

BUSINESS PLAN PROPOSAL

AUTOMATED WAREHOUSE SOLUTIONS

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November 24, 2008
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1. Executive Summary

1.1. Business Description

Each year, billions of dollars are spent on stocking and distributing goods in the warehousing and storage industry. With the continual growth in the industry, warehouses are striving to become more and more efficient, by making their processes more efficient and cost effective. The business strategy of Automated Warehouse Solutions is to capitalize on this industry, making it even more efficient and cost effective by using robotics as a new warehouse distribution system. According to the Bureau of Economic Analysis (BEA), the gross output of the warehousing and storage industry was 48.6 billion dollars in 2006, which is approximately .92% of the total gross domestic product (GDP). The company's business plan is to capture .003% of this industry over the next 20 years.

It is the intent of Automated Warehouse Solutions to provide custom and predesigned robotic equipment to warehouses for storing and fetching goods electronically via a computer system. By using electronic equipment and computers to control warehouse distribution, companies will have more control of their goods in storage, which will be very important for perishable goods in warehouse storage. Millions of dollars are lost each year due to goods that are unaccounted for, or goods that perish while in the warehouse. A robotics solution will allow warehousing companies to not only reduce the number of lost or perished items, but also reduce the staffing needs and labor intensity of the warehouse.

A typical warehouse requires anywhere from 10 to 30 fulltime people to operate effectively. According to the U.S. Labor office, the average warehouse worker makes around \$15 an hour. Automated Warehouse Solutions anticipates a 25% reduction in personnel required to operate a warehouse effectively and efficiently. A robotic warehouse implementation could produce a cost savings of anywhere from \$10,000 to \$1.2 million in labor costs, and even more through liability insurance, employee benefits, and other addition labor expenses. It is not the intent of Automated Warehouse Solutions to eliminate work completely, but rather create new and more skilled positions in robotics.

In addition to implementation and design of robotic warehouse applications, Automated Warehouse Solutions will create a consulting and technical service to assist warehouse management in making good business decisions. The technical aspect of the service will support the robotic applications installed, while the consulting aspect of the service will provide efficiency concepts and automation advice for warehouse owners and management. The service division of the business will add jobs to the economy while also providing the company with a steady stream of post sale income. Additionally, Automated Warehouse Solutions plans to sell replacement parts, maintenance parts, and commissioning and qualification documents. It is expected that the services department will be a large source of revenue.

1.2. Marketing

There are currently many manufacturers of large palletizing warehouse robots, however, these are not in the intended market of Automated Warehouse Solutions, and therefore are not its current competitors. The company's business plan is to create a small and very inexpensive robot capable of retrieving small objects. Furthermore, the company believes that if an automatic storage retrieval robot can be designed on a materials cost of \$1500 to \$2000, then it would open an entirely new market sector in automated

warehouse retrieval systems. These systems could then easily recover the initial investment, making them very appealing to warehouse or even factory applications.

1.3.Strategies

The team believes that by starting as a small business which develops specialized solutions for individual clients, the company can begin with a relatively low overhead, concentrate on customer service, and develop great relationships with the company's clientele leading to additional business opportunities.

1.4.Manual and Technical Expertise

Another advantage of starting off as a small company is that a large number of employees is not needed. The core of the team consists of four electrical engineers with a variety of experience and backgrounds. The team believes that it will be able to effectively manage the technological research and development of the product, as well as the technical support for the customers. The team also believes that it can manage the finances of the company at initial start up, but would like to hire an additional employee to handle the finances when the company begins to grow and it becomes economically feasible.

1.5.Financial Request and Cash Flow

The team has already begun the research and development sector of the business. The design team has purchased an electronic development board and is currently in the process of installing an operating system. This will act as the robots intelligence and control the movement of the arms and its location on the track. It will also communicate with the host computer and receive information about the desired item and its location, along with monitoring for any obstacles along its path. The team is currently investigating the mechanical components of the robotic arm such as electrical motors, arm material types, and a hand gripper type. These decisions will be based on an evaluation of the best balance between object dimensions, warehouse requirements, and final production cost of the robot.

The current cash flow will be used to finish an operating prototype, along with continual research and investigation of possible applications. Once the prototype is completed, additional budgeting for further add-on features to tailor to specific applications will be needed.

2. Vision and Mission Statement

2.1.Entrepreneur's Vision

It is the team's vision as a company to develop a reliable and cost efficient method of storing and retrieving items. The company will strive to incorporate creative design, good business ethics, and Christian principles as the foundations of the company. The company hopes that through hard work and dedication to the product and its customers that it will successfully grow to hold a significant share in the small warehousing market.

2.2. Specific Business Market

While sales and marketing for the product are vitally important, the company believes that a profit can also be made through product technical service and consulting. If the customer is satisfied with the system, they will be likely to purchase add-on features and expand their system. Since the company is oriented on providing excellent customer service and catering to the customers needs, profit from repeat business and referrals is expected.

2.3. What Makes Automated Warehousing Solutions Unique

As mentioned previously, what makes Automated Warehouse Solutions unique is that it is creating a niche market for an inexpensive item storage and retrieval robot for small warehouses. Also, because the company is starting as a small business, it will be able to specifically cater a solution to the customers concerns while building great relationships.

2.4. SWOT Analysis

An effective way of evaluating a developing business is to use SWOT analysis. This type of analysis was developed by Albert Humphrey, who led a research project at Stanford University in the 1960s and 1970s using data from Fortune 500 companies. The term SWOT stands for the Strengths, Weaknesses, Opportunities, and Threats of the company. A SWOT analysis chart has been created and can be seen below.

2.4.1. Strengths

The strengths of the company are that it provides an inexpensive product while offering a customer oriented approach that will help bring repeat and referral business. Also, the company believes that it has a great product idea and therefore is motivated and determined to create a successful business around it.

2.4.2. Weaknesses

The major weakness of the team is that the core of employees are relatively inexperienced Engineers coming straight out of school. The core is also very inexperienced in matters of business and finance. This is one area in which the company will need continual improvement and training. Also, because

it is a start-up business, relatively low funds are available for the necessary start-up costs.

2.4.3. Opportunities

The company believes it has a great opportunity to develop a well designed product to improve the efficiency of warehouses and take hold of a new niche market while building a successful and competitive business. Automated Warehouse Solutions also believes that it can use the Christian values and

	Helpful	Harmful
Internal Origin	<u>Strengths</u> Customer Oriented Inexpensive Great Product Idea	<u>Weaknesses</u> Inexperienced Low Funds Start-up Business
External Origin	<u>Opportunities</u> Niche Market Improve Efficiency Christian Witness	<u>Threats</u> Start-up Failure Larger Companies

Figure 1: SWOT Matrix

perspectives of the company and its employees to continue to be Christian witnesses and agents of renewal through everyday work and by giving back to the community.

2.4.4. Threats

The statistics of start-up business success are frighteningly low. Therefore a big threat to any start-up business is investing a lot of time and money into creating a successful business from scratch. There are many detailed evaluations which need to be carefully considered before entering into such a large endeavor. Start-up business failure can be caused by poor management, poor market evaluation, or even just a bad product. Also, if the company does successfully evaluate the market for their product and develop a great system for their intended small warehousing market, there is still a good chance that a large established company with more money can create a similar product and overtake the company's share of the market.

