Solutions for Axiom ERP inadequacies

Executive Summary

The chief concern of Optifuse, LLC stems from the use of an outdated ERP system, which is failing to properly export data to an updated data visualization software, such as Excel. Within this report, you will notice the weighing of costs, benefits, and other relevant factors for each proposed solution. This report ultimately creates a recommendation for the use of a screen scraper software, specifically Data Watch Monarch, to solve Optifuse’s immediate issue and explains why it is chosen when it is compared to alternative choices. For instance, according to Data Watch Monarch statistics, businesses can increase productivity by up to 30 percent, which is made possible through its ease of use and robust data extraction procedures. Using screen scraper technology, Optifuse can acquire the data that it needs from the Axiom ERP system without incurring heavy costs or the hassle of data migration into a new system. Through the use of Data Watch Monarch, Optifuse can see a reduction in customer accounts overdue by as much as 20% within 3 months and 35% within 6 months of creating new manager reports. Based on the research, this software provides the most viable solution for Optifuse in the short-term for its unique business issues.
Business Analysis

Optifuse, LLC

Optifuse, LLC is a manufacturing and supply company that is currently based out of El Cajon, California, specializing in electrical fuses. Founded by Jim Kalb in 2000, Optifuse was created with the intent of filling the void within the fuse industry when major suppliers in the market changed their distribution methods. Today, Optifuse is a subsidiary of Triad Partners, LLC and a sister company to Vortex Technologies, an OEM components supplier.

In the Optifuse business model, enterprise resource planning (ERP) plays a crucial role in both short-term and long-term business planning - currently, Optifuse utilizes the Axiom ERP software in order to help manage the company’s day-to-day functions. Axiom ERP is a fairly robust system that effectively, and efficiently, streamlines various business procedures into one fluid process; however, the Axiom ERP software operates within what is known as a “closed system.” A closed system is a process/product that is only available for upgrade by the company that creates it. Although a closed system does not typically present any issues when it is first introduced, it always becomes a problem down the line. This is simply due to the fact that in Optifuse’s case, the closed system can only utilize software upgrades and programs created by the Axiom company.

Project Focus

The current instance of the Axiom ERP software is that it does not support the ability to create high-level, interactive manager reports. In an attempt to remedy the issue, this software allows the user to export data, depending on the report; however, the export function does not properly reflect the information that it presents to the user within the ERP system.

At the moment, any report and its accompanying graphics must be created utilizing Excel and the data must be manually entered, which is a process conducted by Mr. Kaleb on a weekly basis. As one can imagine, this is a very time-consuming exercise, and inefficient use of one’s workday; yet, these reports are pivotal in helping manage day-to-day functions as well as achieve long-term business goals.

The focus of our project has the aim at finding one solution that accurately exports data from the Axiom ERP system. The goal of our suggested solution is to get Optifuse’s data in a working form, to be utilized by 3rd party software, in order to generate accurate manager reports. We are narrowing our scope to only address the specific data exporting issues that Optifuse is currently experiencing, omitting the matter of generating manager reports. We have chosen to make this omission for the reason that receiving accurate data and handling its proper exportation appears to be the more prominent issues at this time. In regards to the need for accurately generated manager reports, this is an issue that can be addressed in a separate system review.
Enterprise Needs

In order to efficiently run a company, managers require valid and up-to-date reporting. In the case of Optifuse, inadequate data has the biggest influence on customer accounts. The following organizational goals revolve around and are based on, the improvement of manager reports - when reports are receiving influence from accurate data. They are as follows:

- Reduce customer accounts overdue by 20% within 3 months and 35% within 6 months of creating new manager reports.
- Increase existing customer portfolio growth by 3% within 6 months and 5% overall within 12 months of implementing new manager reports.
- Improve customer orders by accurately forecasting demand to 95% fulfillment.

Through improving manager reports, Optifuse is able to provide better service to its customers by ensuring that they have adequate merchandise in-stock; which, in turn, helps Optifuse grow its current customer portfolios. The improvement of reporting also accurately reflects what customer accounts are overdue in regards to terms, allowing proper dictation of customer follow-ups.

Areas of Opportunities

The following S.W.O.T. analysis is an examination of the Axiom ERP system.

