

The first phase of the production in the injection process that is carried out in parallel for parts A and B/C on the injection stations 1 and 2. The following (Figure 64) shows how in the beginning of the process the overview of the productions stations indicate with green circles. These circular signaling is known as Andon and although it is not always considered part of MES it is commonly an integrated feature in many MES systems. After the production process have been carried out with a little delay the circle turned gray and overall efficiency has been marked red on the station tabs (Figure 64).

第一階段是在注塑過程中進行的生產工作，同時在注塑站1和2上進行A部件和B/C部件的平行生產。如下圖所示，在過程開始時，生產站的概覽以綠色圓圈表示。這些圓圈的信號被稱為安東（Andon），儘管它並不總是被視為MES的一部分，但它通常是許多MES系統中集成的一個特徵。在生產過程稍有延遲後，圓圈變成了灰色，並且在站點標籤上標記了整體效率為紅色。

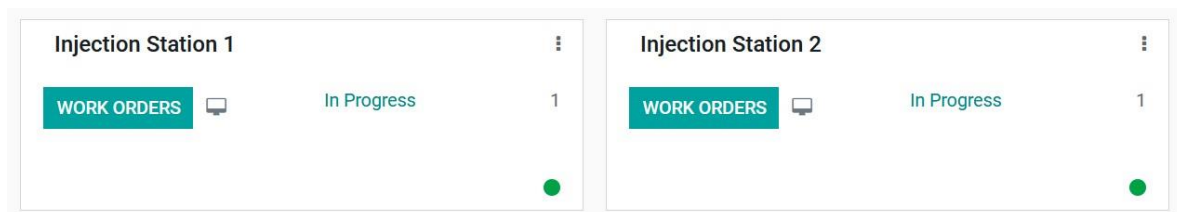


Figure 63 Workcenter overview 1

圖 63 工作中心概覽 1

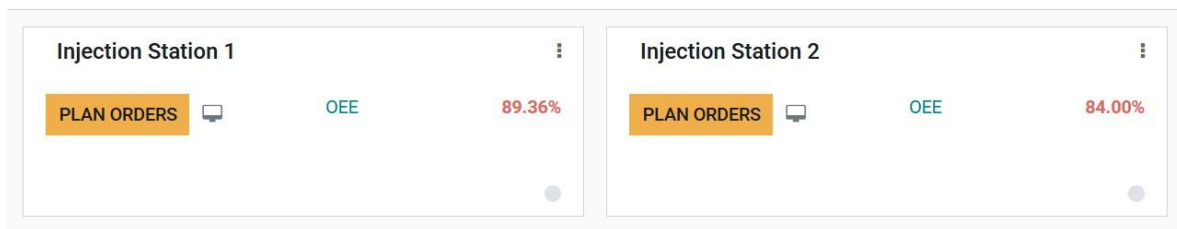


Figure 64 Workcenter overview 2

圖 64 工作中心概覽 2

The production was carried out twice before any improvement was applied. The first improvement to be carried out were on the production process on the operation and the raw materials used. More specifically, a new operation representative of an equipment upgrades on the injection machines and the replacement of the brand of plastic pellets use in the injection process (Figure 65).

在進行任何改善之前，生產進行了兩次。首先要進行的改進是在操作和使用的原材料上進行生產過程。更具體地說，是對注塑機進行設備升級的新操作，以及更換注塑過程中使用的塑料顆粒品牌（圖 65）。

Manufacturing

Overview

Operations

Planning

Products

Reporting

Configuration

Products / [PRT-B/C] Part B/C of Alpha Case / Engineering Change Orders

/ ECO0010: Change of raw materials and operation / [PRT-B/C] Part B/C of Alpha Case

EDIT

CREATE

Print

Action

Routing Performance

Structure & Cost

0 ECO(s)

Product

[PRT-B/C] Part B/C of Alpha Case

Reference

Quantity

1.00

BoM Type

Kit

Components

Operations

Miscellaneous

Component

Quantity

[RM-PLT-TPU-2] TPU-Pellets Supplier 2

0

1.00

Components

Operations

Miscellaneous

Operation

Steps

Work Center

Duration (minutes)

Plastic Injection producing Part B/C Method 2

0

Injection Station 2

00:30

00:30

Figure 65 ECO applied to BOM

圖 65 對 BOM 應用的 ECO

These upgrades were applied to the BOMs of parts A and B of the Alpha case and production recommenced. After two other MOs producing 50 products each simulating an improvement to the process the following types of data were automatically made available by Odoo (Table 3):

這些升級措施被應用於 Alpha 案件的 A 部分和 B 部分的 BOM，生產重新開始。在進行了另外兩個 MOs，每個生產 50 個產品，模擬對過程進行改善之後，Odoo 自動提供了以下類型的數據（表 3）：

Table 3 Types of data output

表3：數據輸出類型

Regarding WOs:	Regarding MOs:	Overall Effectiveness:	Equipment
-Duration deviation -Duration per unit -Expected duration -Quantity -Real duration	-Backorder sequence -Extra cost -Quantity to produce -Total quantity	-Quantity	

It should be commented that the data regarding MOs is unfortunately captured in a monthly basis as opposed to the other two categories that process data per order executed. This means that since this simulation is using a trial version of the software that lasts only 14 days the graphical representation of that data offers an unimpressive view of a single point or a single column. In the long run this is a great way to display performance over time but in the case of this simulation not so much (Figure 66).

