maestro technologies

maestro*WAY
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MAESTRO* GO-LIVE

SUMMARY

WHAT IS A GO-LIVE?

What we commonly call a Go-Live, here at Maestro, is actually the official start-up date of the software; it is not the date where employees start entering data in **maestro*** per se, but more the date where all new transactions must be entered and done in the software[1]. Normally, at this stage, all preparatory tests and configurations have been done. All transactions done as of this date are there to stay and users are finally officially working with **maestro***. In sum, the Go-Live date corresponds to the accounting cut-off date.

It goes without saying that the Go-Live is a moment which demands adequate planning; the implantation's success depends on it! Many elements are to be expected or taken into account from the beginning of the implantation and/or once the Go-Live date has arrived.

FREQUENTLY ASKED QUESTIONS

When does the Go-Live Take Place?

The go-live date is ideally set for the first day of the new month, when the clients are finally ready. Why the first day of the month? Because it will therefore be simpler to close the accounting period in the previous system used. Same for tax rebates and other transactions to be processed.

There are many theories on which month should be chosen to do so. Some go for the first day of the new financial year, saving them from having to close the year in two different accounting systems. Others favour the beginning of the new calendar year to begin inputting a payroll year in **maestro*** and avoid having to enter payroll balances in the course of the year. Some more would say that it is even better if both dates (the beginning of both the financial and calendar year) are synchronous. In any case, it is important to set a date that will facilitate the transition between the current system and **maestro***. The main issue consists of setting a date that will make it possible to benefit from the time required to configure **maestro***, validate the many processes, and correctly train the users.

What is a Go-Live per Phase Approach?

The Go-Live per phase approach consists of gradually starting up the different functions in **maestro***. Are first launched the software's essential functions, then, afterwards, are integrated the desired functions that are not essential. For example, the **Estimating** module can be integrated once users are familiarized with the **maestro*** base system. The use of secondary financial options, such as the **Depreciation Book** and **Loan Management** options, can be initiated in phase two or three.

[1] *For example, if the date of a company's go-live is a Friday, it is possible that few entries will be made by employees in **maestro*** on said Friday. However, all bills received as of Friday will eventually have to be entered in **maestro***, even if the data entry is only done the following week.*

Which Functions Should We Find in the First Start-Up Phase?

The first **maestro*** start-up phase should include all functions mandatory to the good operation of the company's administration; at least financial management and the replacement of the actual financial program. In no case should a company reduce or cease any tasks necessary to its proper functioning. It is therefore required to identify, at the start of the Go-Live, everything the actual company system does, to make sure every corresponding **maestro*** functions be included in phase one. To the latter will often be added the **maestro*** functions which led to the system change.

In short, the content of the first **maestro*** start-up phase is constantly revised during the configuration and training period. Some functions, which were initially planned for the first phase, can be deemed non-essential to the program's start-up. Even the start-up date can be changed to ensure the conversion's success.

Getting Ready for the maestro* Go-Live

Being thoroughly prepared for the Go-Live date means first being up to date in all data entrance, but, more importantly, having practised and done the most test possible before the big day. Experience has shown that the more users are ready to work with **maestro***, the easier the transition is. On the contrary, when only few tests have been done beforehand, the transition from a system X to **maestro*** is much harder.

It will be recommended by your implementation specialist, for each meeting done during the implementation process, to perform tests related to the configurations done and the functions and options seen during each session. These tests can consist of entering orders, invoice types, creating a fictional project, printing reports, etc. In sum, you will be invited to reproduce, in **maestro***, the different entries made in the legacy system, as well as those generated by the use of **maestro***. Furthermore, to maximize training time with your implementation specialist, you will be asked to complete come configurations between two training sessions. The purpose of this "homework" is to:

- Review what the trainee has learned;
- Review every possible case and scenario;
- Review any questions if needed;
- Allow the learner to gain a minimum of experience with **maestro*** before the big day;
- Make mistakes and correct them before they have a real impact;
- Ensure the learner's independence;
- Finalize all configurations, which are numerous and repetitive;
- Give the learner the tools needed to add or modify parameters;
- etc.

There is no point in rushing the **maestro*** implementation and training process. Experience has shown that a run-in period is needed. Furthermore, performing the tests and/or homework assigned by the implementation specialist between sessions takes time, added to the ongoing daily operations of the company.

Can every employee work in maestro* on the day of the Go-Live?

Technically, yes. However, employees usually start working in **maestro*** gradually. Some departments, such as the Purchasing Department, for example, will start placing orders and making purchases in **maestro*** from day one. The Accounting Department, however, will continue to enter previous month invoices in the legacy system until the closing of the financial period (often around the middle of the month). It is common to see users from the Accounting Department working in both **maestro*** and the legacy system for about two to three weeks maximum.

In any case, new transactions are usually entered in **maestro*** from the official launch date. The legacy system us still used to enter transactions from previous periods, until these are closed in the old system and then the balances transferred to **maestro***.

"The secret to a successful implementation is to perform as many tests as possible before the Go-Live. That's the moment to try, perform tests, and train users."

Michel St-Jacques, Implementation Specialist

What happens during the first month using maestro*?

Some monitoring and follow-up time is always planned with the implementation specialist during the period following the Go-Live; we call this the stabilization period. The latter is an accompaniment period with the client and their new system until they are comfortable enough to proceed independently. It can happen that some settings are modified so as to better benefit users. Sometimes an oversight can also lead to the re-explanation of the functioning of an option. Finally, it rarely happens that clients have no questions in their first few days of using **maestro***; a period that can be very stressful for new users.

If conditions and scheduling allows it, and if it is needed, an implementation specialist can be available for one day a week during the first month. Once the preceding month is closed in the legacy system, the various balances are imported in **maestro***. A Maestro professional usually helps the client with the generation of their first two payrolls and, if needed, also helps with the closing of the first financial period to search for any financial gaps.

WORKING WITH TWO SYSTEMS IN PARALLEL

Other than for particular situations where it is necessary, it is recommended for users to only work in one system at a time for the following reasons:

- A new work approach, the use and learning of a new program already represents work overload;
- The use of two systems in parallel increases the risk of data entry mistakes in either system;

- Time can be lost when reconciling the data in both systems and searching for the mistakes, missing entries, or duplicate ones.

The phrase *burn the ships*[2] applies to all system changes; you must look forward and leave the past behind!

A SIGNIFICANT CHALLENGE: CHANGE MANAGEMENT!

Talking about it is one thing, living it is another. Managing change is probably one of the most important elements related to the go-live. Many books have been written on the subject. All system changes automatically gives rise to some resistance; it necessarily generates the adjustment of procedures, daily tasks, and therefore, learning efforts. It is not always simple in the context of a work overload.

It is imperative to continuously follow up with employees and reassure them about the implementation progression. That said, a start-up in phases can be appropriate so as to integrate a portion of **maestro***, have some small victories, and then focus on the more complex functions of the program.

> *"Having already been there, I must admit it is very important to get in a learning mode during the implementation. One must take the time to dig further, ask questions, and understand the logic and the why of things. Learning, it's not jus tmemorizing a certain number of clicks. It is first and foremost knowing why we make a click." - A translation*
>
> Tiberiu Fatan, Implementation Specialist

GO-LIVE PREPARATION

In preparation for the go-live, the company in **maestro*** is reset, meaning that all master files and configuration remain but all transactions are purged. This preserves all the configuration set up and data imported during the implementation phase. However, the transactions that were used for training or to test the configuration are removed. This preparation process in anticipation of the go-live day generally occurs at the end of the month preceding D-day.

Master Files

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[2] *This phrase means doing something and not being able to go back. It refers to the landing of Hernando Cortés in Vera Cruz, Mexico, in 1519. He had more ambition than army and wanted to conquer the whole Aztec Empire. Before marching on, he told one of his men to burn all the ships. That meant there would be no turning back. Thus, the "ships" represent the way back and the " burning" represents the will to not go back, to move forward.*

Source: https://chipmonkbaking.com/blogs/updates/burn-your-ships, 10-06-2020

Master files refer to all files that contain reference/relatively permanent data. Here is a non-exhaustive list of this type of files:

- Customer list and contact details
- Supplier list and contact details
- Employee list and contact details
- Chart of accounts
- Item catalogue
- Asset list
- Etc.

There are six important steps before the go-live target date:

- Creation of a test company
- Initialization of the company
- Checks and refinement
- Balance transfers
- Physical inventory
- Importing employee cumulatives

Here are additional details on each of the go-live prepatory steps.

Creating a Test Company

Maestro* allows the creation of test companies. The creation of a test company consists of defining a new company (identified as a test company) from a pre-existing company (identified as the source company), and copy all data found in the source company. Just like a copy paste.

A test company allows a user to test various functions at all times, without having any impact on the real/original company. Thus, once the system is live, the users will be able to continue testing or simulating transactions as they need, in the test company.

So as to facilitate the creation of the test company, the task has been automated, therefore offering the guarantee of the data's integrity and making sure that the data copy is always done from the real company to the test company, and never the other way around. During the data copy, **maestro*** also ensures that no user is using or logged into the software. Users also benefit from an option in **maestro***, called **Copy the Source Company**. The latter subsequently allows the update of the test company with the new data entered in the source company.

Only users who have an administrative type access can create a test company. Please read the **maestro***security management document for more information.

Initializing the Company

The initialization of a company allows the deletion of the selected company's transactions. It goes without saying that no user must be working in **maestro*** when this operation is taking place.

> ⚠ Warning! This operation cannot be reversed. It will not be possible to retrieve deleted data.

When initializing a company, **maestro*** stores all information and content in the following options:

- All options in the **Maintenance** menus;
- All files found in the **General Settings**;
- All master files (**Customer Management**, **Supplier Management**, and **Employee Management**);
- The general ledger's annual budget;
- The starting funds in the **Depreciation Book** option;
- All project budgets;
- All work order templates;
- All quotation templates;
- Catalogue items (except quantities and stock values, which are reset to zero);
- Invoicing contracts (**Contract Management**, **Progress Billing Contracts**, **Cost Plus Contract Management**);
- Property management (**Property Management**, **Unit Management**, **Create a Lease**);
- **Customer/Supplier Discounts Table**.

> ⚠ The documents found in the **Document Management** and values in additional fields are deleted during a company's initialization if the transactions to which they are linked are deleted.

"Some clients find it expensive to pay for the training of employees regarding a new software. In my experience, mistakes cost a lot more when they happen during production! And if employees did not get the chance to practise before the go-live, mistakes make the stabilization period a lot longer." - A translation

Michel St-Jacques, Implementation Specialist

Checks and Refinement

Customary checks, such as validating the customer and supplier discount tables, closing and deleting test projects, as well as reviewing the catalogue, must be completed in **maestro*** before using the system for the actual business transactions.

Physical Inventory

On the last day of the month preceding the go-live, it is imperative to perform a physical inventory of the company's various items and assets. This inventory is required to enter the inventory balances (as well as quantities if the catalogue is used) as of the first day of the month in **maestro***.

Transferring Balances

The process that involves transferring the current values and the legacy system's balances to **maestro*** is generally performed two to three weeks after starting to use **maestro***, which is once the previous financial period is completed in the legacy system.

The data extraction and importation process must have been validated during the configuration and training phase. This is important because it ensures that the legacy system's data is adapted to the file formats required by **maestro***.

Also, and particularly if **maestro*** is used gradually (through an implementation carried out in a phased manner), some balances can be transferred during a second or third phase.

As with several operations that must be executed in the software, several approaches may be used to transfer balances, however, each one having its pros and cons. The table below introduces the one recommended by Maestro. Nevertheless, your implementation specialist is the most qualified person to discuss the process and iots alternatives with you.

Values to be transferred	Details
Trial Balance	Depending on the official use of **maestro*** start date, it is necessary to import either the year's closing or opening trial balance during the first month. An *Excel* file containing the balance of each general ledger account is imported into **maestro*** through the **Advanced Project-to-Project Transfer** option. Two projects should be created: a first one named *Balance Sheet* for balance sheet accounts, and a second one titled *Opening Balances* that can be used for revenue and expenditures accounts. Other users choose to create a single project for all accounts. In any event, if the go-live corresponds to a year closing, only balance

Values to be transferred	Details
	sheet accounts must be impported. **Produce comparative financial statements for the previous year (legacy system) and the current one (maestro*)** Users that wish to produce financial statements comparing the previous and current year through **maestro*** must import the trial balances for each month of the year preceding the go-live into **maestro***. Remember however that this optional task can be done a few months after the the big day. ⚠ Like the chart of accounts that generally needs to be reviewed during the implementation, the legacy system's trial balance must also be adapted to fit the new account structure. To access the *Excel* file format required to import every GL account balance, click **HERE**.
Accounts Receivable	Once the financial period has been closed in the legacy system, the accounts receivable (AR) data must be imported into **maestro*** using an *Excel* file. To access the *Excel* file format required to import the AR, click **HERE**. *Warning! Do not forget to record the AR holdbacks. Maestro recommends recording the AR balances and holdbacks into two distinct files: one for the balances of accounts receivable and a second for the holdbacks. In addition, receipts can only be carried out in **maestro*** once the AR have been imported. It is therefore imperative to close the final month in the legacy system as soon as possible.*
Accounts Payable	Once the financial period has been closed in the legacy system, the accounts payable (AP) data must be imported into **maestro*** using an *Excel* file. To access the *Excel* file format required to import the AP, click **HERE**. *Warning! Do not forget to record the AP holdbacks.Maestro recommends recording the AR balances and holdbacks into two distinct files: one for the balances of accounts payable and a second for the holdbacks. In addition, disbursements can only be carried out in **maestro*** once the AP have been imported. It is therefore imperative to close the final month in the legacy system as soon as possible.*
Outstanding Cheques	**Maestro*** provides the possibility to enter and manage **outstanding cheques** in the option bearing the same name.
Project Costs	Once the financial period has been closed in the legacy system, the projects' total costs data must be imported into **maestro***. It is suggested to only import projects that have a significant lenght.

