

# Complete Example: Sell, Check the Stock,

## Manufacture and Purchase

# 2

In this chapter, we will show you a complete Sales / Purchase / Manufacturing / Warehouse flow. We will explain how to create a product, create a sales order, have an automatic purchase proposal and / or production order, produce and receive the goods, deliver to the customer, and get sales and purchase invoices in a step-by-step scenario.

First you will get an explanation about the scenario (what Thomas or one of his colleagues is supposed to do). Then the *Notes* will learn you how Thomas (or a colleague of his) enters the information in OpenERP. For the simplicity of the use case, we will do all of the steps under the Admin user. Please note that we will not discuss all elements in detail in this chapter. Later in the book, you will find all required information (apart from the advanced sales features).



### **Simplified or Extended View**

In OpenERP your user interface will look slightly different according to the User Preferences. In *Simplified* view, the screens will only show the most important fields / tab pages. To see also the fields for the more advanced users, you should switch to the *Extended* view. You can easily switch from *Simplified* to *Extended* view by changing your *User Preferences* through the *Edit Preferences* button. For this use case, please switch to *Extended* view.

Your company will have a stand at the House & Design Fair to promote a series of products. Thomas, the salesman, shows the new products to the visiting prospects and customers.

#### 1. Create a new customer

John Smith from the company Clarkson Ltd. visits your stand and decides to order the brandnew Desk and Chair you are promoting. Thomas will have to create this new customer in OpenERP.



## New Customer

To create a new customer, Thomas clicks the Sales button in OpenERP's main screen. Then he goes to *Sales* → *Address Book* → *Customers* and clicks the *New* button. The name of a customer is in blue, because it is a mandatory field, so Thomas enters *Clarkson* in that field. He notices that the *Customer* check box is already checked. Thomas enters *John Smith* in the Contact Name, he selects the *Default* address type. In the Street field, Thomas enters London Street 40; he also enters the City *London* and the Country *United Kingdom* as shown in the screenshot below. He takes a look at the other three tabs and decides to keep the default values. Thomas then clicks the *Save* button to store the new customer.

The screenshot shows the 'Customers' form in OpenERP. The 'Name' field is filled with 'Clarkson' and is highlighted in blue. The 'Language' is set to 'English'. The 'Customer?' checkbox is checked. The 'Partner Contacts' section shows 'John Smith' as the contact name. The 'Postal Address' section is filled with 'Default' as the type, 'London Street 40' as the street, 'London' as the city, and 'United Kingdom' as the country. The 'Communication' section has empty fields for phone, mobile, fax, and email.

Figure 2.1: *New Customer*

## 2. Create a new product category and product

Because the desk and the chair from the new OfficeSecrets series do not yet exist in OpenERP, Mitchell, the Product Manager, will create this brandnew desk as a Make to Order product that will be bought directly from the supplier concerned. He will have to create a new product category for the OfficeSecrets series too.



## Configuring Products

For more information about configuring products, please refer to the next chapter *Creating Products and their Categories* (page 34).



### **Product Category**

Product categories do have an effect on the products assigned to them, and a product may belong to only one category. To create a new product category, Mitchell goes to *Warehouse*, selects the menu *Configuration → Product → Products Categories* and clicks *New* to get an empty form for defining a product category. Mitchell enters *OfficeSecrets* in the *Name* field and adds it to the parent category *All products / Sellable*. He leaves the other fields as such, and clicks *Save*.

Then Mitchell will create three new products. Note that he could also have created the new product category directly from the `Product` form.