"需要指出的是，關於 MO（製造指令）的數據不幸地是按月捕獲的，而不像其他兩個類別那樣按執行的訂單處理數據。這意味著由於這個模擬使用的軟件試用版本僅為 14 天，該數據的圖形表示提供了一個令人印象深刻的單點或單列的觀點。從長遠來看，這是一種很好的顯示隨時間推移的性能的方式，但在這個模擬的情況下則不然（見圖 66）。

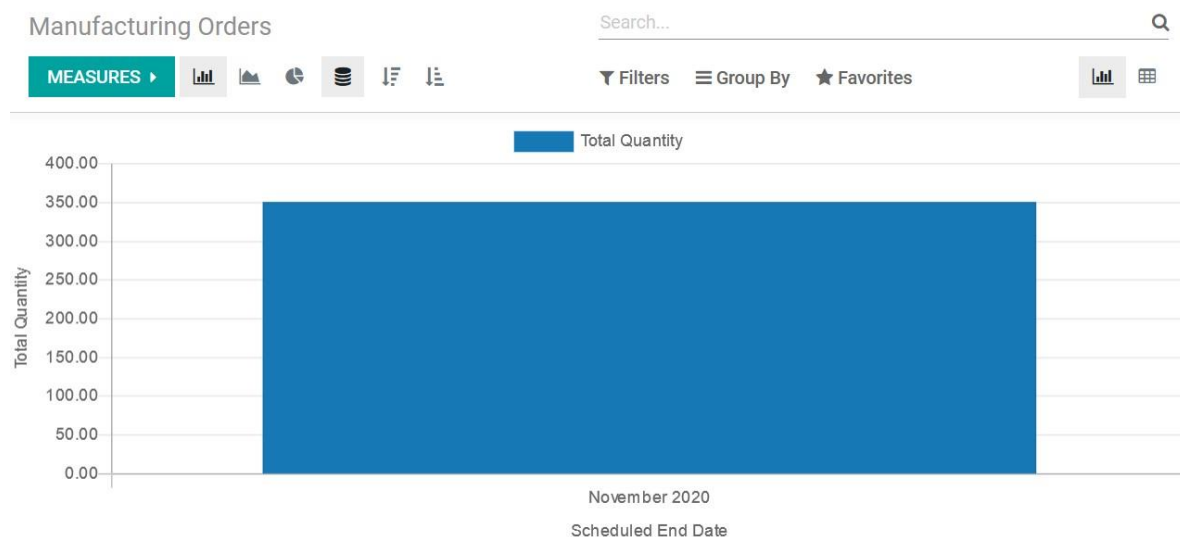


Figure 66 Total quantity regarding MO

圖 66：有關 MO 的總數量

All the data available can be seen in the form of bar charts, line charts or pie charts automatically generated after the time performance is registered (which happens at any moment an action is performed in a work order). Figure 67, Figure 68 and Figure 69 are examples of the results of the 5 production runs:

所有可用的數據都可以以柱狀圖、折線圖或餅圖的形式查看，這些圖表是在時間性能被記錄後自動生成的（這發生在對工單進行任何操作的任何時刻）。圖 67、圖 68 和圖 69 是 5 個生產運行的結果的示例：