Values to be transferred	Details
	Since the project's structure may have to be modified during the implementation, some adjustments may be required. *Note: In rare cases, and especially for projects with very long durations, some users prefer importing detailed costs. It requires more work, but it is possible to enter expenses as financial adjustments using the **Project-to-Project Transfer** option.*
Order Balances	As a rule, the remaining orders' balances are entered into **maestro***, or in some cases, an overall progress invoice. However, when long-term contracts are involved, and mainly for subcontracts that must be entered into **maestro***, it may be useful to keep the payment history. Maestro sometimes recommends entering all past invoices and payments related to a customer's contract into the software. This approach allows: • profiting from having every transaction related to a contract in **maestro*** and being able to view the contract's billing history as well as all payable holdbacks, all properly accounted for; • practicing and validating **maestro*** functionalities; • simplifying holdback management and tracking. The financial resultant of these transactions will be manually cancelled as the financial adjustments will be completed through the importation of the trial balance.  Though accessing the payment history in **maestro*** is preferred by some clients, not everyone chooses to do so. It all depends on the projects' lentght, the quantity of data to enter, etc. Others opt to enter the information into **maestro*** after they have been using the system for a few weeks.
Progress Billing Contracts	With regard to the progress billing contracts, it is recommended to enter the balance of each contract in **maestro***; customers may require progress billing invoices.
Depreciation	The equiment's net value must be entered in the assets. The depreciation calendar has to be adjusted according to the time of the year when the system is changed. It is also necessary to take into account additions and provisions.
Loan Management	If needed, loans can be entered in **maestro***.
Preventive Maintenance	If needed, each equipment's meter value must be updated.

Values to be transferred	Details
Document Management	**Maestro*** allows the batch importation of documents if some of them must be in the system.
Change Orders	Change orders that are pending at the time of the go-live must also be entered in **maestro***. Most of the change orders processed during the first month of officially using maestro* have been initiated during the previous month.

Importing Employee Cumulatives

Cumulatives up to that date must always be imported.

If the use of the **maestro*** payroll starts with the year's first payroll, vacations balances as well as other balances like accrued vacation must be imported.

If the use of the **maestro*** payroll starts during the year, all current payroll data must be imported, including information from the *Quebec Pension Plan* (QPP), the *Employment Insurance* (EI) program, the *Canada Pension Plan* (CPP), etc.

Please note that all other balances must be entered in maestro* before the production of T4 and RL-1 slips.

REMINDER

- What Maestro commonly refers to as a *go-live* is in fact the date on which the software officially becomes operational, i.e. starts being used.
- The go-live occurs on the first day of the month, once the client is ready, after all configuration and tests have been completed and users were trained.
- The phased implementation approach consists in progressively bring **maestro*** functionalities into production.
- Being adequately prepared for the go-live day not only involves having the data entry as up-to-date as possible, but also having practiced and performed as many tests as possible before the big day.
- Change management is probably one of the most important elements related to the go-live.
- Six steps must be performed ahead of a go-live:
    - creation of a test company
    - initialization of the company
    - checks and refinement
    - physical inventory
    - balance transfers
    - importation of employee cumulatives

PLANNING THE MAESTRO* GO-LIVE - FOOD FOR THOUGHT
☐ What is the desired date for the **maestro*** start-up?
☐ What are the reasons behind this date?
☐ What are the start and end dates of your company's financial year?
☐ Have you considered a go-live per phase approach?
☐ Are your employees ready for this change period?
☐ Do you plan on training your employees yourself or would you like for them to participate in the training sessions offered by Maestro?
☐ Which functions in your current program are essential to the smooth operation of your company's administration?

Last modification: May 24, 2024

PROJECT MANAGEMENT IN MAESTRO*

Most Enterprise Resource Planning (ERP) systems are designed primarily around the concept of managing accounting transactions in the General Ledger (GL). The common approach to project management within many of these systems is by means of GL account segmentation, by project. This approach, although easy to understand for those who have an accounting background, goes against generally accepted approaches in project management. From its beginnings, Maestro Technologies Inc., decided from the outset to develop an ERP system that was designed to be project oriented, in which project transactions would be recorded and then transferred into a recognized accounting/financial management structure. Over the years, our approach has evolved to allow comprehensive financial management within the project management system. The latter is based on the *Work Breakdown Structure* (WBS)[3].

The use of an enterprise resource planning program such as **maestro*** offers many advantages. Other than information being available in real-time, participants of an organization need only work with one software, no matter their position in the company. All information is grouped and available, when needed.

What is an enterprise resource plan?

When we say enterprise resource plan, we mean a program which allows to manage and follow, on a daily basis, the financial AND operational data of a company. This type of program reduces the quantity

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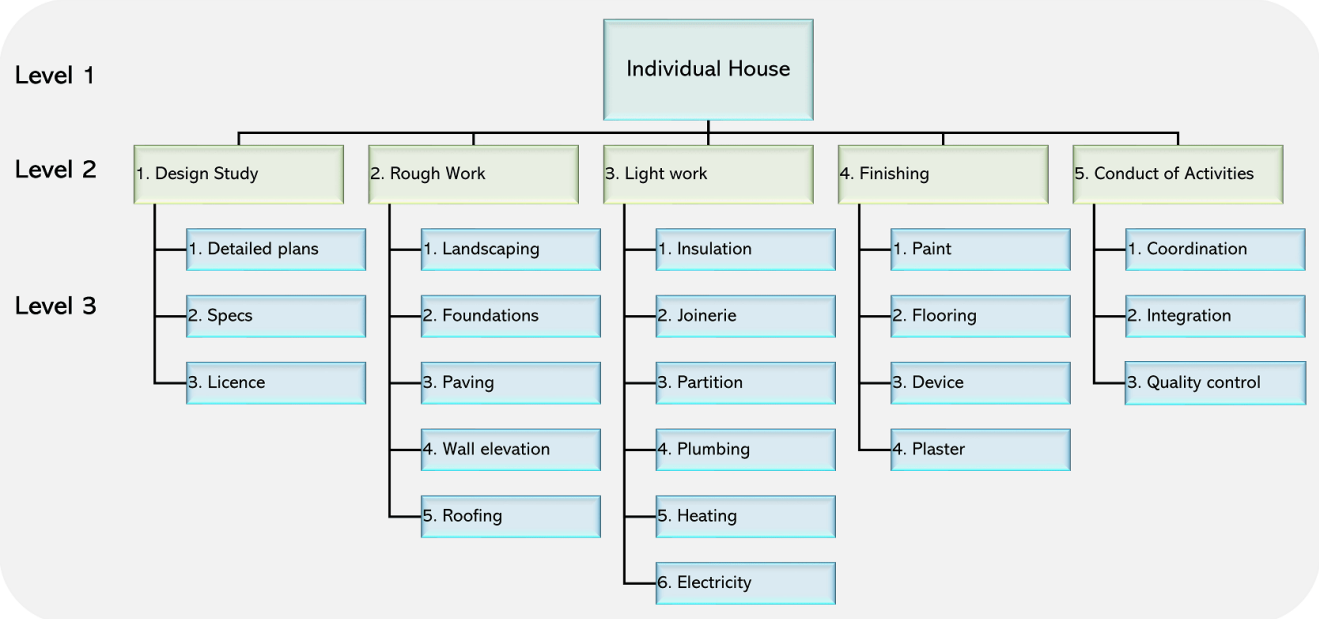
[3] *Work Breakdown Structure (WBS), this principal proposes an operational method that consists of organizing a project by sub-dividing it in manageable units. Projects are therefore divided in ordered subsets, either in sub-projects, tasks, or sets, organized under a tree-like structure and representing deliverables or tasks to be done. The advantage of this method, inspired by NASA practices, is that it facilitates projects by reducing them in easily apprehensible parts. One of the fundamental principals of this approach is that the total needed work of each subset represents the totality of work needed for each divided element.*



Source: https://en.wikipedia.org/wiki/Work_breakdown_structure, May 1, 2020.

of entries to be made as well as the risk of errors; users do not need to transfer information from one system to another.

Thus, **maestro*** is composed of modules dedicated to the management of financial data, others devoted to the management of operational data and, finally, so-called intermediate modules, dedicated to bridge the gap between financial and operational data. The sharing of data, for example, will be done systematically between material requisitions (**maestro*** operational component), inventory management (**maestro*** intermediate component), and the inventory financial management (**maestro*** financial component). We call **transferring** the action of pushing information from an option or module to another, through a transaction.

SUMMARY

A PROJECT APPROACH

In **maestro***, any entity for which we wish to establish a budget and/or monitor income and costs is considered a project. The transactions created and generated in the software therefore always relates to a project. They can be of any kind: construction, activity, layout, etc. The administration, which has associated maintenance costs for a building or head office, for example, is also a project.

We must, therefore, see a **maestro*** "project" as a revenue and cost centre, a concept much more general than a concept limited to construction projects.

Since **maestro*** uses projects for entering all financial transactions, it will, therefore, be necessary to create at least one project that will represent all of the balance sheet accounts.

Thus, in addition to projects specific to the activities and assets of a company, all companies must, as a basic matter, have a "balance sheet" project, an "income and loss" project, and an "administration" project.

Nature of Projects in maestro*

As mentioned earlier, the concept of projects in **maestro*** is very broad. We can find in **maestro*** associated projects with the following entities:

- Event, business unit, or project requiring close monitoring of income and expenses (construction and others).
- Administrative costs (management costs, building maintenance, equipment maintenance, asset maintenance, etc.).
- Internal profit centre or department (management of internal tools and rentals, departmental management, engineering department, etc.).
- Balance sheet (i.e. all accounts not related to income and expenses).
- Income Statement (i.e. all accounts related to income and expenses).

PAG STRUCTURE (PROJECT - ACTIVITY - GROUP)

The project structure in **maestro*** provides almost unlimited flexibility related to the monitoring of revenues and expenses. As we separate the project structure from the financial constraints, it is then possible to tailor the project tracking structure to align to the individual project requirements.

To the concept of a project is added the activities and groups concepts, which allow the breakdown of project revenues and costs. Indeed, in **maestro***, users do not make accounting entries by entering the general ledger account numbers. When entering a transaction, they identify and select the project, activity, and group. **Maestro*** is responsible for carrying out the accounting entries corresponding to the user's selections. In

addition, the use of this nomenclature/structure decreases the number of general ledger accounts to be created, since it is possible to view income and expenses from all levels of detail.

The more varied the projects, the more complex it can be to manage transaction entries. It is therefore important, at the outset, to define the desired level of detail in the structure of the projects, keeping in mind the real needs in terms of cost monitoring. In addition, very detailed project data can be obtained without having to create multiple general ledger accounts.

Implementation specialists support all new customers in the development a project structure corresponding to their business needs and realities.

Activities

Each project can have an unlimited number of activities, that details said project.

For a construction site project, for example, the following activities could be created:

- Foundations
- Slabs on grade
- Basement excavation
- Basement walls
- Floors
- Roofs
- Exterior walls
- Exterior windows
- Exterior doors
- Roof coverings
- Roof openings
- Etc.

For an equipment project (such as a company car), for example, the following activities could be created:

- Fuel
- Maintenance and repairs
- Insurance
- License
- Amortization
- Rental (which could constitute rental fees or rental income)
- Etc.

Finally, for the administration project, we could find the following activities:

- Office equipment
- Office supplies
- Representation expenses
- Telephone
- Internet
- Heating
- Electricity
- Administration salaries
- Administration social advantages
- Etc.

Since activities, in **maestro***, are displayed and/or ordered alphanumerically, it is important to code activities with care. The 3.05 version of **maestro*** allows codes having up to 20 characters.

Groups

In addition to the activities, groups make it possible to compile the financial values according to their natures. Each of these groups is associated with a standard type of expense or income.

If the activities can differ according to the projects, the groups remain the same from one project to another.

Upon installation, **maestro*** includes by default a group for each type of expenditure, managed by the software package as well as for revenues. The six groups (expenses or incomes), for which groups with corresponding names are instantly created, are the following:

- Material
- Subcontractors
- Miscellaneous
- Labour
- Equipment
- Revenue

However, it is possible to define your own groups or additional groups. These additional groups must evidently be linked to a group type that will determine their nature (income or expense, material, subcontractor, miscellaneous, salary, or equipment). Some example of alternative groups consists of:

- Salary groups for the administration and work sites.
- Groups for internal equipment vs rented equipment.
- Material specific groups. For example, a bricklayer could want to follow the costs of bricks and other materials more closely.

Do not hesitate to discuss this with your implantation specialist!

Know that it is also possible to restrict the access to certain groups, in project, in order to control the financial and data transaction entries. For example, two different approaches could be considered in the case of an installation containing two different commercial activities, and for which the costs management would be very different. The first approach could consist of defining particular activities for each project. The second could be to have target groups and to limite the use of these groups in accordance to each project.

Anyhow, and for the sake of simplicity, Maestro recommends, most of the time, to standardize project activity structures.

Example - Civil engineering

In the case of a civil engineering company, for example, the construction of route x could constitute a project. This project will consist of different activities such as clearing, excavation, asphalting, etc. Then, for each activity, we will find the following six groups: wages, materials, equipment, subcontractors, miscellaneous and income.

Example - General contractor

In the case of a general contractor, the construction of a building could represent one of his projects. This building project may be composed of several activities, such as excavation, foundations, framing, electricity, finishing, etc. Then, for each of the activities, we could also find the following six groups: wages, materials, equipment, subcontractors, miscellaneous and income.