3. Industry Profile and Overview

3.1. Industrial Background

As mentioned previously, the target industry is the small to medium sized warehouse industry. Historically these warehouses use human labor to do stocking and fetching of warehouse goods. These processes have remained relatively unchanged to this day. The latest improvement to the industry has been the implementation of computers and database systems for inventory tracking and control. This means the industry is ripe for efficiency upgrades with all the available technology that is available to implement automation to the stocking and retrieval system.

3.1.1. Major Customer Groups

The initial target market of our business is the smaller warehouse industries and also small parts distribution centers. Some sample businesses could include iKea, Auto Zone, Fastenal, and NAPA. Further evaluation of the market could eventually lead to an expanded product to accommodate larger warehouses. However, in order to reduce the complexity of the product design, our team has chosen to concentrate on developing a prototype to maximize the efficiency of this untouched market.

3.1.2. Regulatory Restrictions

There are currently very few regulatory restrictions in the industry that are directed at automation largely because there have been few attempts to automate the small warehousing market. The only known regulations that the design will need to accommodate are the electrical and mechanical safety codes applicable to all electronic and mechanical industrial applications.

3.1.3. Significant Trends

The data available for trends in this industrial application is insufficient at best. The application is untested and there are no current businesses pursuing what this design is intended to do. The trend for large warehouse automation is very strong, but it is often geared toward ground up implementation. This means that the entire warehouse must be designed around the equipment being installed. Automated Warehousing Solutions will take a separate direction from the industry's trend by being a customizable implementation which will require a very small cost to implement.

3.1.4. Growth Rate

If the product is well received by the industry, it could grow very quickly due to the uniformity of the industry. Stores such as iKea, NAPA, Auto Zone, and other parts stores all have very similar layouts, which would make installation easy and the required training minimal due to their uniformity.

Additionally, these industries are very competitive with each other and therefore their competitiveness will likely lead to further sales. For example, if NAPA chose to purchase a system and is therefore able to reduce its costs and become more efficient, Auto Zone will also be likely to install the equipment in their stores.

3.1.5. Barriers to Entry

The team does feel that a successful entry into the market will be the most imperative and difficult part of the business plan. It will be of the utmost importance that the product has been tested and works as planned. If the product breaks frequently or does not operate as planned, then growth into the industry will be stunted due to a soiled reputation. The product will therefore be thoroughly tested in a warehouse under regular operation before being released into the market in order to better understand the systems weaknesses.

3.1.6. Key Success Factors in the Industry

The product must be easy to use, easy to maintain, and be very reliable. Any downtime negates the benefits produced by the product and decreases the overall efficiency of the system. We would like to keep the GUI (graphic user interface) usability complexity at a high school level so that the warehouse operators will be able to use it easily with minimal training. Preventative maintenance should only need to be performed on a quarterly basis, which also results in the reduction of the system downtime. Specific customer implementation flexibility is very important to the success of the business because each customer will have different warehouse layouts and requirements. A major selling point of this product is that it is able to be implemented in existing warehouses. Lastly, the product needs to be flexible and capable of installing add-on features. The system must handle a variety of items with different dimensions, and therefore the system must be flexible in order to accommodate them. Overall, in order for the system to be a successful product, it must be easy to use, have a flexible design, and meet the requirements of the individual customer.

3.1.7. Outlook for the Future

This product is on the cutting edge of future warehousing automation systems. The warehouse and storage industry is already heading toward automation, and has already shown great success in this direction. Our product will allow a whole new market, in this industry, to be revolutionized and streamlined by automation. With proven success in the large warehousing industry, the void in the autonomy of small warehouses, and the continual advancement of computers and electronics, the timing for this product seems to be just right.

3.2. Stages of Growth

3.2.1. Startup

The introduction of the product will start by forming an agreement with three or four real-world applications within the targeted market for system testing and debugging. These customers will most likely be local companies so that relationships with the customer will become strong and so that when

problems with the system arise, they can be solved quickly and easily. These initial applications will be free of charge so that the system can be fully tested in a real-world environment. When the product is ready to be openly released, the marketing division will use these applications as examples for potential customers. The production of each system unit will be on an as purchased basis, due to the customizability of the product and the diversity of the applications.

3.2.2. Growth

Upon gaining more experience in the industry, the company may choose to create different basic system lines and begin mass production of these base systems for increasing demand. The company will look into the possibility of exploring overseas markets such as Europe, China, and Japan. The company will look into development of new products and the possibility of expanding the focus of the company's marketing scope into different warehouse automation applications. Consulting would potentially pursue upgrading or replacing existing systems with newer and more efficient products.

3.2.3. Maturity

In maturity the company would like to become a leader in the small warehouse automation industry by being innovators of new products that maintain a high standard of quality while offering an affordable price. The company will be open to product diversification only after thorough market evaluation to prevent risking the company's financial success.

4. Company Products and Services

4.1. Customer Benefits

Benefits to the customer include more productivity from employees because they will not need to act as a runner for parts retrieval and stocking. There are cost reductions because the robot will be less costly than human labor and poses a smaller liability risk. Warehouse operation will be possible 24 hours a day, and 7 days a week with minimal down time and will only require a minimal staff to operate properly. The product will be flexible and allow the customer to re-task the system according to the warehouse's changing needs. In short, the product driver is return on investment (cost savings) and increased efficiency.

4.2. Warranties and Guarantees

Automated Warehouse Solutions will have warranties and guarantees, but it is not possible at this time to properly determine what those warranties and guarantees will be without a completely designed product. Additionally, the company plans to warranty the motors and other supplied parts through the manufacturer. Programming will be a warranty item covered through Automated Warehouse Solutions for a specified amount of time. This warranty is tentatively two years to work out the flaws in the system after installation.

4.3. Uniqueness

The product is not the first automated warehouse stocking and storage system, but it is the first of its kind at targeting the small to medium sized warehouse markets. Currently the biggest competition is Kiva Inc., but this company only offers a product that is designed to be implemented from the ground up.

This system is unique because it is able to be implemented in existing warehouses with minimal changes to the existing layout and system.

4.4. Patent or Trademark Protection

It is not the intent of Automated Warehouse Solution to pursue any patents at this point in time. The hardware and software programming will be copyrighted, and the team feels this protection will provide enough legal protection and will be adequate for protecting the company from “design poachers” for the time being. The team does not feel that it is worth investing time and money into a patent that will be in constant change and will need to be customized for each warehouse implementation. Automated Warehouse Solutions does plan to obtain a trademark upon successful completion of the product design.

4.5. Outsourcing vs. In-House

Automated Warehouse Solutions production plan is to outsource most of the components used in the product. All motors, servos, integrated circuits, etc will be purchased on contract with suppliers and manufacturers. In-house services will include: programming, basic machining, and product assembly. The reason for the large amount of outsourcing is to reduce the initial investment required for the company to become operational. Secondly, this allows Automated Warehouse Solutions to focus on its own products and new product development instead of being distracted with the production of less costly and proven components.

4.6. Future Product of Service Offerings

Automated Warehouse Solutions plans to continue development of new products and offer warehouse and storage operational consulting services. The company plans to develop options that can easily be added to an existing system, upgrading the systems capabilities and efficiency. Additionally, Automated Warehouse Solutions is prepared to expand into new areas of the storage and warehouse industry if the opportunity arises. Lastly, Automated Warehouse Solutions plans to expand much of their business into consulting services as the company gains experience and rapport in the warehouse and storage industry. The consulting side of the business is expected to generate a large portion of the company’s revenues and produce an excellent return on investment, being that this side of the business will not require a large investment since it is based off of human intellectual resources.

