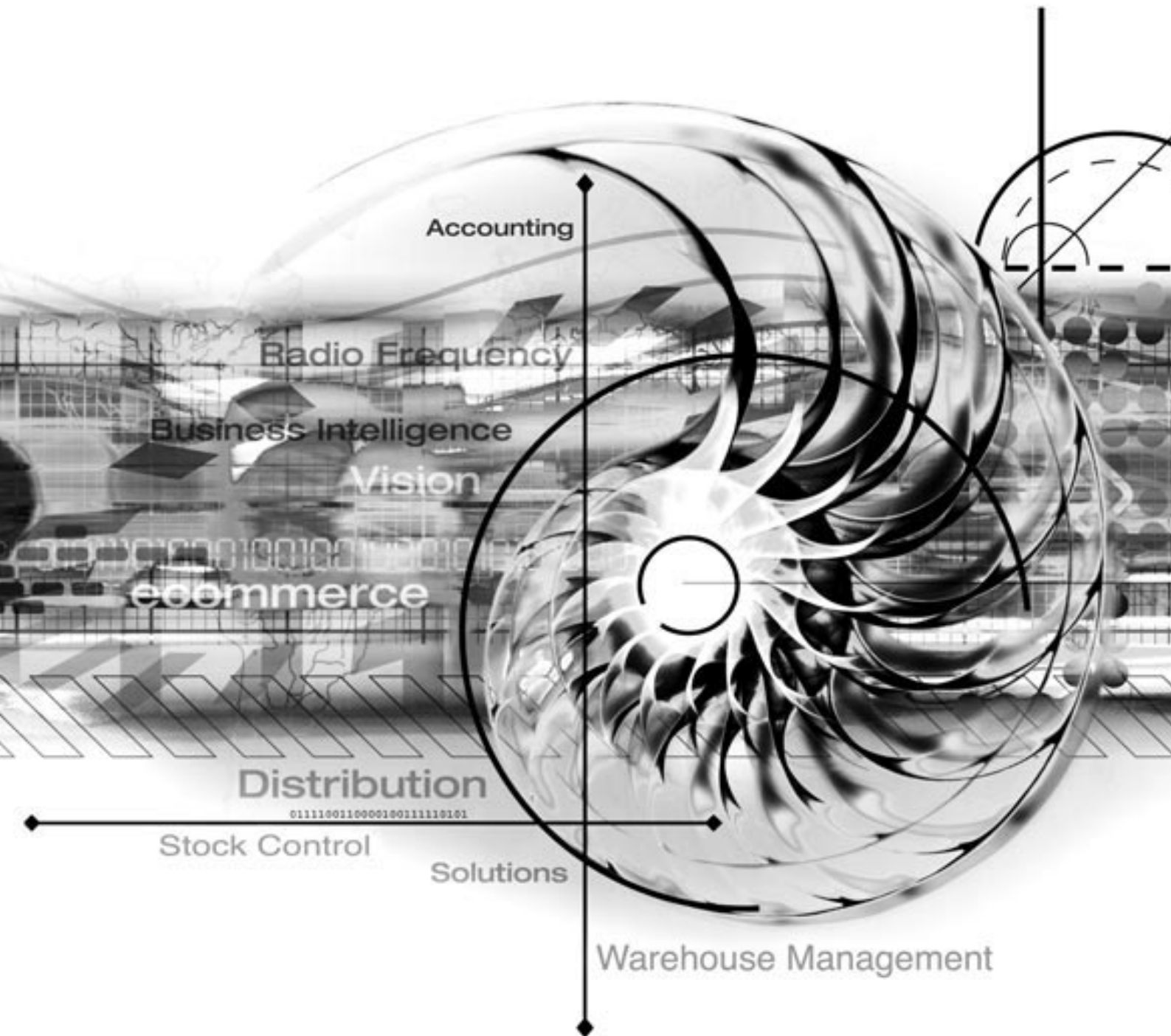




**WAREHOUSE MANAGEMENT SOLUTIONS
COST BENEFIT ANALYSIS GUIDE**



BUSINESS SUMMARY



As business volumes and ranges of stocked products grow, the complexities associated with inventory management and logistics increase. The dependence upon the key role of the warehouse operation becomes even more significant.

Companies are finding the need to implement a Warehouse Management Solution (WMS), integrated with their ERP/Supply Chain Execution system to meet the increasing demands of their major clients and to do so efficiently. Implementation of the right solution can yield major cost savings, as well as increases in company profitability, the ability to respond and add capacity within the current operation.