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PAG Example in maestro*

Here is what a construction project structure could look like[4]:

Phase and Activities	Activity Code	Material	Subcontractors	Miscellaneous	Labour	Equipment	Revenue
PHASE A - Substructure							
Standard Foundations	A1010	5001	5002	5003	5004	5005	4001
Slabs on Grade	A1030	5001	5002	5003	5004	5005	4001
Basement Excavation	A2010	5001	5002	5003	5004	5005	4001
Basement Walls	A2020	5001	5002	5003	5004	5005	4001
PHASE B - Shell							
Floor Construction	B1010	5001	5002	5003	5004	5005	4001
Roof Construction	B1020	5001	5002	5003	5004	5005	4001
Exterior Walls	B2010	5001	5002	5003	5004	5005	4001
Exterior Windows	B2020	5001	5002	5003	5004	5005	4001
Exterior Doors	B2030	5001	5002	5003	5004	5005	4001

[4]*Please note that this PAG example is incomplete and for informational purposes only. We invite customers to build a PAG structure that fits their needs and activities. Furthermore, the nomenclature used in this example comes from the Canadian National Master Specification for Building Construction (NMS). Source: https://nrc.canada.ca/en/certifications-evaluations-standards/canadian-national-master-construction-specification/nms-table-contents, May 1, 2020.*

Phase and Activities	Activity Code	Material	Subcontractors	Miscellaneous	Labour	Equipment	Revenue
Roof Coverings	B3010	5001	5002	5003	5004	5005	4001
Roof Openings	B3020	5001	5002	5003	5004	5005	4001
PHASE C - Interiors							
Interior Partitions	C1010	5001	5002	5003	5004	5005	4001
Etc.	C...	5001	5002	5003	5004	5005	4001

Phase, Division, and Section Notions

Companies who wish to obtain even more detailed data than those available with the use of a **PAG** structure can divide their activities in additional hierarchical levels. Thereby, it is possible to regroup a project's activities in a phase (for example, project development, conception, layout, procurement, construction, and delivery). Other sections can also be added to, for example, dissociate work done on historical buildings from regular construction work, or to divide in parts a road in construction. Finally, the division notion can be added, as well, to further compartmentalize the activities of a same project.

In short, the phases, sections, and divisions notions can be added to the already established structure of activity creation and can be used in the following increasing order: activity, phase, section, and division. They will allow customers to have access to three additional levels to manage a projects expenses, for which the structure is very complex.

We can also say that phases, sections, and divisions allow the sectionning of a project and the compartmentalization of its activities.

Project Type, Category, and Department Notions

Type, category, and department notions will allow the grouping of projects at the discretion of customers and for different purposes. This could be done to:

- Apply a security management to make sure that access to certain project types, or categories, be limited to specific user groups.

- Have reports by project type or category, according to a company's needs.
- Apply a default projection calculation method to project types.
- Regroup projects in departments for the production of financial statements.

Furthermore, regrouping projects by type, category, or department can make it possible to:

- Indicate, by project type, the advancement entry percentage precision level by default.
- Create, or not, a dispatch project for particular project types.
- Associate a project type to a PAG, to which discounts will be deduced during revenue transfers.
- Establish a history to link the different department expenses.

In short, it is important to define types, categories, and departments with care and think about the security to apply to each project, as well as how we wish to select them.

In **maestro***, the three options in which these groups can be created are the following:

- Define Project Types
- Define Project Categories
- Define Project Departments

Master Projects and Sub-Projects

When creating a project in **maestro***, it is possible to associate the project with a so-called "master" project which oversees the newly created project. A master project is, therefore, a project in itself, to which other projects are attached which then become sub-projects.

Based on the nature of the company, the master projects' and sub-projects' nature may vary. For example, in the case of a mall construction, the following sub-projects could be created: preparation of the site and excavation, parking, infrastructure, roofing, etc. These sub-projects would therefore form cost centers; they would be linked to the master project, the construction of the mall. Based on the needs of the company responsible for this construction project, global costs could be redistributed to each sub-project or attributed to the master project, so only development costs would appear in the subprojects. Another master project example could be the construction of an office tower; each floor of the building would become a sub-project. Since it is possible to create multiple sub-project levels, each unit of the floor could constitute the sub-project of a sub-project. Finally, it would even be possible, in **maestro***, to manage the ground floor differently than all other floors, because of its commercial potential.

In **maestro***, it is possible to make configurations so that the determined percentage of an expenditure or income from a master project is redistributed to subprojects. Thus, a promotional expense can be allocated to the master project in a single entry instead of having to make five entries of 20% to apply the expense to the five condominium towers.

STANDARDIZATION OF PROJECT STRUCTURES

Although each project may have its own list of activities, most users prefer to standardize this list, either globally, for their projects, or, at the very least, for the same type of project or cost centre.

The standardization of project structures facilitates data entry and the comparison between project incomes and expenses:

- Over time and by dint of using them, the user comes to know the activity codes. In addition, several of these codes are configured by default and appear automatically on the first line of an order or purchase entry. The user comes to know which activity of a project should normally be charged for each type of expense.
- This standardization can also allow the comparison of income and expenses between the various projects. This is particularly important for a company with several projects and whose performance may vary. Thus, with an identical activity structure, it is possible and easy to visualize the costs of various projects and identify the differences. It then remains to find the explanations for these differences. This is particularly

interesting for residential entrepreneurs. Indeed, for the construction of the same model, an entrepreneur should expect very similar costs.

Several companies, including general contractors, use the *National Master Specification for Building Construction* (NMS). Built in 16 separate sections, the latter standardizes the various activities for the monitoring of a construction or renovation project.

In the past, the activity structures used by project managers often differed from those used in accounting. This had the effect, in addition to the double-entry, of complicating the comparison between what was happening on the site and the financial data. In addition, the project structure was often determined by the way the estimate was made. This made it more difficult to compare the actual financial costs to the estimated costs. With a project approach, it is possible, and even desirable, to use a cost activity structure similar to the one used to prepare estimates. The budget can therefore be easily transferred from the estimate.

The analysis of a company's actual or wished financial statement helps define the project structure to put in place in **maestro***, since a great flexibility is allowed. The established project structure must also allow linking project costs to the project's starting estimate, so as to allow feedback.

CREATING PROJECT TEMPLATES

To facilitate the standardization of project structures (and, thereby, project costs), **maestro*** renders possible the creation of project templates. Project templates are standard project structure models, created by the company to answer to its needs. The creation of new projects is facilitated since all general ledger accounts, activities, groups, etc. are simply replicated and automatically copied from the project template. Various project templates can be created. Furthermore, many customers decide to create relatively elaborate project structure templates. Once the template is copied to create a new project, the latter is pruned, and unnecessary activities are simply deleted.

PAG AND GENERAL LEDGER ACCOUNT

All **maestro*** transactions (each entry line, to be more precise) must be linked to a **PAG**, to then find themselves transferred to the corresponding general ledger account that will receive the incomes and/or expenses. This method allows for a greater project costs diversity and simplifies the financial aspect. **This is the action of a transfer generating an accounting entry**. Therefore, all non-transferred transactions are not yet taken into account financially.

Maestro* offers various methods when comes the time to link **PAG**s to general ledger accounts. Furthermore, it is possible to use more than one of the proposed methods and associate general ledger accounts on different levels. For example, when a transaction is done in **maestro*** and an accounting entry must result from it, **maestro*** verifies account configurations in a certain order. When an account is not identified on the project level, **maestro*** uses the configured default account for all projects.

A general ledger account can be linked to a group only. When this is the case, the expense related to this group is automatically carried over to the group's general ledger account, and not to the activity's. For example, the RL - Revenu Location group will always be carried over to the account number 40510, whatever the general ledger accounts defined in the project or default accounts defined in the **General Settings** are.

REMINDER

- **Maestro*** is an enterprise resource plan, which allows to manage and follow the financial and operational data of a company.
- We call **transferring** the action of pushing information from an option or module to another, through a transaction.
- In **maestro***, any entity for which we wish to establish a budget and/or monitor income and costs is considered a project.
- All companies must, as a basic matter, have a "balance sheet" project, an "income and loss" project, and an "administration" project.
- To the concept of a project, in **maestro***, is added the activities and groups concepts, which allow the breakdown of project revenues and costs.
- In **maestro***, users do not make accounting entries per se. When entering a transaction, they identify and select the project, activity and group. The software is responsible for carrying out the accounting entries corresponding to the user's selections.
- If the activities can differ according to the projects, the groups remain the same from one project to another. They make it possible to compile financial values based on their nature.
- Companies who wish to obtain even more detailed data than those available with the use of a **PAG** structure can divide their activities in additional hierarchical levels called phases, sections, and divisions.
- Type, category, and department notions allow the grouping of projects with common values, which makes it possible, in part, to apply security rules, limiting access to the data used to produce reports.
- It's possible to group projects under a so-called master project, facilitating the distribution of incomes and expenses.
- The standardization of project structures facilitates data entry and the comparison between project incomes and expenses.
- **Maestro*** allows the creation of project templates to speed up the project creation process.
- A company's desired project cost reports help determine the project structure to create.

FOOD FOR THOUGHT – PROJECT MANAGEMENT IN MAESTRO*

- ☐ Are your projects or mandates diverse, in term of activities?
- ☐ What is your current project (budget) structure?

FOOD FOR THOUGHT – PROJECT MANAGEMENT IN MAESTRO*

- ☐ Do you follow up on your work estimate costs vs. your real work costs?
- ☐ Are your project activities standardized?
- ☐ How do you redistribute project costs?
- ☐ What comparison do you wish to perform between your projects, and for which projects?
- ☐ What do you wish to view on your project costs reports?
- ☐ How could your projects be ordered?
- ☐ What is the magnitude of the projects carried out by your company? Are they long-term?
- ☐ How are your project activities currently coded?
- ☐ Does a link exist between the coding and estimating?
- ☐ Etc.

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ACCOUNTING AND FINANCIAL STATEMENTS

Maestro* is an enterprise resource planning software (ERP) that ensures very precise financial management. Indeed, PAGs are linked to general ledger accounts and allow various levels of drilling. They thus act as matrices and filter the information to be generated. The result is the creation and generation of financial statements that meet the multiple needs of the main stakeholders. Even though financial report templates such as the balance sheet and income statements are predefined and provided from the outset with **maestro***, users have the possibility to customize and configure these reports, as well as create new ones and adapt them to their needs, as particular as they may be.

This document presents some good practices for the development of a chart of accounts for **maestro*** and gives an overview of the software's possibilities for the production of financial statements.

SUMMARY

Maestro*: A Project Management... and Financial Management Software

Maestro* is a project management software that has the advantage of being characterized as an Enterprise Resource Planning (ERP) software, which allows to manage and monitor a company's financial and operational data on a daily basis. Some modules are dedicated to operational data while others allow the management of financial data. Finally, some modules are used to establish a link between both.

The project structure allows to complement and therefore reduce the need to have various general ledger accounts. **Maestro*** uses masks to filter data and, if necessary, display only data specific to a prefix, project, activity, group, department, master project, or category. As all transactions are linked to a project - activity - group, they are therefore linked to a general ledger account. Users authorized to do so will therefore be allowed to generate income statements per project or category, for example. It is therefore not necessary to have a separate account number for materials from two different projects.

Coding Strategy, Groups, and Chart of Accounts

Like in any software that offers accounting management, account numbers are associated to each type of account. A user can take advantage of the standard chart of accounts provided by Maestro, or create their own chart – that can also be imported from an *Excel* file.

Type of Account	Recommended Numbers
Assets	1000...
Liabilities	2000...
Equity	3000...
Income	4000...
Expenses	5000
Internal Accounts	8000... for internal incomes 9000... for internal expenses

In **maestro*** 3.05, account numbers can only be composed of numbers, up to nine consecutive digits. When defining the chart of accounts, it is recommended to provide for the potential creation of additional accounts that may be required later on. The account numbering must therefore make allowances for this situation within the structure. For instance, some users decide to add 00 at the end of the numbers that were originally set, in order to have more flexibility.

The charts of accounts included in **maestro*** are generally less elaborate than those found in other ERP systems. Why? Because using a project structure and having the possibility to filter information by project - activity - group and/or using project groupings per type, category, or department eliminates the need to create an account for each project. For example, salary accounts can be limited to one account for administration salaries and another one for all other employees' salaries. Though simplified, with this type of chart, it will always be possible to limit the display of these accounts values to one or several projects. In short, the chart of accounts of organizations managed with **maestro*** only include two to three pages as it doesn't require duplicating the same account for each project. This makes managing this type of chart easier, thanks to its simplified structure.

The chart of accounts included in this document's appendix can be used as a default chart or as a starting point to build a new one.

Account Groups

To facilitate, and more importantly, to simplify the display of financial statements, **maestro*** suggests creating account groups.[5] These account groups are used to organize accounts and determine which groups appear in the financial statements. Once created, the groups are linked to general ledger accounts.

The most basic use of account groups consists in having a group for each type of account (assets, liabilities, equity, revenue, expenses). However, after creating the chart of accounts, it becomes easier to identify which additional groupings are needed. It is important to keep in mind that they will be used to structure financial statements and therefore, meet the needs of the organization's managers. A security group can also be connected to an account group. A manager could decide to single out an account related to the reimbursement of their business expenses in a group and apply security specific to that group.

The recommended coding for account groups is to use the first letter of the account type and pair it with a number between 00 and 99. An organization's asset accounts could be defined as follows:

Code	Account Groups
A00	Cash
A01	Current Assets
A02	Receivables
A03	Goods
A05	Fixed Assets

[5]Attention, these groups must not be confused with groups explained in the presentation of the project management (PAG) concept; the latter referencing to standard expense types or incomes.