5. Marketing Strategy

The marketing strategy for this company requires strong and in-depth planning and action from an early point in product development. It is important to keep marketing objectives closely in check with the company’s business objectives in order that the company does not allow the marketing department to solely determine the course of product development. Rather, the company should first develop a strong and realistic business objective, which will then drive the marketing objective.

Building off the business objective of developing a low-cost, easy to install warehouse automation solution leads to a rather clear marketing objective. The business is driven by a need in the market, so the marketing objective will simply be to promote that need and make warehouse foreman and factory managers aware of the time-saving and cost effective opportunity they are being provided.

5.1. Target Market

As mentioned before, the target market for this product will be small scale warehouses and factories. It is possible that there will be a benefit to doing some specialty marketing in safety critical environments, or warehouses involving hazardous chemicals as well. It needs to be emphasized that since most of the target warehouses are small, this product will help them efficiently use their limited space. The diagrams below demonstrate that by implementing this system, more product aisles may be added to the warehouse.

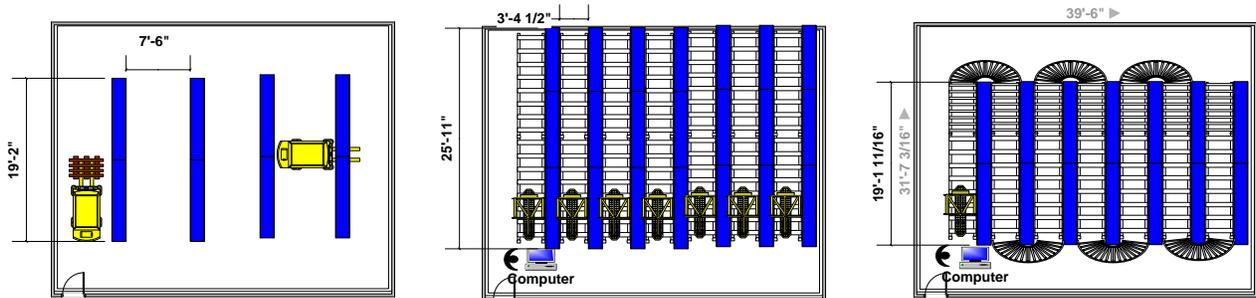


Figure 2: Warehouse Floor Layout Options

The first prototype will focus on low weight requirements. The robot will be able to pick up an object about five pounds or less which needs to be moved. The first group to be targeted will be local small factories. Since the company will focus on customer service, technical support, and product customization, and because of an initial low technical staffing, it is critical to stay close to the customer base. As the business grows, the intended demographic will grow as well, expanding into new geographic areas. Through all of this, however, all advertising and marketing will be directed at the same occupational position. Aiming at warehouse and factory foremen and managers means the demographic will break down as follows.

The market will be mostly men, of middle or upper middle class income level. Race will not be a determining factor, nor will age or education level. Though many managers have a higher education than factory workers, many have also become managers due to factory experience, therefore the age and education level demographic is too blurred to be able to specify. However, it is apparent that experience is a big part of what makes foremen good, so it will be important to promote how experience will prove the product to be efficient. Experienced people tend to prefer products that seem to be time-tested. It therefore must be shown that though they may be satisfied with the way things are currently running, in five years time the system will be such an important aspect of their job that they won't be able to effectively do their job without it.

5.2. Motivation to Buy

This promotion of time-tested approval will provide some motivation to buy, but few factory foremen will be willing to go out on a limb, by themselves, to see if this product is a viable solution. This is an understandable concern, as a robotic solution can easily come off as too futuristic and an unnecessarily complicated way to perform a simple task. Therefore it may be necessary to only do the specialization for hazardous environments first. It can be made known through this niche that the product is a valid staffing

solution for any warehouse with small scale products, and these applications can be used as reference examples and testimonials. The specifics behind the marketing techniques that will be employed are discussed later, but the success of the initial market opinion will heavily sway marketing strategies as the company grows.

5.3. Market Size and Trends

The size of the company's market will grow in proportion to the company's technical and customer support staffs abilities. Since one of the main selling points of the system is catering specific solutions and providing consistent customer service, it is important to insure that these principles are not overlooked by growing larger than the range of the support staff. Technical and sales staff will be sent to insure that the customers are always satisfied, offer expansion and customization packages, and ask for feedback on performance of the product for their particular needs. This will help shape the market as it grows, specializing in more specific warehouse areas as customer needs become better defined. The objective and principle of the company is not just to concentrate solely on the sale of the system, but also to establish a long term relationship with the customer which benefits both parties.

There is a very strong trend in new warehouses being built lately to incorporate built in automation, from the ground up. However, that is not an option for most businesses in operation today. The cost of closing the factory, loses due to down time, and making drastic changes to the building, simply to incorporate the efficiency and reliability of automation is not cost effective.

However, there are few companies in the market of retrofitting an automation solution into currently operating warehouse environments. Many warehouses, as has been mentioned, are wasting valuable employee time and money with simple retrieval tasks. By shrinking aisle sizes and speeding up product retrieval, it is believed that a trend for turnkey automation will develop quickly and spread rapidly.

The reasoning for this is two-fold. First, to stay competitive and keep drawing new customers, companies must keep their manufacturing units modern. They often provide potential customers tours of their facilities, showing off their capabilities. If a customer is touring two identical facilities, including one warehouse implemented with an automated warehouse system, the potential customer could easily see the efficiency benefits of the more modern warehouse. If these two solutions have the same price and time constraints, the potential customer is almost always inclined to go with the more modern, and efficient solution. In this specific case, the modern warehouse is the right choice. This solution is not only more modern, but it will be shown to be more reliable, cost effective, and safe. When presented with all of these benefits for an identical price, the customer will be hard pressed to turn down the offer. This type of warehousing solution will then in turn spread by word of mouth, and the trend for turnkey automation will grow very quickly as an easy and inexpensive solution to the dilemma of staying modern and competitive.

5.4. Personal Sales Efforts

The Sales staff is one of the most important parts of this business. The sales staff will control the location(s) of the support staff, since growth is so entwined with customer support. The sales staff will also determine the path of product development. After the first few simple pre-production units are out and being used, the sales staff will get the feedback about what product add-ons or replacements the customer would be interested in buying.

That being said, the sales staff will have to be a group of people very closely tied to the company. They must have a deep understanding of the product, the company's past, and the company future goals. They will have to have a strong desire to be an integral part of the company, including the training that makes them capable to make this possible.

The sales staff will need to set up the customer relationship and then be able to pass it on to the customer support staff and move on to the next projected sale area. This requires close inter-departmental communication.

It will be required that the sales force have at least three months of training under either a company executive or a experience salesman before being allowed to perform their own sales calls. Compensation for training time will be 30% of the rate being given to the experienced sales person. This is quite an investment for the company, which feeds back to the tough selection process for sales team members.

Once a member becomes a full time independent sales person, their pay will be based on a commission of their sales. Though the customer relationship is important, the sales staff must also be motivated to keep a steady flow of sales and leave the long term relationship to the customer service staff. The estimated sales commission on a sale will be 10%. This is a high enough percentage to attract motivated and talented sales people to the company which will help make the company grow..