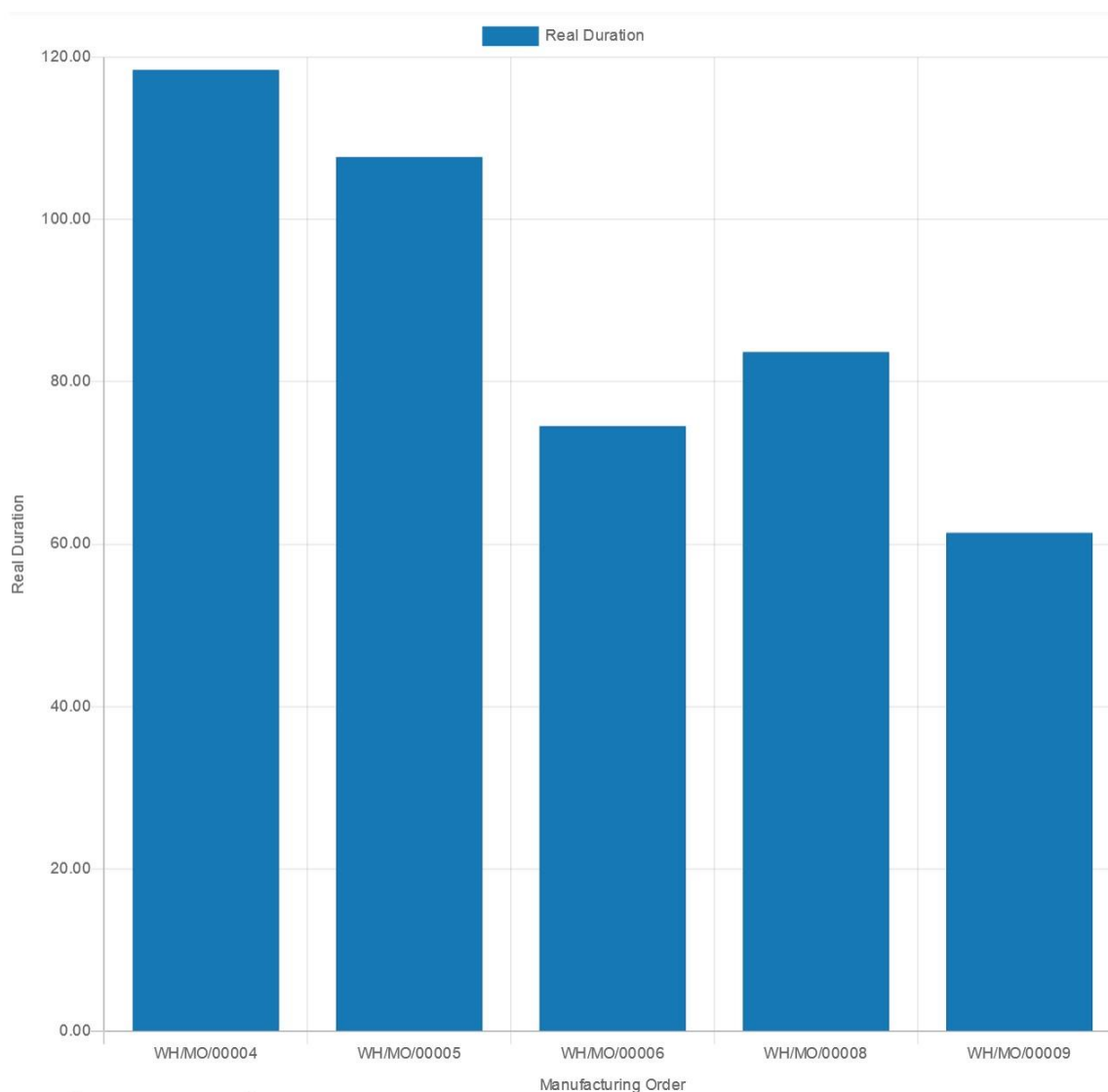


Figure 67 Real duration regarding work orders

圖 67：關於工單的實際持續時間

Something worth mentioning here is that whenever Odoo mentions quantity or duration it is referring to amount per workorder summed (the system does not care if the operations are being carried in parallel). So, on our simulation, making 50 units using 3 operations that should take 30 seconds each the estimated “duration” to be recorded ideally here is 75 minutes per MO.

值得一提的是，每當 Odoo 提到數量或持續時間時，它指的是每個工單的總數量或持續時間（系統不關心操作是否在平行進行）。因此，在我們的模擬中，使用 3 個操作製造 50 個單位，每個操作應該需要 30 秒，理想情況下應該記錄的“持續時間”為每個 MO 75 分鐘。