Code	Account Groups
A07	Long-Term Assets
A08	Advances to Shareholders

For more examples, refer to the chart included in the appendix.

Bank Accounts and Currency Management

Of course, each company, each corporation even, must customize its chart of accounts to perfectly match its needs. That is why separate accounts must be created for each bank account. It is also to avoid having to make currency conversions that some, who use multiple currencies, decide to use separate bank accounts. In any case, whether it be to generate financial statements or to perform transactions in the software, **maestro*** renders possible the use of multiple currencies, for which the current rate and/or rate to use must have been specified.

Financial Statements in maestro*

Maestro* makes it possible to elaborate its various financial reports. As previously mentionned, it offers the basic version of a balance sheet and income statement, from which can be created various other versions of these same report types, to meet various needs and customer preferences. It is also possible to create a report from scratch.

Desired lines and columns can be defined for each financial report. It is therefore important to think about the data to be displayed, compared, and... eventually printed (since the number of lines and columns is not limited, it is also important to consider this aspect)! The structure of projects and possible groupings, based on project types, project categories, and project departments, thus impact the possibilities for creating financial statements. It is important to take this into account when configuring projects in **maestro***. How do we want to analyse the company's profitability? Do we wish to view results by project, department, administrative region, division, service, etc.? Do we plan on comparing the current data with last year's figures at this time? Do we wish to display certain ratios and percentages?

The financial structure and configurations are directly linked to the report we wish to generate. And the best time to think about it is beforehand, before starting the implementation!

There are many advantages to using **maestro***'s financial statements instead of simply doing them in an *Excel* file:

- The data used is available in real time;
- Users can generate and work on reports without creating files external to **maestro***;

- Users can generate multiple income statements of different formats to meets various needs (i.e. a very detailed report for internal users vs a more summarized report for the accountant);
- If needed, the currency conversion is performed in the software;
- Income statements can be generated at any time, even if they are not final;
- Users can drill into the data to understand the origin and source of certain amounts;
- Reports can be saved under different formats and/or transferred by email;
- When used in multidimensional mode, **maestro*** allows to generate consolidated financial reports;
- When resources are shared between different offices, companies, or divisions, or when using the **maestro*** multidimensional mode, masks can be used to filter the displayed information;
- Etc.

As the composition and presentation of financial reports are configurable, it is possible to make comparisons between actual values and budget forecasts. Some variables and ratios can also be added and calculated in the financial statements.

Finally, it should be mentionned that **maestro*** allows the configuration of print queues, i.e. combinations of lists and different financial report formats, which a user can print, for example, at the end of each period. All financial reports generated in **maestro*** can be exported in an *Excel* file and/or transferred by email.

The amount of detail and parameters available in **maestro*** ensures the display and drilling of countless data, linked to as many transactions. This is not without affecting the performance of the software, when used excessively. It is therefore important to limit the number of fragmentation levels (for data drilling) and the number of lines and columns to what is really needed, in order to fully benefit from the flexibility and efficiency that **maestro*** offers.

Display and Layout

Various financial statement display details can also be managed in **maestro***. Users can decide:

- the font and font size;
- whether they wish to round out displayed amounts or not;
- whether they wish to display zeros;
- whether they wish to display the account numbers as well as their description;
- the account display order;
- whether they wish to isolate certain accounts in the account group and/or perform account groupings;
- whether or not to display subtotals and/or totals;
- whether or not to display ratios;
- to automatically reverse a debit or credit income or expense to allow them to be added together;
- to mask certain information when printing;

- to add, in the financial statements, the quantities sold in order to also display the average cost per sold unit;
- etc.

Variables

In addition to ratios, variables can also be used in **maestro***'s financial statements. Some basic variables, such as BUDMENSANPREC (for the monthly budget of the previous year) and more than thirty others are already configured for users, but they also have the possibility to create new ones from scratch.

Frequently Asked Questions

Is it possible to generate an income statement combining real incomes to date and projections made for the following month?

This type of functionality does not currently exist in **maestro***. For most construction companies, near 90% of the budget is linked to projects. As data is highly variable and subject to change, obtaining financial statements generated by **maestro*** that combine real and fictitious values could generate misperceptions and/or false indicators to an uninformed user.

Can reports be generated for cash flow management analysis?

Maestro* has a specific option and tools for cash flow analysis. Functionalities and analysis tables are available but managed in options separate from those dedicated to the creation of financial statements.

That said, **maestro*** allows the almost unlimited creation of reports and other financial documents to address specific needs.

When multiple companies or divisions are managed using maestro*, is it possible to generate combined or consolidated financial statements? What is the difference between the two?

Consolidated Financial Statement

Consolidated financial statements are only available in multidimensional mode, meaning when more than one company of a corporation are managed by **maestro***, that ressources are shared between these companies, and that intercompany entries are generated.

Consolidating the financial statements of two or more companies in **maestro***, in multidimensional mode, ensures that the software applies the appropriate financial rules specific to the consolidation. In fact, when generating the consolidated income statement, a confirmation page is printed and displays the balance of intercompany accounts at 0. Internal incomes and expenses are therefore cancelled out. The

data of all the companies in the corporation are compulsorily pooled.

Combined Financial Statement

The production of combined income statement is possible for all companies managing more than one company or division in **maestro***, including those managed using the multidimensional mode. However, the account balances are only added; the intercompany income and expense accounts are not eliminated. The user determines, using the prefixes linked to the companies, which values will be added. They can therefore decide, for example, to combine the revenues and expenses of two out of five companies. If they decide to combine the data of all companies, the latter will add-up, but the internal incomes and expenses will not cancel out, as is the case when generating consolidated financial statements.

Please refer to the document concerning the **maestro*** multidimensional mode for more information on this subject and to decide, with your implementation specialist, on the best strategy for your company.

REMINDER

- **Maestro***'s project structure allows to complement and therefore reduce the need to have various general ledger accounts.
- Using this project structure and the possibility to filter information by project - activity - group and/or use project groupings by type, category, or department eliminates the need to create an equivalent account for each project.
- The projects - activities - groups are linked to general ledger accounts and allow for different drilling levels. They thus act as matrices and filter the information to be generated.
- Each general ledger account created must be assigned a groupe identification code, such as the account type (assets, liabilities, equity, income, or expenses).
- **Maestro*** allows the grouping of general ledger accounts; these account groups are therefore used to determine the groups used for financial statement presentation and to group accounts.
- **Maestro*** offers a basic version of a balance sheet and income statement, from which can be created various other versions of these same report types, to meet a variety of needs.
- With **maestro***, it is possible to customize financial statements:
  - Every line in a financial statement can be configured;
  - It is possible to manage the displayed columns in financial statements, in order to perform calculations between data, use variables, and view ratios.
- The presentation and display of financial reports can also be customized.
- All financial reports generated with **maestro*** can be exported to an *Excel* file and/or shared through email.
- **Maestro*** allows the configuration of print queues, i.e. combinations of lists and different financial report formats, which a user can print, for example, at the end of each period.
- When a balance sheet, income statement, or trial balance are displayed on the screen, it is possible to drill on each of the accounts to view the transactions and find out what generated the account balance.

REMINDER

- During the **maestro*** implementation, it is possible to import the company's chart of accounts using an *Excel* file containing the necessary information.

ACCOUNTING AND FINANCIAL STATEMENTS IN MAESTRO* - FOOD FOR THOUGHT

- ☐ What is the size of your chart of accounts? How many accounts does it hold: 200, 1000, etc.?
- ☐ Do you have equivalent accounts for each project?
- ☐ Which account groupings would you like to make?
- ☐ Do any of these account groupings require special security?
- ☐ Do you use customized financial statements or statements other than the balance sheet and income statement? What is their composition? Do you wish to modify or add to the displayed data?
- ☐ What do you want to compare and evaluate (ratios) on these reports?
- ☐ What is the start date of your fiscal year? When do your periods close?
- ☐ What cheque format(s) do you use?
- ☐ What are the cheque statuses that should be set up in **maestro***?
- ☐ How many bank accounts do you have?
- ☐ Do you need to manage foreign currencies?

Last modification: May 23, 2024

APPENDIX - DEFAULT ACCOUNT LIST SUGGESTED BY MAESTRO

Account	Description	Group	Description
10000	Bank	A00	CASH

Account	Description	Group	Description
10005	Bank Revenue	A00	CASH
10010	Bank Wages	A00	CASH
10020	Bank Direct Payment	A00	CASH
10050	Petty Cash	A00	CASH
11000	Prepaid Expenses	A01	CURRENT
11100	Employee Advances	A01	CURRENT
11200	Supplier Advances	A01	CURRENT
12000	Accounts Receivable	A02	ACCOUNTS RECEIVABLE
12100	Withholding on Sales	A02	ACCOUNTS RECEIVABLE
12800	Allowance for Doubtful Accounts	A02	ACCOUNTS RECEIVABLE
13000	Inventory	A03	INVENTORY
13100	Work in Progress	A03	INVENTORY
15000	Land	A05	FIXED ASSETS
15100	Building	A05	FIXED ASSETS
15150	Cumulative Depreciation Building	A05	FIXED ASSETS
15200	Computer Hardware and Software	A05	FIXED ASSETS
15250	Cumulative Depreciation Hardware and Software	A05	FIXED ASSETS
15300	Office Furniture and Fixtures	A05	FIXED ASSETS
15350	Cumulative Depreciation Office Furniture and Fixtures	A05	FIXED ASSETS
15400	Equipment and Tools	A05	FIXED ASSETS
15450	Cumulative Depreciation Equipment and Tools	A05	FIXED ASSETS
15500	Rolling Stock	A05	FIXED ASSETS
15550	Cumulative Depreciation Rolling Stock	A05	FIXED ASSETS
17000	Instal. Payment Provincial	A07	LONG-TERM ASSETS
17500	Instal. Payment Federal	A07	LONG-TERM ASSETS
18000	Advances to Shareholders	A08	ADVANCES TO SHAREHOLDERS
20000	Bank Overdraft	P00	CURRENT LIABILITIES
20100	Line of Credit	P00	CURRENT LIABILITIES
21000	Accounts Payable	P01	ACCOUNTS PAYABLE

Account	Description	Group	Description
21100	Withholding on Purchase	P01	ACCOUNTS PAYABLE
21200	Customer Advances	P01	ACCOUNTS PAYABLE
22000	Salaries Payable	P02	SALARIES
22100	Accrued Salaries	P02	SALARIES
22101	Accrued Fringe Benefits	P02	SALARIES
22102	Accrued Expenses	P02	SALARIES
22150	Vacation Payable	P02	SALARIES
22200	CCQ Payable	P02	SALARIES
22210	QRBHCA Payable	P02	SALARIES
22300	Payroll Deductions Federal	P02	SALARIES
22350	Payroll Deductions Provincial	P02	SALARIES
22360	Alimony Garnishing Payable	P02	SALARIES
22370	Pension Fund Payable	P02	SALARIES
22380	CNESST Payable	P02	SALARIES
22390		P02	SALARIES
22395	Group Insurance	P02	SALARIES
22400	Union Payable	P02	SALARIES
23000	Accrued Liabilities	P03	PAYABLES
23005	Accrued Liabilities Subcontractors	P03	PAYABLES
25000	GST Payable	P05	TAXES
25100	QST Payable	P05	TAXES
25200	GST and QST on Purchase	P05	TAXES
25300	GST Receivable	P05	TAXES
25400	QST Receivable	P05	TAXES
25500	GST and QST on Receivable	P05	TAXES
26000	Income Tax Payable Federal	P05	TAXES
26100	Income Tax Payable Provincial	P05	TAXES
27000	Long-term Loans	P07	LONG-TERM LIABILITIES
28000	Shareholders Advances	P08	SHAREHOLDER LIABILITIES
28100	Dividends Payable	P08	SHAREHOLDER LIABILITIES
29999	Machinery Accrued	P99	INTERCEPTION GROUP

Account	Description	Group	Description
30000	Share Capital	C01	EQUITY
32000	Dividends	C01	EQUITY
35000	Retained Earnings	C01	EQUITY
40000	Revenues	R00	REVENUES
41000	Sales Discounts	R00	REVENUES
45000	Revenues Interests	R05	INVESTMENT INCOME
49999	Revenues Internal	R00	REVENUES
50000	Cost of Goods Sold	D00	COGS
51000	Purchases	D01	MATERIALPURCHASES
51150	Purchase Discounts	D01	MATERIALPURCHASES
52000	Salaries Work Site	D02	DIRECT LABOR
52500	Social Benefits	D02	DIRECT LABOR
53000	Equipment	D03	EQUIPMENT
54000	Subcontractors	D04	SUBCONTRACTORS
55000	Other Costs	D05	OVERHEAD COSTS
57000	Motor Vehicle Costs	D05	OVERHEAD COSTS
58000	Depreciation	D05	OVERHEAD COSTS
59999	Expenses Internal	D05	OVERHEAD COSTS
60000	Sales Costs	D06	SALES COSTS
70000	Salaries Administration	D07	ADMINISTRATIVE COSTS
70100	Administration Social Benefits	D07	ADMINISTRATIVE COSTS
71000	Rent	D07	ADMINISTRATIVE COSTS
71100	Electricity	D07	ADMINISTRATIVE COSTS
71200	Heating	D07	ADMINISTRATIVE COSTS
71300	Maintenance	D07	ADMINISTRATIVE COSTS
72000	Office Costs	D07	ADMINISTRATIVE COSTS
72100	Computer Supplies	D07	ADMINISTRATIVE COSTS
72200	Hospitality Costs	D07	ADMINISTRATIVE COSTS

Account	Description	Group	Description
72300	Phone	D07	ADMINISTRATIVE COSTS
72400	Internet	D07	ADMINISTRATIVE COSTS
73000	Taxes, Licences and Permits	D07	ADMINISTRATIVE COSTS
75000	Depreciation	D07	ADMINISTRATIVE COSTS
80000	Interest and Bank Costs	D08	FINANCIAL COSTS
90000	Income Tax	D09	INCOME TAXES
91000	Deferred Income Tax	D09	INCOME TAXES
99999	Interception Account	P99	INTERCEPTION GROUP

THE PURCHASING AND PROCUREMENT CYCLE

To meet the needs of its many customers, **maestro*** has a procurement cycle which offers various avenues and features. Each of its components works in harmony with the others to create an efficient transaction flow that benefits all of the process' stakeholders. At the heart of this process are the orders, around which estimations and quotations converge, the resources and requisitions, from which releases and receipts of goods are derived, implicitely or not, invoicing, and payment receipts.