The amount of time spent with the sale of each customer will be the decision of the sales staff. However, to help encourage sales the sales staff should strive to achieve an average of four new customer sales per month, after an initial training period. There is not an order size requirement for these sales, but it is enough to keep the sales staff motivated and pushing for new clients. This can be achieved any way they find most effective. Possible sales opportunities may include renting booths at trade shows or advertising in pertinent periodicals, but most of the sales responsibilities will be dictated by the sales staff themselves. Though this company is based upon the power and reliability of a robotic automated system, it is important that we keep our employees happy and motivated, because our business is built on people and the relationships we establish. The sales staff is often going to be the first impression a potential customer has of our company, so the sales staff must be positive and professional at all times to stay competitive.

5.5. Advertising and Promotion

As mentioned previously, the sales strategy will largely be based on word of mouth and face to face sales person interaction. However, to promote state-wide and then national expansion, it will be necessary to invest in larger scale advertising which our sales staff cannot personally reach. To do so, the company will follow several routes.

The first sales opportunity would be to purchase booths in regional trade shows. Warehouse managers and sales staff from companies using warehouses will be at these shows to both sell their own services as well as to see what their competitors are doing. This will give us an opportunity to market to a group of people which are normally not very approachable. We can promote our product to other sales people, who will in turn inform their advisors of what is currently available on the market.

The second way we hope to generate business is through purchasing advertizing space in magazines or periodicals that the interested parties will be reading. Pinpointing productions that specialize in catering

to small business and manufacturing customers, our advertisements will contain a picture of the base unit along with other products being sold, the base price, and a brief description of the company. After production units have been sold, testimonials and efficiency statistics may be added from existing customers. The advertisement will also contain the company website and a sales representative's phone number for further information. Upon the customer inquiry, the customer service representative will ask which method they were referred to the company from, which will help provide feedback as to the success rate of the advertisements.

5.6.Price

Though it is given more detail in the financial section of this business plan, the base price of the system to achieve a reasonable profit for an entry level unit will be approximately \$3000. This will be the base price the sales team and advertising team will be given to work from. As the company grows and more options are added, they will be encouraged to suggest add-ons or upgrades to the base unit. This will help increase the sales and profit of the company as well as keeping existing customers coming back for the newest system add-on feature or improvement.

At first the profit margin will be low, due to the cost of low volume production. As time goes on the cost of production will be reduced by increasing part volumes, stream-lining the process, phasing out unnecessary parts or electrical components, and packaging things together to save space and materials.

5.7.Distribution Strategy

While the company is in its first stages of development, distribution will look quite different than it will once the company is working out of multiple regions and states. At first, the distribution will be performed exclusively by the executive team. This entails going to every customer's warehouse, overseeing and directing installation themselves, and talking with the operators of the system in depth. They will provide hands on, intensive training to insure proper understanding of the system, and will check back frequently to insure that everything is performing as intended.

As the company expands, we will outsource the installation process. There will be one central manufacturing center. No inventory will be kept and every order will be prepared custom after it is placed. The entire order is prepared in house and then shipped out to the local distributor or installer as one unit. The installation company will then bring that to the customer's warehouse. While it is being installed, a company customer service representative will be there, overseeing the installation and talking the customer through the process involved with adapting to their new system. They will give the same intensive training sessions of safety and proper use to all parties that will be involved, as well as maintaining close contact on a weekly basis to insure everything is working properly.

These local installers will be sourced based on geographic location. Any construction crew with an electrician will be able to install this unit, so as long as a customer service representative is around to answer any questions that might arise.

6. Competitor Analysis

The analysis of the intended market competition is a very difficult yet delicate process. It is important to determine the different levels and purposes of the mechanical automation companies and their capabilities

being offered. It is then also important to evaluate whether these are turnkey solutions or whether they require a facility level integration which must be implemented while the original factory is built. Finally, one of the major strengths of the company is dedication to the customer.

6.1.Existing Competition

Most of the existing warehousing automation companies today develop large scale products. They intend to have a warehouse run entirely from automation, and design palletizing robots that can handle very large loads. However, these systems often require millions of dollars to install and run, a lot of space to maneuver, and a long factory downtime to install. It is possible, however, that these large businesses are capable of quickly reducing the scale of their current product to create a shorter time to develop a similar product. The matrix shown in Table 1 outlines the current competition with respect to the intended small scale market only.

The strength of the existing competition lies within their experience and existing customer base. If the competitors’ customers can be reached and information about Automated Warehouse Solutions is provided, it is the belief of the company that it can attain some of this valuable market share by emphasizing customer service and specific solutions to their needs.

The weaknesses of the existing competition are what really create the appeal for this product. There are no apparent companies offering a very low cost and quick turnkey solution for automation. Many of the current companies require ground-up integration, which provides a large time and money commitment which most companies are unable to make. If we can convince people that we can be operational within a few days for a low price, people will be inclined to try this product.

Table 1: Competitive Matrix

FACTOR	Automated Warehouse Solutions, Inc.	FATA Automation	Kiva Robots (Amazon)	Westfalia
<i>Low Price</i>	5	1	3	3
<i>Superior Quality</i>	5	4	4	4
<i>Customizable Product</i>	5	3	2	4
<i>Unique Features</i>	4	5	4	4
<i>Rapid Product Delivery</i>	4	3	3	4
<i>Customer Service</i>	5	2	4	3
Total	28	18	20	22

6.2.Future Competition

As previously mentioned, most of the future competition will come from companies already doing work in the warehouse automation field such as FATA or Westfalia. These companies will be able to assign their Engineers to design a new product, and utilize their currently existing implementation strategies to focus on developing a low cost solution. This will provide good competition for Automated Warehouse Solutions, and drive the market even faster to meet the customers’ needs.

Another potential future competitor will be Engineers within warehouse companies themselves. If the system offered is simple and inexpensive enough, companies may be able to save time and money by simply designing a system themselves. This will allow for total customization, task specific

programming, and full time on-site customer and robot support. In order to prevent this from becoming an issue, we must make clear that the design time is as quick as possible. Design time cost must become a sunk cost for the corporation, so that if a potential warehouse customer considers designing it for themselves, they would have to be spending money on design time, as well as losing that engineers time for other tasks. With this product, they are not spending a penny on design time. That is a reliable way to reduce the risk of customers designing this product for themselves.

7. Company Managerial Structure

The chart below outlines the basic hierarchical structure the company will take once it reaches full expansion. The top four positions will be held by the four founding members of the business. As the business grows, they will work toward specializing in the development of their own area, so that once these roles become formally assigned titles, each member will be fully equipped to take that position. There will be no formal board of directors. If growth sees fit that this be added, that will come in time, but at this moment it is felt that the company will run best if things stay simple and modular, as shown above. Each unit will be able to operate independently of the others, though information pertinent to development and growth will regularly be shared.