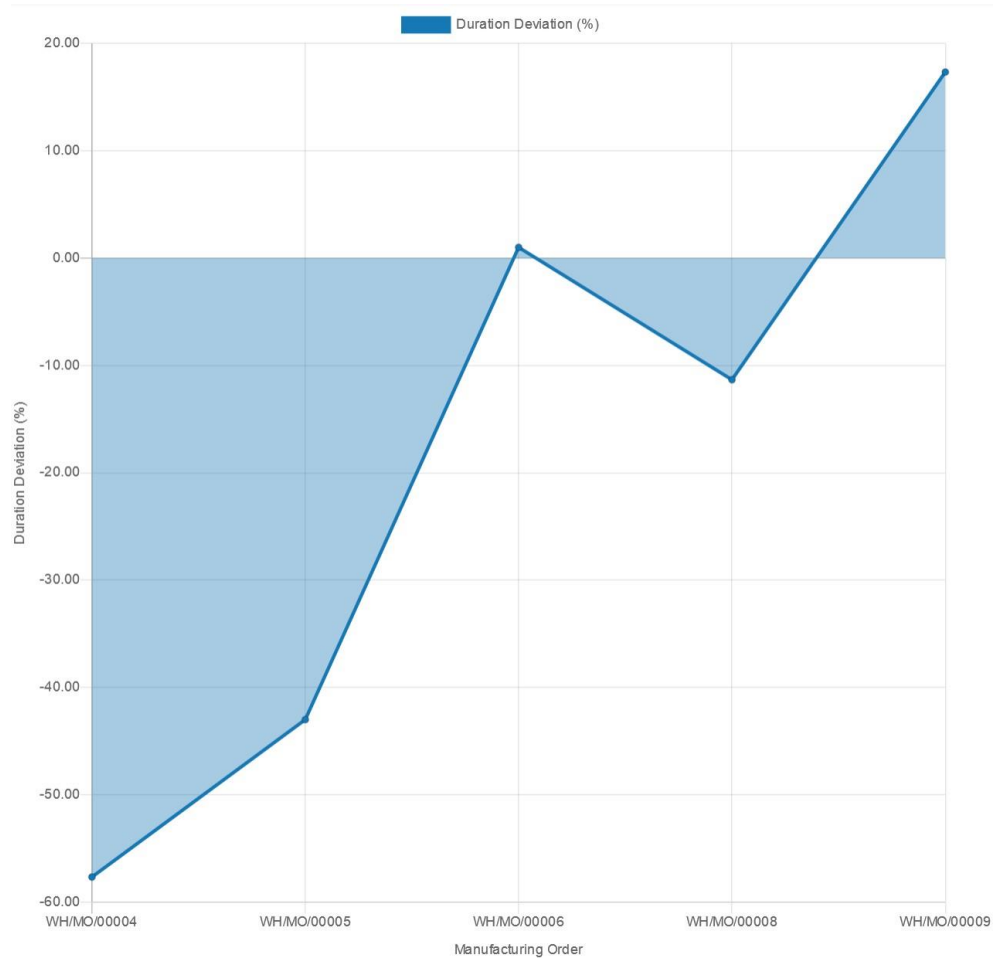


Figure 68 Duration variation regarding work orders

圖68：關於工單的持續時間變化

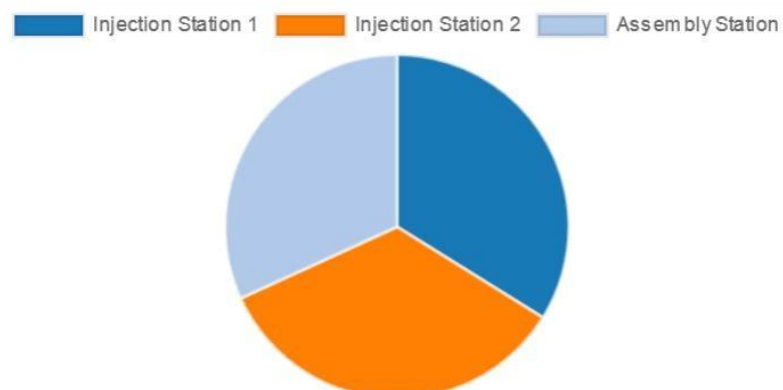


Figure 69 Overall equipment effectiveness

圖 69：整體設備效率

The astute reader will notice that all the data mentioned so far is derived from the time to completion of the operations been carried out, the related amount to the MO and the workcenter utilized. Even so it is impressive how much information can be drawn especially considering that it is all generated automatically.

細心的讀者會注意到，到目前為止提到的所有數據都是從操作完成所需的時間、MO 相關的數量和使用的工作中心中獲得的。儘管如此，仍然令人印象深刻的是可以獲得多少信息，尤其是考慮到這些信息都是自動生成的。

6. CHAPTER

第6章

ODOOS ACOMPLISHMENTS REGARDING PLM AND MES

This chapter aims to summarize the strengths and weaknesses of the Odoo software focusing on the questions raised on section 4.2. It will also comment Odoo functionalities or lack thereof noticed throughout the simulation also taking the questions into account.

這一章旨在總結 Odoo 軟件在產品生命週期管理（PLM）和製造執行系統（MES）方面的優勢和劣勢，重點討論第 4.2 節提出的問題。它還將評論 Odoo 在模擬過程中注意到的功能或缺失，同時考慮到這些問題。

6.1. How does the software deals with items?

Overall, the Odoo software presents the user with a wide variety of digital items that can be used to represent several aspects of manufacturing as well as other aspects of business. This is mainly due to the way the Odoo ERP functionality uses items to track the pull and push actions throughout its use, that is also how automation is achieved in the software.

6.1. 該軟件如何處理物品？

總體而言，Odoo 軟件向用戶提供了多種數字化物品，可以用來表示製造的各個方面以及業務的其他方面。這主要是由於 Odoo ERP 功能使用物品來跟蹤其使用過程中的拉動和推動行為，這也是軟件實現自動化的方式。

6.1.1. Are all aspects of the product lifecycle represented?

One of the disadvantages of being derived from a ERP system is that it focus on the primary scope of ERP (Figure 2) ,that is, production and sales. The Items in Odoo reflect that. For instance, the development part of the life cycle during the simulation, although the representation was possible it certainly felt like a stretch of functionalities made for the production phase rather than development is self (Figure 70). When developing prototypes for instance many of the steps like creating an ECO just to carry files in the beginning and going through many steps every time an adjustment in the prototype was made felt too bureaucratic or too much of a workaround.

6.1.1. 產品生命周期的各個方面是否都有所代表？

由於 Odoo 是從 ERP 系統衍生出來的一個缺點是，它專注於 ERP 的主要範圍（見圖 2），即生產和銷售。Odoo 中的物品反映了這一點。例如，在模擬中的開發生命周期部分，儘管表示是可能的，但肯定感覺像是為生產階段而非開發本身設計的功能拉伸（見圖 70）。例如，當開發原型時，許多步驟，例如創建一個早期僅用於攜帶文件的 ECO，並且每次對原型進行調整時都要經過許多步驟，這種感覺過於官僚或者說是一種繞道行事的方式。