## Product

To create a new product, Mitchell goes to *Warehouse* → *Product* → *Products* and clicks the *New* button. The name of a product is in blue, because it is a mandatory field, so he enters *1600 Desk Wave Right-hand W1600x D1200x H725mm Maple* in that field. He notices that the *Can be Sold* and *Can be Purchased* check boxes are already checked by default. Mitchell selects the *Stockable Product* product type, because he wants to keep track of the stock movements of the desks. In the *Procurement Method* field, Mitchell selects *Make to Order*, because the company decided to only buy the product at the supplier when there is a sales order for it. The *Supply Method* will be *Buy*. He sets the *Cost Price* to 300 and the *Sales Price* to 541.25, as shown in the screenshot *Product* (page 11). Mitchell selects the product category *OfficeSecrets*. Now he just has to add the supplier from whom he will buy the desks. He clicks the *Suppliers* tab, then clicks *New*. He clicks the Magnifying glass to get a list of suppliers, from which he selects *Wood y Wood Pecker*. He sets the minimal quantity to 1 and clicks the *Save & Close* button. He takes a look at the other tabs and decides to keep the default values. He then clicks the *Save* button to store the new product.

To create the component to be included in the Bill of Material, Mitchell clicks the *Duplicate* button to duplicate the Desk (available when a product is not in Edit mode). He changes the name to *Leather for Chair* in that field. He unchecks the *Can be Sold* checkbox. Mitchell changes the *Procurement Method* to *Make to Stock*, because the company needs a permanent stock of leather to be able to fulfil the customer's demands. He sets the *Cost Price* to 20 and the *Sales Price* to 0. Mitchell then clicks the *Save* button to store the new product.

To create another component to be included in the Bill of Material, Mitchell clicks the *Duplicate* button to duplicate the Leather for Chair. He changes the name to *Chair Frame* in that field. He sets the *Cost Price* to 100. Mitchell then clicks the *Save* button to store the new product.

To create the finished product, Mitchell goes to the list of products, opens the Desk product and clicks the *Duplicate* button to duplicate the Desk (available when a product is not in Edit mode). He changes the name to *Leather Operator Chair* in that field. In the *Procurement Method* field, Mitchell selects *Make to Order*, then he changes the *Supply Method* to *Produce*. He sets the *Cost Price* to 200 and the *Sales Price* to 325.50. From the supplier tab, Mitchell deletes the supplier by clicking the black cross. He then clicks the *Save* button to store the new product.


### 3. Add Minimum Stock Rules

To make sure the leather and the frame is always in stock, Mitchell has to define minimum stock rules, telling OpenERP how many goods have to be ordered to keep a good stock level.

The screenshot shows the 'Product' form in OpenERP. The product name is '1600 Desk Wave Right-hand W1600x D1200x H725mm Maple'. The form is divided into several sections:
 

- Name:** Contains the product name and fields for Reference and EAN13.
- Information:** Includes tabs for Procurement & Locations, Suppliers, Descriptions, Packaging, and Accounting.
- Procurement:** Shows Product Type (Stockable Product), Procurement Method (Make to Order), and Supply Method (Buy).
- Base Prices:** Displays Costing Method (Standard Price), Cost Price (300.00), and Sale Price (541.25).
- Weights:** Fields for Volume (0.000), Gross weight (0.000), and Net weight (0.000).
- Status:** Category (All products) and Status (dropdown).
- Stocks:** Real Stock (0.000) and Virtual Stock (0.000) with an Update button.
- Unit of Measure:** Default and Purchase Unit of Measure (PCE).
- Lots:** Checkboxes for Track Manufacturing Lots, Track Incoming Lots, and Track Outgoing Lots.

Figure 2.2: Product



### Minimum Stock Rules

To enter minimum stock rules for the *Leather for Chair* product, he clicks the Minimum Stock Rules action, and clicks the New button. Mitchell notices that the product is already preset in the form. He selects the *OpenERP S.A.* warehouse and notices that the *Stock* location is automatically set. As a minimum quantity, he adds 10 and the maximum quantity will be 40. He then clicks the *Save* button to store the minimum stock rules, as shown in the screenshot *Minimum Stock Rules* (page 11). Do the same for the frame.

