

LINXIS PartsManager

Manufacturing Software



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AV Ventures Corporation Berhad has engaged Linxis Sdn. Bhd. for computerization of the manufacturing operation. The scope of the computerization includes Production Planning, Purchasing, and Inventory. The purpose of the study is to perform IT investment Costs/Benefits Analysis of computerization in manufacturing and allow management to make intelligent and informed decision.

A Steering Committee is formed to ensure the success of its implementation. The members are:

AV Ventures Corporation Bhd Representatives

| | | |
|-----------|----------------------------|------------------------------|
| Chairman: | Ms. K.H Pang | - Chief Finance Officer |
| Members: | Mr. Mohanthas | - Assistant Manager |
| | Ms. Tan Ching Ching | - Head of Account Department |
| | Mr. Lim Pang Hiang | - Head of Finance Department |
| | Mr. Azmin bin Mohd. Razali | - Head of IT Department |
| | Mr. Mzaid | - Inventory Executive |
| | Mr. Vijay | - Purchasing Coordinator |

Linxis Sdn Bhd Representatives

| | |
|-------------------|--------------------------------|
| Mr. Vincent Set | - Project Consultant / Advisor |
| Mr. Lim Swee Nyin | - Project Director |
| Ms. M.S Chan | - Application Consultant |
| Mr. S.Y Yee | - System Analyst |
| Mr. Adam Ooh | - Marketing Director |

EXECUTIVE SUMMARY

PartManager Application Software (PMAS) system integrates Production Planning, Purchasing and Inventory functions onto a single computerized system. It performs most of the daily routine and manual-processing work in Production Planning, Purchasing and Inventory with a unified software program and workflow, which consists of software modules: Production Planning, Purchasing and Inventory. PMAS can be enhanced and scalable by incorporating other modules listed below.

- ❖ **Sales**
- ❖ **Finance**
- ❖ **HR & Payroll**
- ❖ **Production**
- ❖ **Equipment Maintenance**
- ❖ **Inventory**
- ❖ **Fixed Assets**
- ❖ **Costing**
- ❖ **Customer Care**
- ❖ **System Administration**
- ❖ **Shares**
- ❖ **Executive System**

When an end user enters necessary information into the PMAS, it will execute the software process flow automatically in real time. People in different departments view the same information and share it based on their user privilege. When end user finishes keying in the information, the information is automatically routed to the next department or carried over to next task.

- ❖ PMAS system can automatically generate daily routine sheets such as Customer orders, Master Production Schedule, Materials Requirement Planning, Purchase Orders, Delivery Order, Invoice, and Inventory Report and so on.
- ❖ PMAS helps to improve the manufacturing process flow, expedite order fulfillment process in the company. Thus reduced inventories and material used to make products (work-in-progress inventory), and it can also help users better plan deliveries to customers, reducing the finished good inventory at the warehouses.

This paper identifies and quantifies the benefits, return on investment (ROI) and total cost of ownership (TCO) that can be achieved with PMAS on AV Ventures Corp Bhd specifically and automotive industry as a whole.

With the exception of projects focused solely on improving internal IT operations, the business owns the task of identifying and projecting the benefits. IT should participate, but the business must ultimately own the estimation of benefits. Translating soft benefits into dollars for analysis purposes can be a highly subjective process. Look closely at the probability and risk associated with achieving the estimated benefits. Possible benefits to consider:

| | |
|--------------------------------|---|
| Enhance efficiencies | Prompt reporting process |
| Cost Reduction | Determine any reduction in ongoing operating costs, be they personnel or process. |
| Increased Revenue | Be aware that this metric does not necessarily translate into increased profits. |
| Increased Profits | This metric will affect your margins. |
| Improved Customer Satisfaction | Decide how you will measure this soft benefit. |
| Improved Customer Retention | A benefit is reduced customer acquisition costs. |
| Higher Quality Product | Quality fosters increased customer satisfaction and reduces rework type costs. |
| Better Business Intelligence | Improvement in data accuracy and reliability. Challenge to translate into dollars. |
| Improved Decision Making | Better communication between departments. Challenge to translate into dollars. |
| Improved Strategic Positioning | Challenge to translate into dollars. |
| Increased Market Share | You may not be able to directly tie an increase to a specific project, but it looks great as a benefit. |

