$ 2,599.00$. Kawasaki produces five 2008 models. They range in price from $\$ 1,749.00$ to \$7,299.00.

The competitive forces that can affect the motorcycle industry include other manufactures that produce vehicles for a lower cost. If the motorcycle is produced by hand, the labor cost may be more then if it was mass produced on a assembly line. It can also be affected by new businesses entering the market, and fluctuations of prices for supplies.
The competitive strategy that Dirt Bikes U.S.A. should pursue is a larger sales area. Although they supply over 40 businesses, most of the businesses are located in the Midwestern states. Even though customers can purchase spare parts from the Dirt Bikes U.S.A. they can not purchase complete motorcycles. This leaves out the eastern states from being able to purchase their motorcycles, intern, they are missing out on a large portion of sales.

In addition, other factors can influence sales and efficiency, not just what is manufactured and where the products are sold, such as the computer systems utilized by Dirt Bikes USA.

## Analyzing the Total Cost of Ownership (TCO) of Office XP vs. Sun StarOffice 8

Dirt Bikes USA has realized its computer deficiencies and now wants to upgrade its systems to something more modern and more efficient.

The two most prevalent office systems on the market toady are Microsoft Office XP and Sun Microsystems Sun StarOffice 8. Both systems are very capable of performing the required tasks of the administration staff of USA Dirt Bikes Company, but there are differences.

Sun Microsystems is a very specialized producer. In addition to producing a product that is more affordable, Sun Microsystems offers updates and downloads that can assist a user specifically involved in business. The Microsoft Office XP is a more general office system. While it is able to do the required operations (Web design, memos, letters, published paper designs, databases, and spread sheets). Microsoft's product costs more. The price varies depending who the company purchases Office XP from. The lowest price these writers were able to find was $\$ 184.53$ from Software Media.com.



Figure 4 Office XP Per Year Costs

|  | Software <br> Sun <br> StarOffice <br> 8 | Installation Cost | Training | Technical Costs | Downtime Costs | Notes |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| January | \$559.60 | \$200.00 | \$800.00 | \$13.99 | \$7.00 | Purchased from Sun Microsystems |
| February |  |  |  | \$13.99 | \$7.00 |  |
| March |  |  |  | \$13.99 | \$7.00 |  |
| April |  |  |  | \$13.99 | \$7.00 |  |
| May |  |  |  | \$13.99 | \$7.00 |  |
| June |  |  |  | \$13.99 | \$7.00 |  |
| July |  |  |  | \$13.99 | \$7.00 |  |
| August |  |  |  | \$13.99 | \$7.00 |  |
| September |  |  |  | \$13.99 | \$7.00 |  |
| October |  |  |  | \$13.99 | \$7.00 |  |
| November |  |  |  | \$13.99 | \$7.00 |  |
| December |  |  |  | \$13.99 | \$7.00 |  |
| Yearly Totals | \$559.60 | \$200.00 | \$800.00 | \$167.88 | \$83.94 |  |
| Total Cost | \$1,811.42 |  |  |  |  |  |

Figure 5 Sun StarOffice per Year costs
As you can see in Figures 4.1 and figure 4.2, the cost of the Sun Microsystems's Sun StarOffice 8 is half the price of Microsoft's Office XP in the first year. Note that the numbers in Figure 4.1 and Figure 4.2 have been adjusted to include all 8 users and all 8 copies of the office system.

|  | Software <br> (Office <br> XP) | Installation Cost | Training | Technical Costs | Downtime Costs | Notes |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| January |  |  |  | \$36.91 | \$18.45 | Purchased from Software Media.com |
| February |  |  |  | \$36.91 | \$18.45 |  |
| March |  |  |  | \$36.91 | \$18.45 |  |
| April |  |  |  | \$36.91 | \$18.45 |  |
| May |  |  |  | \$36.91 | \$18.45 |  |
| June |  |  |  | \$36.91 | \$18.45 |  |
| July |  |  |  | \$36.91 | \$18.45 |  |
| August |  |  |  | \$36.91 | \$18.45 |  |
| September |  |  |  | \$36.91 | \$18.45 |  |
| October |  |  |  | \$36.91 | \$18.45 |  |
| November |  |  |  | \$36.91 | \$18.45 |  |
| December |  |  |  | \$36.91 | \$18.45 |  |