The screenshot shows the 'Minimum Stock Rules' form. The name is 'OP/00010'. The form has buttons for New, Edit, Duplicate, and Delete. It is divided into four main sections:
 

- General Information:** Name (OP/00010), Product (Leather for Chair), and Product UOM (PCE).
- Locations:** Warehouse (OpenERP S.A.) and Location (Stock).
- Quantity Rules:** Min Quantity (10.00), Max Quantity (40.00), and Qty Multiple (1).
- Misc:** Latest procurement (empty) and Active (checked checkbox).

Figure 2.3: Minimum Stock Rules

#### 4. Create a Bill of Material

To produce the chair from the frame and the leather seat, Mitchell has to create a Bill of Material for the finished product (the Chair). This way, he will tell OpenERP which components are required to produce the Chair.



### BoM

Mitchell opens the Chair product, clicks the *Bill of Materials* action, then clicks the *New* button. Mitchell notices that the Chair is already preset in the form. He clicks the *New* button next to *Components* to add the Leather for Chair. He clicks the disk in front of the line to save his changes. Then he adds a new line (which is displayed automatically) for the Chair Frame and clicks the disk to save. Finally, Mitchell clicks the *Save* button at the top.



### BoM

You can also create a Bill of Materials from the *Manufacturing* → *Master Data* → *Bill of Materials*. More information on Bills of Material will be provided in the next chapters.

## 5. Warehouse and locations

Now Thomas will have a look at how the warehouse and the locations have been organised.



### Configuring locations

We will not create a warehouse and configure locations in this chapter. For more information, please refer to the chapter *Managing your Warehouse* (page 69) later in this book. Just have a look at the list of locations defined with the demo data.



### Warehouse and Location Structure

OpenERP has three predefined top-level location types: *Physical Locations* which define where your stock is physically stored, *Partner Locations* for the customer and supplier stock and *Virtual Locations* representing counterparts for procurement, production and inventory. Thomas clicks *Warehouse* → *Configuration* → *Warehouse Management* → *Locations* to display a list view of the locations.

## 6. Create a sales quotation

The customer *Clarkson* asked to receive a quotation for two Office Desks and two chairs from the OfficeSecrets series. Thomas enters the sales quotation.

- LOCATION NAME
- Physical Locations
- Physical Locations/OpenERP S.A.
- Physical Locations/OpenERP S.A./Output
- Physical Locations/OpenERP S.A./Stock
- Physical Locations/OpenERP S.A./Stock/Shelf 1
- Physical Locations/OpenERP S.A./Stock/Shelf 2
- Physical Locations/Shop 1
- Physical Locations/Shop 2
- Partner Locations
- Partner Locations/Customers
- Partner Locations/Customers/European Customers
- Partner Locations/Customers/Non European Customers
- Partner Locations/Internal Shippings
- Partner Locations/Suppliers
- Partner Locations/Suppliers/IT Suppliers
- Partner Locations/Suppliers/IT Suppliers/Generic IT Suppliers
- Partner Locations/Suppliers/IT Suppliers/Maxtor Suppliers
- Virtual Locations
- Virtual Locations/Inventory loss
- Virtual Locations/Procurements

Figure 2.4: Location Structure



### Sales Quotation / Order

Thomas goes to *Sales* → *Sales* → *Sales Orders*. He clicks the *New* button, to make a quotation. He enters *Clarkson* in the *Customer* field. Now he can enter the products he will be selling. Next to *Sales Order Lines*, Thomas clicks the *New* button to enter sales order lines. He selects the *Desk* product and changes the quantity to 2 as specified in the screenshot *Sales Order* (page 14). Thomas clicks the *Save & New* button to add a second line. He adds 2 chairs and notices that a message is displayed saying that there is no stock. Thomas clicks the *Save & Close* button. Then he clicks *Compute* to see the total price of the quotation. He opens the *Other Information* tab, because he wants the sales invoice to be created from the picking. So he changes the *Shipping Policy* to *Invoice* from the *Picking*. To print the quotation, he clicks *Quotation / Order* in the *Reports* section at the right side of the screen.