ANALYZE COST & ESTABLISH ROI, ROO

In the automotive industry, as in other industries, cost is a major factor for companies considering IT investment. But while cost can easily be measured for many physical businesses attributes and processes, calculating intangible soft costs can be difficult because of the multitude of variables introduced, especially when a company is considering computerizing the management system in a manufacturing environment. Hard costs — those that are easily identifiable and quantifiable for budgeting purposes, such as software, hardware and equipment, paper, supplies, and office space — are readily measurable. Companies can easily determine outlays for such materials before and after a software/service implementation and therefore accurately measure Return on Investment (ROI) based on these hard costs. On the other hand, soft costs — those associated with non-tangible items such as staff productivity and communication efficiency — are not so easily measured and therefore can complicate an organization's ability to accurately establish overall ROI.

Return on Opportunity (ROO), a new return-measuring tool is an approach to categorizing and quantifying the difficult-to-measure top-line benefits of IT investments. ROO helps organizations identify areas in which technology implementations affect competitive advantage and business success. Most organizations are familiar with or have established some methodologies for computing the impact of IT implementation on the overriding costs of business operations. The growth of the Internet and the increased acceptance of web-based collaboration services have introduced a number of hard and soft metrics that companies consider when establishing overall cost and determining ROO. In the automotive industry, some of these hard and soft costs could include those associated with production, delivery, productivity and time.



SURVEY DATA & ANALYSIS

The study takes a qualitative and quantitative approach to the methodology of developing PMAS metrics for ROI and total cost of ownership (TCO). To refine ROI and to test the quantitative survey instrument, end users of the PMAS had been interviewed.

The following personnel were interviewed:

- ❖ Mr. Mohanthas
 - ❖ Ms. Marliana bt Mohamad Omar
 - ❖ Ms. Tuan Khatijah bt Tuan Yahaya
 - ❖ Mr. Vijay
 - ❖ Mr. Mohd. Fauzi bin Shamsul Annuar
 - ❖ Mr. Yusaini
 - ❖ Ms. Zarina
- Assistant Manager
 - Production Planning Executive
 - Purchasing Coordinator
 - Purchasing Coordinator
 - Inventory Executive
 - Inventory Executive
 - Inventory Executive

