**Evaluation Report Concerning Medical Technology Manufacturing**

**Group 6**

Bianca Domenghini- Hospitality

Michael Medina- Management Information Systems

Prateek Chandani- Accounting

Sophia Achett- Finance

Yulian Nichev- Marketing

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**Executive Summary**

**Accounting/Finance**: Out of all the products, product 20 will not increase the company revenue. Based on the data, the company can logically conclude that product 20's low sales stopped the company from hitting their target of $1,000,000 in sales. The company needs to address some concerns regarding operating expenses. Some expenses went over the allocated budget and reduced the net profit.

**Human Resources/HR**: When it comes to the HR department the company should be looking at employee salary, bonus reports, and employee benefits. In the data that is revised the company's HR team should look at how to better set up employees for success when it comes to the training in order to do well in this field. HR needs to identify if the salaries each employee is getting is equitable for the jobs that employees are doing. Lastly, making sure that discrepancies in their training and performance at work are better managed in order for them to be more efficient at work.

**Inventory/Production/Supply Chain Management:** Inventory in all 31 products fluctuated between 2014-2022. The company should obtain software to calculate inventory trends to ensure that customers find their needed products in stock, such as product 30, product 20, metal 2, product 10, aluminum, 3D metal machine, 3D plastic machine, cleaning, and nitrile gloves. It will also eliminate the chance of overproduction, especially in Product 30, to prevent machine-produced defects such as machines 6 and 7, as shown in the Excel files.

**Marketing/Sales:** The marketing/sales module analyzes the medical technology’s product sales in units, the profitability of each product, and the industry’s biggest clients. Through the evaluation of each product, the marketing and sales department will receive the proper understanding on which products to promote and market and which products should be improved. This section will cover the target market of the products within the medical technology industry and the industry’s biggest clients.

**Support/IT**: In this paper, the investigation of support/IT explores what issues exist within the department. In this investigation, various factors such as call times, product returns, and user interface are brought into question. By evaluating each factor of the support/IT department, the company gains insight on its position among each, as well as the issues that have endured. While the support/IT section of this report does review errors within the department, it also analyzes solutions for minimizing and removing said problems. This information only reports on the statistics given at the time of research and does not define all issues within the department, only the ones witnessed within the Excel files.

**Accounting/Finance**

Three pivot tables in the excel workbook show the sales data for products 10,20, and 30. Product 10 will turn over the most profit because it sold the most. According to the graphs on the dashboard, product 10 has consistently outsold both products 20 and 30. Product 30 sold more than product 20 by a big margin, so product 30 also made the company profit. Looking at the sales data, product 20 did the worst in sales and will probably bring the company's revenue down. The company should only invest in products 10 and 30. The sales data supports this idea.

The budget for 2021 shows that the budget for buying the products totals $175,000. According to the 2021 budget, the company needed to sell $1,000,000 in products (Chandani 4). The company failed to hit their target for the month because of underselling products. Additionally, the company went over the budget in certain areas like wages and vehicle expenses.

Going over budget will have serious consequences for the company. An article by Bizfluent states that going over budget results in less profit. “If the project goes too far over the initial budget, your company may lose money on the job.” (Acevedo 1) The company needs to keep this in mind when they set their goals for the year and for each month.

The company might need to consider the fact that they have not set a proper sales quota. An article by Eskinder Assefa outlines this as one of the reasons for a company not hitting their sales quota. “One of the worst misunderstood and often misused sales management tools is a sales quota.” (Assefa 1)

The income statement reflects total revenue earned and expenses paid. This income statement reflects revenues and expenses for the 2021 fiscal year. (Chandani 2) The cost of goods sold section of the income statement does not have enough information to be finished completely. The company only knows the total amount of money to pay for the products. A proper and complete income statement also shows the beginning inventory. Without an ending inventory balance and cost for all the goods in the inventory worksheet the company will have to settle for an incomplete income statement. Additionally, the 2022 fiscal year has not concluded so the company has no way to prepare a complete income statement for the year 2022.

The accounting dashboard shows that the company went over the wage expense for the whole year of 2022. (Chandani 1) The HR department needs to investigate how this happened. Employees might need to clock in too much overtime to finish their work, so this could explain why the wage expense surpassed the budget every month in 2021. Additionally, the marketing/sales department needs to investigate why product 20 sold the least number of units. From an accounting perspective, the company should cut employee salaries and should manufacture more units of product 10 and 30. The tables, graphs, and the income statement all support this conclusion.