Strengths:
- Robust system
- Integrated and deep-rooted in Optifuse business model
- Optifuse staff and management extremely familiar with Axiom ERP software

Weakness:
- Cannot accurately export data from within system reporting menus
- Closed system (ERP is not compatible with 3rd party software)
- Requires supplemental software to produce desired reports and accompanying graphics

Opportunities:
- Accurate accounts receivable will help improve customer service levels
- Robust manager reports will make accurate and informative business decisions
- Increase employee productivity (employees are inclined to utilize ERP system more often)

Threats:
- Inadequate customer service levels may lead to loss of clients
- Managers may not be notified of critical issues due to lack of accurate reporting
- Mismanagement time and energy (can focus on other priorities)
Current Process Analysis

Current Physical Process Narrative

Axiom is an outsourced vendor ERP system that tracks a variety of data types such as customer purchasing information, manufacturer orders, company invoices, etc. Through the utilization of Axiom, Optifuse is better able to organize its accrued data, importing its findings into .PDF files with uniform formatting for ease of access and readability.

Optifuse’s process begins when a customer makes a purchase on the company website, and the request routes through Axiom to Inside Sales. In Inside Sales, a salesperson checks to see if the selected product is available by contacting the Shipping department. The Shipping department conducts an inventory survey to determine whether the product is available or out of stock, reporting its findings back to Inside Sales. Inside Sales orders more of the specific product if necessary and confirms the sale request, contacting Quality Assurance to inspect incoming products in a pass/fail inspection process. After products pass the inspection, those passing products become available for shipping, and the Shipping Department ships the product(s) to the customer, ultimately contacting the Accounting Department to update its record books. After updating company credits and debits, Axiom ERP is able to take all that has transpired in past transactions and formulate financial reports in .PDF form. The Owner receives the reports from Axiom ERP and attempts to adjust and correct the final reports, importing the data/reports into Microsoft Excel.

Summary of Problems, Opportunities and Directives

At the moment, any report and its accompanying graphics must be created utilizing Excel and the data must be manually entered - this is done by Mr. Kaleb on a weekly basis. As one can imagine, this is a very time-consuming process and inefficient utilization of time; yet, these reports are crucial to help manage day to day and long-term business functions.

Optifuse is experiencing difficulties with its Axiom ERP system, as it does not provide the necessary business intelligence that the CEO needs in order to make practical business decisions. The Axiom ERP software does not provide the business analytical tools or graphical representations that Optifuse receives from other applications, such as Microsoft Excel. In order to resolve this issue, Optifuse attempts to import reports from Axiom ERP into Excel, running into a substantial issue - a major loss of information due to importing errors between Axiom and Excel.

Optifuse’s errors presumably stem from the company’s main programming language, FoxPro. Because FoxPro is a discontinued coding language, the current ERP is likely encountering errors in translating Axiom ERP into Excel, which is primarily a Visual Basic code-based application. In turn, Optifuse observes that its data is consistently misformatted, and misinforms its employees continues to be spread through
the office. Due to Optifuse’s issue with migrating its data between software, it becomes evident that the implementation of a screen scraper may be the best fitting solution.

**Proposed Process Analysis**

**Proposed Technical Solution, Overview**

Screen scraper technology resolves Optifuse’s issues because screen scraper programs are specifically designed to extract data from old systems and migrate it into new systems. A screen scraper is exactly what Optifuse requires, as the company has expressed concerns with the technological burden, and costs, of migrating 7+ years of data into a newer, more robust ERP system. Screen scraper technology eliminates the need for Optifuse to heavily invest in the implementation of a new ERP system, instead only requiring the installation of a new software.

**Proposed Physical Process**

Data Watch Monarch is a data extraction application that is developed for Windows and has the ability to extract data from a variety of file formats including PDF. Optifuse’s current system presents its data in a PDF format, but it cannot import the data from old programs into new programs like Excel 2016 or Tableau. Data Watch Monarch is one of the many data extraction tools that can remedy Optifuse’s specific problem of data migration. According to Data Watch Monarch statistics, businesses can increase productivity by up to 30 percent, which is made possible through its ease of use and robust data extraction procedures.

If senior management shows interest in producing accurate business intelligence reports, it becomes integral to install, as well as learn how to use, the Data Watch Monarch software. This will add an extra step to the Optifuse’s current process, one in which the end user simply exports desired data analytics from the Axiom database into Data Watch Monarch. Once the data gets processed through Data Watch Monarch, it will then need to be exported to the desired data analytics software. What this process accomplishes is simply adding an integration process that can ensure the proper exchange of data. There is not very much complexity to this screen scraper solution, and therefore the physical process will not undergo any dramatic changes.

