

User Story

This document is a sample of the tailored work we'll do for you for
FREE
as part of the Proof-of-Concept Project.

Goals

Control:

Based on the final delivery date of the project, the system must be able to plan a series of production orders backwards, so that we know when to start each production phase in order to reach our final delivery date of the project.

During the development of the project, we must understand what processes are currently holding back the progression of the project.

We must be able to see where bottle necks are likely to happen in the production 1-2 weeks ahead of time so that we can take action.

Cost:

We must be able to calculate correct cost for both the entire boiler project as well as the individual sub-assemblies going into it. The project cost components must include:

- a. Purchased Materials.
- b. Labour Cost from manufacturing activities.
- c. Labour Cost from other departments, such as design.
- d. Machine Cost (Depreciation)
- e. Overhead

Correct cost is needed for a number of reasons:

- a. Correct Commission
- b. Correct profitability Analysis.
- c. Correct future pricing.

Warehouse:

We must be able to Receive goods without putting them away instantly.

We must be able to issue Put-Away instructions with bins. The employee though must be able to overwrite the bin if he chooses to place the goods in another bin.

Business Central must be able to issue pick tickets, that instruct us where in the warehouse we can find the different components.

We must be able to issue materials by work centre, rather than issuing all in the beginning. This is important since some materials are not needed until many weeks later when the production reaches a later stage.

Replenishment:

The purchase suggestions must be able to distinguish between buying for project vs. buying to stock.

Business Central must be able to time the purchasing of materials, so that they do not arrive too early. Ideally, materials arrive a few days before needed.

Business Central must be able to suggest us to produce more subassemblies of those that we use frequently and want to maintain a stock of.

We must be able to monitor the status of all purchase orders. Has the supplier confirmed? Should we be re-confirming the deliveries on important orders 2 weeks before?

Sales Quoting / Ordering:

We want a list of Up-Sell products that can easily be added to the quote.

We want the quotes to print out in various formats based on various factors.

We want the system to be able to calculate the expected delivery date for a new project we are quoting for based on production lead times as well as purchase lead times.

Finance:

Get an understanding of how a boiler project has performed: Actual performance vs. budgeted.

We must be able to invoice in stages.

Integration to the G/L for all transactions through the entire value chain, such as:

- Goods Shipped, Not invoiced.
- Sales Invoicing.
- Goods Received, Not invoiced.
- Purchase Invoicing
- Manufacturing WIP / Consumption
- Production Output
- VAT

Future proof

The solution must be scalable and likely to support your company in the next 10 years, even if the company grows 5-fold.

Case details

Sales Quote:

- | | | |
|---------------|--------|-------------|
| 1) Boiler | Q=1pcs | (Produced) |
| 2) Economiser | Q=1pcs | (Purchased) |

BOM - Boiler:

- | | | |
|------------------|--------|------------------|
| - Flat Panel: | 10 sqm | Purchased |
| - Pipe: | 50m | Purchased |
| - Valves: | 200pcs | Purchased |
| - Control Panel: | 1pcs | Produced Inhouse |

BOM – Control Panel:

- | | | |
|---------------------|------|-----------|
| - Metal Box: | 1pcs | Purchased |
| - Electrics Package | 1pcs | Purchased |

Work centres:

We have the following work centres:

- 1) Design
- 2) Cutting/Rolling
- 3) Manufacturing
- 4) Boiler Assembly
- 5) Electrics Assembly

Route for Boiler:

- | | |
|--------------------|-------------------------------------|
| 1) Design | 40 hours |
| 2) Cutting/Rolling | 40 hours (Consume: Flat Plate) |
| 3) Manufacturing | 80 hours (Consume: Pipe and Valves) |
| 4) Boiler Assembly | 40hours (Consume: Control panel) |

Route for Control Panel:

- | | |
|-------------------------------------|---|
| 1) Electrics Assembly – Unpacking | 24hours |
| 2) Electrics Assembly – Assembly | 24hours (Consume: Metal Box + Electrics Package). |
| 3) Electrics Assembly – Calibration | 24hours |

Costs:

- | | |
|-------------------|------------|
| 1) Labour: | £16/hour |
| 2) Flat Panels: | £200/sqm |
| 3) Valves: | £100/pcs. |
| 4) Pipes: | £100/meter |
| 5) Economiser: | £2000/pcs |
| 6) Metal Box | £1200/pcs |
| 7) Electrics Pack | £3000/pcs |

Lead Times for Purchased Materials:

Economiser: 6 weeks

Users participating in the story.