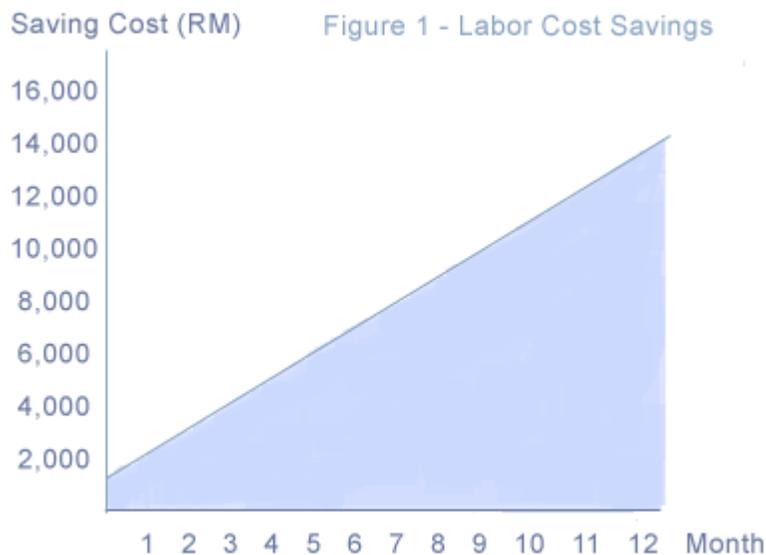


ROI BENEFITS

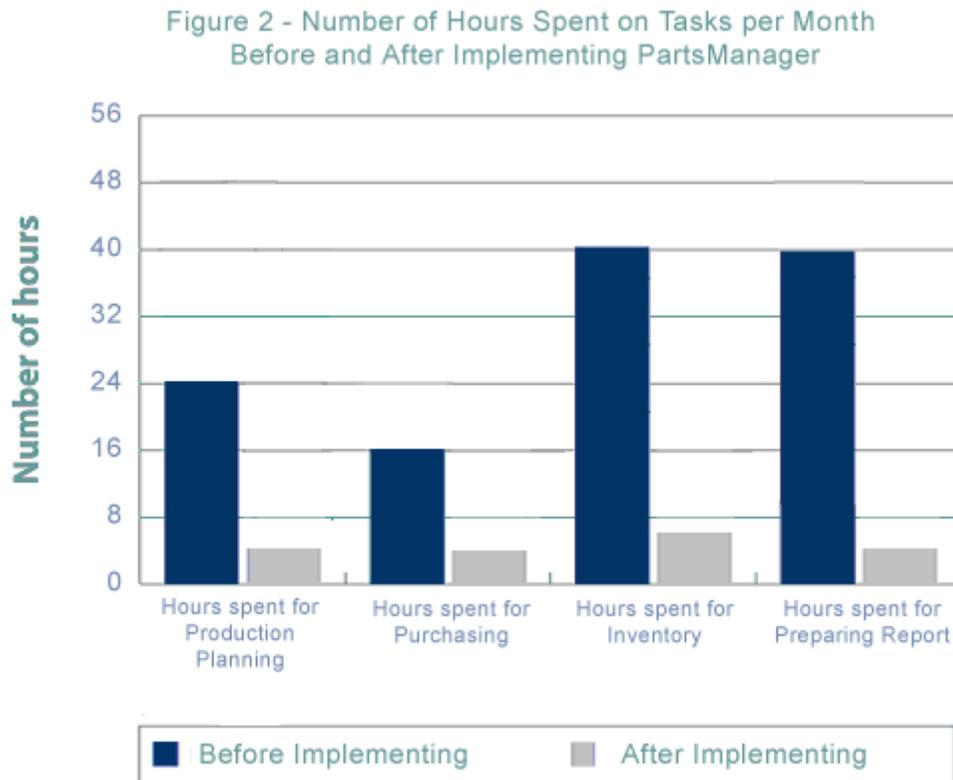
The benchmarks used to calculate key metrics included average TCO for PMAS customers and the average savings in labor and material costs (Research shows .05% to 1% material cost saving). Since software acquisition and on going maintenance costs are based on the size of a project and number of users, TCO directly correlates to the size of company and varies widely. In this case, PMAS Average TCO is approximately **RM 95,000**, including hardware, software, and third party operating system as well as implementation cost such as training and maintenance.

- ❖ The average ROI (savings on material and labor costs) estimate is **6 months**
(ROI can be achieved in very short time frame if ROO can be translated into dollars)

ROI labor cost over a 12-month period is shown in Figure 1.



With PMAS, management reported a reduction in the number of hours employees spent on downtime or cycle time. -Figure 2. These timesaving increases in proportion to the number of tasks a company works on simultaneously.



The estimate hour/work percentage of saving per month is as below:

- ❖ Hours spent for Production Planning $\approx 83\%$
- ❖ Hours spent for Purchasing $\approx 75\%$
- ❖ Hours spent for Inventory $\approx 85\%$
- ❖ Hours spent for Preparing Report $\approx 90\%$

Note: The companies involved with the computerized system are Auto Korsia Sdn. Bhd, Auto Mako Sdn. Bhd and Nobel Decree.