Figure 6 Office XP Three Year Costs

|  | Software <br> Sun <br> StarOffice <br> 8 | Installation Cost | Training | Technical Costs | Downtime Costs | Notes |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| January |  |  |  | \$13.99 | \$7.00 | Purchased from Sun Microsystems |
| February |  |  |  | \$13.99 | \$7.00 |  |
| March |  |  |  | \$13.99 | \$7.00 |  |
| April |  |  |  | \$13.99 | \$7.00 |  |
| May |  |  |  | \$13.99 | \$7.00 |  |
| June |  |  |  | \$13.99 | \$7.00 |  |
| July |  |  |  | \$13.99 | \$7.00 |  |
| August |  |  |  | \$13.99 | \$7.00 |  |
| September |  |  |  | \$13.99 | \$7.00 |  |
| October |  |  |  | \$13.99 | \$7.00 |  |
| November |  |  |  | \$13.99 | \$7.00 |  |
| December |  |  |  | \$13.99 | \$7.00 |  |
| Yearly Totals | \$0.00 | \$0.00 | \$0.00 | \$167.88 | \$83.94 |  |
| Total Cost | \$251.82 |  |  |  |  |  |

Figure 7 Sun StarOffice 8 Second and Third Year Costs
Figures 4.3 and 4.4 show the cost per year after installation and as you can see the total cost per year dramatically decreases in year 2 and 3 (Figure 4.3 is for Microsoft Office XP and Figure 4.4 is for Sun StarOffice 8).


Figure 8 Three Year Total Costs
Figure 4.5 is the three year totals for both Microsoft Office XP and Sun StarOffice 8. Sun Star Office ends up costing half as much as Office XP after three years and if USA Dirt Bikes wishes to get business specific updates for Sun Star Office 8, the cost will still be much less than Microsoft Office XP.

As a result of both the cost of the two products and the capabilities of these two products, Sun StarOffice 8 is the better system. Sun StarOffice 8 costs dramatically less ( $\$ 2,315$ vs. $\$ 4,469$ ) and can be easily upgraded in case USA Dirt Bikes wished to add to the capabilities of the program while the Microsoft product (stock version) cost twice as much and accomplishes the same tasks.

## Customer Demographics

In addition to manufacturing and MIS systems, the demographics of a consumer population can have an effect on sales.

Below are the reports developed from the contact information and questions asked when developing each person's profile. This data can be used by the marketing and advertising departments to decide where the best places to advertise are, such as at sporting events or in magazines.

## Customers with Multiple Bikes (Table 1)

| CustomerID Last Name | First Name | Multiple Bikes | If Yes, Then What Kind |
| :---: | :--- | :--- | :--- |
| 1 Mann | Dwight | Yes | Harley Davidson |
| 2 Porter | William | No | NA |
| 3 Higgins | Daniel | Yes | Suzuki |
| 4 Langan | Howard | No | NA |
| 5 Delgado | Luis | Yes | Kawasaki |
| 6 Stratman | Philip | Yes | Indian |
| 7 Yates | Gerry | No | NA |
| 8 Mickel | Paul | No | NA |
| 9 Podell | James | No | NA |
| 10 Lowe | Mark | Yes | Harley Davidson |
| 11 Mann | Dwight | Yes | Harley Davidson |
| 12 Higgins | Daniel | Yes | Suzuki |

## Customer Sports and Racing (Table 2)

CustomerID Last Name
1 Mann
2 Porter
3 Higgins
4 Langan
5 Delgado

First Name
Dwight
William
Daniel
Howard
Luis

Attend Races
Yes
Yes
No
No
No

Other Sports
Hockey
Football
Football
Lacrosse
Football

| 6 Stratman | Philip | No | Football |
| :--- | :--- | :--- | :--- |
| 7 Yates | Gerry | No | Lacrosse |
| 8 Mickel | Paul | Yes | Skiing |
| 9 Podell | James | No | Football |
| 10 Lowe | Mark | No | Football |
| 11 Mann | Dwight | Yes | Hockey |
| 12 Higgins | Daniel | No | Football |

## Customers Ages and Level of Education (Table 3)

| CustomerID Last Name | First Name | Age Level of Education |
| :---: | :--- | :---: |
| 1 Mann | Dwight | 25 College |
| 2 Porter | William | 19 High school |
| 3 Higgins | Daniel | 42 PHD |
| 4 Langan | Howard | 36 College |
| 5 Delgado | Luis | 29 College |
| 6 Stratman | Philip | 23 College |
| 7 Yates | Gerry | 34 High school |
| 8 Mickel | Paul | 31 High school |
| 9 Podell | James | 44 PHD |
| 10 Lowe | Mark | 27 College |
| 11 Mann | Dwight | 25 College |
| 12 Higgins | Daniel | 42 PHD |

## Customer Model and Distributor (Table 4)

CustomerID Last Name
1 Mann
2 Porter
3 Higgins
4 Langan
5 Delgado
6 Stratman
7 Yates
8 Mickel
9 Podell
10 Lowe