Sales:	Sales-Scott
Planning	Planning-Paul
Design:	Design-Denis
Cutting:	Cutting-Chris
Manufacturing	Manufacturing-Mike
Electrics:	Electrics-Ed
Assembly:	Assembly-Allan
Warehouse:	Warehouse-William
Finance:	Finance-Fiona

Story.

Sales Quoting

Change work date to 2 of Nov.

After nurturing a new prospect, Scotland Whisky, Sales-Scott has been asked to provide a quote for a Boiler.

When raising the quote, Sales-Scott will add the boiler to the quote. He will then click the button "Add Up-Sell Products", which will display a number of possible up-sell products:

- Unity
- Economiser
- Steam meter
- Water meter
- Gas meter

The boiler as well as all up-sell products will already have a suggested sales price. Sales-Scott can change the prices and discount if he wants to. The quote ends up with two lines:

- Boiler
- Economiser

Sales-Scott prints and sends the quote using the appropriate Quote Template with the relevant paragraphs. On the quote is indicated an expected lead time of 7 weeks from the day Scotland Whisky accepts the order.

Sales Order and Prepayment

An hour later, Scotland Whisky accepts the Quote and Sales-Scott converts it into a Sales Order.

Before sending the Sales Order Confirmation to Scotland Whisky, he wants to calculate the expected delivery date. The system can do this automatically by looking at the time the production must spend in each work centre as well as the purchase lead

times of any materials we'll need to purchase. The system calculates, that the Boiler can be delivered earlier than the Economiser, so Sales-Scott sets the Shipping Date to 17 Dec on both lines.

He prints out the Sales Order confirmation and sends it to Scotland Whisky.

He also generates, and sends a pre-payment invoice, which Scotland Whisky pays right away.

Production Planning and Purchase Planning

Next, we need to start planning for the production and the purchasing. This is the responsibility of Planning-Paul. He runs the MRP in Business Central, which comes up with two replenishment suggestions:

- Production Order for the Boiler.
- Purchase Order for the Economiser.

All raw materials needed to produce the Boiler are in stock, so Business Central does not suggest any more purchase orders.

Planning-Paul agrees with the two suggestions and converts them into a Production Order and a Purchase Order.

Load in Work Centres.

Planning-Paul checks the load in the different work centres.

Purchasing

Planning Paul goes to the purchase order for the Economiser, creates a pdf printout and sends it to the supplier. The supplier responds immediately and informs us, that we can expect the Economiser on the 10th Dec., which is earlier than anticipated. He updates the Promised Delivery Date.

Issuing the Production

Planning-Paul issues the Boiler production order to the design department. Design will spend their time and register this on the production order to capture their cost.

Cutting and Rolling

Once design is finished, the Boiler production order is passed on to the Cutting/Rolling work centre. Although we need to consume flat plates, we do not need a pick ticket for this since the flat panels are stored next to the cutting area. Cutting-Criss will perform his tasks and register how much time he has spent. This also consumes the flat panels.

Check consumption and time on production order.

Picking for Manufacturing

A few days before the boiler manufacturing is supposed to start, Planning-Paul creates a pick-ticket (paper or digital) for those materials needed for this step and hands the pick-ticket over to Warehouse-William. On the pick ticket are the valves and pipes.

The pick ticket will tell him exactly where in the warehouse he will be able to find the different components. He moves the picked materials to the Manufacturing work centre so that they are ready to be used.

He registers the pick ticket.

Start Manufacturing

A few days later, Manufacturing-Mike starts the work by attaching the valves and pipes to the boiler.