**Sales Orders** Order Reference: SO006

Order Reference: SO006    Ordered Date: 06/16/2011    Paid ? :

Shop: OpenERP S.A.    Customer Reference:    Delivered ? :

**Sales Order**    Other Information    History

Customer: Clarkson    Ordering Contact ? : John Smith, United Kingdom London London Street 40

Invoice Address ? : John Smith, United Kingdom London London Street 40    Shipping Address ? : John Smith, United Kingdom London London Street 40

Pricelist ? : Public Pricelist (EUR)    Analytic Account ? :

DESCRIPTION	QTY	UOM	DISCOUNT (%)	UNIT PRICE	SUBTOTAL
Leather Operator Chair	2.00	PCE	0.00	325.50	651.00
1600 Desk Wave Right-hand W1600x D1200x H725mm Maple	2.00	PCE	0.00	541.25	1,082.50

Untaxed Amount ? : 1,733.50    Taxes ? : 364.04    Total ? : 2,097.54

Order State ? : Quotation

Buttons: Compute, Advance Invoice, Cancel Order, Confirm Order

Figure 2.5: Sales Order



### Price Lists

In this chapter, the *Public Pricelist* will be used. Later on, you will learn more about creating price lists.

## 7. Confirm the sales order

John Smith calls Thomas to tell him that he agrees with the quotation. Thomas now confirms the sales order.



### Sales Quotation / Order

Thomas goes to *Sales* → *Sales* → *Sales Orders*. He enters *Clarkson* in the *Customer* field and then clicks *Search*. Thomas clicks the sales order to open it. He clicks the *Confirm Order* button to make a sales order from the quotation. To print the sales order, he clicks *Quotation / Order* in the *Reports* section at the right side of the screen.



### Order Confirmation

When you click *Confirm Order*, red text will be displayed at the top of the screen depending on the parameters of the sales order. In our example, you will see two text lines, one about the quotation conversion and another one about the delivery order. You can click the second line to be directed to the delivery order. You can also open the delivery order from the *History* tab of the sales order.

## 8. Run the scheduler



The goods have to be produced and delivered to the customer, but Thomas notices that the desks and chairs are not available in stock. Because the Desk was defined as a Make to order & Buy product, OpenERP will automatically create a procurement order on confirmation of a sales order, allowing you to directly generate a purchase order. The same will be done for the Leather.

OpenERP has a scheduler that will run by default every day. In this case, Jason, your company's Purchaser, will run the scheduler manually.



### Scheduler

Jason goes to *Warehouse* → *Schedulers*. He clicks *Compute Schedulers* because he needs to purchase material and wants to check whether anything needs to be added. In the Wizard, Jason clicks *Compute Schedulers* to start the computation.



### Procurement Exceptions

Jason can also run the procurement for each product from the *Warehouse* → *Schedulers* → *Procurement Exceptions*. The procurement exceptions menu also includes procurements that have not been scheduled yet.

## 9. Change the purchase request and confirm it

Now OpenERP will have created procurements (in this example purchase requests) for the products that need to be supplied.



### Purchase Requests

Jason goes to *Purchases* → *Purchase Management* → *Request for Quotation*. He notices three purchase requests for *Wood y Wood Pecker*. He selects these three purchase requests by clicking the checkbox in front of them, then clicks the *Merge Purchase Orders* action at the right to order all products in one go. He clicks the yellow pencil to open the merged purchase request in Edit mode. Now he decides to purchase some extra desks, because Luke, the Sales Manager, told him he expects more sales. To do this, he clicks the yellow pencil in front of the order line and changes the quantity to 10. He clicks the *Save & Close* button, then he clicks *Compute* to see the total price of the quotation. From the *Delivery & Invoicing* tab, he specifies that the invoice has to be created from the picking (*Invoicing Control From Picking*). To confirm the purchase order, he just has to click the *Convert to Purchase Order* button.

## 10. Receive the products

The supplier *Wood y Wood Pecker* sends the goods to your company. Jason receives the goods and enters this receipt in OpenERP.