Although many of the steps forming this cycle are optional in **maestro***, when combined, they can speed up the information processing time and reduce the risk of errors. What's more, many of these can be performed directly from the construction site, using the **maestro*MOBILE** application. In short, **maestro***'s purchasing and procurement cycle is highly flexible, efficient, and adapts to the realities and needs of the different verticals in the construction industry.

SUMMARY

ORDERS, A BASIC CONCEPT

As previously mentionned, **maestro***'s purchasing and procurement cycle is built around the orders. Indeed, whether or not an inventory is kept, placing orders in **maestro*** is a must for any company that wants to keep track of budgets and incur project costs. While order entry in **maestro*** can have an operational impact, there are many benefits, both from a financial and time-saving perspective. Furthermore, the time spent on order entry is recovered during the billing process.

Orders in **maestro*** offer many advantages and features, such as:

- Costs are incurred at the project level, giving better visibility on cost projections;
- Orders can be placed with or without an item catalogue in **maestro***, whether an inventory is kept or not;
- The invoice approval process is simplified;
- Prices are validated and it is possible to display the latest supplier prices associated with an ordered item;
- Follow ups can be done on outstanding items;
- Orders can be linked, or not, to a requisition, a service call, or a work order;
- Receipts of goods can be performed, which has the effect of enabling the management of accrued costs;
- Returns of goods can also be made;
- It is possible to take into account certain costs (customs, transport, etc.) which will be charged separately but which should be included in the average stock costs or in the costs allocated to projects;
- Etc.

To address the different needs, several types of orders are possible in **maestro***:

- **Basic Orders**, a basic functionality
- **Catalogue Orders**[6], the majority of orders placed in **maestro***

  Items ordered from the catalogue are necessarily associated to a project or inventory. To be linked to the inventory, the **maestro*** catalogue option[7] must be used.

- **Project Orders**, also called internal orders

  A project order allows to place an order on material already associated with a project, which may or may not have been manufactured in-house. It is usually a feature of profit centres[8]; it is a kind of internal procurement. For example, an order for panels for a project might be placed with another division of the company that manufactures panels itself. Costs will necessarily be incurred to the project.

  Project orders facilitate the transfer of costs from a source project to a destination project by providing the customer with a structured framework to do so.

- **Subcontracts**

[6]Despite their name, the use of the **maestro*** catalogue is not required.
[7]Refer to the ***The maestro* Catalogue*** document if needed.
[8]Refer to the ***Cost Centre VS Profit Centre Notions*** document if needed.

A subcontract is a sort of order placed with a subcontractor. This type of order has the advantage of being able to add change orders and use separate forms from the original order for these change orders. Several versions of the order can therefore be printed and the user has the order's change history.

Note that through an option called **Subcontractor Work Progress**, it is now possible, in **maestro***, to approve construction work and thus generate accrued costs that will be reversed once the invoice is entered, as is the case for receipts of goods from catalogue orders.

MATERIALS, RESSOURCES, AND REQUISITIONS

For most companies whose main activity is the management of construction projects, the purchasing and procurement cycle starts with the estimation of the needed materials and items, as well as the estimation of the required quantities. Different estimation methods can be used; some customers merely use an Excel file devoted to this purpose while others will focus on automating the process using **maestro***'s features, such as quotations and estimations.

Afterwards, the project resources must be created and identified. Let's recall that a resource is a list of materials required to complete a project or part of a project. It's sort of like a project's catalogue. A project can be made up of one or more resources; some prefer to create a resource by stasge or sector, for example. Establishing the resources needed for a project also speeds up the completion of requisitions and orders, and avoids errors. Furthermore, the addition of items to the list of resources initially ordered can identify errors in the initial estimate and/or highlight change orders.

Finally, material requisitions can be created from resources. It is possible, from only one resource, to create one or more requisitions to, for example, space them out over time if needed. The user can also, at any moment, add items that are not part of the orignal resource list. Requisitions also go hand in hand with the presence, within the organisation, of one or more buyers dedicated to handling them.

It goes without saying that having an established process and completing the quotation - resource - requisition and ordering steps in **maestro*** reduces processing time and the risk of errors. The user avoids entering the same item codes repeatedly and as all information is automatically copied from one step and option to another, manual input errors are avoided. When producing a requiisition, the workers on site only have to select the resource items and are assured of requesting the adequate items. Thus, if there are, for example, ten different types of wires available, the one to be used will be specified in the estimate. Unless there is a mistake on the

estimate, everything that needs to be requisitioned, ordered, and used should already be listed and not require any research on the part of the worker.

Of course, all of these steps can be integrated to the **maestro*** catalogue, which can or not be used complementarily.

RECEIPT OF GOODS

In maestro*, receipts of goods can be performed before invoicing or implicitly when the invoice is entered. The use of **maestro***'s **Receipt of Goods** option, as opposed to automatic receipts, has the advantage of allowing, if desired, the entry of received quantities linkes to an order and unit conversion if applicable. What's more, the inventory is updated upon the transfer of this transaction and the accrued costs accounts can be charged.

If the Receipt of Goods option is used in **maestro***, the invoice breakdown grid is automatically completed. Otherwise, the entry of received quantities must be done manually. Receipts of goods can also be used by companies that do not manage an inventory and be put in place as a management and/or control procedure. In any case, they make it a lot easier to enter invoices in **maestro***.

When receipts of goods with accrued costs make up a step of the procurement cycle, companies who use work order and cost plus inovicing appreciate being able to quickly charge customers. Furthermore, receipts of goods can be performed directly in the **maestro*MOBILE** app. The photo of the delivery slip can be added to the daily entry. Let's also mention tht receipts of goods maje it possible to trace items and materials. That way, serial numbers or steel casting identification numbers (MILs) can be recorded so you know specifically which items/materials have been sent to a site or project. The billing step then confirms the receipt of an invoice linked to an order entered in **maestro*** and the supplier's account payable is charged. The incurred costs are reversed and, if applicable, the accrued costs entry, previously transferred during the receipt of goods, is cancelled and replaced by the real accounting entry. The payment of said invoices closes the purchase cycle.

Request for Delivery

An option called **Request for Delivery** allows to ask a supplier to perform multiple deliveries for a same order. This feature is particularly useful when quantities to be delivered are great and storage space is limited. Multiple invoices are therefore linked to the same order.

Maestro* allows multiple deliveries to be linked to one invoice or multiple invoices to be linked to one order. However, the software does not allow to link multiple orders to a single invoice.

Accrued Costs Management

Maestro* allows to manage receipts of goods with or without accrued costs and adapts to the company's needs.

REMINDER: The term "accrued" refers to a product or service received, but for which the supplier's invoice has not yet been received nor charged to the books. The cost of the products or services has, on the other hand, been applied to the project or inventory, hence the creation of the accrual. Accrued costs are costs incurred with suppliers. For example, an air conditioner that has been delivered, installed, and paid for by a customer but for which the invoice has not yet been entered into **maestro*** or received from the supplier.

With Accrued Costs

A receipt of goods with accrued costs means that these are accounted for. Accrued costs are reversed upon saving the supplier's invoice. The accounting of accruals is necessary to the efficient management of an inventory. Each invoice needs to be linked to a receipt of goods. Obviously, having a warehouse and a preexisting receipt of goods process are encouraged for companies that manage an inventory in order to properly control the ins and outs of merchandise.

The receipt of goods with accrued costs methodh as the advantage of keeping average costs more stable. A catalogue adjusting method should be put in place for invoicing to ensure the accuracy of inventory costs. On the other hand, this method forces buyers to be as precise as possible about the value of their purchases and requires that a tight management process be put in place for inventory entries and removals. Without a rigorous management of costs linked to purchases, discrepancies between the amounts invoiced to customers and charged to accruals and those invoiced after the fact by the supplier could arise (where cost plus invoicing[9] is used).

[9]Refer to the ***The Different Invoicing methods in maestro**** document if needed.

Without Accrued Costs

A receipt of goods without accrued costs does not result in any charges being made to projects and accounting entries in the books. Charges are made once the supplier invoice has been saved. Several receipts of goods can therefore be performed for a single invoice. Note, however, that if invoices are late in coming in, the profitability of the project seem skewed at first sight.

The Location and Localization Concepts

Companies are generally made up of various locations, for example: warehouses, garages, trucks, etc. **Maestro*** takes into account these locations. Indeed, it is possible to define le location and localization of items and, by doing so, track inventory movements from one location to another without having to place an order. Multiple locations can be assigned to a single item; this is known as multi-location, one of them designated as the primary location. Multi-location is therefore synonymous to multiple physical locations where items can be stored. These locations can be permanent or moveable. As such, a warehouse or garage is considered a location in the same way as a ventilation technician's truck or a container. In addition to locations, **maestro*** also provides localization, which refers to the shelves or rows where an item is stored at a location.

Companies who use the maestro* multidimensional mode also benefit from the multi-location inventory management system. Inventory can be managed using prefixes and items can easily be transferred from one company to another; the software generates the intercompany entries. Other companies instead decide to centralize their inventory in a "master" company; the latter performs all material purchases and supplies the other companies to meet their needs. Intercompany entries are also generated in this case. For more information, read **Maestro*'s Multidimensional Mode** **maestro*WAY** concept. .

MAESTRO*: EQUIPPED TO MANAGE PLANNING

Companies with a well-functioning and controlled supply system will certainly want to take advantage of "just-in-time" inventory and order management. **Maestro*** has an MRP (*Materials Resources Planning*) tool to do just that. This planning and decision help tool performs a number of calculations, fed by **maestro***'s database and information entered by the user. More precisely, it helps companies to better calculate which items and materials they need, when and in what quantities. The Production Resource Planning tool is an option that:

- facilitates and automates material orders by consolidating all requisitions;
- feeds inventories, taking into account the minimum and maximum quantities to be kept in stock;
- allows stocks to be grouped together and quantities to be validated;

- takes into account the supplier delivery times and applies the principles of Just-in-Time (JIT) management;
- Etc.

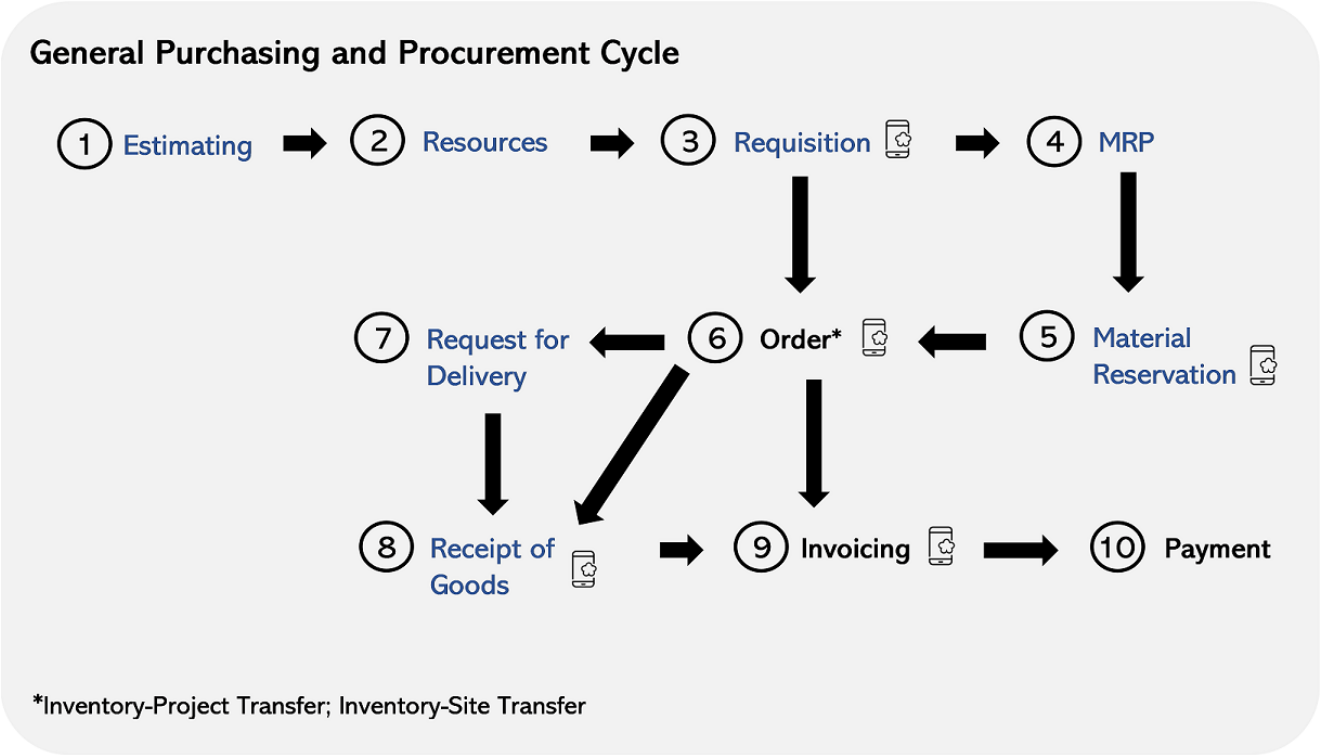
Whether **maestro***'s MRP is used to its full potential or not (for example, its use can be focused on the calculation of minimum and maximum quantities), this tool is worth considering for anyone concerned with good inventory management and planning.