First Name
Dwight
William
Daniel
Howard
Luis
Philip
Gerry
Paul
James
Mark

Distributor
J\&J Cycle
WX Cycle
All-Terrain Cycle
Cycle World
Ben's Cycles
Don's Off Road
Lightning Cycles
WX Cycle
Performance Cycles
KB Racing

Model
Enduro 250
Enduro 250
Moto 450
Moto 450
Moto 300
Moto 450
Enduro 250
Moto 300
Enduro 550
Moto 300

| 11 Mann | Dwight | J\&J Cycle | Enduro 550 |
| :--- | :--- | :--- | :--- |
| 12 Higgins | Daniel | Lightning Cycles | Moto 300 |

Table 5.1 shows the customers who own multiple motorcycles and what make they are. The most popular brand would be Harley Davidson. Dirt Bikes U.S.A. may want to advertise with the NFL, since most of the people who have bought motorcycles said that their favorite sport was football (See table 5.2). From the records received, most customers are in there twenties (See table 5.3). The advertising department may want to get the demographics of different magazines and television stations to serve this age group. Advertising with these companies may increase sales. Table 5.4 shows that the Moto 300 is the most desired motorcycle. The owners of Dirt Bikes U.S.A. may want to produce more of this motorcycle, or they should raise the price of this model to increase their profits. In conclusion, Dirt Bikes U.S.A. can use the above data to help with their advertising and make more of an overall profit.

## Communication

Another area of management and manufacturing that affects efficiency and costs is communication speed and the costs of quick communication.

Dirt Bike's management is concerned about how much money is being spent communicating with people outside the company and on obtaining information about developments in the motorcycle industry and the global economy. Below is a list of the various internet tools that can be used to help Dirt Bikes employees towards increasing efficiency and productivity.

Figure 9 Employee Tools and Benefits

| Type of Tool | Employees/Functions Benefitted | Explanation |
| :--- | :--- | :--- |
| E-mail | Sales \& Marketing, Human Resources, <br> senior management | Increases speed/efficiency in communicating <br> globally; can market to wider range of customers <br> quicker, and receive job resumes \& applications |
| Chat/IM | Knowledge workers, operational <br> management | Operational management can use it to keep up with <br> workers on a daily basis and knowledge workers can <br> use it to communicate through video, IM, or chat to <br> talk to designers from other companies on creating <br> the most effective product |
| Electronic <br> Conferencing | Senior management | Communicate with other business leaders within the <br> global industry to collaborate and discuss ways of <br> impacting the industry without high phone costs |
| World Wide <br> Web | Senior management; middle <br> management; Marketing, Human <br> Resources, Finance \& Accounting | Can be used to introduce new products into the <br> company line, for potential employees to apply, <br> provide stock and other public information to <br> investors and companies |

Dirt Bikes could benefit from Sales \& Marketing through intranets by its mobile capability. Salespeople can access databases from anywhere on their PDA's or palm pilots where they can track how much they have sold because they are out on a regular basis. Human Resources would use intranets heavily because they have software in which they can more effectively distribute training, recruitment, and other resources documents and files to employees or trainees. Manufacturing and Production can benefit from an in-house database employees can use to track and analyze inefficiencies in the processes and systems. Finance \& Accounting can use them for
on-going in-house transactions, payroll, and software that can be used to by other departments to make company decisions. It would increase efficiency and productivity by providing a live company-wide view of the financial status of the company.

## Developing a Disaster Recovery Plan

There are many things that Dirt Bikes should stay up to date with. They should always be planning for something bad to happen. In fact all small businesses should. They should worry about the possibility of a theft, a power failure or a serious computer virus. All of these things could be deadly to a small company.

Being that the Dirt Bikes headquarters is located in Colorado, there could be a great chance of an avalanche in the winter or a mudslide in the summer. Along with those risks, there is the possibility of computer virus's and identity theft. Therefore it is always important to make sure that all the computer systems and constantly undated with virus protection. It is also important to make sure that any purchase over a certain amount be monitored by the credit card company that you deal with. Identity theft is a growing problem for many people and it can be a devastating thing. Those are some of the major protection problems that Dirt Bikes should be concerned with.

Dirt Bikes most critical system is their computer system. This is how they take care of order, information, payroll, and every aspect of the business. If their computer system shut down there would be nothing good going on within the company. If the system didn't work the company would eventually shut down. They couldn't do anything, it would be too hard to try and sell a product without it being available on the internet. This company could possibly survive for a couple of weeks without their computer systems. It would be very important to have all the necessary information backed up in other hard drives so that all the information wouldn't be lost when they did get it back. If a disaster was to happen, it would be important to backup all the information that is important to them. They would also have to somehow protect the factory where they manufacture the bikes so that they could still build bikes when the disaster was over.