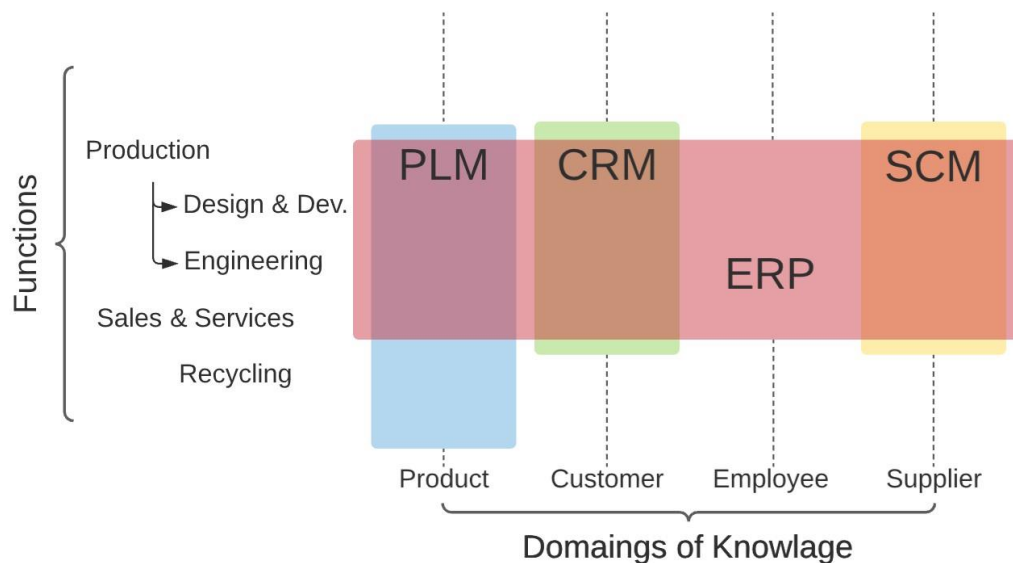


Figure 70 Diagram representing Odoo scope of ERP

圖 70：代表 Odoo ERP

6.1.2. How well are each of those items represented?

Representation levels of the items vary depending on how the item is used. A good example of that is the material focus of product items. In the sense that everything is considered a product with very little distinction between prototypes or raw materials. The representation of product items or BOM items is very high with a lot of metadata and useful connections to other items. However, even within the manufacturing application there are

some items that lack attention. Operations for instance are items that could benefit greatly from more upload capabilities like 3D printing or CNC files. As automation is becoming more widespread in production it is no longer enough to have only PDF or slide instructions. Additionally, other items do not have the ability of holding files not even with the use of ECOs

6.1.2. 每個項目的代表程度如何？

這些項目的代表程度取決於該項目的使用方式。產品項目的材料焦點是一個很好的例子。從產品原型或原材料之間幾乎沒有區別的角度來看，一切都被視為產品。產品項目或 BOM 項目的代表程度非常高，具有大量的元數據和與其他項目的有用連接。然而，即使在製造應用程序中，也有一些項目缺乏關注。例如，操作項目是可以從更多上傳功能中受益的項目，比如 3D 打印或 CNC 文件。隨著自動化在生產中變得更加普及，僅具有 PDF 或幻燈片說明已不再足夠。此外，其他項目甚至無法保存文件，即使使用 ECOs 也無法。

6.2. How easy it is to create a brand-new product?

Product creation is one of the most straightforward procedures in Odoo, it really comes down to using either the Inventory application or the Manufacturing application to create a new Product and then fill in its metadata.

6.2. 創建全新產品有多容易？

在 Odoo 中，產品創建是最直接的程序之一，它主要是使用庫存應用程序或製造應用程序來創建新產品，然後填寫其元數據。

6.2.1. How is the product depicted?

The product depiction is clear and concise, the product item allows for an image to be uploaded to the item and used as an icon. The ERP nature of the product items in Odoo means that the metadata is reasonably bias toward information that is used to manage storage and inventory (Weight, Volume, Quantity etc.) but the item also allows for written description as well as providing links to the BOMs and ECOs related to the product.

6.2.1. 產品如何描述？

產品描述清晰而簡潔，產品項目允許上傳圖像並將其用作圖標。Odoo 中產品項目的 ERP 性質意味著元數據基本上偏向於用於管理存儲和庫存的信息（重量、體積、數量等），但該項目還允許編寫描述，並提供與產品相關的 BOMs 和 ECOs 的鏈接。

6.2.2. How does the product integrate and reference relevant files?

There is surely a reasonable attempt in allowing the most valuable items (Product and BOMs) to be able to manage and reference relevant files. However, Odoo does not implement much more than the bare minimum as far as file management goes. The most it can do is allow for files to be uploaded and download manually. This means that whenever someone makes a change in a file it needs to be manually uploaded in ECO. Integration with most files is inexistent except for operation items because the instruction files can be opened and interacted within Odoo during the production.

6.2.2. 產品如何整合和參考相關文件？

在允許最有價值的項目（產品和 BOMs）管理和參考相關文件方面，Odoo 確實做了合理的努力。然而，Odoo 在文件管理方面實施的幾乎僅限於最低限度。它最多只能允許手動上傳和下載文件。這意味著每當有人更改文件時，需要手動將其上傳到 ECO 中。與大多數文件的整合幾乎不存在，除了操作項目外，因為在生產過程中可以在 Odoo 中打開並與之交互的指示文件。

6.2.3. Does changing one affects the other?

It does not, files are mostly dealt by Odoo as paperwork for later reference. Anything added file wise that could entail a change in the product or BOM metadata will require someone to be aware of the change and update the information manually.

6.2.3. 改變一個是否會影響另一個？

不會，Odoo 主要將文件視為以後參考的文件。任何添加文件的操作，如果可能會導致產品或 BOM 元數據的變化，都需要有人意識到這一變化並手動更新信息。

6.3. How easy it is to create a brand-new production process?

As mentioned before the item the best represents the process is the bill of materials. This item class requires an existing product to be associated with, other than the BOM is no harder to create than a product item.

6.3. 創建新生產流程有多容易？

如前所述，最能代表流程的項目是物料清單（BOM）。此項目類別需要與現有產品關聯，除此之外，創建 BOM 並不比產品項目更難。

6.3.1. How the process is depicted?

The process is depicted in the BOM as a list of components (other product items) and operations that are carried out in as specific order to produce a number of end products. This representation seems to sit well with the production procedure. Metadata is kept to a minimum but there is still the capability to offer a text description.

6.3.1. 流程如何描述？

流程在 BOM 中被描述為一系列組件（其他產品項目）和按特定順序進行的操作，以生產一定數量的最終產品。這種表示似乎與生產程序相得益彰。元數據被保持在最低限度，但仍具有提供文本描述的能力。

6.3.2. How does the process integrate and reference the product it produces?

The integration between the BOM and the product items is by far the most well done in Odoo. Changes made in the BOM affect production and are directly linked to the product. Whenever metadata changes are possible and said aspect is represented in the product item as well the change of one is inherited by the other.