ROO BENEFITS

The study reveals some main benefits achieved by PMAS. The ROO are shown in Figure 3.



The end users said that PMAS enabled faster information sharing both internally and externally (90%) because most of the processes are done electronically. For example, better accountability in raw materials and work-in-process inventory and faster checks on delivery status. Besides data sharing, retrieving and entering can be done from different departments and processed through the PMAS.

The Increase in data accuracy (95%) helps the management in preparing more reliable reports. e.g., PMAS reduces duplicate processes and performs systematic data processing thus increase the efficiency and accuracy of information. In addition, it minimizes inconsistencies in data entry to secure data integrity.

The end users saw a direct correlation between PMAS and improvement in team productivity (30%) because end users in different departments can view the same information and update it. When one department finishes the task, it is automatically routed via the PMAS system to the next department. To find out where the task is at any point in time, users only need to log in to the PMAS and track it down.

Study showed that organization would be able to increase customer response time by (25%) because end users now have greater access to work order data, making it easier to provide current information to customers on time.

CHALLENGES

Although the study shows that IT investment can achieve many business benefits to the organization. However, the management must look deeper into their organizations to identify, understand, and address the true source of their successes and failure: the collective behavior of their people. How do you know whether your organization has developed a cultural behavior driven toward success or one destined for ultimate mediocrity and failures? Getting desirable answers to the questions will give you more objective answer.

1. Are the production processes in place robust and working effectively?
2. Does your new technology get fully and effectively implemented?
3. Is your production environment stable?
4. Does your department clearly understand and focus on business objectives?
5. Does the company treat your IT department as a strategic partner?
6. Does the business you support understand your true value?
7. Is your staff communicating well within the department?

CONCLUSION

In general practice, the operating and material cost savings are the most important measurements used in the calculation of ROI. In order to achieve better ROI in IT investment, the difficult part for management is to translate the ROO benefits into dollars. Once these benefits can be calculated and converted into dollars, they can shorten the time frame of TCO and improve the ROI significantly.

The biggest benefit for PartsManager implementation is it improves AV Ventures Corporation Bhd in the following areas:

1. Revenue Cycle
 - a. Order Delivery (authorization, accuracy and completeness)
 - b. Delivery/shipping out (completeness and accuracy)
 - c. Billing (completeness and accuracy)
2. Purchasing and Payment Cycle
 - a. Purchases (authorization, accuracy and completeness)
 - b. Payment (completeness and accuracy)
 - c. Receiving (completeness and accuracy)
3. Cost of Production and Inventory Cycle
 - a. Resource requisition (authorization and accuracy)
 - b. Production reporting (completeness)
 - c. Inventory management (access to assets, substantiation and evaluation of balances)
 - d. Inventory perpetual records for purchase of raw materials and sales of finished goods (completeness and accuracy)

USERS' COMMENTS

“PartsManager is easy to use, understand and suit our working environment well. I’m very happy with the software,” says Mohanthas, the Assistance Manager.

“We can check and monitor finished goods, raw materials and in-process inventory at any time just with a click on mouse.” says Zarina, Inventory Executives.

“Processing Purchase Order and Invoices is all automated now,” Tijah says, Purchasing Coordinator “saving us a lot of time and we can have more time to communicate with supplier or customer. It is very user-friendly, and we can maneuver easily from one module to another.”

“I can easily check whether the PO is completed or not and electronic approval save us a lot of time. It also helps me to generate the Cost Savings Report automatically just within a few minutes only.” says Vijay, Purchasing Coordinator.

“Once the quantity reaches the re-order level, the shortage message will alert user and it helps to avoid the production run out of stock. This is a useful feature as we have to deliver the finished goods to customer on time.” says Mzaid, Inventory Executive.

“Most of the routine tasks are handled by PartsManager such as generating the Master Production Schedule and Materials Requirement Planning, etc. The software improves the productivity and quality in preparing the report.” Says Marlina, Production Planning Executives.