

Factory Management Software for the Seafood Industry

MRP & ERP
Platforms

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A large, faint, light blue gear graphic is positioned in the bottom-left corner of the page, partially overlapping the dark teal background.

If you find your business expanding rapidly, you may encounter some of the below challenges.



Do you think that you lack sufficient up-to-date real-time information about your business to enable you to make good strategic decisions?



Do you need to better understand your production yields, your profit margins or your growth rate?



Does it seem that not all company employees are aligned in their work?



Are they all pulling in different directions based on their own impressions of what is required?



Does your business need more structure and its participants more discipline?



Does your business lack a system to keep all employees aligned?



Have you a manual management system to manage day-to-day activities?

If the answer to some or all of the above questions is Yes, then it is likely that your business would benefit from the installation of factory management software.

Factory Management Software

Factory management software should be seen as a means of automating the following work:

- the planning and scheduling of company work
- tracking progress and monitoring performance
- the collection and storage of company data
- administration tasks such as issuing of invoices & account statements
- tracking of yields/throughput
- maintain the quality & consistency of the product.

Factory management software comes in a broad range of formats and sizes.

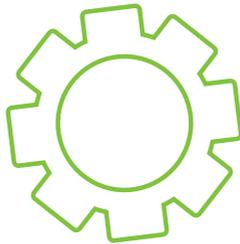
Some popular software packages have additional functionality which is aimed at improving the management of small to medium sized factories.

At the other end of the scale there are large scale full data management software systems.

In between there are MRP or factory management systems that interface with mainstream accounting software.



What is Materials Requirements Planning (MRP)?



Materials Requirements planning or MRP is a system used for calculating the materials and components needed to manufacture a product. It assists companies in production, planning, scheduling and inventory control.

An effective planning technique for production and manufacturing businesses

3 primary steps:

- ✓ Taking note of materials inventory & components that are available on hand.
- ✓ Identifying additional components as required for a specific process.
- ✓ Scheduling of the production process & purchase of raw materials.

Objective of MRP

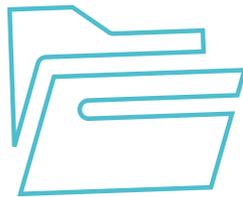
To ensure that materials and components are available for production while ensuring the right quantity of materials is available at the right time. It can improve efficiency by using accurate scheduling to optimise the use of labour and equipment.

- Overall Equipment Effectiveness (OEE)
- Yield
- Conversion Costs

Benefits to your business of a MRP System

1. Inventory Control
2. Purchase Planning
3. Production Planning
4. Work Scheduling
5. Time Saving
6. Traceability & Transparency

What is Enterprise Resource Planning (ERP)?



An ERP system is an integrated software system that uses real-time information to integrate business processes for example, finance, logistics and production. It is also used to manage the internal and external resources of an organisation.

These include the physical assets, financial resources, labour, materials and human resources.

The ERP system facilitates the flow of information between all business functions inside the organisation and links to outside stakeholders such as customer and supplier systems.

Objective of ERP

To bring together the disparate functions of the organisation into a single system environment and therefore make the operations run more efficiently. An ERP system is an integrated management system software that standardises, streamlines and integrates all relevant business processes both internal and external.

What is an ERP system used for?

- Integrating financial information
- Integrating orders
- Providing insights from customer information
- Standardising & increasing production efficiency
- Standardising Procurement

Core functions of an ERP system

- Financial accounting
- Product lifecycle management
- Purchase orders
- Manufacturing
- Product distribution
- Warehouse management system
- Distribution
- Supply chain management
- Stock
- Quality control/Traceability

Optional Additional Functions

- Customer Relationship Management (CRM)
- Mobile access for account and sales management

Benefits to your business of an ERP System

1. Integrated and coordinated business processes with your team aligned in their work.
2. One central database with all your organisation's financial and operational data with no duplication of data.
3. More efficient production and distribution operations.
4. Real-time availability of financial, production and distribution data.
5. Increased agility - with better and faster information comes an ability to make better informed decisions more quickly.
6. Greater Traceability - tracking products & raw materials throughout the organisation.
7. Reduces costs such as labour, materials & improve base line costs.
8. Yield tracking - improved, consist and accurate data.

Herein, MRP and ERP systems will be referred to as factory management software/software systems. These steps will apply to both a MRP and ERP system.

Approaching Factory Management Software

Research & Selection



Before you speak to any providers, begin by answering the following questions:

1. Objective – Define the goals & objectives

1. What are the current challenges for the business operations?
2. What are the obstacles to the business's growth?
3. Do you have the necessary information to drive business and make important decisions?

It will be important to involve key members of the team in answering these questions.

Once the goals are defined you will get a better understanding and have the ability to measure your return on investment (ROI).