A functionality dedicated to the reservation of materials, both on the project and service call levels, is also offered to companies that tightly manage their inventory and resources. It is therefore possible to have better visibility of stocks and to distinguish the quantity of items held by the company from the quantity of items actually available for projects.

TRANSACTION WORKFLOWS

With the exception of orders, invoices and payments, which are common to all companies, it goes without saying that the procurement cycle scenarios in **maestro*** are as many and as varied as the needs and processes can be.

The following diagram illustrates all the possible transactions in a standard purchasing and procurement cycle. The steps shown in black are essential to the execution of a purchase cycle in **maestro*** while those in blue are optional; some companies choose to run them in parallel, without **maestro***, or not to use them at all. Finally, the mobile phone pictogram means that the step, whether mandatory or not in **maestro***, can also be performed in the **maestro*MOBILE** application.



APPROVAL PROCESSES AND PAYMENT AUTHORISATIONS

A functionality named **Workflow Management** has been developed to allow various mechanisms to be put in place to obtain approval and alert certain key players when a transaction meets certain conditions. Therefore, when the conditions are met, a process is triggered and the responsible person must give their approval for the transaction to proceed. In addition, a process may have more than one approval step, involve several actors and different types of variables (equal, not equal, contains, does not contain, is between). **Maestro*** can be set up to send an email or text message to one or more specific recipients about a specific transaction, such as a receipt of goods worth more than $50,000. Many different scenarios can be set up to suit the needs of all companies. The following transaction types may currently be associated to an approval or alert process, or are in the process of being so:

- Project purchase;
- Orders;
- Disbursements;
- Receipts of goods;
- Transactions generated from subcontracts;
- Inventory-project or Inventory-site transfers;
- Sales;
- Etc.

Payment authorization workflows can also be set up in **maestro***. These differ somewhat from the processes presented above in that the objective is not to enable the transfer of a transaction, but to make the payment of an invoice possible by changing the payment authorization code.

When **maestro***'s multidimensional mode is used, workflows can easily by copied from one company to another. View the maestro*WAY concept **Maestro*'s Multidimensional Mode** for more information.

REMINDER

- **Maestro***'s procurement cycle offers various avenues to serve the needs of customers in different sectors. Orders are at the heart of the process and placing them using **maestro*** has many advantages.
- Depending on a company's complexity, optional features are available. Furthermore, many are compatible with the use of **maestro*MOBILE**.
- **Maestro*** has an MRP option that helps companies calculate exactly which items and materials they need, when and in what quantities.
- The software allows you to define the location and localization of items and, thus, track inventory movements from one place to another without having to place an order. Multi-location is when several possible locations are associated to the same item.

REMINDER

- In **maestro***, receipts of goods can be implicit or not. The **Request for Delivery** option also allows to partially receive an order, i.e. as the products are to be used. Receipts of goods can be performed with or without accrued costs.
- A feature called **Workflow Management** allows various mechanisms to be put in place to obtain approval and alert certain key players when a transaction meets certain conditions. Payment authorization workflows can also be set up in **maestro***.

FOOD FOR THOUGHTS - THE PURCHASING AND PROCUREMENT CYCLE

- ☐ How is the inventory decrease performed/accounted for, if applicable?
- ☐ Do you record accrued costs?
- ☐ Does your organization have estimators, buyers, storekeepers?
- ☐ Is there close management of the inventory, if any?
- ☐ How, and by whom, is the list of items needed for a project established?
- ☐ How are these needs communicated between the different stakeholders?
- ☐ Are items stored in a single place?
- ☐ Is there an approval and/or verification process for orders / receipts of goods / payments?
- ☐ Can there be multiple receipts of goods for a same order?
- ☐ Do you, or will you, use **maestro*MOBILE**?

Last modification: February 27, 2024

THE MAESTRO* CATALOGUE

SUMMARY

What is the maestro* Catalogue?

The **maestro*** catalogue can be compared to an encyclopedia, in which are listed all elements that may be sold, purchased, or held in inventory. These are called catalogue items.

Much more than a list, the catalogue allows users to benefit from tons of information concerning each item; information about previous purchases, product history, in-stock quantity if these items are part of an inventory, and discounts given by suppliers. Furthermore, it can contain:

- rental tools, asset inventory items
- information about the last supplier(s) where the product was purchased, with the date and price
- supplier and manufacturer product code, and universal product code (UPC)
- replacements and substitutes
- conversion factors
- minimum and maximum stock to be held
- the product's location and localization, if applicable
- warranty information, if applicable
- default values to speed up the process
- etc.

The **maestro*** catalogue must also be dissociated from a catalogue exclusively for inventory item follow-ups or material pieces. Some items can be created for the rental of expertise hourly labour, or to facilitate the billing of various trades (a concrete former, a carpenter, a labourer, a fore(wo)man, etc.).

Work Order T&M Invoicing requires for all billable elements to be configured. The use of this invoice type suggests the use and the creation of catalogue items such as subcontract services, salaries, tools and equipment expenses, etc.

In sum, a catalogue can sometimes contain more than 50,000 items. That is why it is so important to establish an efficient coding system, to facilitate research. Furthermore, many modules and options refer or are linked to the catalogue, facilitating and speeding up the process of various transactions.

Why Use It?

There are multiple reasons to use the **maestro*** catalogue, such as the following benefits:

- **Have access to supplier and customer prices**

  The establishment and/or recording of prices for different suppliers and clients allows to:

  - speed up the invoicing process
  - apply discounts by product family and/or type

- **Have access to individual item descriptions**

  Once the item is saved in the **maestro*** catalogue, only the item code selection becomes necessary when the latter must be used for whatever reason. Its name is therefore always the same.

- **Profit from purchase and sales statistics**

  The use of indexed item in the **maestro*** catalogue ensures that a wealth of information is available to the user, who can then generate various reports.

- **Assign codes to sold or used products**

  Inventory management ensures, in part, that codes be assigned to items generated by the shopper.

Obviously, there are many other functions to the catalogue, such as unit conversion, which facilitates item management. Indeed, **maestro*** can systematically convert measure and quantity units to make sure they correspond to the ones the user wants, even if they are different than the supplier's. Furthermore, using products listed and coded in a catalogue allows users to know which products are being used for every project.

Finally, let's mention that catalogue items are available through **maestro*MOBILE** to, in part, generate service quotations, make material reservations or requisitions, perform inventory-project or inventory-site transfers, and place orders; another reason to use it!

The Classification and Coding of Items

The catalogue is a central database for various modules. It can be used for procurement, sales, material and tools inventories, in work orders, customer orders, quarry and concrete tickets, service calls, etc. This database is in some way **maestro***'s important central hub, hence the importance to thoroughly elaborate it. Indeed, given the number of items likely to appear in the catalogue, it is important to structure the latter in order to easily find the desired items.

Item Types, Categories, and Classification

Item classification must be done based on a well-considered logic. To do so, **maestro*** allows the creation of item types, categories, and classes to build a structured hierarchy and facilitate search.

Category definition constitutes the first available item classification level in **maestro***. In second part, types not only enable the regrouping of items with common characteristics or variables, they can also be used in different **maestro*** options, such as in **Define Customer Pricing** and **Define Supplier Pricing**, to identify to which items a discount will be applied for different customers.

It is then possible to assign a category to these items. These can be broken down into three levels.

Finally, categories can be combined, or not, with classes, allowing a tree-like structure as big as 10 levels. Let's also mention that a category's items can appear in more than one item class.

In short, item classification in **maestro*** can be compared to one we could find in a renovation centre or its website, for example. To find a product, we first select a department (seasonal, paint, plumbing, flooring, etc.), then a product type (slatted floor, tile, carpet, application and finition accessories, etc.). Then comes the selection of a specific category (subfloor membranes, application accessories, etc.).

Item	Level Classification and Hierarchy Examples
	- Hardware - Plumbing - Electricity - Paint - ... + Lumberyard — Level 1 - Shingle - Aggregate - Exterior Siding - ... + Wood — Level 2 - Spruce - Cedar - ... + Treated Timber — Level 3 - 2 x 16 - 2 x 12 - 2 x 10 — Level 4

Item	Level Classification and Hierarchy Examples
	- 2 x 8 - 2 x 6 + 2 x 4 - Length 8ft - Length 10ft - Length 12ft - Length 16ft Level 5
	• Level 1 : Hardware • Level 2 : Bolt • Level 3 : Galvanized Steel • Level 4 : Hexagonal Head • Level 5 : Length 2 in. • Level 6 : Diameter 1/4 in. • Level 7 : Thread 1/4-20
	• Level 1 : Tools • Level 2 : Radial Arm Saw • Level 3 : 10 in. Diameter Blade • Level 4 : Carbide Teeth

Item	Level Classification and Hierarchy Examples
	• Level 1 : Hardware • Level 2 : Screw • Level 3 : Steel • Level 4 : Wood screw • Level 5 : Contersunk Head • Level 6 : Length 1 in. 1/4 • Level 7 : Size: n° 8

Coding and Coding Strategies

Various codes can lead back to items in order to reference to and identify them:

- the product's universal code
- the manufacturer's code (a unique code)
- the supplier's product code - different for every supplier[10]
- the **maestro*** code

When the time comes to determine the **maestro*** codification system, it is important to consult the company's key actors and make sure the system answers the needs of every department. It is better if the buyers, project managers, estimators, etc. agree from the start on which method to use. The best codification system will therefore be the one which answers to the needs of most in the company. Furthermore, many companies have already established a codification system based on the methods used for estimation.

Here are the most used codification system of Maestro customers, each having its advantages and disadvantages:

- **Maestro*** Code = the most frequently used supplier code
- **Maestro*** Code = the *Allpriser* or *Trade Service Group* product code
- **Maestro*** Code = a code established based on the item's classification in the catalogue or logic, such as TUYPVC20-34

Users have always become familiar with the catalogue at a quicker pace when product codes are short. However, the various search tools available in the **maestro*** catalogue compensate for the difficulties that could be caused by the use of more elaborate codes.

Though it is obviously better to correctly code items in **maestro*** from the start, one of the software's functionnalities allows the mass modification of the latter, by merging inventory codes when the

[10] **Maestro*** allows up to four supplier product codes to be assigned to a single item.

codification is found to be non-optimal. However, the quantity of transactions related to these merging items has an incidence on the time needed to process the data; this operation can take quite a while.

Furthermore, **maestro*** allows the joining of items to create what we call an assembly, in the **Define Bill of Materials** option. Created assemblies are assigned a code containing various other codes, since they are made up of various pieces. It is then possible to use these assemblies in different **maestro*** options linked to the product catalogue, such as stock orders from catalogue, requisitions, work orders, manufacturing, procurement management, quotations, etc. If an assembly is defined for an item, it is the content of that assembly that will appear in the description upon transaction entry.

Editing the Catalogue

Once both the classification and codification defined, it is possible to create the catalogue in **maestro***. Although it is possible to manually add and configure items one by one, most users choose to use an *Excel* file import. This file can regroup preexisting lists or catalogue information, though many take advantage of the software change to revisit and rethink their data organization.

Catalogue Item Characteristics

Other than the various codes, types, categories, and classes, the **maestro*** catalogue ensures the recording of much information for each item.

Status

As previously mentionned, the **maestro*** catalogue is used for various reasons, hence the reason why it is so important to assign a status to each item to restrain their use to their specific application. Assigning a status to items allows to:

- limit their use to sales or purchases;
- make them available for sale AND purchase - making sure an average cost is calculated based on the history;
- directly account for their price in expense accounts;

- identify them as non-defined or general[11] items, and/or whether their sale price can be modified, and/or whether no average cost is calculated.
- identify whether they are composed of other catalogue products;
- identify if they are a "kit" that cannot be bought or kept in stock, but that is made up of catalogue products, therefore making the item only useful for sales[12];
- determine if the quantities in stock are monitored and whether it is possible to generate statistics;
- etc.

Cost and Price Management

Other than the information concerning the cost of items for a maximum of four suppliers, when applicable, users also have fields enabling them to identify:

- The cost price (average item cost), or a fixed amount, which can be used as the unit price for inventory transactions and requisitions, if needed;
- The estimate price (default estimate price), which can be used for a selling price calculation using the discount table;
- The selling price (default selling price). A coding allows to indicate how this selling price must be calculated and which parameters, sources, and price increase percentages (including administration fees and profit, for example) are used;
- The list price (default list price).

Unit and Conversion

It goes without saying that a high proportion of items are managed by unit in the **maestro*** catalogue. However, the format, quantity, or volume of the various materials used and sold do not always correspond to the format, quantity, or volume of material bought. That is the case, for example, of filters, which are bought in boxes but used individually, freon bottles, which we only use in specific portions, rolls of fabric, for which the length used depends on the area that needs to be covered, etc. In sum, **maestro*** allows batch conversion of units, and vice-versa, as well as the modification of measurement units based on the different needs.

Maestro* also allows the identification of the number of item units included in one package for each supplier, when the item is managed by unit. However, it is impossible perform different valued conversions for a same product code; that is, selling an item, bought in a box of twelve, individually or in

[11] Assigning a general status to an item has an impact on other **maestro*** functions. Indeed, it is impossible to hold inventory for general items since there are no average costs, nor any specific data associated to them. This status should therefore be used in a context that justifies its use. For example, that is the case for door and window stain-glass, for which shapes and sizes are countless. It could also be the case for a service company's engines, when these are too numerous and varied.
[12] Let it be mentionned that it is possible to view and modify the "kit"'s components (or other catalogue products).

boxes of two, four, or six. To do so, separate product codes must be created for each value. The conversion unit must be constant and unique.