**Solution Assessment and Justification**

**Enterprise and Business Area Issues**

Through the utilization of screen scraping software, we address Optifuse’s main concern - company reports are no longer being incorrectly formatted and, instead, become uniform in likeness. This screen scraping solution will not only improve the organization of information within Optifuse, it also has a positive effect on the relationship with the company’s many clients. Sensitive information such as credits and
debts are accounted for regularly through the screen scraper, as are payment due
dates for each client; thus, Optifuse no longer finds it necessary to look into client files
one by one, or ask clients when their quoted payment date is scheduled.

Benefits and Consequences

Tangible

The proper business intelligence decision is measurable, for instance, there is a
quantifiable increase in the efficiency of decision making. With the screen scraper,
Optifuse is able to accurately and visually measure the demand for its products and
adjust the company’s business strategies. With this in mind, Optifuse increases its
profits, as well as its business decision efficiency. With proper data decisions, this
business is destined to be even more successful than it is now.

Based on this analysis of the current system we have generated an estimate on
the amount of time that it currently takes Optifuse to generate some of its most used
reports, and how often the company wants to generate them. Some of these reports are
massive, and manually configuring the numerous fields within a spreadsheet throughout
a month will take a substantial amount of time.

<table>
<thead>
<tr>
<th>Report Types</th>
<th>Time</th>
<th>Frequency (In Months)</th>
<th>Total (Minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Orders</td>
<td>30 minutes</td>
<td>10</td>
<td>300</td>
</tr>
<tr>
<td>Revenue</td>
<td>60 minutes</td>
<td>4</td>
<td>240</td>
</tr>
<tr>
<td>Liabilities</td>
<td>80 minutes</td>
<td>4</td>
<td>320</td>
</tr>
</tbody>
</table>

**Grand Total: 860 Minutes Wasted per Month**

Cost estimates are also derived from the current process in place. This section of
the analysis evaluates the financial impact of improper business intelligence reports.
One of Optifuse’s largest losses of revenue is a result of inaccurately billing its clients.
Optifuse’s current system does not accurately depict any specialized due dates for bills,
which causes financial loss for the company. Jim Kalub, the CEO, explains that
whenever Optifuse inaccurately bills a major client, the company risks losing future
contracts with that client. The following data is an estimate based off of observations
from last year’s billing reports made at Optifuse. The grand total represents the
combined value of inaccurately billing 3 major clients, assuming those clients decide to
no longer do business with Optifuse in the future - as a result of inaccurate billing.
### Clients

<table>
<thead>
<tr>
<th>Clients</th>
<th>Optifuse Billing Due Date</th>
<th>Actual Billing Due Date</th>
<th>Average Billing Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client A</td>
<td>3/20/17</td>
<td>5/28/17</td>
<td>$3,800</td>
</tr>
<tr>
<td>Client B</td>
<td>4/6/17</td>
<td>6/25/17</td>
<td>$6,830</td>
</tr>
<tr>
<td>Client C</td>
<td>5/16/17</td>
<td>7/26/17</td>
<td>$8,360</td>
</tr>
</tbody>
</table>

Grand Total: $18,990 average potential loss of future contracts

### Intangible

Improving business intelligence generally results in an increase in employee morale. As senior management continues to make proper business decisions for Optifuse, the company becomes more profitable; which, increases customer satisfaction as Optifuse is able to make more accurate demand decisions. Below is a measure of how employee morale is affected by the productivity of Optifuse on a quarterly basis. Employees that are stuck with an old system are more likely to experience frustration, which causes individuals to lose roughly 25% of their productivity. This rough estimate is directly compared to an employee with 100% efficiency, one who is using the new system that this report is recommending.

### Employee Quarterly Unit Quota

<table>
<thead>
<tr>
<th>Employee</th>
<th>Quartly Unit Quota(1 Unit=$2)</th>
<th>Employee Efficiency</th>
<th>Actual Units Sold</th>
<th>Revenue</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee A</td>
<td>450 Units</td>
<td>X 80%</td>
<td>360</td>
<td>$720</td>
<td>360 Units Sold ($180 loss) per quarter</td>
</tr>
<tr>
<td>Employee B</td>
<td>450 Units</td>
<td>X 100%</td>
<td>450</td>
<td>$900</td>
<td>450 Units Sold per quarter, Quota met.</td>
</tr>
</tbody>
</table>
Winners and Losers

**Beneficiaries** within Optifuse consists of those individuals who feel the direct effect of executive business decisions made by the company’s senior management. For example, President Jim Kalub is able to accurately measure the demand for his product through the company’s operations department, which accurately orders and forecasts the appropriate number of products they are trying to sell.

The President may be affected negatively because he is the individual who implements this solution, and it has a bit of a learning curve/takes time to implement. The only people who will resist this change are those who reject the necessary extra effort to learn this software. Some other members of management may prefer to hire someone to pull up and generate the professional reports that they want for Optifuse.