2. Scope – Identify the functions that should be covered by the software system

ERP software can manage all financial, production and logistics functions. It is much easier to work with one single system, its more efficient and the software solutions are available in various dimensions.

Some functionalities that an ERP software for the food industry include:

- Planning production
- Managing costs
- Integrating hardware
- Assuring quality & traceability
- Yield tracking
- Sales order processing
- Stock control

3. Research the software market

A good place to research the market (given that it's software) is the internet.

Your accountant or your IT support provider may have links to software companies. BIM can support you with conducting a feasibility study to determine the best supplier suited to your requirements.

4. Modularity – What do I need (& when)?

Every company grows and changes and this should be reflected in the software system.

You can add functionality at any time and implement new modules when needed.

The choice of software modularity will depend on the business goals that you define.

What is important is that the modules are integrated into the solution.

5. Future Sustainability – Will you still be happy with your software system 10 years from now?

In order to prevent certain scenarios, you should check the following points when selecting an software system:

- Will the system grow with the company as you expand?
- Are there regular updates?
- Can processes be adjusted easily?
- Is it clearly structured & flexible?
- Is the software provider well established?

However, it is important to note that computers and the software they hold are developing at an ever increasing rate. The system that you buy will require upgrades and in a short couple of years it will develop functions beyond what is feasible today.

6. Mobility – Can you enter data on-site & use it everywhere?

Mobility (remote access) is becoming an increasingly important criterion for seafood companies. It allows greater productivity from employees, higher transparency and flexibility in all processes.

Dynamic owners of growing businesses need to access real-time business data, anytime, anywhere. Focussed employees need to be able to work remotely from home.

Current software systems allow remote access and provide mobile applications for use on the go.

7. Integration – Can the Software system link to other software?

Integration is offered by most vendors by using standard interface conventions.

Check that the software system can link to customers'/suppliers' electronic data interchange (EDI) systems which enable the secure automated exchange of electronic documents.

EDI: Electronic data interchange which enables the secure automated exchange of electronic documents.

What options exist for linking directly to production machinery?

Will your existing machinery require upgrades/retro fitting?

8. Security – How will your data always remain yours?

Security is a critical element for software systems and should be considered from the start. Security polices can be created and authorized access can be given to selected employees.

Software system solutions must meet strict security standards, such as login authorisation and restriction.

All data saved on a change to software system can be stored in a protected manner.

This is a dynamic area and advice should be sought from a person with experience in the area.

Complying with GDPR regulations should also be considered at this stage.

Once you have considered and defined these eight key aspects of researching a factory management software system, it's time to think about the procurement process.

Steps in the Software procurement process

- ☑ Define the software requirements for the company
- ☑ Vendor Communications - Find the suppliers and contact them
- ☑ Generate: — *Request for Quote (RFQ)*
— *Request for Invoice (RFI)*
— *Request for Purchase order number (RFP)*
- ☑ Create & Evaluate the Vendors Short list
- ☑ Refine the RFQ if appropriate based on the research
- ☑ Make the decision
- ☑ Set up the contract



Preparing for System Implementation



Preparing for Implementation

The success of using a software system will be based on both the correct product selection and the preparation undertaken regarding the Materials/Enterprise Resource Planning principles in your business. In this section of our guideline we will focus on the preparation you will need to do before implementing your selected software solution.

Good inventory management principles are crucial to the operation of good business. In addition, proper monitoring of the principles will lead to better business results.

FIGURE 1.0



As you will see there may be significant work involved to ensure that the correct principles are in place for good inventory management separately to implementing a software management system.

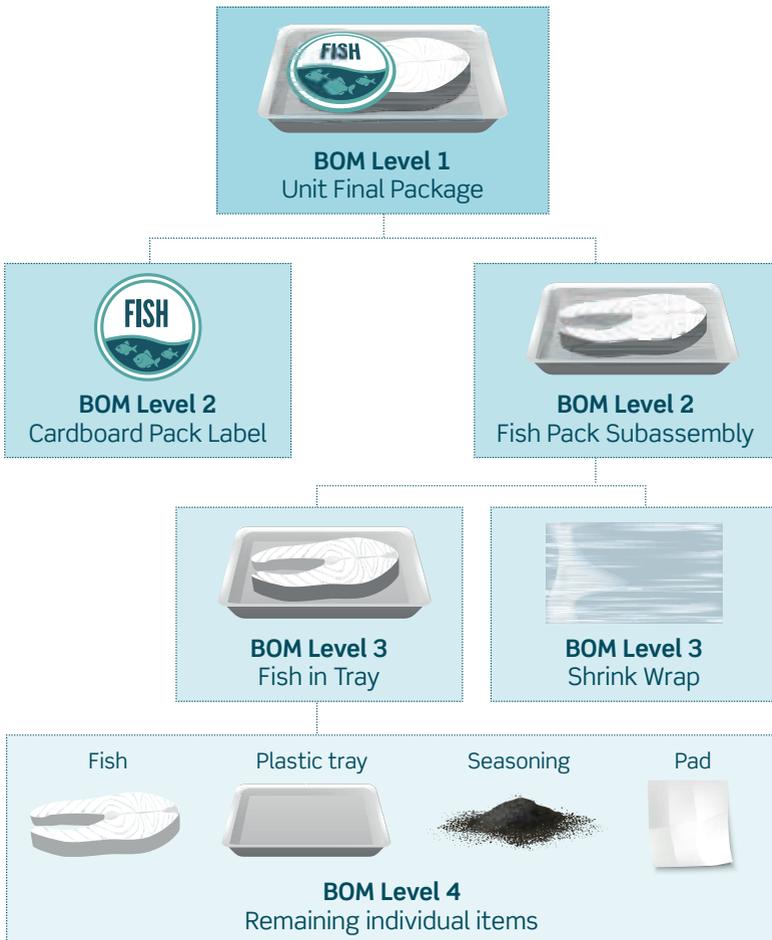
First let us look at the main principles of good inventory management.