6.3.2. 流程如何整合並參考其所產生的產品？

在 Odoo 中，BOM 和產品項目之間的整合是最好的。對 BOM 所做的更改會影響生產並直接關聯到產品。每當元數據的更改是可能的且該方面也在產品項目中表示時，一個的更改會被另一個繼承。

6.3.3. Does changing one affects the other?

As far as inventory and manufacturing is concerned integration is and referencing is well implemented. Production results flawlessly in the resulting changes in inventory and the navigation path of the GUI is very well optimized. It does not take more than 3 or 4 clicks to get from one product to another or to navigate to other relevant items.

6.3.3. 改變一個是否會影響另一個？

就庫存和製造而言，整合和參考都實施得很好。生產在庫存的變化和 GUI 的導航路徑上都無懈可擊。從一個產品到另一個產品或導航到其他相關項目不需要超過 3 或 4 次點擊。

6.4. How easy is to improve an existing product/ production process?

As mentioned previously, all improvements in Odoo are performed using engineering change orders. These are applied to product items or bill of materials. Creating ECOs is quite easy and organized, the ECO is an item on itself that symbolizes a signal given to create change, once effective, it symbolizes an increment on the product or process.

6.4. 改善現有產品/生產流程有多容易？

如前所述，Odoo 中的所有改進都是使用工程變更訂單進行的。這些應用於產品項目或物料清單。創建 ECOs 相當容易且有組織性，ECO 本身代表著一個創建變更的信號，一旦生效，它就代表著對產品或流程的增量。

6.4.1. How easy it is to update its metadata

It is easy to update any metadata regarding any item in Odoo; however, it is wise to point out that since the ECOs are separate items that are just point by products or BOMs many of the changes are not automatic and require manual intervention. I.e. an ECO will not change the text description of the product for instance. If the new update were to require a change on that description it would require a manual intervention from the user in the product item. Doing that is easy, but it is an extra task that will not be tracked by the ECO.

6.4.1. 更新其元數據有多容易

在 Odoo 中更新任何項目的任何元數據都很容易；但是，值得指出的是，由於 ECOs 是單獨的項目，僅僅是副產品或 BOM，許多變更並不是自動的，需要手動干預。例如，ECO 不會更改產品的文本描述。如果新更新需要更改該描述，則需要用戶手動在產品項目中進行干預。這樣做很容易，但這是一項額外的任務，並不會被 ECO 跟踪。

6.4.2. How easy it is to determine the effects of the change?

Odoo feedback of information is mainly done in a manufacturing order basis. The information available is clear and ECOs do not affect MOs that are already under way so the effects of an applied ECO would not be hard to notice. However, it is good to point out that in the way the performance information is displayed there is no indication of the product revision or the ECO applied. This means that the user would need to first figure when the ECO was applied, then navigate to the equivalent MO in the data to draw its conclusions. Although not a problem for recent changes this does become problematic if someone wants to analyze effects of old changes.

6.4.2. 確定變更影響有多容易？

Odoo 的信息反饋主要是基於製造訂單的。可用的信息很清晰，而且 ECO 不會影響已經進行中的 MOs，因此應用 ECO 的影響不難察覺。然而，值得指出的是，在性能信息顯示的方式中，沒有顯示產品版本或應用的 ECO 的指示。這意味著用戶首先需要確定應用 ECO 的時間，然後才能在數據中找到相應的 MO 來做出結論。雖然對於最近的更改並不是問題，但如果有人想要分析舊更改的影響，這就變得有問題了。

6.4.3. How does the software deal with different product revisions?

Version control is something well covered by the 1 to N relation between product/BOM and linked ECOs. Every product will have a tab containing all the ECOs applied to it in chronological order effectively working as a timeline representing the item evolution.

6.4.3. 軟體如何處理不同的產品版本？

版本控制是通過產品/BOM 和相關 ECOs 之間的 1 到 N 關係很好地解決的。每個產品都將有一個標籤，其中包含按時間順序應用於它的所有 ECOs，有效地作為代表項目演變的時間軸。

6.5. How easy is to find data related to product or process?

Most of the data related to performance regarding production is concentrated under the reporting tab as mentioned in the previous chapter (Figure 71).

6.5. 找到與產品或流程相關的數據有多容易？

關於生產的性能相關數據大多集中在報告選項卡下，如前一章中

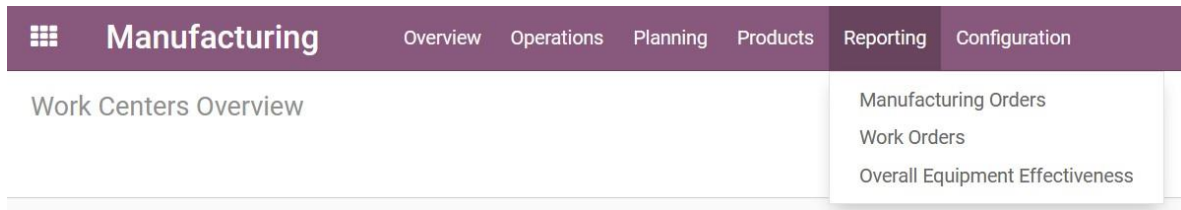


Figure 71 GUI Options of data reporting

This means that as far as performance is concerned it is quite easy to find the data. The previous chapter will show examples of possible information that are available within those tabs.