Feasibility Analysis

**Operational**

The screen scraping software is capable of implementing within Optifuse’s ERP system, as it does not burden how the Axiom ERP software inherently works. In essence, this proposed screen scraper is simply grabbing information that is provided within the generated reports. The employees within Optifuse are able to handle this integration because it is a simple data extraction tool, with just a couple of extra clicks. Employees are capable of extracting company data into apps they are already comfortable with, like Excel; therefore, this system will easily integrate into Optifuse’s business needs.

**Technical**

Technically speaking, this solution is initially difficult since there is a learning curve for a sophisticated software, such as a screen scraper. With a new software in place, there will undoubtedly be resistance to the change, but Data Watch Monarch has an intuitive design that stresses simplicity and ease of export to software that is more familiar to staff.

**Schedule**

An ERP system is the life and blood of a business, it is crucial that a new solution fixes the company’s problem quickly without interrupting daily business activities. This solution is a quick fix to a complex system, so no time will be lost in the workplace. The Data Watch Monarch software can be downloaded and implemented immediately on devices that have access to the Axiom ERP system. This integration is simply an add-on to Optifuse’s current ERP system and does not dramatically change the current procedures in place, therefore, this solution will fit into any time frame that Optifuse wishes to specify for integration.
**Economic**

Speaking from an accounting perspective, this screen scraping software is affordable and available for many to use; however, screen scrapers range from free to as much as a few thousand dollars. Data Watch Monarch is a subscription-based software currently priced at $1200 per year with an estimated $300 training cost. While this may seem costly, it is not nearly as expensive as hiring an SAP specialist to migrate over 7 years of data to a new ERP system. With these things in mind, Data Watch Monarch is the premier economic option for Optifuse. In general, the data extraction techniques available in screen scraping software is by far the most financially sound decision for Optifuse. Our economic analysis of all viable solutions for Optifuse has led us to conclude that screen scraping is the most cost-effective solution available.

We calculated the ROI on this plan based on the data provided earlier in regards to employees operation at 100% efficiency with the new system. The ROI yielded is based on the values for one single employee using the new system. ($3,600 revenue of one employee per year) - ($1638 Cost of investment)/$1638(Cost of investment)= estimated 119% Return on investment per employee. The ROI yield is high because this solution is so low cost compared to the substantial benefit it provides users.

**Proposed Implementation Plan**

Data Watch Monarch must be installed on the device of every user within the organization who wishes to produce accurate and informative data analytics. For instance, this software needs to be implemented on all the devices of those senior management members who require regular reports. Once the software is installed, those employees that wish to utilize this software will require some training. Due to the nature of this technology, there are no other implementations necessary in order to operate the software. Data Watch Monarch takes advantage of the current system already operating within Optifuse, so there are no other implementations necessary - besides proper understanding, and utilization, of the software.

**Conclusion**

Optifuse’s reporting issues are evident, as information cannot be taken directly from one document and placed into the company’s final reports. The two notable solutions for this issue include the utilization of screen-scaper technology and/or the updating of ERP system as a whole. Although updating the ERP system as a whole is extremely costly, it is the best long-term solution to the primary issue Optifuse is experiencing, as well as the others that have not been addressed within this report. Based on Optifuse’s current situation, the proposed screen scraper software is likely to be the best fit, as it is low-cost and will solve Optifuse’s main issue in the short-term.
Context Process Model for Current System

- **Owner**
  - Generate Incomplete Reports
  - Adjust Reports
  - New Correct Reports

- **Quality Assurance**
  - Lists Products for Inspections
  - Pass/Fail Inspection

- **Accounting**
  - Records Payments
  - Generates Invoices

- **Inside Salesperson**
  - Inputs Customer Order & Information
  - Determines Product Availability
  - If Available Confirm

- **Shipping/Receiving**
  - Marks Order Fill or Reports Back Product Out of Stock

- **Axiom ERP System**
  - Order Details
Logical View Level 0 Current System Process Model