1. Clearly identify all items
2. Transact then move, maintaining data integrity
3. Single storage locations
4. Manage batch/quantity splits
5. First In First Out, (FIFO)
6. Monitoring

1. Clearly Identify all items

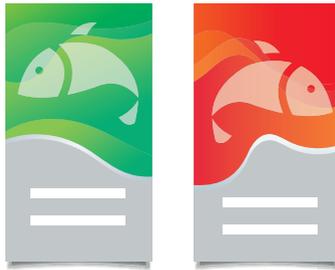
In any inventory system where parts, products, sub parts or sub products are being held it is important that they are clearly identified and linked to what they are used for and where they are needed. Ideally each item should be allocated a unique identifier to allow it to be easily identified and differentiated from other items. The linkage can then be outlined using a tiered system as per figure 2.0 below, which shows a typical Bill of Materials, (BOM), structure.

FIGURE 2.0 HIERARCHY OF LINKED ITEMS FOR BOM



Once a unique identifier is assigned it is then imperative that the item is tagged or labelled with this identifier. Time can be wasted in processing trying to differentiate items that have no clear identity. If items are small, such as ingredients, they should be stored in such a way as the holder can be easily identified with respect to content. In addition to a clear item identifier best practice would include using different packaging shape or colour to help differentiate like items.

In this picture colour is used for example to differentiate product



While this picture uses different shapes and colour for identification



It is good practice to use an identifier that gives the organisation the least amount of work labelling the items on receipt. This means planning to use identifiers that external sources use or negotiating with the external source to label the items prior to receipt with your required identifier.

To aid this, ensure the following are considered:

1. All external suppliers use the same item identifier.
2. Where electronic tagging is used that it uses consistent technology for automation on receipt.

2. Transact then move

A recognised problem with implementation of materials management systems is the lack of data integrity. Data may not be up to date or it may have errors due to poor data processing issues which in turn gives output that is inaccurate. This can be a significant cost to your business.

In practice a core discipline will be ensuring that material is not moved from one location to another unless it is recorded first. This may appear obvious. However, people are often put under pressure to allow material to be moved urgently to meet deadlines and take the view they will follow up later with the recording. Reconciliation of paperwork or computer systems after the event is prone to human memory errors. To avoid this, you should insist that no material can be moved unless the recording is completed and approved first. The up-front definition of the discipline and possible workload allocation will save significant time later.

To aid this, ensure the following are considered:

1. Recording systems are placed at suitable locations, point of use.
2. Work leaders understand the need for data accuracy.
3. Audit systems, discussed later, are actively in place.

3. Single storage locations

To avoid unnecessary searching make sure all inventory storage areas are clearly identified and that items are ideally stored in a single location. It may be necessary to have a “bulk” and a “point of use” location initially depending on your supply chain. You should work to develop Just In Time, (JIT), practice to reduce potential for damage and obsolescence onsite. Excess inventory will eat profit faster than most inventory problems. On average the cost of poor inventory flow can add between 20-40 percent of an item value to the item. This cost is often hidden from product costs and absorbed in overhead losses at year end.

To aid this, ensure the following are considered:

1. Evaluate your current storage areas for suitability.
2. Calculate inventory flow, batch sizes, usage and item storage footprint.
3. Negotiate with suppliers for delivery using JIT, a small cost here can save a larger cost later.
4. Clearly label all storage areas and install appropriate storage facilities and do not shoehorn old equipment/racks etc. that are not suitable or cannot be remade to be suitable.