In addition to using this path the UI of the product item also has a tab that point to the monthly comparison of production volume regarding the product (Figure 72). Which would be more impressive if there was more than one month in the trial version of Odoo.



Figure 72 Total quantity regarding MO from product item

Figure 72 關於產品項目的 MO 總數

6.5.1. How easy is find production numbers?

In addition to the previously mentioned ways, Odoo also makes available a unit forecast graph that records the ins and outs of the inventory. This is particularly useful to estimate sales and balance storage with demand (Figure 73). This feature is not mentioned to much in this work because supply and demand is not so much a MES functionality, but it is to useful to have an overview of the production.

6.5.1. 找到生產數字有多容易？

除了之前提到的方法外，Odoo 還提供了一個單位預測圖，記錄庫存的進出情況。這對於估計銷售並平衡存儲和需求特別有用（見圖 73）。這個功能在這份工作中沒有被提到太多，因為供應和需求不是 MES 功能的重點，但是這對於獲得生產概況非常有用。

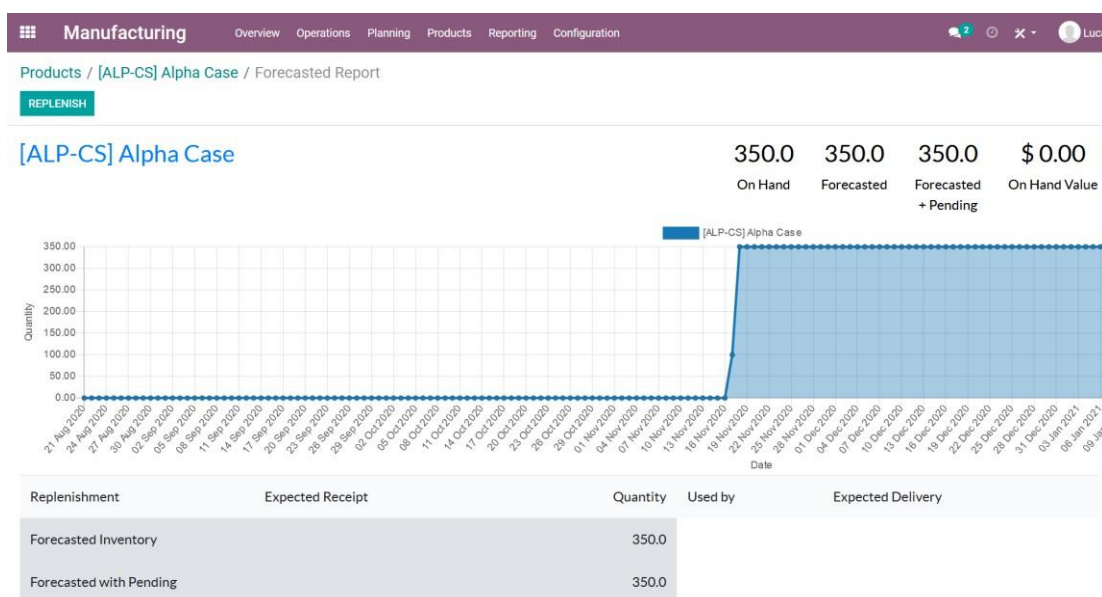


Figure 73 Unit forecast overview

Figure 73 單位預測概況

6.5.2. How does Odoo generate performance data?

The astute reader will notice that all the data mentioned so far is derived from the time to completion of the operations been carried out, the related amount to the MO and the workcenter utilized. Even so it is impressive how much information can be drawn especially considering that it is all generated automatically.

6.5.2. Odoo 是如何生成性能數據的？

細心的讀者會注意到，到目前為止提到的所有數據都來自於操作完成所需的時間，與 MO 相關的數量以及使用的工作中心。即便如此，尤其考慮到所有數據都是自動生成的，可以得出如此多的信息仍然令人印象深刻。

6.5.3. How does the software present performance change as a result of a upgrade?

In order to identify the change, the user must identify the MOs following the change and see the difference based on that. Ideally it would be nice if the graphical information showed the revision of the product, but this is not present as of Odoo V13.

6.5.3. 軟件如何展示升級導致的性能變化？

為了識別變化，用戶必須在變化後識別 MO，然後根據此來查看差異。理想情況下，如果圖形信息顯示了產品的修訂，那將會很好，但是截至 Odoo V13，這一點尚未實現。

CONCLUSION

結論

In chapter 2 I referenced a diagram that represents a theoretical ideal of how the integration of PLM with other systems should be (Figure 74). In that diagram the reader can notice that ideally PLM would be the center of the system with other systems (Including ERP) attached to it. Different from said diagram the Odoo software takes ERP as the center with other systems attached to it. This work has shown that it is certainly possible to use Odoo for PLM and MES however it has also shown that the PLM and MES implementation presents some weaknesses.