Location and Localization

It is possible to define an item's location and localization in **maestro***. Furthermore, various locations can be assigned to a same item; that is what we call a multilocation (one location is assigned as the main location). Multilocation is therefore synonimous of multiple physical locations where an item may be stored. These locations can be regular or mobile. Thus, a warehouse or a garage can be considered a location just the same as a technician's truck, or a container. By localization, we make reference to the shelf or aisle where the item is stored inside a location.

Barcodes

In addition to enabling the creation of labels, **maestro***'s barcode functionality added to a barcode reader can facilitate receipts of goods, inventory-project transfers, internal sales, and tool rental returns. Barcodes can also be used in the **maestro*MOBILE** interfaces that require the selection or identification of item codes: **Projects**, **Service**, **Field Work Orders**, **Receipt of Goods**, **Inventory-Project Transfer**, and **Inventory-Site Transfer**. The font type that must be used is 39 and it is recomended to use a laser printer with a resolution of at least 300 dpi.

Although it is inviting for all those managing an inventory to use barcodes, it is mandatory to have a well-established inventory management system; the use of barcodes and a scanner speeds up information entry but still requires that means and ressources be implemented to ensure the accuracy of the data.

The **maestro*MOBILE** app is currently able to read barcodes of the following types: 39, 128, and 93.

Searching in the Catalogue

There are various ways to search for items in the **maestro*** catalogue. It is important to ponder on the preferred catalogue structure in order to optimize item search for the user. Breaking down the catalogue into categories and classes can, if applicable, speed up the search for specific items when comes the time to create a requisition or a stock order from catalogue.

The search modes available in the **maestro*** catalogue are the following:

- Using basic **maestro*** filters (to search in the whole catalogue);
- By category (limited, three-level search);

- By class (research mode allowing up to ten levels, but mandating the creation of a predefined hierarchical structure);
- Using SQL search, which allows the use of filters in different and predefined columns.

The SQL search method must not be confused with the **maestro*** platforme or MSSQL version. The SQL search mode is more efficient than the standard search mode, and can be used with **maestro***'s Pervasive version. It makes reference to the SQL logic, which wants for special characters to be used as search conditions in a database (for example, ≠, =, >, ≥, etc.).

Using the **Estimating** module mandates the definition of classes, and therefore categories, to structure the catalogue's hierarchy; the latter results from the association between categories.

REMINDER

- The **maestro*** catalogue can be compared to an encyclopedia, in which are listed every item that can be sold, purchased, or held in inventory.
- Catalogue items are a very important **maestro*** component, since they are used in a wide range of options.
- Out of all the different advantages of using the **maestro*** catalogue, let's mention the possibility to have access to supplier and customer prices, individual item descriptions, purchase and sale statistics, and being able to assign codes to products that have been used and/or sold.
- Catalogue items can consist of possessions, but can also be subcontract services, salaries, equipment expenses, etc.
- **Maestro*** allows the creation of types that can afterwards be linked to items.
- The creation and use of classes and categories facilitates item search in the **maestro*** catalogue.
- In fact, there are many available search methods in **maestro***: using filters, by category, by classification, and using SQL search.
- It is mandatory to assign a **maestro*** code to catalogue items; different strategies are made available to users.
- **Maestro*** allows for different status' to be assigned to catalogue items to facilitate their management.
- Various information can be entered and configured for each item, such as unit conversion, different prices, product location, etc.
- It is possible to create labels with **maestro*** and facilitate the execution of certain operations by using barcodes and a barcode scanner.

· FOOD FOR THOUGHT - USING THE MAESTRO* CATALOGUE

- ☐ Does your company hold inventory?
- ☐ Are these items "consumable" (meaning, are they used and charged to a project) and/or tools used by employees?
- ☐ If they are tools, can they be billed and rented to a third party?
- ☐ Do you buy and perform the maintenance of equipment and capital assets?
- ☐ Do you bill the use of equipment in your projects?
- ☐ Does your company store supplier items?
- ☐ How is your catalogue structured (hierarchy)?
- ☐ How is item codification done?
- ☐ Are your inventory items already grouped by class and/or category?
- ☐ Do you review your inventory before treating a requisition?
- ☐ Are all purchases transferred to the inventory?
- ☐ Does a warehouseman perform your company's inventory reception?
- ☐ How are prices of purchased material determined?
- ☐ Do you use assembly or material invoices for purchased or manufactured items? Please describe the hierarchy.

Last modification: May 09, 2024

THE DIFFERENT INVOICING METHODS IN MAESTRO*

Maestro* supports the use of many invoicing methods commonly used in the construction industry. This document outlines the various options to help you determine which methods are most suitable to your business.

SUMMARY

ENTER A SALE (T&M) INVOICING

This invoicing method is also known as *Manual T&M Billing*. It is often used by trade contractors and subcontractors for small-scale work and may be linked to the use of work orders[13]. Furthermore, this invoice type is particularly useful for contractors that do not use contractual billing. It allows a user to directly enter the different elements that must be billed, such as material used (three wires and a strap), travel time, hours worked, etc. In effect, this is a kind of free-form invoicing, by which the user can produce an invoice showing whatever content they like.

Besides the many concrete and quarry companies who use it, this method meets a variety of needs and the majority of **maestro*** users will use it for one purpose or another at some point. This type can be used to produce a contractor's invoice, for example, who decides to sell a piece of equipment, such as a shovel, to buy a newer one, or to bill any kind of one-off service. Enter a Sale invoicing can also be used to back charge a subcontractor.

- The Enter a Sale invoicing method is quick and easy to use and can be used for many purposes.
- With this method, the invoice is created from start to finish within the single option.
- The billing of items does not require them to be a part of the **maestro*** catalogue.

- Since this invoice mode is independent and not linked to any other option in the software, it is easy to forget to bill items.
- A new **maestro*** user could be tempted to produce a project's invoices from this option instead of from the **Prepare Progress Billing** option, which should be the preferred method for true progress billing.

WORK ORDER (T&M) INVOICING

Work Order Billing allows the automatic rebilling of a given project's incurred costs. These costs can be selected and grouped together on a work order. They can be charged at cost plus (marked-up) or at fix prices, based on the previously defined parameters. An invoicing contract must have been created in **maestro*** beforehand to establish the billing rules for each contract.

Work order billing is also used when some type of work or internal company task is given to a subcontractor or outsourcing company – as is common for industrial construction. As previously mentioned, the use of work orders often leads to the use of work order billing.

[13] Do not confuse the use of work orders with using the **Enter Work Orders** option.

Examples

- A company could decide to entrust their electrical or mechanical maintenance work to a third party, sparing them the need to engage with various unions.
- Outsourced employees can work full-time in the company's offices, factory, or given region. They are managed by the company that called for a subcontractor and not their employer.

> In Quebec, the term "régie contrôlée" is used in French for this particular invoice type and has no real equal in English. In **maestro***, the latter has been translated to **Work Order Billing**. It allows for the invoicing of work orders.

Work Order Billing is distinct from service invoicing. In **maestro***, a work order is created to indentify the customer number, the work requisition, and other general parameters. The said work order will then be used to accumulate materials used, labour hours worked and equipment usage. This process happens on a day to day bases as work proceeds. Work Order Billing also offers tremendous flexibility in invoice presentation and allows various levels of detail presentation and grouping together of multiple work orders on a single invoice. Individual items can also be flagged as non billable or postponed to a future invoice. Work Order Billing is linked to the **maestro*** catalogue; it demands that selling items be entered in the latter.

There are also many possibilities offered in terms of work approval during the pre-billing cycle. It is possible to generate approval reports before billing and to attach these approved documents to the invoice, as a PDF file.

- All costs incurred on a project will flow through to billing so that nothing can be forgotten.
- Work Order Billing offers great invoicing flexibility for a whole variety of invoicing scenarios.

Special Pricing

The **Customer Discounts Table** option in **maestro*** can apply to every invoice type. It allows the automatic management, at the time of billing, of discounts or special prices attributed to one or more customer(s) for a product, a product type, for a client type, a work order, or a specific project. It is also possible to specify dates for which these discounts/prices will be applied.

CONTRACTUAL BILLING

This invoice type requires the establishment of a set contract price before the start of construction work. Depending on the duration and/or scope, this could be a fixed price to bill upon the completion of work or could be progress billed multiple times until the full contract value is reached.

All contractual invoices must be linked to a previously created contract as well as to a project.

Lump Sum

Lump sum invoicing consists of a total fixed price set at the start of the project. The replacement of a residential home's windows is a good example of work that would be billed by lump sum.

- This invoice type is often used when few details need to be recorded in the project and when the customer does not need to see the details of every item billed.
- It allows the invoicing of change orders on top of the original contract value.

Progress Billing

This is probably the method that **maestro*** construction client use the most. The customer is billed based on the monthly progress or work, and a payment request may precede the invoice, so that modifications can be made if need be prior to sending out the final invoice. If some phases are defined in the progress bill, they can correspond, or not, to the project's phases.

Monthly progress can be recorded based on the progress of work to date in the current period or on cumulative work to date. It can be based on:

- Percentage complete by items
- Quantity complete by item (with a unit cost)

In the case of an invoice by percentage progress (or by unit), the contract may be broken down into sections that can correspond to the different construction phases or to match the bid items from the customers original bid form. A portion of the total cost is associated to each of these phases and then each month, the progress percentage of each phase is recorded. The customer is billed based on the progress of each line item.

It is possible, in **maestro***, to modify the recorded progress percentages after printing a payment request to present to the customer so that they can be counter-verified by the customer or their representative. This allows for the settlement of discrepancies before the final invoice is submitted.

When the invoice is by quantity progress, work progress percentages are replaced by quantities. Each detail line would be defined with a unit price and estimated quantity. Each month the quantity to date is updated and the unit price applied to determine that month's billing. Based on the quantity of material used (by m^3 for example), the project's final amount can be lesser or greater than the planned amount. This invoice type is frequently used in heavy construction where construction work must be completed based on detailed excavation plans and unit costs per bid item, for example.

It is possible, in **maestro*** 3.05, to use both percentage and quantity detail lines on the same progress bill.

Lump sum invoicing makes it possible to bill gradually as construction work progresses.

An evaluation of the construction progress must be done for each invoice period and therefore requires that project deliverables or milestones be clearly defined beforehand.

Cost Plus Invoicing

This invoice type establishes a direct link between costs incurred by the contractor and the price charged to the customer for a certain material or labour; it stems from a cost-plus contract instead of a lump sum one. Cost plus invoicing is often used when the scope of work includes the sale or personalized products, for which various modifications can be made during the construction.

During the cost plus billing process all costs will be presented in a grid on the screen (in **maestro***), and the corresponding selling price shown for each line. The selling price is generally the cost plus the appropriate markup. This markup could include administration fees (10% for example) and a profit percentage (5% for example), determined and agreed to in the contract. For labour and equipment costs it is also possible to set a charge out rate rather than use the actual cost. Copies of bills paid by the contractor are often attached to the invoice sent to the customer.

This billing type can, for example, be used in the construction of luxury homes. During construction, windows can be added, walls removed, materials changed, flooring added, etc. With cost plus invoicing, all these costs get presented to the customer and marked up as per the agreed to contract.

This billing mode generally enables a direct link between actual project costs incurred by the contractor and billing to the customer.

Elements in the invoice that are identified as non-billable when generating an invoice will not be billed using this invoice type later on. They will have to be billed through the Enter a Sale (T&M) Invoicing method. This method therefore offers fewer possibilities to the user.

Construction Management Billing

Contruction Management Billing is the hallmark of contruction management.

Construction Management

Construction management is when a project manager or general contractor manages a project for the client. The mandate can include the preliminary plans of the construction, the managing of schedules and deadlines, cost management, work execution, respecting the construction material and health and safety requirements, supervision, managing subcontractors and suppliers, etc. The client is still responsible of the expenses, even if payments can be done by either the contractor or the said-client. The contractor's or project manager's financial performance is often the product of an agreement where a possible sharing of the savings made is added to the project management costs.

Construction Management Billing allows to bill said-client based on the construction progress, to mark up cost prices by a profit percentage determined in the contract, and, if needed, to add administration fees. The invoice is generated for a given period and all transactions that need to be billed are listed and grouped by project activities.

This billing mode offers the same characteristics as cost plus invoicing, and also facilitates the project's progress (based on the percentage of completed elements) with respect to the established budget. Furthermore, it allows to process sub-projects and to join documents related to transactions billed upon the mailing of the said invoice.

Construction Management Billing offers the following advantages:

- At the time of billing, the customer can view the detail of all billed expenses.
- The customer can compare the said expenses with the established budget and can follow up on the work progress.
- In addition to presenting the incurred costs, this billing method allows to add a profit percentage and/or administration fees.

SERVICE MANAGEMENT BILLING

In **maestro***, there is a specific module dedicated to service management. It allows for individual or combined billing of service calls, whether they originate from **maestro*MOBILE** or **maestro***.

WORK ORDER DIRECT BILLING

Though many clients bill work orders through **Work Order Billing**, **maestro*** also allows the invoicing of work orders through direct billing in the **Enter Work Orders** option. This method would create one invoice per work order and simply invoice everything that has been entered on the work order. The work order is transferred to **Enter a Sale** and a regular invoice ensues.

CUSTOMER ORDERS INVOICING

Maestro* offers the renting of equipment and realization of orders for customers. As a result, a new invoice option has been developped to answer to those needs.

Customer orders are linked to the **maestro*** catalogue, therefore allowing users to have access to the sale price (discounted or not), to know the availability of sold items, and to make available all information concerning the quantity to be delivered or that has already been delivered. Customer orders and the invoicing of the latter are mostly used in the distribution field.