This step takes a while so he will not register his time yet.

Monitoring the Supply Chain

While the production is ongoing, Planning-Paul knows that it is important to monitor the progress of the supply chain, both in production and in purchasing.

Monitoring delays in production.

Planning-Paul knows it is important to look at whether we've got delays in the production. He knows, that if the first phase of a production is delayed, it can delay the entire production. For example, if the cutting/rolling phase is delayed, it will push the entire project and ultimately lead to delays for Scotland Whisky. That is not good. If Planning-Paul notices that any phase in the production has not been registered as complete we'll need to spend some over time to catch up. This is important even if the project is not due until 10 weeks later.

Monitoring our capacity load.

Planning-Paul also wants to look at the load on our work-centres in the next couple of weeks/months. If he can see that a particular work centre will be significantly overloaded in two weeks, he might want to organise overtime to avoid delays or re-plan other production orders.

Monitoring deliveries from Suppliers.

Planning-Paul also knows it is important to stay on top with whether we've received our goods from our suppliers on time. Therefore, he starts every day checking if any expected receipts have not been received. Whenever he discovers a delay, he instantly contacts the supplier.

He will also check if we've send out new purchase orders that the suppliers have not confirmed within 2 days. If he finds purchase orders that have not been confirmed by suppliers, he will pick up the phone and call them.

Producing the Control Panel

While the Boiler has been going through the production, the Control Panel has been undergoing a similar production. Electrics-Ed has been picking the components from the small local warehouse in the electrics department.

Let's register time and finish all operations.

Finishing Manufacturing

Manufacturing-Mike has now finished his production so he registers his time.

Boiler Assembly

Eventually, the boiler will enter the Boiler Assembly work centre, where the produced Control Panel will be attached.

Register time.

Receiving in the Warehouse

Warehouse-William greets a delivery truck with deliveries. Among other goods, this includes the Economiser. He places a pallet of goods in the receiving area, and sits down at a computer with the delivery note to create a warehouse receipt on Business Central. He then compares the items on the pallet with those listed on the delivery note and registers the receipt on the system.

Putting-Away

Later that day, Warehouse-William has some spare time and decides to put away all receipts for that day, including the Economiser. With the help of Business Central, he puts all the goods away and registers where he placed the different items. Registering where you place the items will make it easier to pick items later on.

Finishing the Production

The production has been moving through different phases. Not only has the boiler been produced, but in other areas of the shop floor, sub-productions have been produced. The idea is to produce the pressure vessel and all sup-assemblies and have them all meet up at the last assembly phase and become a finished boiler.

As the production has been progressing, more and more components have been picked as they were needed. Manufacturing workers have been registering the completion of the different phases and been registering their time on the system. Components have been consumed and actual costs have been collected during the production of the Boiler for Scotland Whisky. These actual production costs will help us determine the true profitability of the project.

Shipping of the Boiler and Economiser

A number of other components must be picked/shipped along with the Boiler. This includes the economiser. Therefore, Planning-Paul creates a warehouse shipment along with a pick ticket.

Final Invoicing

Because the Boiler has now been delivered to Scotland Whisky, the finance department can issue the final invoice and register the receipt of the money.

G/L Entries.

Finance-Fiona is interested in tracking the impact that this production has had on our General Ledger. Many different accounts have been updated in the General Ledger. Finance-Fiona identifies a number of relevant transactions booked to the G/L, including:

Purchase Transactions:

- Goods Received, Not invoiced.
- Purchase Account.
- Purchase VAT
- Accounts Payables
- Raw Materials Inventory

Sales Transactions:

- Goods Shipped, Not invoiced.
- Sales Account
- Sales VAT
- Cost of Goods Sold
- Accounts Receivables

Inventory/ Manufacturing

- Manufacturing WIP / Consumption
- Production Output
- Variance.

Customer and Vendor Ledger Entries.

In addition, Finance-Fiona Customer and Vendor ledgers have been updated so that we have a continuously up-to-date view of what we owe our vendors and what our customers owe us.