4. Manage batch/quantity splits

In normal operation batches of ingredients, parts, products will from time to time have to be split from the master batch. This is an area where mistakes can easily become errors in data. Splitting should be done in a clear, identifiable way. A system of sub batch identification must be developed, and the recording system must be able to reconcile the split with the original master for both integrity and traceability requirements. The corollary of this is that master batches may need to be merged and again data integrity is exposed to error.

To aid this, ensure the following are considered:

1. Endeavour to order in line with usage requirements which will reduce split/merge requirements.
2. Consider the allocation of this activity to a materials professional position such as the Cycle Counter mentioned later.
3. Ensure that the recording system has clear rules around how such transactions are done.
4. Clearly identify the new split/merged item as a split or merged item using label, colour, location, etc.

5. First In First Out, (FIFO)

FIFO is the mantra of flow in materials and production operations. The disciplines associated with everything mentioned above should culminate in a FIFO culture. All material should be used based on its aged arrival. Old material first. If newer material is stored in front of old, it is very likely that you will end up with business costs in obsolescence.

To avoid this:

1. Structure storage areas with both-side access, in one side out the other, allowing flow of material by aged delivery in all areas through the facility.
2. Educate everyone involved in the material principles above.
3. Measure the cost of non-compliance with the disciplines of the system.

6. Monitoring

One or more people in the organisation should be allocated singular responsibility for materials management. It is usual that at the stores and production floor at least one position is created to handle monitoring on an hour to hour basis. This role may be referred to as the “Cycle Counter” or “Materials Handler” for identification purposes. This person should be a trained material person and be assigned additional duties as follows:

- They should carefully screen inventory and BOM data.
- They may have responsibility for cycle-counting inventory, inventory adjustments, reporting of scrap, damage, waste, and potentially split/merge transactions.
- They should also be in direct regular contact with the people responsible for planning and scheduling.

Daily and weekly reports should be generated showing transaction levels, count levels and inventory levels within the facility. Waste material with categories should be reviewed. A daily operations review huddle is good practice and the inventory reports should form part of that daily review.

Errors in inventory should be reported, investigated and understood before any adjustment is made. Each adjustment should have a formal review and approval prior to transaction. Records should be kept of these changes and approvals. The value of these errors should be calculated and reported daily/weekly and monthly.

Summary

In summary, a good inventory system will not happen with the introduction of a new computer management system. The disciplines for a good system need to be in place prior to the introduction. Further, the organisation that has implemented good practice in inventory management will find the transition to a new computer management system much easier. It is the disciplines that require culture change within the organisation not the computer.

Steps to Implementation



Consider the following before you implement your system

Make sure that:

- The supplier(s) has a technical team with experience in your industry.
- There is a “tried & tested” methodology for the introduction of the system.
- The supplier has already implemented similar projects numerous times.
- Ask for case examples or consider arranging a site visit.
- Timeframe – will require 12 months to be implemented.

Step 1: Bring together a project team

Clearly structure the project and provide clarity on the roles amongst team members to figure out where they should be and what each team member is responsible for.

Strategic plan – design project team including members from IT, Project management and production.

Examine data and processes.

Step 2: Develop an implementation plan

Plan it in steps & delegate across the team.

Plan ways to keep the organisation onside during the implementation. Review software capabilities. This may change the way several employees work, some may resist this change.

Step 3: Forecast your software system implementation costs & develop a Budget

How much does software system implementation cost?

Dependent on:

- Size of your business
- Vendor selection
- Modules & Features

Don't forget to allow for:

- Training
- Additional hardware such as servers, updated PCs, network extensions
- Input from your I.T. services provider

Step 4: Migrate your existing data

Clean up and verify the data and convert it to the relevant format. The most important and necessary data should be transferred, for example:

- Suppliers
- Throughput/Yields
- Quality Control & Traceability

Map and test legacy data to new database fields where it can be transferred to a new system.

Step 5: Start training your Data System User base

Changes come with a software system implementation.

It's important to prepare employees and the organisation to achieve a better understanding and manage the impact of the changes. A change management plan is needed to encourage adaptation and reduce risks.

Need to communicate & promote implementation so staff can embrace the new change.

Set up a planned & proactive approach for equipment maintenance.

Step 6: Plan & initiate your go-live activities

Before the system goes live, it is important to ensure that the right information is communicated to the right people. A software system is a continuous process which needs to be carefully planned and monitored.

Things to plan:

- System testing
- Staff co-ordination for launch
- Identifying metrics for project evaluation
- Creating a communication strategy
- Data back-up processes
- Support from vendors and industry

The aim of this document is to guide seafood companies through the selection and implementation stages of investing in factory management software. These systems can be expensive and prove to be more costly if the wrong system for your company is selected. Therefore, you are encouraged to speak to BIM or an expert in the area that can guide you through the process.

For further information speak to Gavin McGrath - gavin.mcgrath@bim.ie.





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EUROPEAN UNION

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