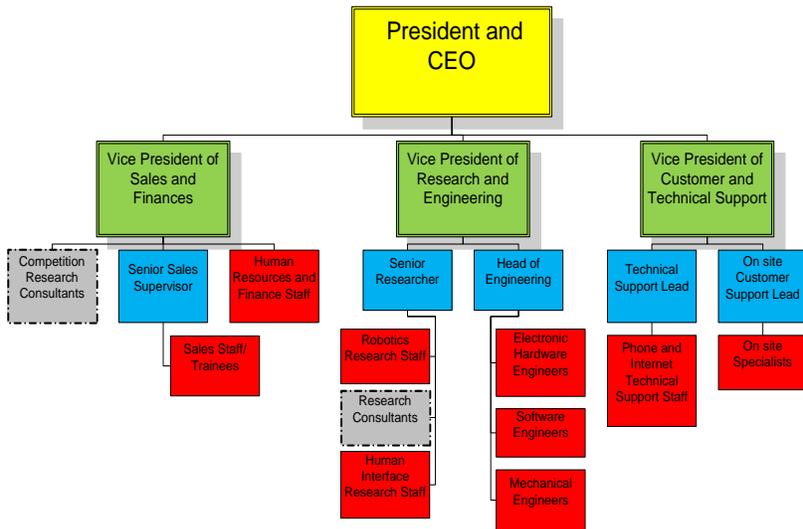


Figure 3: Company Managerial Hierarchy

All units displayed in yellow or green will be salaried positions that require five or more years of experience within the company to obtain. The salaries will be

determined by the top four positions as well, based on employee satisfaction and company success. There is no reason the executive should still make large amounts of money if the company is suffering.

The blue squares represent salaried positions that can be filled by new hires, or people with high experience levels. The people who fill these positions are chosen by the top four executives. All of these positions will also have managerial roles, supervising the shown subordinates.

All grey and red rectangles represent either hourly or commissioned employees. These rectangles also represent potentially large staff groups, not just single people. These units can expand and contract based on company needs. Experience for these groups will be favored, but new hires are welcome, since the company has a vested interest in young graduates, because that is who it was founded by.

All staff and company executives will be covered under the same compensation and benefits package. This will be determined as growth progresses, and based on employee needs.

8. Financial Forecasts

The team's financial goals for the first few years of operation are based on an understanding that these plans are written as conditions constantly change in the marketplace and as more information is gathered about the market. The project's financial forecast for the next few years has been spelled out, along with associated assumptions and a short break-even analysis.

8.1.Key Assumptions

The proposed financial statements for the first few years of the company's life are based on several assumptions:

- 1) Perhaps the key assumption in all company plans is that sales can begin after three months of the business officially beginning operation. This assumes the product that results from senior design can be finalized in the first six months after graduation and tested in the first three months of operation.
- 2) The team also assumes that the market for this product will grow in the first few years of operation. No marketing costs have been added into financial calculations because business is assumed to be growing off low-budget advertisement by salaried employees (through calls, emails, etc.).

8.2.Financial statements (year 1 by month, years 2 and 3 by quarter)

8.2.1. Income Statements

The income statements for the company are included below for the first, second, and third years of operation. For detailed more detailed calculations see Table 6 or Appendix A

The team expects to make a profit in the first and second years of operation. After the first year, the most valuable asset of the team will be knowledge of the market that it has entered and is creating a niche in.

Table 2: Income Statements for years 1-3

Income Statement:	Year 1	Income Statement:	Year 2	Income Statement:	Year 3
Net Sales:	\$ 395,000	Net Sales:	\$ 1,375,000	Net Sales:	\$ 2,110,000
Operating Expenses:		Operating Expenses:		Operating Expenses:	
Wages	\$ 120,000	Wages	\$ 160,000	Wages	\$ 220,000
Vehicles	\$ 42,800	Vehicles	\$ 25,400	Vehicles	\$ 7,200
Computers	\$ 4,020	Computers	\$ 1,840	Computers	\$ 1,200
Lab Equipment	\$ 17,850	Lab Equipment	\$ 41,250	Lab Equipment	\$ 63,300
Office Fixtures	\$ 17,850	Office Fixtures	\$ 6,875	Office Fixtures	\$ 10,550
Production Materials	\$ 132,750	Production Materials	\$ 419,250	Production Materials	\$ 642,750
Payroll	\$ 18,000	Payroll	\$ 24,000	Payroll	\$ 33,000
Property	\$ -	Property	\$ -	Property	\$ -
Transportation	\$ 22,150	Transportation	\$ 71,150	Transportation	\$ 107,900
Repairs and Maintenance	\$ 63,200	Repairs and Maintenance	\$ 220,000	Repairs and Maintenance	\$ 337,600
Field Supplies	\$ 12,200	Field Supplies	\$ 53,200	Field Supplies	\$ 81,600
Rent	\$ 4,000	Rent	\$ 12,000	Rent	\$ 12,000
Utilities	\$ 1,000	Utilities	\$ 2,800	Utilities	\$ 2,800
Miscellaneous	\$ 5,300	Miscellaneous	\$ 13,750	Miscellaneous	\$ 21,100
Total Operating	\$ 461,120	Total Operating	\$ 1,051,515	Total Operating	\$ 1,541,000
Net Operating Profit:	\$ (66,120)	Net Operating Profit:	\$ 323,485	Net Operating Profit:	\$ 569,000
Income Taxes:	\$ (3,306)	Income Taxes:	\$ 16,174	Income Taxes:	\$ 28,450
Net profit:	\$ (62,814)	Net profit:	\$ 307,311	Net profit:	\$ 540,550

8.2.2. Balance sheet

Balance sheets for the first few years of the company are included below. For more detailed calculations see Table 6 or Appendix A.

One notable feature of the company’s balance sheet after the first year is a negative owner’s equity. This can be expected since a loss is recorded in the income statement for the first year. In successive years the company generates a positive equity for shareholders.

Table 3: Balance Sheet, Year 1

Balance Sheet: Year 1			
Assets		Liabilities	
Current Assets:		Current Liabilities:	
Cash:	\$ 24,761	Loan:	\$ (145,825.58)
Accounts Receivable:	\$ 14,000	Accounts Payable:	\$ -
Total Current Assets =	\$ 38,761	Total Liabilities =	\$ (145,825.58)
Fixed Assets:		Owner's Equity =	
0 Cars	\$ -	Total Liabilities and	
4 Computers	\$ 2,661	Owner's Equity =	\$ (88,309.21)
Lab Equipment	\$ 8,201		
Office Fixtures	\$ 7,893		
Total Fixed Assets =	\$ 18,755		
Total Assets =	\$ 57,516		

Table 4: Balance Sheet, Year 2

Balance Sheet: Year 2			
Assets		Liabilities	
<u>Current Assets:</u>		<u>Current Liabilities:</u>	
Cash:	\$ 474,170.95	Loan:	\$ (61,359.09)
Accounts Receivable:	\$ 133,750.00	Accounts Payable:	\$ -
Total Current Assets	\$607,920.95		
<u>Fixed Assets:</u>		Total Liabilities =	
1 Cars	\$ 14,628.12		\$ (61,359.09)
5 Computers	\$ 2,922.96	Owner's Equity =	\$ 624,070.29
Lab Equipment	\$ 46,073.28	Total Liabilities and	
Office Fixtures	\$ 13,884.07	Owner's Equity =	\$ 685,429.38
Total Fixed Assets =	\$ 77,508.43		
Total Assets =	\$685,429.38		

Table 5: Balance Sheet, Year 3

Balance Sheet: Year 3			
Assets		Liabilities	
<u>Current Assets:</u>		<u>Current Liabilities:</u>	
Cash:	\$ 1,140,047.09	Loan:	\$ 0.91
Accounts Receivable:	\$ 203,750.00	Accounts Payable:	\$ -
Total Current Assets =	\$ 1,343,797.09		
<u>Fixed Assets:</u>		Total Liabilities =	
1 Cars	\$ 13,230.52		\$ 0.91
5 Computers	\$ 2,389.08	Owner's Equity =	\$ 1,482,761.90
Lab Equipment	\$ 100,401.22	Total Liabilities and	
Office Fixtures	\$ 22,943.08	Owner's Equity =	\$ 1,482,760.99
Total Fixed Assets =	\$ 138,963.91		
Total Assets =	\$ 1,482,760.99		

8.2.3. Cash flow statement

A detailed summary of cash flow statements for the first few years of operation is shown in Table 6 below. For a complete cash flow statement, see Appendix A.