**Human Resources/HR**

Looking at the dashboard created out of the 33 employees 26 of them stayed with the company and 7 of them left. Doing the average of the salary of the employees it shows that .70 cents is the difference that makes or breaks a staff member staying with the company (data worksheet). If the employee gets paid under 15.50 an hour most likely the employee will at some point. For HR rolls, there are 4 staff members that work and with the pay they are getting planned on staying. Some employees looking at the data were paid 17 dollars an hour while others were paid 15 dollars an hour.

The HR/Human Resources department overall had an average of 4 out of 5 points for customer service (data worksheet). Accounting was the only department that had a higher percentage and another part of the performance review is the paperwork quality which HR led the board with an average of 4.125 out of 5. In the company there were no customer service complaints against the HR team while the sales team led in complaints. Training for the whole team looks like they will make their progress over 4.2 out of 5 training options are completed.

When creating a training plan it is essential that the HR department assess the needs, develop goals, and success metrics for all employees to follow. From there determine the type of employee training style, develop learning objectives/outlines, finalize the training plan, design/develop training materials. Throughout the years training should be implemented, evaluated and measured in the data that HR created. Everyone should be able to go to a conference or classroom training and for the employees who left the company within five days in the new year; both had a conference but had no training when it came to the job. Within this field it is important that employees are getting the proper training needed in order to do well.

The way that training was done for this company is outdated which can play a huge role as to why some employees did not like the training process for this company. According to this article by Steve Glaveski *Where Companies Go Wrong with Learning and Development* it states that “Not only is the majority of training in today’s companies ineffective, but the purpose, timing, and content training is flawed” (Glaveski 2019). Companies teach everything at once expecting employees to know everything right away but another way training should be more effective for employees is by offering micro courses “give employees short, bite sized learning opportunities, which can take the form of digestible, hour long courses on topics of relevance to an employee’s immediate challenges or opportunities”( Glaveski 2019). The employees could also benefit from peer learning especially the ones who are struggling more than others. HR could set up workshops and ask employees who are performing well within the company to help teach or nativate a better way of learning so that way it could benefit everyone.

When it came to the discrepancies looking at the machines, certain people had a better production rate with certain machines/systems than others. Also need to have a better understanding on why accounting went over wage expense and how employees were clocking in causes certain employees to have overtime. When paying overtime is a huge issue with the company it is important that the employers for this company force employees to clock out when their shifts are over. Managers should then be disciplined if they do not implement this rule. This affects the accounting/financial side of how the company is runned. According to this article by Lisa Evans on *How to Create an Employee Training Plan in 10 steps* ``Reevaluating is necessary just like with any type of program, it’s best to reevaluate within a predetermined amount of time. What’s working? What's Not? Have the objectives changed? Do you need to measure metrics differently?”(Evans, 3 Nov. 2021).

Employees would benefit from having technology-based learning and on-the-job training because when it comes to developing and working with medical technology the best way to get rid of discrepancies like the machines not being able to work having a backup plan is necessary. When employees are not clocking out correctly this also affects the company having to pay them for overtime. HR should have a point system for this and be able to talk to the employee and ask them why they are doing that. What is happening is that because employees are not getting paid so little or at the average rate this could be a reason why they are wanting overtime. Based on the data and performance of each employee there should be an incentive for employees who perform with a high success rate and based on customer service reviews that each employee gets.

**Inventory/Production/Supply Chain Management**

​​The inventory bar chart and table summarize the number of product units calculated and summarized from 2014-to 2022. Bar chart of inventory visually shows what inventory units have stayed consistent vs. what inventory units have significantly fluctuated. Predicting the potential growth and popularity of the inventory products can be done when we have the data accurately shown. It also helps the company understand which stocks are essential to abundance vs. items in inventory to take up shelf space. The dashboard suggests that metal filament 1 has the highest and most consistent inventory units of all the other products.