在第二章中，我引用了一幅圖表，代表了 PLM 與其他系統整合的理想模式（見圖 74）。在該圖中，讀者可以注意到，理想情況下，PLM 應該是系統的中心，其他系統（包括 ERP）附加在其上。與該圖不同，Odoo 軟件將 ERP 視為中心，其他系統附加在其上。這項工作顯示，確實可以使用 Odoo 進行 PLM 和 MES，但也顯示了 PLM 和 MES 實施存在一些弱點。

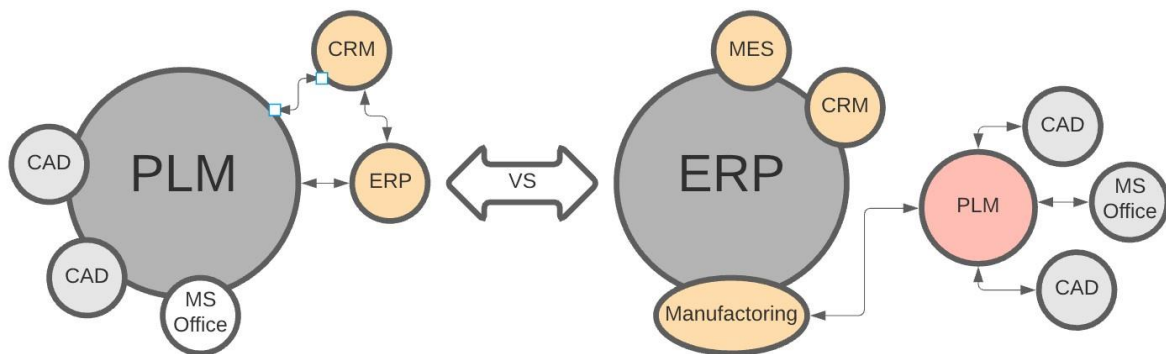


Figure 74 Comparison to the left the adapted diagram as theorized by Saaksvuori, A. and Immonen, A. (2008), to the right Odoo take on how systems interact.

圖 74 比較左邊是 Saaksvuori, A.和 Immonen, A. (2008) 理論化的調整後圖表，右邊是 Odoo 對系統互動的看法。

The lack of file upload support on things like operation items, work centers or equipment is something of some concern especially considering 3D printing or CNC because access to the CAD files would prove helpful to the operators. Also, there is a gap in between the facets of product and tool when the company is taking upon themselves to develop and produce said tooling (similar situation founded when developing the molds in the simulation).

在操作項目、工作中心或設備等方面缺乏文件上傳支持，尤其是考慮到 3D 打印或 CNC 時，對 CAD 文件的訪問將對操作員有所幫助是一個值得關注的問題。此外，當公司自行開發和生產工具（類似情況發生在模擬中開發模具時）時，產品和工具之間存在一個差距。

In addition, although MES provide detailed graphical representation regarding the dataset that it has, it is limited to data derived from the time to completion of the operations been carried out. For instance, it would be very valuable if graphical representation regarding quality control was easily available as well.

此外，雖然 MES 提供了有關其數據集的詳細圖形表示，但僅限於從完成操作所需的時間中衍生的數據。例如，如果關於質量控制的圖形表示也容易獲得，那將非常有價值。

All that said, applying ECOs to BOMs in Odoo is a procedure deserving of praise. The ECO holds the information until it is ready to be applied and then it updates the BOM automatically once the ECO is validated by responsible personnel. It might not look like something so important now because this simulation is dealing with very simple products, but it becomes exponentially more important as complexity increases. E.g. A car with thousands of parts and hundreds of nested BOMs would be considered a nightmare to control and keep track of change if a system like this was not present.

總之，在 Odoo 中將 ECOs 應用於 BOMs 是值得稱讚的程序。ECO 保持信息，直到準備應用並且由負責人員驗證 ECO 後，它會自動更新 BOM。現在可能看起來不像什麼很重要，因為這個模擬正在處理非常簡單的產品，但隨著複雜性的增加，它變得越來越重要。例如，擁有數千個零件和數百個嵌套 BOMs 的汽車，如果沒有此類系統，將被視為難以控制且難以追蹤變更的噩夢。

This software is not perfect for PLM or MES implementation, but it does hold value in the sense of availability and integration with other systems. The functionality is there specially regarding product and process and the software has an extremely interesting integration with its natural ERP functionalities. All this makes up for a system that would suit better:

- Small business that could use PLM and MES in a smaller scale.

□ Companies that deal with less manufacturing and more assembly or distribution taking advantage of the All in One nature of the software.

這個軟件在 PLM 或 MES 的實施方面並不完美，但在可用性和與其他系統的整合方面具有價值。特別是在產品和流程方面，軟件具有極具吸引力的整合性，與其自然的 ERP 功能相結合。所有這些都構成了一個更適合的系統：

- 小型企業可以在較小的規模上使用 PLM 和 MES。
- 那些處理較少製造而更多組裝或分銷的公司，可以利用軟件的一體化特性。

It is important to mention that the limitations of Odoo are not in the complexity of the product itself but in the complexity of the operations that surround its development. All things considered you could track a large and complex assembly if it includes only simple manufacturing operations or if more complex engineering tasks are done by suppliers. I.e. you could track the assembly of a motorcycle with ease in Odoo, but the PLM features are not polish enough to track the full evolution/development of its powertrain. It is certainly possible to do so but it would take too much time and effort from the engineering team to be considered worth it just for the sake of having an all in one solution with ERP features.

值得一提的是，Odoo 的限制不在於產品本身的複雜性，而在於其開發周圍操作的複雜性。綜合考慮所有因素，如果裝配包含的僅是簡單的製造操作，或者更複雜的工程任務由供應商完成，那麼你可以追蹤一個大型而複雜的裝配。換句話說，在 Odoo 中輕鬆追蹤摩托車的裝配，但 PLM 功能不夠完善，無法追蹤其動力傳動系統的完整演變/開發。當然可以做到這一點，但從工程團隊的角度來看，為了獲得一個全方位的解決方案並帶有 ERP 功能，這將需要太多的時間和精力，而不值得僅僅為了這個目的而這樣做。

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