In the past, advanced semi-automated technology within the warehouse was restricted to larger companies and professional supply chain businesses, due to the complexity and level of investment required. However, an understanding of real business benefits and cost advantages that can be derived, has led to a wide selection of operations, both large and small embracing WMS solutions.

The process of identifying the need and business justification for a full WMS solution is a well established process. Discussions with a wide variety of warehouse professionals confirm the main focal areas as:

- Accurate inventory levels and locations
- Increased efficiencies
- Improved customer service
- Ability to respond to extreme seasonality and volumes
- Operational capacity building

Many of our clients have been able to quantify the financial and business benefits that implementation of our PROTEUS® Warehouse Management Solutions has provided.

This guide draws upon the experience of many successful implementations and is aimed at providing a framework for assisting with cost benefit and return on investment analysis, which will illustrate the potential benefit to your warehouse operation.

Proteus Software and our experienced staff would welcome the opportunity to assist in a review of your current warehouse operations and the preparation of an Operational and Cost Benefit Analysis for your business.

INVESTMENT SOLUTION LEVEL



The investment level applicable to any particular business will depend upon a number of factors, such as those listed below:

- Truck Mount Picking Devices
- Hand Held Picking Devices
- Product Packing Devices
- Stock Check Verification Devices
- Size and Structure of the Warehouse
- Number of Management Users
- Number of Casual Enquiry Users

The level of investment obviously depends upon the size and complexity of the warehouse operation and business requirements, as well as the level of training and consultancy services.

Our experience and that of our clients indicates a comprehensive mid-range solution can be provided for £100,000 to £300,000. This enables a better return on the investment when compared with the offerings from large complex system providers and in relation to the business benefits provided.

PROTEUS® delivers real value for money solutions and is used by some very satisfied supply chain professionals, who have derived real business benefits and will testify to the returns on their investments.

Proteus Software is able to provide an implementation solution questionnaire to assist in the formulation of an investment outline.

To prepare an investment appraisal and calculate the extent of any return on investment a number of standard financial tools can be used to help to confirm that the level of investment is justified. These could include the following:

- Breakeven Point Calculations
- Cash Flow Implications
- Net Present Value

To reach a decision a business will need the following information:

- Initial Investment Solution Level
- Annual Solution Support Fees
- Cost Saving Opportunity Range
- Annual Cost Savings for 4/5 years
- Cost of Funding
- Internal Rate of Return

Proteus Software will be pleased to assist in the formulation of a return on investment appraisal, if required.

INVESTMENT COST SAVINGS



The identification of the business process issues and their associated costs are not the only areas needing to be considered. An important further exercise is essential to complete the assessment of the value of the potential benefits an integrated Warehouse Management Solution would generate.

There are often a number of key **'hard'** benefit areas and cost savings associated with the successful implementation of a Directed Radio Frequency Warehouse Management Solution. The following indicates some of the potential opportunities and a range of cost benefits for each, based upon general industry experiences.

Cost Saving Opportunities		
Operational Element	Low	High
Warehouse Operations Efficiency:		
Equipment Utilisation - reduced CapEx	10%	30%
Inventory Carrying & Funding	20%	15%
Inventory Level Reduction	10%	25%
Load Plan Utilisation	10%	25%
Order Consolidation Transportation	5%	10%
Product Returns	10%	30%
Stock Throughput	20%	40%
Stock Verification	20%	60%
Stock Write-Offs through Rotation	10%	30%
Storage Space Utilisation	10%	40%
Warehouse Operative Utilisation	10%	25%
Staff Efficiency:		
Paper Work and Handling	50%	90%
Picking Productivity	15%	30%
Data and Stock Accuracy:		
Data Entry Activity	30%	70%
Data Entry Errors	10%	99%
Stock Shrinkage	20%	40%
Management Efficiency:		
Reactive 'Fire Fighting' Management	20%	40%
Staff Performance Analysis	20%	30%

The actual range of cost saving opportunities will differ for each company and it is important to determine which apply to any individual company and the realistic extent of the saving potential.

In addition, there are many benefit areas, which are difficult to quantify, such as image and marketing, web ordering, stock visibility, reduced cycle times, internal trust and improved communications.

Proteus Software provides standard models and examples of cost saving opportunities that can provide any company with assistance to determine the extent and range of potential cost savings.

COST IMPLICATION ASSESSMENT



Having completed an assessment of the improvement processes, it should be possible to identify and determine the operational impact, as well as the hidden costs within the current operational processes.

This will highlight the extent of the inefficiencies within the operation, and the business opportunity that will be provided once any issues are addressed.