Medical Technology products and equipment amount produced fluctuated between 2014 and January 2022. The company needs to understand the top products in inventory on the dashboard. The sum of each product from 2014-to 2022 was used to rank the products at the top. Understanding the entire inventory list of medical technology manufacturing helps the company connect to its consumers. The dashboard shows the essential products such as product 30, product 20, metal 2, product 10, aluminum, 3D metal machine, 3D plastic machine, cleaning, and nitrile gloves for the company to make sure the company has in stock (*Data worksheet*).

Logistics determine whether the company delivered the products ordered on time to their designed locations. Product 10 and Product 20 have roughly similar on-time and late deliveries. Product 30 has more late deliveries between 2021-2022; however, it also has the most deliveries that are on time. The dashboard also showed that the overall production/order volume has been successful due to comparing the inventory’s overall batch size and the number of detectives.

The company’s recommendation by the dashboard information is to use cloud-based inventory management software to monitor the amount of inventory produced and delivered on online software. Cin7, an enterprise application software for eCommerce businesses that immediately analyze inventory as they sell to consumers, allows the company to look at the big picture of all the inventories in one platform of how the software manages inventory from different branches. The company will deliver product 30 more on time using the Cin7 and reduce the 265 times delivered late. The software tracks all machines, equipment, and products traveling from in and out of the facilities, reducing the possibility of inventory mismanagement (*Cin7*, 2022).

Order management helps with late deliveries, a feature of Starshipit, which integrates with Cin7. Starshipit keeps track of the orders placed and sends immediate updates to the consumer purchasing the products and the company to the status of the product shipped. Documents related to the shipping are processed virtually, which reduces the time to package products and ship them. (Square).

Logistics of Product 30 on the dashboard show the products delivered on time to their locations in Chicago. The company delivered Product 30 onetime the most out of Product 10 and 20. It also has the latest deliveries than Product 10 and 20 in 2021 and 2022. The company delivered Product 10 on time 231 and late 147, delivered Product 20 on time 228 and late 150; however, they both equal 378. The company delivered Product 30 on time 265 but late 175, which was 440 in 2021. The company delivered Product 10 on time 128 times and late 90 times and delivered Product 20 on time 127 and late 96. Product 10 units for on-time and late delivery were 218 and for Product 20 was 223, which is roughly consistent. The company delivered Product 30 on time 155 but late 100, which was 256 in 2022 (*Data worksheet*). The data shows that as the machines produce more of the same product, defects are higher.

Overproduction is the main reason for products produced with the high number of detectives, as there is a rush for products to be delivered on time. There can also be a delay in developers making the number of products consumers demand.

Malfunctions with Machine 6 and 7 had production units skyrocketed, so has the number of detective products. Machine 6 had 23,472 detects between Products 10, 20, and 30. Machine 7 has 24,444 defects between Products 10, 20, and 30. Machines 5 and 8 have significantly lower defects between the products shown (*Data worksheet*). The company should replace machines as there could be a missing part, an issue with the engine, or the whole device could be old, and then we should replace the entire machine. There could also be a possibility that we need more machines to produce more products if their system could handle it at the number of machines currently warehoused.

This department recommends that the company adopt a “need-by-system.” The company should only produce the number of products that consumers have ordered. The company can eliminate products that are not or rarely ordered. The company can put a tracking system in place where products are in inventory. The firm orders more to reduce the likelihood of products being out of stock when needed. The company will place a reminder in the database to produce more products automatically without employees having to check the database consistently to see if products and equipment are out of stock (*Unleashed Software*, 2021)

**Marketing/Sales**

Through the sales data provided, it reveals lots of information about the medical technology products, the overall desirability of these products, and the sales and profit of each respective product. The most prevalent and popular medical technology in the industry are Product 10, Product 20, and Product 30. Product 10 is the most popular and desirable medical technology, and it has single handedly outsold both Product 20 and 30 combined by itself. Since the beginning of 2014, there have been 1,508,175 units of Product 10 sold (*Nichev Excel Dashboard*). With ​​$581.20 profit per device unit sold, it has generated $876,551,310.00 in profit for manufacturers (*Nichev Excel Dashboard*). With the high volume of units sold and the solid profit margins of Product 10, it will continue to generate manufacturers the most revenue, sales, and profit. For this reason, Product 10 should be the manufacturers’ most produced and marketed product.