Researching multiple disaster recovery services, we have come up with two reasonable companies. They are Rackspace and DRS (disaster recovery services). After researching the two companies we have decided that DRS is the right company for Dirt Bikes in the time of a disaster. Not only do they offer all the support that is needed but they have one of the greatest reputations in the business. You can store all your information with them and in the case of an emergency all your information can be stored. It will also be kept confidential which is another great feature that all businesses appreciate. In the case of a disaster DRS would help the company get back on their feet by giving them all their necessary information and assisting them with anything else that might be needed.

As you can see Dirt Bikes could be in serious danger if a disaster was to occur. However with the proper protection all their worries could be rested. It just takes a little time and effort to find the right people. It also takes a little money to insure that your assets are protected.

## Suppliers and Supply Chains

Dirt Bikes USA has a fundamental problem that plagues many companies at some point; supplying parts to customers, manufacturing facilities, and retailers. This analysis will focus on two retailers of Dirt Bike Fuel tanks and Supply Chain software to be used by Dirt Bikes USA.

The two companies that were found to have reasonable prices and good shipping costs were Rocky Mountain ATV \& MC and Just Gas Tanks. As you can in Figure 8.1 below, both companies offer free shipping for orders over a certain price and have a slot on the online order forms for company information.


Figure 10 Fuel Tank Suppliers

It would be logical for Dirt Bikes UAS to do business with these two companies. In addition to free shipping, Dirt Bikes USA would also receive the parts two days after placing the order or shortly thereafter. This will reduce the tension among resellers and cut down on wasted time (rust orders are also available from both companies). Both companies have their positives and negatives. Rocky Mountain has higher part prices, but better shipping. In Contrast Just Gas Tanks has lower part prices, but slightly worst shipping. Dirt Bikes may want to do business with both companies and choose one as the situation dictates.

Supply Chain Software is not as easy a problem to fix. There are several suppliers of Supply Chain software, including Microsoft, Epicor, and LLamasoft. LLamasoft seems to have the best product among the three conmpanies; LLamasoft's product is called Supply Chain Guru and is offered only to companies. Unfortunately their website does not quote a price for the product, but does give a detailed description. The advantage to using Supply Chain Guru is that this particular software is user friendly and reduces the amount of time needed to model a shipping system in comparison to other products so the user has more time to analyze the situation and make choices in a shorter amount of time.

Epicor's product, though not as user friendly as LLamasoft's, is industry and manufacturing specific. Epicor Enterprise Financials - Epicor Supply Chain Management
software comes in at quite a price, $\$ 20,000-\$ 500,000$ depending on the package selected. Microsoft's product, Microsoft Dynamics NAV - Supply Chain Management, is much the same and is internet oriented. Microsoft's product comes in a a much lower price than Epicor's, $\$ 3,000-\$ 100,000$ depending on the package selected.

It is suggested that Dirt Bikes USA use LLamasoft's product as their customer service and product seem to be of better quality, but without a price estimate, it is hard to know. If the price for the LLamasoft's product is too high then it would be advisable to purchase the Microsoft product. The costs are less for Microsoft's product and it will do the same job as its higher priced counterparts.

## E-Commerce and Dirt Bikes USA

What kind of impact does e-commerce have on Dirt Bikes? Since it is a B2C base, it will benefit greatly Dirt Bikes, Inc.'s marketing and selling. It could use the website to advertise its motorcycles, but the motorcycles should be sold in-house. On the other hand, the motorcycle parts can be sold over the Internet. It could use a call center where customers can find the phone number or fill out an online form with questions.

Using Yahoo! Store, we find that the cost of implementing a Web program service is not that great. At the very least, a Starter Plan with the Yahoo! program would only cost $\$ 29.95$ per month with a $\$ 49.95$ setup fee. This means that it would not take too long before the company can grow their sales revenue.

They should include in their website a shopping cart and checkout section. They should also offer the customer service features, such as 24-7 phone and email support, feedback forms, and an account manager, so that they can track who are there most frequent customers, and capitalize on that. They should form a partnership with PayPal to use their payment and order processing services for when customers buy bicycle parts online. They can advertise their sponsored motorcycle racing events on the main page, and a link from there can redirect them to a new page where they find out upcoming rates, dates and times of the races. Yahoo! Store is a good resource because it offers an incredible amount of features into the company's web site management system, listed in the following link: http://smallbusiness.yahoo.com/ecommerce/features.php

## Dirt Bikes USA Cost Analysis

Another thing to take into consideration is the piece by piece cost of manufacturing a product. Even the smallest reduction in cost of one part can affect the total cost for the entire company.