1.0 Process current requests

1.0.1 Process orders to be fulfilled

1.0.2 Generate Inadequate Reports

2.0 Order additional supplies

2.0.1 Order Fulfilled

2.0.2 Invoice

2.0.3 Current Inventory

2.0.4 Product for Inspection

2.0.5 Product Pass/Fail

3.0 Process orders to be fulfilled

3.0.1 Marks all Deliveries

3.0.2 Update AP/AR

3.0.3 Buyer Info for Report

3.0.4 Inventory for Request

4.0 Generate Inadequate Reports

5.0 Customer

6.0 Vendor

7.0 Warehouse

8.0 Owner

DS:1 Buyer’s Info

DS:2 Inventory Info

DS:3 Data Visualization Software

DS:4 Quality Assurance

DS:5 Accounting

DS:6 Business Decision Intelligence
Entity-Relation Diagram for Current System

Senior Management
- Management ID
- Employee Name
- Department

Shipping/Receiving
- Order ID
- Product ID
- Inventory

Queue
- Order ID
- Product ID

Axiom ERP System
- Product key
- Company information
- Client Information
- Inadequate Reporting

Quality Assurance
- Batch ID
- Employee ID
- Employee Name

Inside Salesperson
- Sales ID
- Product ID
- Order ID

Accounting
- Accountant ID
- Invoice
- Accounts
Entity-Relation Diagram for Proposed System
Use Case for Current System

1.2.2.1 Notify Vendor

- Check inventory
- Request new inventory
- Transfer Funds
- Goods Out For delivery
- Delivered to Optifuse

Inventory Manager

Optifuse

Vendor Facility

Vendor Driver
Use Case for Current System

2.2 Generate open purchase order

- Place order in Axiom ERP system
- Send order request to manufacture/supply
- Manufacturer sends order confirmation
- Update vendor records
- Update inventory records
- Generates open purchase order
Use Case for Current System

3.2.3 Reject Product

- Identify lot for inspection
- Randomly select specific lot for inspection
- Identify Faulty Products
- Reject lot contact supplier
- Ship back to supplier
Written Use Case for Current System

Current system - Written Use Case: 1.2.1 In stock

Overview: The Axiom ERP system will verify inventory records to check to see if merchandise is in stock to fulfill customer order; it will update records and notify respective associates.

Actors: Axiom ERP Systems, sales associate

Pre-conditions: A customer order is processed by a sales associates

Main Success Scenario:
1. The Axiom ERP system will access a customer order that has been processed by a sales associates.
2. The Axiom ERP system will then proceed to access the inventory records
3. The Axiom ERP system will cross reference customer order with inventory records
4. The Axiom will update both customer and inventory records
5. The Axiom will send a notification

Post-Conditions: Axiom ERP system will notify shipping/receiving department to process customer order or will go into 1.2.2 Out of Stock
Use Case for Proposed System

1.1 Approve customer requests

Customer

Order Made

Order request received

Transfer Funds

order stored in database

Customer demand data updated

Customer Service

Accounts Receivable

Axiom
Use Case for Proposed System

5.1 Accurate Logistics Report

- Requests quarterly demand report
- Axiom Processes query
- Forward report to Data Watch Monarch
- Export to data analytics software
- Review new report
Written Use Case for Proposed System

Proposed System - Written Use Case: 5.2 Accurate CRM Report

Overview: The Optifuse employee will update CRM database by utilizing Datawatch Monarch software on Axiom ERP System. The user will then be able generate accurate CRM reports depending on the selected criteria.

Actors: Axiom ERP System, Monarch

Pre-conditions: None

Main Success Scenario:
1. Optifuse associate will access customer recorders with pertinent information on Axiom ERP system
2. The associate will then proceed to utilize the Datawatch Monarch software to screen scrape the Axiom ERP window
3. Within Datawatch Monarch program, the associate will choose which software to export the data to and the integrity of that data will be maintained.
4. Accurate table report to external analytical software.

Post-Conditions: The user will be able to generate reports reflecting new and accurate customer data
Review of MIS 306 Project

The hardest parts of the MIS 306 project were finding a client and meeting that client's needs. What we learned in MIS 306 is that cold calling is incredibly difficult to pull in our own potential clientele. Cold calling did not work for us, as we were not able to secure any clients on our own and required the help of Dr. Meader in order to pursue the project any further. After receiving a helping hand from Dr. Meader, we were able to secure Jim Kalb as a client from Optifuse. When meeting Jim Kalb, we were unsure of his company's needs, and it was essential to meet/interview repeatedly in order to get a clear project scope.

In order to stay organized and create a schedule, we utilized Microsoft Project to create a dynamic GANNT chart, updated as the semester progressed, in order to keep track of our project milestones, delegate roles, and manage our project deliverables in a timely and organized manner. Utilizing our specialties we have learned in other MIS courses, we were able to implement our Microsoft Visio skills to visualize and create the physical and logical process models as well as the ERD.

Overall MIS 306 was a real-world experience where we applied our knowledge and skills of the principles of Information Systems. Although it was a difficult project, this was one of the most rewarding and valuable experiences for our professional development as IS majors.