Product 20 was the lowest selling medical technology product, with only 397,914 units sold. However, it generated the second most total profit of $569,434,830 because of the product’s fantastic profit margins. With each sale of Product 20, it generated $1,431.05 profit per unit sale (*Nichev Excel Dashboard*). This is the manufacturers’ most profitable product because of the higher selling price of the product combined with the lower expenses/costs of labor and materials. Product 20 will continue to be a reliable source of profit for the manufacturers in the long term scope of the medical technology industry.

On the other hand, Product 30 was the worst product driving product. The marketing/sales team has to focus on improving the profitability of Product 30. Although it generated 807,099 units in sales, Product 30 only generated $127,521,642 in profit because the profit margins were at a low of $158 profit per device sold. To increase Product 30’s profitability, the marketing/sales team needs to find a way to decrease the expenses/costs of producing the product. According to Francesca Nicasio’s *How to Increase Your Profit Margins* article, retailers often “focus on pricing strategies when searching for ways to increase profits” (Nicasio 2021). To potentially decrease costs of labor, the marketing team can come up with a plan to decrease these labor costs by outsourcing work to a foreign country to decrease these manufacturing and labor prices.

Medical technology manufacturers conduct business to business (B2B) commercial transactions with their target market of nursing homes. Nursing homes purchase various medical technologies to support and assist their elderly residents with a wide range of health and personal care services. Since 2014, Nursing Home 100 was the biggest consumer in the industry, purchasing over 839,820 total product units (*Nichev Excel Dashboard*). Of those sales, 819,705 units were Product 10. As discussed previously, Product 10 is the best selling technology in the medical technology field. With over 97.7% of Nursing Home 100’s technology spending on Product 1, this emphasizes the extremely high demand of the product. Overall, Nursing Home 100 generated over $493,212,351 in sales profit for the manufacturers, the most out of any buyer in the medical technology industry (*Nichev Excel Dashboard*). Nursing Home 100 is the industry’s biggest client and the marketing/sales department should be communicating with this client to ensure that they are satisfied with the functionality of the products and the service received. This client should be the marketing team’s top priority to satisfy and ensure they remain a buyer for years to come.

Nursing Home 150 was the industry’s smallest spender, only purchasing 28,013 total product units since 2014. Nursing Home 150 only generated $24,130,527 in sales profit for the manufacturers (*Nichev Excel Dashboard*). These values are extremely low compared to the other two nursing home clients. The marketing/sales department should develop a marketing campaign to increase sales with Nursing Home 150. The marketing team should send a survey out to Nursing Home 150 to address the nursing home’s biggest needs and to better understand the functionality and usage of the products in their nursing. As Lori Hubbard discusses in ​​*Why Is Identifying the Target Market so Important to a Company?,* it is crucial for the marketing team to understand what their target market wants in a product and how that product will bring value to the customer (Hubbard 2019). By correctly identifying the needs of the target market, this allows “marketers to focus on those most likely to purchase the product” (Hubbard 2019).

The marketing/sales department should keep up with their biggest clients at Nursing Home 100 to maintain their spending, while also improving their understanding of the needs and demands of Nursing Home 150 to improve their spending with the manufacturers.

**Support/IT**

Over the course of three years of information provided, there exist matters which require addressing. In support/IT for medical technology manufacturing, these matters prevail within its deficiency in sustaining product sales. The company website’s faulty interface increases product returns. For example, in the Excel files regarding product returns, all reasons for returns continue growing, with the wrong device ordered as the highest reason over these three years. This result shares similarities with another excel file: customer support.

For two years in a row, the inability to reach the PO site and the wrong device order remain two of the largest reasons for consulting customer support in January(Dataworksheet). This presents a problem for the customer and the company as this specific entry demonstrates difficulty navigating the products available for purchase. The wrong device ordered required the company to refund 362 products over three years and a minimum of 8 hours per January speaking to customers over this concern(DataWorksheet). However, this statistic does not demonstrate the only telling sign of an issue within the company. Over the course of two years, the most significant reason for customer support calls remains evident in the inability to access the PO site, requiring a minimum of 19 and a half hours of employee resources in January 2021 and 17 hours in January 2022(Dataworksheet).