Table 6: Summary of Business Cash Flow, Years 1-3

	Year One											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
SALES	0	0	6,000	6,000	6,000	3,000	3,000	10,000	13,000	13,000	14,000	14,000
TOTAL RECEIPTS	0	0	1,500	4,500	6,000	6,750	8,250	3,250	10,500	12,250	13,250	13,750
CASH DISBURSEMENTS												
Wages	6,667	6,667	6,667	6,667	6,667	6,667	6,667	6,667	6,667	6,667	6,667	6,667
Materials	13,567	12,227	8,707	8,707	3,977	3,717	3,867	10,437	16,037	13,187	11,437	23,587
Taxes	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Other	500	500	1,760	2,000	2,000	2,630	2,540	2,760	4,660	5,780	5,100	5,140
TOTAL CASH DISBURSEMENTS	15,067	13,727	11,467	11,707	12,377	13,347	13,407	14,257	21,637	19,367	17,537	29,727
CASH FLOW	(15,067)	(13,727)	(3,367)	(7,207)	(6,377)	(6,597)	(5,157)	(5,007)	(11,137)	(7,717)	(4,287)	(15,977)
CASH AVAILABLE	(15,067)	(11,683)	(6,032)	(1,864)	(580)	838	4,232	3,058	3,170	14,457	25,125	7,563
Repayment	0	0	0	0	0	0	0	0	0	0	0	0
Borrowing	17,327	16,035	11,341	8,339	8,803	3,457	10,875	12,506	14,382	16,540	0	19,021
Loan Balance	(17,327)	(33,361)	(45,303)	(54,242)	(63,044)	(72,501)	(83,376)	(95,883)	(110,265)	(126,805)	(126,805)	(145,826)
Interest	(217)	(417)	(566)	(678)	(788)	(906)	(1,042)	(1,139)	(1,378)	(1,585)	(1,585)	(1,823)
CASH END OF MONTH	2,043	3,334	5,343	6,397	7,435	3,389	14,065	20,366	22,174	29,412	23,540	24,761

	Year Two				Year Three			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
SALES	300,000	325,000	360,000	390,000	445,000	510,000	555,000	600,000
TOTAL RECEIPTS	210,250	318,750	346,250	380,000	422,500	492,500	540,000	585,000
CASH DISBURSEMENTS								
Wages	25,000	25,000	25,000	25,000	30,000	30,000	30,000	30,000
Materials	127,240	135,615	148,160	173,800	183,725	204,000	219,075	233,400
Taxes	3,750	3,750	3,750	3,750	4,500	4,500	4,500	4,500
Other	79,760	90,500	104,700	107,400	121,100	138,200	155,400	161,800
TOTAL CASH DISBURSEMENTS	210,750	229,865	256,610	284,950	309,325	346,700	378,975	399,700
CASH FLOW	(500)	88,885	89,640	95,050	113,175	145,800	161,025	185,300
CASH AVAILABLE	95,430	451,128	815,560	#####	#####	#####	#####	3,228,141
Repayment	11,000	35,000	45,000	50,000	61,360	0	0	0
Borrowing	56,534	0	0	0	0	0	0	0
Loan Balance	#####	(509,077)	(379,077)	#####	(62,717)	3	3	3
Interest	(7,109)	(6,363)	(4,738)	(2,988)	(784)	0	0	0
CASH END OF MONTH	155,855	479,765	855,822	#####	1,765,038	#####	#####	3,228,141

8.3. Break-even analysis

A short break-even analysis was performed for the company (see Table 7). The analysis was performed assuming the company had all the fixed expenses it had accumulated by the end of Year 1.

Table 7: Break-Even Analysis

Selling Cost =	3000					
Total Expenses:	194880					
Total Fixed Expenses:	118160					
Variable Cost / Unit:	1680					
Break-Even Sales (# of units) =	$\frac{\text{Total Fixed Expenses}}{\text{Selling Cost} - \text{Variable Cost}}$					= 90

9. Loan or Investment Proposal

As a start-up business, the company has little equity and so must rely on debt financing to begin the business. Fortunately, the interest payments made on debt capital are tax deductible. Overall, though, the team would prefer equity loans, where overall interest rates are naturally lower (equity reduces risk of lender).

As the business builds equity (moving into its own building, building an inventory, gaining equipment) the loans it depends on will begin to increasingly depend on equity.

9.1. Amount requested

The team would like to make an initial request to the bank for \$150,000 in capital for a vehicle, several computers, lab equipment, and other start-up costs for the business. After six months, the business would request an additional \$50,000 for further operating expenses.

9.2. Purpose and uses of funds

For complete details on how the funds will be used, see Appendix A: Detailed Cash Flow Analysis. The most important needs that will be addressed by these funds will be vehicle costs, computers, lab equipment, and related start-up costs.

The company would like to purchase one vehicle for the first nine months of operation. After this point, the company will re-evaluate the need for further vehicle expenditures. Throughout the business' life, salesmen and engineers will be traveling to warehouses throughout the state and country serving clients.

Computers and lab equipment will be needed for technical research and development of the product, one of the priorities of the company in its first few months of operation. Initially this equipment will be used at the business owner's homes, and then moved to a dedicated facility as the company's situation improves.

Funds provided by the loan will also be used for the salaries of the engineers working at the company in the first year. These salaries are very modest for current job market conditions.

9.3.Repayment of “cash out” schedule (exit strategy)

Repayment on the principle of the loan will begin at the beginning of the company's second year of business. For the first six months, the payments will be \$10,000 per month, and following that, \$20,000 per month. The duration of the \$20,000 payments will depend on the interest rate of the loan.

Interest on the loan will be paid throughout the first few years of the business.

9.4.Timeline for implementing plan and launching business

Figure 4 shows the timeline for the repayment of the loan and important milestones in the companies' early life.