Whilst there are industry standard equations that can be used, it is beneficial to use specific company figures to determine the extent of the cost of inefficiencies.

Below are only a few examples of typical process elements. Proteus Software is able to provide some templates to help assess the implications.

Cost Implication Assessment			
Process Element	Incidence	Cost/Incidence	Total Cost
Data Input Inaccuracy*	1%	£10.00	£25,000 per annum
Debtor Collection Delay	100%	2 days delay on £2,000,000 Debtors	£10,000 per annum
Duplicated Handling Time	50%	£1.00	£25,000 per annum
Obsolete Stock	1%	£2.0M Inventory	£20,000 per annum
Paperwork Production	90%	£0.15 per pick note	£10,000 per annum
Picking Errors*	1%	£10.00	£25,000 per annum
Stock Holding - Overstocked	50%	£2.0M Inventory	£10,000 per annum
Stock Location*	5%	£2.00 per hour	£25,000 per annum
Stock Returns Handling	1%	£10.00	£25,000 per annum
Stock Shrinkage	3%	£2.0M Inventory	£60,000 per annum

*Example based upon 1,000 orders per week/5 lines per order

Upon completion of this exercise, it should be possible to assign a weighting and priority to each process element, to reflect the cost and operational impact of each process under review. This will enable each to be investigated fully, assessed and then agreed by the management team for action.

IMPROVEMENT PROCESS



An important element in achieving success with the implementation of a Warehouse Management Solution is to identify and quantify the operational objectives of your business.

The key to efficiency improvement areas within most warehouses can be summarised as being:

- Inventory Accuracy
- Information Access and Availability
- Resource Utilisation
- Material Handling and Location
- Operational Capacity Building
- Service Level Management

Focusing upon these key areas and the operational processes within each, will lead to the identification of the main 'areas of significant pain'.

Whilst it is often possible to identify many elements of improvement and benefit, it is advisable to apply the '*Pareto Principle*' or 80/20 rule to fully consider the major elements. These will enable you to determine, measure and focus upon the key benefits the implementation of a Warehouse Management Solution will provide.

It is important to map the information and materials flow within the organisation, as there is often a poor correlation between each. Once mapping has been completed, hidden inefficiencies and erroneous costs will be highlighted and corrected, producing further financial benefits.

This process will also provide some key indicators of the issues that any new solution must address, and provide success criteria to measure and assess any implementation project.

As an element of any improvement process it is beneficial not only to seek the views of those members of staff within the warehouse operation, but any staff whose work impacts, or is dependent on the warehouse. This will assist in ensuring that all 'touch points' are considered, enabling a full assessment of the potential impact and benefits.

Proteus Software will be pleased to assist in the preparation of a review document focusing upon these key areas, and the operational processes within the business, to help determine the benefits that the implementation of a Warehouse Management Solution will provide.

PARTNERSHIP SOLUTION DELIVERY



PROTEUS[®] Warehouse Management solutions are designed and built for collaborative commerce, with operation and integration capabilities in mind; to provide our clients with compatible, robust, flexible, high performance solutions.

PROTEUS[®] Warehouse Management Solutions can be operated fully integrated with the PROTEUS[®] Supply Chain package or integrated with any other existing ERP/Supply Chain solutions. Industry standard software integration tools are used, operating within paper or radio frequency scanning device environments.

As a leading software author and supplier of computer based business solutions for supply chain and financial management applications, Proteus Software is uniquely able to use its experience and knowledge of application software covering inventory management, warehouse management, sales ordering, purchasing, e-commerce, relationship management, and financial accounting to provide robust solutions.

Our record of successful project implementations has its foundations in the industry knowledge of our staff and their understanding of PROTEUS[®]. This enables us to design and implement solutions that consider the business process requirements of Supply Chain companies.

Our philosophy of market and customer focus has enabled Proteus Software to retain an enviable client list, from the independent owner run company, to major blue-chip corporations. We have a proven track record of delivery of high levels of service level satisfaction.

The ultimate success of our PROTEUS[®] implementations is measured by our ability to provide solutions that allows our clients to focus upon improving their own customer services and to concentrate on profitable business generation.

Having determined and quantified the cost benefits to be derived from any solution implementation, it is essential that responsibility is assigned to individual key members of the company staff, for key operational elements. It is also important to stipulate the timeframe within which the cost and operational benefits should be delivered by.

Proteus Software will be pleased to assist in the formulation of a Cost and Operational Benefit Delivery Plan and give assistance to each staff member and the company, if required.

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