

7 Deadly Sins of MRP

"Unleash Your Business"

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Intro

Material Requirement Planning (MRP) is a common term in the manufacturing industry. Simply, material requirement planning is an inventory & production planning management system.

The main objective of an MRP system is to provide a plan so the correct materials are available at the right time. MRP systems are an extremely valuable component to a business for balancing supply & demand, meaning carrying the correct inventory levels so excessive inventory and overhead costs are not tied-up in aging materials.

The reality is many companies struggle with leveraging an MRP system to provide the proper balance of inventory. Material Requirements Planning (MRP) can't provide accurate numbers or data; if ERP & business data is outdated, inaccurate, or non-existent.

MRP has been around for many years' and it is a very sound methodology for planning your supply and demand. When MRP adoption or ROI is low there are few key areas which should be considered.

1) Inaccurate Bill of Materials (BOM)

Bill of Materials are arguably the most important data element of a successful MRP implementation. If the BOM's are not configured to reflect the reality of your operations, don't expect to get valuable information from your MRP system.

"Garbage in - Garbage-out"

Let's consider both elements of a BOM; the routing & materials.

- **Routings:** This includes how much time a particular operation consumes, but also any scheduled delays between operations. In MRP, the routing is considered indirectly, as MRP is driven by the material side of the BOM.
- **Materials:** This includes how much "raw materials" are needed in a particular unit of measure to manufacture the top level finished good. If these per unit or per lot quantities are incorrect, you can be assured the MRP data will be incorrect. You'll have to much or not enough material.

For BOM optimization or accuracy you need to have several processes in place.

- Efforts needs to be used to get an accurate baseline for BOMs
- A BOM review process needs to be in place.
- Engineering Change Notices (ECN) are very effective in creating an approval process workflow to manage changes.
- Proper Standard Operating Procedures (SOP) need to be in place for BOMs and surrounding processes.

2) MRP Parameters

MRP parameters provide a way to configure your system to support your business in terms of the way the business operates. If these are not setup properly they will provide conflict without your functional business units, rather than alignment.

Some parameters include:

- Forecast Windows
- Exception message suppression
- Order status' to plan within the MRP engine
- Planning horizon
- Which "orders' should be planned
- Excluding certain items from your MRP plan

A workflow of your supply chain is extremely helpful when determining how you want your Planning Parameters configured. A visual mapping of your processes will provide extreme value when identifying workflow gaps or inefficiencies.

3) Inaccurate Forecasting

Having an accurate Forecast allows operations to plan for future production, material, and labor needs. In addition, forecast levels are an important data point to calculate the correct Safety Stock levels.

There are a few methodologies related to forecasting;

- Qualitative: Subjective forecasting techniques, based on the opinion and judgment experts; they are appropriate when past data are not available or reliable.
- Quantitative: Forecasting models are based on using historical data to predict the future demands, in a time-phased approach.

4) Poor Inventory Management

If your inventory accuracy isn't at 96% or higher, you're going to have an extremely difficult time successfully implementing MRP.

Don't expect an MRP system to fix broken inventory accuracy disciplines.

- Are you performing Cycle Counts on a regular basis?
- Are you Cycle Counting every location on a schedule; such as once per month?
- Is your inventory accuracy at least at 96%?

Remember a Cycle Count should be a verification of your inventory accuracy, not a method to correct it.

If you're not performing these, you need to begin. What good will MRP be if you can't count on your existing inventory for fulfillment.

5) Ineffective Process Management

If you don't have some-type of Change Management in place, you'll need to evaluate to what degree this is needed. If processes aren't controlled/maintained this might lead to some difficulties with implementing MRP and other functional process.

Change management is all about documenting and controlling changes to these processes. This relates to MRP in several ways:

MRP is very sensitive to consistent processes and communication. If processes change "on the fly" you can expect to have issues with accurate data or siloed departments.

By managing changes and testing in a pilot environment you are validating process improvements and changes will have a positive impact.

There are many disciplines within your supply chain and minor changes can have an extremely negative impact to your overall process.

6) Customized Systems

It's critical to implement MRP with as much of the standard system as possible. Remember, most system are designed based on best-practices. If you're trying to change the system to match the "way you're always done things" you might be by-passing some potentials process improvements.

Now we do have to understand there are some bad software designs, but for the most part these system are stable from a best-practice standpoint. So try and implement using the standard features and functions.

If you begin modifying your system to match internal processes, you really need to validate your process are aligned to best-practices and not using work-arounds.

As mentioned above, the best way is to have a visual process mapping of your MRP and supply chain processes.

7) Insufficient Training

When we look at MRP or really any system there are two training categories; Systems & Concepts.

- **Systems:** These are defined as the steps involved to use the system. These are basically repetitive processes based on an Standard Operating Procedures. The system steps generally have a fairly narrow scope.
- **Concepts:** Conceptual training is the knowledge of the disciplines surrounding an area of expertise. For MRP is could be topics as stated below:
 - How to develop forecasting models
 - The integration between forecasting and safety stock levels
 - Determine which items to stock
 - Understanding Cumulative Material Lead Times (CMLT)
 - How stock outs related to customer service levels

Wrap-Up

So what are the realities of having a low performing MRP system.

- Excessive costs allocated to inventory
- Low customer service levels
- Low capital, resulting in lost opportunities for business growth
- Siloed functional departments
- Conflicted communications within your organization
- Increased cost for overtime and expedited raw materials

Hopefully this publication helped you see the how valuable an MRP system can be to a business. In addition, exposing the 7 critical areas of a challenged MRP implementation.

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feel free to get in touch with us for any
feedback or questions

To your success,

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