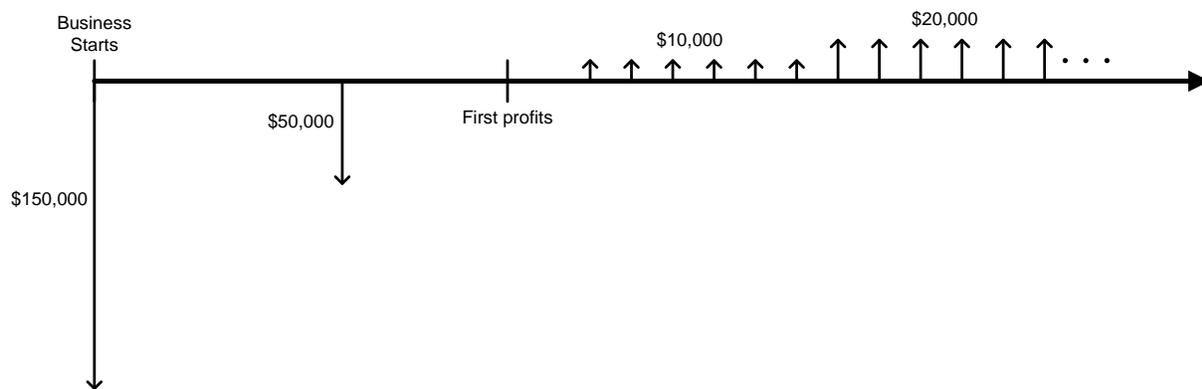


Figure 4: Payback Timeline

Appendices

Appendix A: Detailed Cash Flow Analysis

	Number Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
	Number Computers	3	3	3	3	4	4	4	4	4	4	4	4
		Year One											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Production Units Sold	0	0	2	2	2	3	3	3	4	4	4	4
	Add-on and Technical Support	0	0	0	0	0	0	0	1000	1000	1000	2000	2000
	SALES:	0	0	6,000	6,000	6,000	9,000	9,000	10,000	13,000	13,000	14,000	14,000
	[Accounts Receivable]	0	0	4,500	6,000	6,000	8,250	9,000	9,750	12,250	13,000	13,750	14,000
Collections	25% immediately	0	0	1,500	1,500	1,500	2,250	2,250	2,500	3,250	3,250	3,500	3,500
	50% after on month	0	0	0	3,000	3,000	3,000	4,500	4,500	5,000	6,500	6,500	7,000
	+ 25% after two months	0	0	0	0	1,500	1,500	1,500	2,250	2,250	2,500	3,250	3,250
	TOTAL RECEIPTS:	0	0	1,500	4,500	6,000	6,750	8,250	9,250	10,500	12,250	13,250	13,750
	CASH DISBURSEMENTS:												
LABOR	Wages	6,667	6,667	6,667	6,667	6,667	6,667	6,667	6,667	6,667	6,667	6,667	6,667
MATERIALS	Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
	[Vehicle Capital]	0	0	0	0	0	0	0	0	0	0	0	0
	Computers	2,400	60	60	60	880	80	80	80	80	80	80	80
	[Computer Capital]	2,360	2,321	2,282	2,244	2,993	2,943	2,894	2,846	2,799	2,752	2,706	2,661
	Lab Equipment	4,000	2,000	180	180	180	270	270	300	390	390	420	420
	[Lab Equipment Capital]	3,960	5,900	6,020	6,138	6,254	6,459	6,662	6,892	7,209	7,523	7,864	8,201
	Office Fixtures	500	500	0	0	0	0	0	0	5,000	2,000	70	70
	[Office Fixtures Capital]	497	990	983	977	970	964	957	951	5,911	7,859	7,876	7,893
	Production Materials	0	3,000	1,800	1,800	2,250	2,700	2,850	3,450	3,900	4,050	4,200	16,350
	TAXES	Payroll	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
	Property	0	0	0	0	0	0	0	0	0	0	0	
OTHER	Transportation	200	200	500	500	500	650	650	700	850	850	900	900
	Repairs and Maintenance	0	0	360	360	360	1,440	1,440	1,600	2,080	2,080	2,240	2,240
	Field Supplies	0	0	0	240	240	240	360	360	400	520	520	560
	Marketing	0	0	0	0	0	0	0	0	0	1,000	0	0
	Rent	0	0	0	0	0	0	0	0	1,000	1,000	1,000	1,000
	Utilities	0	0	0	0	0	0	0	0	200	200	300	300
	+ Miscellaneous	300	300	300	300	300	300	90	100	130	130	140	140
		TOTAL CASH DISBURSEMENTS	15,067	13,727	11,467	11,707	12,977	13,347	13,407	14,257	21,697	19,967	17,537
	END OF MONTH BALANCE												
	Cash Receipts	0	0	1,500	4,500	6,000	6,750	8,250	9,250	10,500	12,250	13,250	13,750
	- Cash Disbursements	15,067	13,727	11,467	11,707	12,977	13,347	13,407	14,257	21,697	19,967	17,537	29,727
	CASH FLOW	(15,067)	(13,727)	(9,967)	(7,207)	(6,977)	(6,597)	(5,157)	(5,007)	(11,197)	(7,717)	(4,287)	(15,977)
	CASH AVAILABLE	(15,067)	(11,683)	(6,032)	(1,864)	(580)	838	4,232	9,058	9,170	14,457	25,125	7,563
	Repayment	0	0	0	0	0	0	0	0	0	0	0	0
	Borrowing	17,327	16,035	11,941	8,939	8,803	9,457	10,875	12,506	14,382	16,540	0	19,021
	Loan Balance	(17,327)	(33,361)	(45,303)	(54,242)	(63,044)	(72,501)	(83,376)	(95,883)	(110,265)	(126,805)	(126,805)	(145,826)
	Interest	(217)	(417)	(566)	(678)	(788)	(906)	(1,042)	(1,199)	(1,378)	(1,585)	(1,585)	(1,823)
	CASH END OF MONTH	2,043	3,334	5,343	6,397	7,435	9,389	14,065	20,366	22,174	29,412	23,540	24,761