### Incoming Shipments

Jason goes to *Warehouse* → *Warehouse Management* → *Incoming Shipments*. He notices the incoming shipment for Wood y Wood Pecker, and clicks the green arrow to start receiving the products. He clicks the *Validate* button to confirm that all products have been received from the supplier. From the *Incoming Shipments* list view, he notices that the *Delivery order* for the customer is now ready to process (red text at the top of the screen), at least for the desks. He wants to check the stock of Desks and goes to *Warehouse* → *Product* → *Products*. In the *Name* field, Jason types *desk*, then clicks *Search*. The real stock is 10, the virtual stock is 8, because of the confirmed sales order for two desks.



### List versus Form view

You can receive / deliver goods from both list and form view. You can also receive / deliver goods by product instead of by complete order.

## 11. Create the draft purchase invoice

Because the purchase order was set to be invoiced from the picking, Jason can now create the draft invoice, which allows for easy invoicing control.



### Draft Purchase Invoice

Jason returns to *Warehouse* → *Warehouse Management* → *Incoming Shipments* and clicks *Clear*. He opens the extended filters and clicks the *To Invoice* button. He ticks the check box in front of the incoming shipment to be invoiced and then clicks the *Create Invoice* action in the *Reports* section at the right side of the screen. He selects the *Purchase Journal* and clicks *Create* to generate the draft invoice. The screen with the supplier invoice will open. We will get back to this later.

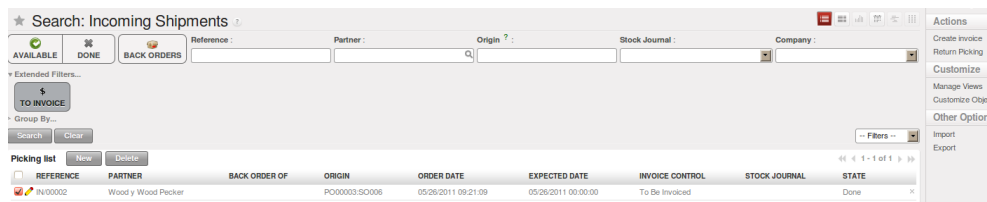


Figure 2.6: Create Invoice from Incoming Shipments

## 12. Run the scheduler again

To tell the system that the procurements have been received and that the raw materials are now in stock, so that the production order can be generated, Jason has to run the scheduler again.



### Scheduler

Jason goes to *Warehouse* → *Schedulers*. He clicks *Compute Schedulers*. In the Wizard, Jason clicks *Compute Schedulers* to start the computation.



### Just in Time

You can also install the `mrp_jit` (Just in Time) so that this is computed in real time. In a production environment, however, you would typically have the scheduler run.

## 13. Start manufacturing

Jason checks his list of manufacturing orders which are ready to produce. He notices the leather operator chair and decides to start manufacturing it.



### Manufacturing or Production Orders

Jason goes to *Manufacturing* → *Manufacturing* → *Manufacturing Orders* and selects the order to start producing the chairs. He opens it by clicking the yellow pencil, then clicks the *Start Production* button. He notices the products to be consumed. He assembles the frame and the leather for both chairs. When he has finished, he clicks the *Produce* button. He keeps the default settings and clicks *Confirm*, then *Cancel* to close the window. He clicks the *Save* button to see the changes.

## 14. Deliver the goods to the customer and create draft sales invoice

The Chairs are now also available in stock and the complete order can be delivered to the customer. In the warehouse, they check the open delivery orders.



### Delivery

Randy from the warehouse goes to *Warehouse* → *Warehouse Management* → *Delivery Orders* to check the goods ready for delivery. He clicks the yellow pencil to open the delivery order. He clicks the *Process* button to deliver the 2 desks and chairs, then he clicks *Validate*.

## 15. Create the sales invoice

Thomas now checks whether the goods have been delivered to his customer. He can check this from the sales order, or he can tell from the status of the delivery order.



### Creating a Sales Invoice

To create the draft sales invoice, Thomas has several possibilities.