Bill of Materials: Moto 300 Brake System

| Component | Component No. | Source | Unit Cost | Quantity | Extended Cost |
| :--- | :--- | :--- | ---: | ---: | ---: |
| Brake cable | M0593 | Nissin | $\$ 27.81$ | 1 | $\$ 27.81$ |
| Brake pedal | M0546 | Harrison Billet | $\$ 6.03$ | 2 | $\$ 12.06$ |
| Brake pad | M3203 | Russell | $\$ 27.05$ | 2 | $\$ 54.10$ |
| Front brake pump | M0959 | Brembo | $\$ 66.05$ | 1 | $\$ 66.05$ |
| Rear brake pump | M4739 | Brembo | $\$ 54.00$ | 1 | $\$ 54.00$ |
| Front brake caliper | M5930 | Nissin | $\$ 105.20$ | 1 | $\$ 105.20$ |
| Rear brake caliper | M7942 | Nissin | $\$ 106.78$ | 1 | $\$ 106.78$ |
| Front brake disc | M3920 | Russell | $\$ 143.80$ | 1 | $\$ 143.80$ |
| Rear brake disc | M0588 | Russell | $\$ 56.42$ | 1 | $\$ 56.42$ |
| Brake pipe | M0943 | Harrison Billet | $\$ 28.52$ | 1 | $\$ 28.52$ |
| Brake lever cover | M1059 | Brembo | $\$ 2.62$ | 1 | $\$ 2.62$ |
|  |  |  |  |  |  |
| Total |  |  |  |  | $\$ 657.36$ |

Bill of Materials (Table 5)

## Bill of Materials: Moto 300 Brake System Sensitivity Analysis

| Component | Component No. | Source | Unit Cost Quantity | Extended Cost |  |
| :--- | :--- | :--- | ---: | ---: | ---: |
| Brake cable | M0593 | Nissin | $\$ 27.81$ | 1 | $\$ 27.81$ |
| Brake pedal | M0546 | Harrison Billet | $\$ 6.03$ | 2 | $\$ 12.06$ |
| Brake pad | M3203 | Russell | $\$ 27.05$ | 2 | $\$ 54.10$ |
| Front brake pump | M0959 | Brembo | $\$ 66.05$ | 1 | $\$ 66.05$ |
| Rear brake pump | M4739 | Brembo | $\$ 54.00$ | 1 | $\$ 54.00$ |
| Front brake caliper | M5930 | Nissin | $\$ 107.20$ | 1 | $\$ 107.20$ |
| Rear brake caliper | M7942 | Nissin | $\$ 106.78$ | 1 | $\$ 106.78$ |
| Front brake disc | M3920 | Russell | $\$ 143.80$ | 1 | $\$ 143.80$ |
| Rear brake disc | M0588 | Russell | $\$ 56.42$ | 1 | $\$ 56.42$ |
| Brake pipe | M0943 | Harrison Billet | $\$ 30.52$ | 1 | $\$ 30.52$ |
| Brake lever cover | M1059 | Brembo | $\$ 2.62$ | 1 | $\$ 2.62$ |
|  |  |  | $\$ 628.28$ |  | $\$ 661.36$ |
| Total |  |  |  |  |  |

Bill of Materials Sensitivity Analysis (Table 6)
As you can see in tables above, a small change in the cost of front brake calipers and in the cost of brake pipes will result in the overall cost of the brake assembly increasing by $\$ 4$. The increase may seem small, but when a company like Dirt Bikes U.S.A. produces thousands of products a year, they must pass the costs on to their customers.

The braking system accounts for $30 \%$ of the overall cost of the motorcycle. If the other $70 \%$ of the motorcycle parts raised the same amount, the cost of the bike could increase by
$\$ 14.66$. Once again this seems like a small change, but in the long run, this will effect the company if the cost is not passed on to the customer. This would raise the retail price of the Moto 300 from \$4295 to about \$4310.

## CONCLUSION

Throughout this report we have acted in the best manner we can as managers to interpret, understand reason, extrapolate, make decisions, and present our findings on several areas in which we were assigned. Dirt Bikes USA was a challenging Case Study that incorporated everything, we as managers, need to be aware of and situations that we as managers will encounter as we go out into the work force. This report has come to many conclusions, some positive and some negative. We have interpreted the data and made managerial decisions based on the data either supporting theories and products or denouncing theories and products for the company. Thank you for reading and we would be more than happy to hear your comments or suggestions on our effort.