	Number Vehicles	0	0	0	0	0	0	0	0	0	1	1	1
	Number Computers	4	4	4	4	4	4	4	4	5	5	5	5
		Year Two											
		Q1			Q2			Q3			Q4		
	Production Units Sold	5	5	5	6	6	6	7	7	7	8	8	8
	Add-on and Technical Support	3000	3000	3000	5000	5000	5000	8000	8000	8000	12000	12000	12000
	SALES:	95,000	100,000	105,000	105,000	110,000	110,000	115,000	120,000	125,000	125,000	130,000	135,000
	[Accounts Receivable]	74,750	98,750	103,750	105,000	108,750	110,000	113,750	118,750	123,750	125,000	128,750	133,750
Collections	25% immediately	23,750	25,000	26,250	26,250	27,500	27,500	28,750	30,000	31,250	31,250	32,500	33,750
	50% after on month	7,000	47,500	50,000	52,500	52,500	55,000	55,000	57,500	60,000	62,500	62,500	65,000
	+ 25% after two months	3,500	3,500	23,750	25,000	26,250	26,250	27,500	27,500	28,750	30,000	31,250	31,250
	TOTAL RECEIPTS:	34,250	76,000	100,000	103,750	106,250	108,750	111,250	115,000	120,000	123,750	126,250	130,000
	CASH DISBURSEMENTS:												
LABOR	Wages	8,333	8,333	8,333	8,333	8,333	8,333	8,333	8,333	8,333	8,333	8,333	8,333
MATERIALS	Vehicles	0	0	0	0	0	0	0	0	0	15,200	200	200
	[Vehicle Capital]	0	0	0	0	0	0	0	0	0	14,875	14,751	14,628
	Computers	80	80	80	80	80	80	80	80	900	100	100	100
	[Computer Capital]	2,617	2,573	2,530	2,488	2,447	2,406	2,366	2,326	3,074	3,023	2,972	2,923
	Lab Equipment	2,850	3,000	3,150	3,150	3,300	3,300	3,450	3,600	3,750	3,750	3,900	4,050
	[Lab Equipment Capital]	10,341	13,801	16,782	19,732	22,802	25,841	28,938	32,272	35,662	39,018	42,489	46,073
	Office Fixtures	475	500	525	525	550	550	575	600	625	625	650	675
	[Office Fixtures Capital]	8,312	8,753	9,216	9,676	10,158	10,637	11,137	11,659	12,202	12,742	13,302	13,884
	Production Materials	29,250	30,750	31,500	32,250	33,000	33,750	35,250	36,750	37,500	38,250	39,750	41,250
TAXES	Payroll	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250
	Property	0	0	0	0	0	0	0	0	0	0	0	0
OTHER	Transportation	4,950	5,200	5,450	5,450	5,700	5,700	5,950	6,200	6,450	6,450	6,700	6,950
	Repairs and Maintenance	15,200	16,000	16,800	16,800	17,600	17,600	18,400	19,200	20,000	20,000	20,800	21,600
	Field Supplies	560	3,800	4,000	4,200	4,200	4,400	4,400	4,600	4,800	5,000	5,000	5,200
	Marketing	1,000	0	0	2,000	0	0	7,500	0	0	2,000	0	0
	Rent	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
	Utilities	300	300	200	200	200	200	200	200	200	200	300	300
	+ Miscellaneous	950	1,000	1,050	1,050	1,100	1,100	1,150	1,200	1,250	1,250	1,300	1,350
	TOTAL CASH DISBURSEMENTS	66,198	71,213	73,338	76,288	76,313	77,263	87,538	83,013	86,058	103,408	89,283	92,258
	END OF MONTH BALANCE												
	Cash Receipts	34,250	76,000	100,000	103,750	106,250	108,750	111,250	115,000	120,000	123,750	126,250	130,000
	- Cash Disbursements	66,198	71,213	73,338	76,288	76,313	77,263	87,538	83,013	86,058	103,408	89,283	92,258
	CASH FLOW	(31,948)	4,787	26,662	27,462	29,937	31,487	23,712	31,987	33,942	20,342	36,967	37,742
	CASH AVAILABLE	(7,187)	25,539	77,078	112,148	149,818	189,162	225,920	271,139	318,501	352,451	403,213	454,938
	Repayment	0	1,000	10,000	10,000	10,000	15,000	15,000	15,000	15,000	15,000	15,000	20,000
	Borrowing	30,139	26,395	0	0	0	0	0	0	0	0	0	0
	Loan Balance	(175,964)	(201,359)	(191,359)	(181,359)	(171,359)	(156,359)	(141,359)	(126,359)	(111,359)	(96,359)	(81,359)	(61,359)
	Interest	(2,200)	(2,517)	(2,392)	(2,267)	(2,142)	(1,954)	(1,767)	(1,579)	(1,392)	(1,204)	(1,017)	(767)
	CASH END OF MONTH	20,752	50,417	84,686	119,881	157,676	202,208	239,153	284,560	332,109	366,247	417,196	474,171

	Number Vehicles	1	1	1	1	1	1	1	1	1	1	1	
	Number Computers	5	5	5	5	5	5	5	5	5	5	5	
		Year Three											
		Q1			Q2			Q3			Q4		
	Production Units Sold	9	9	9	10	10	10	11	11	11	12	12	12
	Add-on and Technical Support	13000	13000	13000	14000	14000	14000	15000	15000	15000	16000	16000	16000
	SALES:	140,000	145,000	160,000	165,000	170,000	175,000	180,000	185,000	190,000	195,000	200,000	205,000
	[Accounts Receivable]	138,750	143,750	156,250	163,750	168,750	173,750	178,750	183,750	188,750	193,750	198,750	203,750
Collections	25% immediately	35,000	36,250	40,000	41,250	42,500	43,750	45,000	46,250	47,500	48,750	50,000	51,250
	50% after on month	67,500	70,000	72,500	80,000	82,500	85,000	87,500	90,000	92,500	95,000	97,500	100,000
	+ 25% after two months	32,500	33,750	35,000	36,250	40,000	41,250	42,500	43,750	45,000	46,250	47,500	48,750
	TOTAL RECEIPTS:	135,000	140,000	147,500	157,500	165,000	170,000	175,000	180,000	185,000	190,000	195,000	200,000
	CASH DISBURSEMENTS:												
LABOR	Wages	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
MATERIALS	Vehicles	200	200	200	200	200	200	200	200	200	200	200	200
	[Vehicle Capital]	14,506	14,385	14,265	14,147	14,029	13,912	13,796	13,681	13,567	13,454	13,342	13,231
	Computers	100	100	100	100	100	100	100	100	100	100	100	100
	[Computer Capital]	2,874	2,826	2,779	2,733	2,687	2,643	2,599	2,555	2,513	2,471	2,430	2,389
	Lab Equipment	4,200	4,350	4,800	4,950	5,100	5,250	5,400	5,550	5,700	5,850	6,000	6,150
	[Lab Equipment Capital]	49,771	53,579	57,796	62,118	66,546	71,078	75,713	80,451	85,289	90,228	95,265	100,401
	Office Fixtures	700	725	800	825	850	875	900	925	950	975	1,000	1,025
	[Office Fixtures Capital]	14,487	15,110	15,804	16,519	17,253	18,007	18,781	19,574	20,388	21,220	22,072	22,943
	Production Materials	42,750	45,750	48,750	50,250	51,750	53,250	54,750	56,250	57,750	59,250	60,750	61,500
TAXES	Payroll	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
	Property	0	0	0	0	0	0	0	0	0	0	0	0
OTHER	Transportation	7,200	7,450	8,200	8,450	8,700	8,950	9,200	9,450	9,700	9,950	10,200	10,450
	Repairs and Maintenance	22,400	23,200	25,600	26,400	27,200	28,000	28,800	29,600	30,400	31,200	32,000	32,800
	Field Supplies	5,400	5,600	5,800	6,400	6,600	6,800	7,000	7,200	7,400	7,600	7,800	8,000
	Marketing	2,000	0	0	2,000	0	0	7,500	0	0	2,000	0	0
	Rent	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
	Utilities	300	300	200	200	200	200	200	200	200	200	300	300
	+ Miscellaneous	1,400	1,450	1,600	1,650	1,700	1,750	1,800	1,850	1,900	1,950	2,000	2,050
	TOTAL CASH DISBURSEMENTS:	99,150	101,625	108,550	113,925	114,900	117,875	128,350	123,825	126,800	131,775	132,850	135,075
	END OF MONTH BALANCE												
	Cash Receipts	135,000	140,000	147,500	157,500	165,000	170,000	175,000	180,000	185,000	190,000	195,000	200,000
	- Cash Disbursements	99,150	101,625	108,550	113,925	114,900	117,875	128,350	123,825	126,800	131,775	132,850	135,075
	CASH FLOW	35,850	38,375	38,950	43,575	50,100	52,125	46,650	56,175	58,200	58,225	62,150	64,925
	CASH AVAILABLE	510,021	567,879	626,562	691,497	741,597	793,722	840,372	896,547	954,747	1,012,972	1,075,122	1,140,047
	Repayment	20,000	20,000	21,360	0	0	0	0	0	0	0	0	0
	Borrowing	0	0	0	0	0	0	0	0	0	0	0	0
	Loan Balance	(41,359)	(21,359)	1	1	1	1	1	1	1	1	1	1
	Interest	(517)	(267)	0	0	0	0	0	0	0	0	0	0
	CASH END OF MONTH	529,504	587,612	647,922	691,497	741,597	793,722	840,372	896,547	954,747	1,012,972	1,075,122	1,140,047