He opens *Sales* → *Invoicing* → *Deliveries to Invoice* and selects the corresponding delivery for invoicing by ticking the check box and clicking the `Create Invoice` action in the Reports section at the right of the screen.

He goes to *Warehouse* → *Warehouse Management* → *Delivery Orders*, and clicks the `Create Invoice` button.

He goes to the list of sales orders, and opens the sales order concerned. Thomas clicks the *History* tab, clicks the picking list and then the `Create Invoice` button. He selects the *Sales Journal* and clicks the `Create` button.

The draft invoice is now displayed in list view. Thomas opens the invoice and clicks the `Validate` button. To print the invoice, he clicks the `Print Invoice` button, or the `Invoices` action in the Reports section at the right of the screen. The printed invoice will automatically be added as pdf document to Attachments.

## 16. Confirm the purchase invoice

Robin, the accountant, now receives the invoice from his supplier. He can do the invoicing control according to the picking directly from the Purchase Invoices screen.



### Invoice Control

Robin goes to *Accounting* → *Suppliers* → *Supplier Invoices* and opens the Wood y Wood Pecker invoice. Robin verifies whether the invoice from the supplier matches this draft invoice created from the picking order. The invoice indeed matches and he clicks the `Approve` button to confirm the invoice and assign a document number to it.



### Purchaser

The purchaser can also do the invoice matching from *Purchases* → *Invoice Control* → *Supplier Invoices to Receive*.

Below you find a graphical representation of the sales flow we explained before; the part from quotation to invoice. This view is available in OpenERP. You can open this *Process view* by clicking the question mark next to the *Sales Order* title.

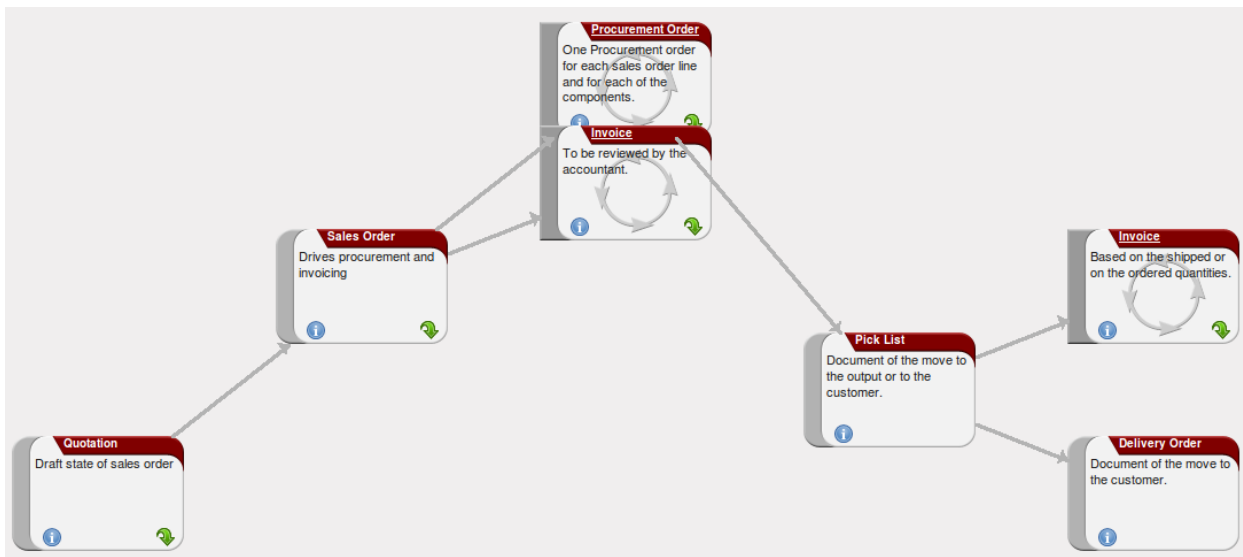


Figure 2.7: *From Quotation to Invoice*