These two concerns imply an issue with the company's online presence, meaning a failure in the design process and maintenance of the webpage. This failure required the allocation of 83 hours of customer service to resolve these two matters, each stemming from the same problem. Combined, these two categories equate to 58% of the total time allocated to customer calls per January(Dataworksheet). While the corrupted company website may appear as one task among many in this report, this website plays a significant role in customer reputation. A damaged reputation might mean the end of the business, as 92% of consumers stand less likely to use a company if they display negative reviews(1).

These negative reviews do not just deter potential customers, but existing ones as well. "89% of consumers began doing business with a competitor following a poor customer experience" (2). A failure to act upon this issue can result in the potential totality of this statistic befalling the company and its products. Once a customer undergoes a negative experience, their dissatisfaction will extend towards others. This means that the wrong product ordered or inability to access the PO site will be announced to an average of 9-10 additional people. (3)

Prospective clients will not use a company if customer disapproval urges existing clients to no longer do business. The corporation must enact one of two things: insource or outsource professionals to address the problem and resolve it. An adulterated user interface or a loss in revenue from the growing rate of returns across all categories can equate to a diminishing public appearance. While statistical data can aid in forecasting what growing user dissatisfaction can mean for the company, information on the current status of customer’s satisfaction and emigration rates can further this inquiry. Customer feedback on the use of products and the company website overall also requires further evaluation.

This offers statistical evidence on what courses of action the company should execute and where the most considerable complications exist amongst the website. Understanding this can result in the company's website enhancement to offer a better user experience and higher customer appraisal. "49% of consumers need at least a four-star rating before they choose to use a business"(4). Almost half of the customer market remains inaccessible because of low user reviews, making higher reviews beneficial to the reputation and profits. Within Support/IT, this department interacts most with customers and their concerns, requiring their satisfaction necessitating precedence over many other department tasks.

90% of customers hold customer support to high standards when dictating loyalty to a brand, and if unable to do meet this task, 58% of customers demonstrate "little hesitation in severing the relationship."(5)

(6)

**Conclusion**

**Accounting/Finance**: The company did not maximize their profit during the 2021 fiscal year. The other departments must review the necessary information to address why the company net profit fell short of its target. Specifically, HR should investigate why workers have higher salaries. Marketing/Sales needs to address the lack of sales for product 20.

**Human Resources/HR:** Overall, when it comes to human resources they performed well when it came to customer service reviews but lack in the proper training in order for them to feel prepared for this company. It is crucial to make sure that employees have the proper training that is needed in order to succeed in this field. If they had performance reviews this would also benefit the company having a better undering of where their employees are lacking the training in order to exceed. The employer should give pay raises after an employee retains a certain amount of good reviews and the overall performance within the company. If their hourly pay is never raised by a certain amount of time that is when the company will lose its employees.

**Inventory/Production/Supply Chain Management:**The production/order overall produced products rapidly to keep up with consumers, especially machines 6 and 7. We need Starshipit, an order management system, to have products delivered on-time more often. As we advance, we need to eliminate the number of detects in inventory by fixing used to produce the medical technology products by replacing missing parts, engines, or the whole machine. The Inventory/Production/Supply Chain Management department should repair machines and install order management and cloud-based software to send deliveries on time and reduce product defects.

**Marketing/Sales:** The medical technology industry has seen growth in medical technology product sales from previous years, with future growth expected. The industry’s best selling medical technology is Product 1, generating the most sales and profit for manufacturers. However, issues arise particularly with Product 3’s low sales units and small profit margins. Marketing/sales department should prioritize improving Product 3’s sales and demand through organized ads and marketing campaigns. The marketing and sales team should prioritize keeping Nursing Home 100 satisfied as they are the biggest spenders in the medical technology industry and generate the most technology product sales and profit for manufacturers.

**IT/Support**: The main issues within the Support/IT department exist within the website interface as it causes major problems for the company. The first problem being a large number of product returns due to the failure of the website’s clarity. This clarity causes customers to purchase the wrong items, therefore returning them. This along with the inability to access the PO site account for 58% of all service calls in the months recorded in the Excel files. The request for further statistics concerning customer loyalty as well as satisfaction ratings are made in order to provide an understanding of the severity levels of these issues. The support/IT department request that the company website undergoes maintenance and user testing to better the experience of future customers and retain a positive public image.

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