QUARRY AND CONCRETE TICKETS

Quarry and concrete tickets can also be billed in **maestro***. Because of their specialized requirements, this is explained in a separate document.

HOMEBUILDER SALES

Residential sales are also covered in a separate document. They consist of notarized sales and are managed in a specific module of **maestro***.

HOLDBACK NOTIONS

According to the Canadian Construction Association's (CCA) standards and construction contracts, a contractor will often allow their customer to hold back a percentage of each invoice and defer payment of the holback amount until the project has reached substancial completion. This amount withheld is part of a contractual agreement and is usually fixed at 10% but can be any defined percentage. In part, this is considered a sort of insurance for the work to be completed and is a widespread standard in the construction industry. Holdbacks become payable when the construction work is done and delivered. Holdback percentages are calculated on the whole invoice. In the case where a 10% holdback is agreed upon, 90% of the sale (plus tax) is initially billed and due. The balance, 10% of the sale plus tax, is billed at the end of the contract. Indeed, based on

industry practices and government requirements, taxes must be declared and accounted for on invoiced amount and paid within prescribed deadlines. The standard holdback method follows these standards and is the recommended option by Maestro. However, in practice, there are three ways that construction companies deal with holdbacks:

- Standard method
- With Tax method
- Without Tax method

The processing of holdbacks requires the setup of two accounts receivable (as well as two accounts payable) GL accounts in **maestro***: one for current receivables and one for deferred holdbacks receivable.

Standard Holdback Method and Holdback Release in maestro*

Though the customer is billed for the total cost minus the holdback, the standard holdback application in **maestro*** has for effect of accounting for the total sale amount upon the generation of the first invoice. Since taxes are applied to the total cost minus the holdback, 90% of taxes are due on the first invoice[14]. The difference, 10% of taxes, will be accounted for upon the release of the holdback. A second invoice will be generated to this effect.

With this method the entire sale is recognized as revenue, but the holdback is deferred and invoiced at a later date. The amount of the holdback will be allocated to a deferred receivables account for holdback and no tax will be applied to the holdback amount. This method has the benefit of not recognizing the tax liability until the holdback becomes due.

When the holdback does become due **maestro*** can produce a holdback invoice and create the tax liability at that time. This invoice will create no revenue as that has already been recognized on the original invoice. It is simply a method to claim the holdback from the customer. Note however that the contractor will now have a tax liability even if the customer has not yet paid the invoice.

[14] In the case of a 10% holdback.

Example of a Standard Holdback Process in maestr

applied to a 10% holdback sale, and where the GST (5%) and QST (9.975%) are applicable

1

Production of the 1st invoice

∴ Maestro* declares 100% of the sale and 90% of taxes.
∴ Maestro* reserves the holdback on income only.
∴ (The sale – the holdback) + taxes are charged to the customer

	DT	CT
Incomes		$100.00
GST to be paid		$4.50
QST to be paid		$8.98
Holdbacks	$10.00	
Customer account	$103.48	
Total	$113.48	$113.48

2

Payment of the 1st invoice, by the customer

	DT	CT
Bank	$103.48	
Customer account		$103.48
Total	$103.48	$103.48

3

Production of the 2nd invoice, upon release of holdbacks, once the contract is over.

∴ Maestro* releases the 10% sale holdback and adds the applicable taxes.
∴ To do so, 3 accounting entries are done by maestro*:

A — A 1st invoice for the customer.

	DT	CT
Incomes		$10.00
GST to be paid		$0.50
QST to be paid		$1.00
Customer account	$11.50	
Total	$11.50	$11.50

B — A second one to release the holdback and overturn the sale counted in Step A, since the latter was included in the sale amount in Step 1.

	DT	CT
Holdback	$10.00	
Holdback		$10.00
Total	$10.00	$10.00

C — A third entry with no accounting impact, that allows the deletion of an invoice which displays ∅ on the customer account age report.

	DT	CT
Holdback		$10.00
Holdback	$10.00	
Total	$10.00	$10.00

4

Payment of the 2nd invoice, by the customer

	DT	CT
Bank	$11.50	
Customer account		$11.50
Total	$11.50	$11.50

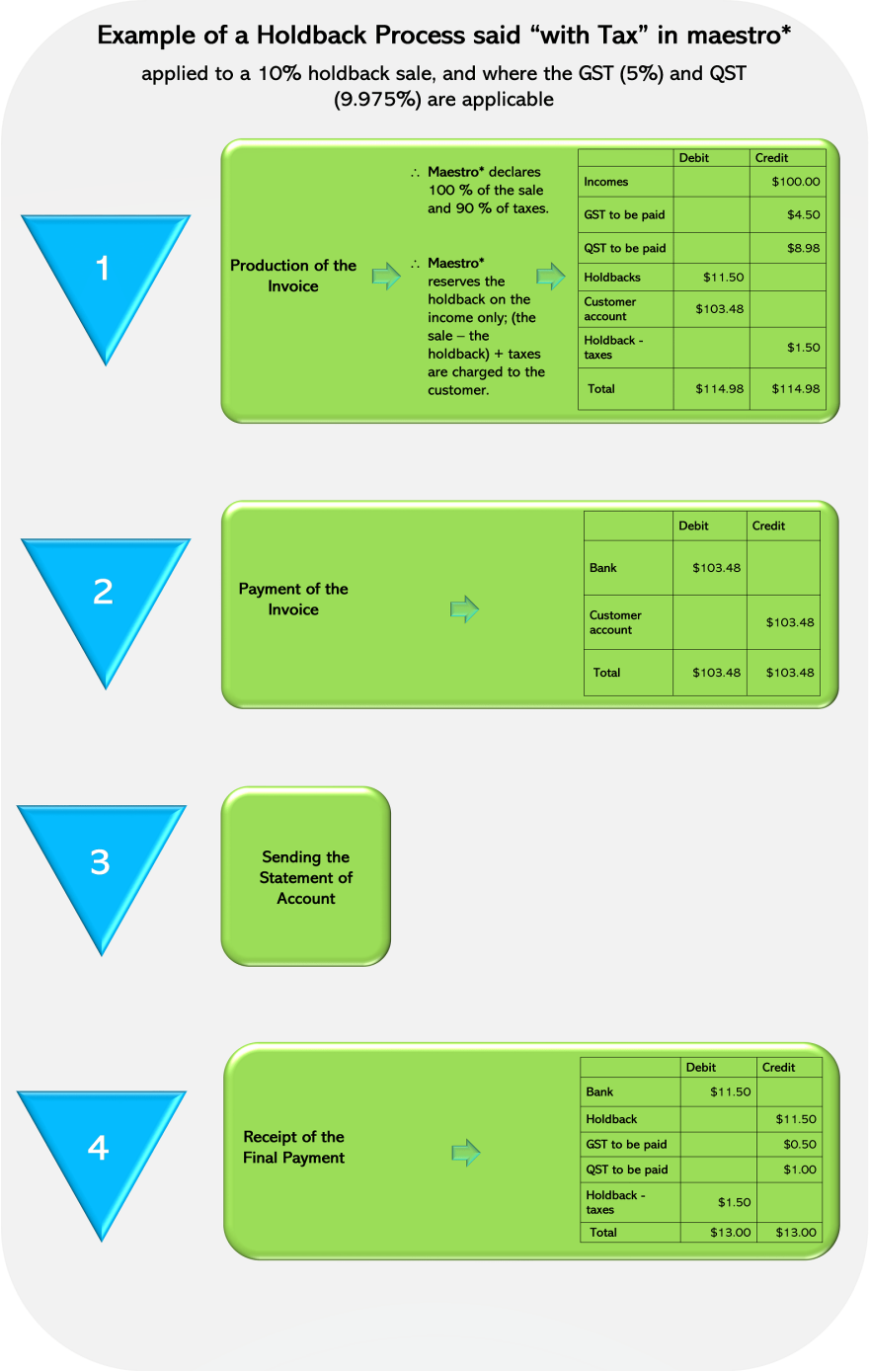
Holdbacks with Tax

A second way of dealing with holdbacks treats the holdback and tax more like cash basis accounting, in that the tax liability will only be recognized when the customer actually pays the holdback.

With this method, taxes applicable to holdbacks are accounted for from the start. However, these are provisioned and do not appear on the tax report, when issuing the invoice. These taxes are only declared when the holdback has been paid.

At the moment of original invoicing the holdback amount (plus tax) is allocated to the holdbacks receivable account but the tax amount is also assigned to a deferred tax due account. Then at the time the payment is received for the holdback the tax is transferred from the deferred account to the tax liability account.

The advantage of this method is that the contractor is not on the hook for taxes until the customer actually remits the holdback. The downside is that Maestro does not create an invoice for the holdback; we simply wait for customer to remit payment. This is intentional since if an invoice was created the tax would legally be due.



Holdbacks without Tax

Lastly, the third method, rarely used by Maestro clients, recognizes the full tax liability right up front and therefore creates holdback receivables without tax. So unlike the With Tax method, taxes are due to the government upon the original billing and therefore no tax need be declared upon payment of the holdback.

This method entails that the holdback is calculated from the invoice amount's subtotal and that taxes are 100% declared on the first and only invoice. Contrary to the method with tax, **maestro*** declares 100% of incomes, but also 100% of taxes when invoicing, making the holdback provisioned, with no tax. Taxes are therefore due to government agencies upon billing and no tax is declared upon payment of the holdback.

Comparative Table - Holdback Management Methods in maestro*

Method and Main Characteristics	Advantages	Disadvantages
Standard with Holdback Release* • Two invoices are issued. • The revenue completely accounted for when issuing the original invoice. • The original invoice's taxes are calculated on the sale amount, minus the holdback.	• Upon substantial completion, the holdback is billed and an invoice produced for the customer. • This method meets governmental requirements.	• The company's liquidity can be affected because the taxes become due to the government upon the issuance of the holdback invoice (even if the customer does not pay the holdback in a timely manner).
With Tax • Only one invoice is issued. • The revenue is completely accounted for when the invoice is issued. • The tax applicable on the holdback amount is declared only upon the payment of the holdback.	• The tax liability on the holdback amount is not recognized until the payment of holdback is received, limiting the impact on the company's liquidity. • The taxes applicable to the holdback do not affect the customer's accounts; an advantage during a credit analysis.	• An account statement or an external invoice (not posted in **maestro***) must be sent to the customer to notify them that the holdback is now due.
Without Tax • Only one invoice is issued. • The revenue and taxes are 100% declared when billed. • The holdback is therefore recorded and billed without tax.		• An account statement or an external invoice (not posted in **maestro***) must be sent to a customer to notify them that the holdback is now due. • All taxes are due upon issuing of the original invoice.

**This method is recommended by Maestro, as well as by government authorities.*

FREQUENTLY ASKED QUESTIONS

Why do people talk about a similarity between Work Order Billing and Cost Plus Invoicing?

In both cases, the agreement between the company and the customer is based on the fact that all committed and accumulated costs to date can be billed. The total project cost is therefore not necessarily determined at the start, although a budget is normally agreed upon and requires change orders to be ajusted. Furthermore, with both methods, it is possible to apply labour charge out rates and markups.

The main difference is that W/O Billing allows a much more flexible way of calculating billable amounts for each cost. Indeed, **maestro***'s Work Order Billing makes use of catalogue items to set the selling prices, whereas Cost Plus does not offer that possibility and simply marks up actual costs. One could say that Work Order Billing is in fact a type of advanced Cost Plus invoicing option.

REMINDER

- It is possible, in **maestro***, to use many different invoicing methods.
- Enter a Sale billing makes it possible to bill material used, hours worked, travel time, etc. without the need for a contract to be defined or for the billed items to be linked to a **maestro*** project or catalogue. It is the most manual of the billing methods.
- There are several contractual billing methods available in **maestro***: Cost Plus, Construction Management Billing, Lump Sum, or Progress Billing (by direct costs, progress percentage, or unit based).
- Work Order Billing allows the automatic rebilling of the costs incurred for a given project, at a fixed or marked up price.
- **Maestro*** also offers options to bill work orders, service calls, change orders, quarry and concrete tickets, and perform home closings for homebuilders.
- Lastly, **maestro*** is designed to manage holdbacks according to standards implemented by the industry as well as alternate methods observed in the field.

FOOD FOR THOUGHT – INVOICES IN MAESTRO*

- ☐ Which billing types are used in your company, considering the explanations offered in this document?
- ☐ Do you do true progress billing with scheduled values?
- ☐ What is your invoicing process, at a high level?

FOOD FOR THOUGHT – INVOICES IN MAESTRO*

- ☐ How are your invoices generated? Where does the information come from? Do you use custom invoices for your customers?
- ☐ What information needs to be displayed on the invoice? At what level of detail?
- ☐ Do you plan on entering and formatting the final invoice manually, or does the detail come from a completed work order? Please give us more information concerning your billing process so that we may assist you in generating the desired output.
- ☐ Do you use different forms for each invoice method?
- ☐ If you use the time and material invoicing, do you bill by charge out rate?
- ☐ Do you manage holdbacks? If yes, how?
- ☐ How many employees have a hand in the invoice preparation process? What is the role and responsibility of each individual?
- ☐ Do you need to perform a price verification before processing an invoice? If yes, how do you proceed?
- ☐ Do invoices need to be approved by customer or their consultant?
- ☐ Do invoices need to be reviewed and approved internally?
- ☐ Are some invoices the result of a contractual agreement with customers?
- ☐ Are product and service billing prices pre-established?
- ☐ Are some billing prices the result of a mark-up of the cost price?
- ☐ Do you use a price list, or do you manage per customer, product, order, and/or project?
- ☐ Do you manage customer credit limits?
- ☐ When do you produce your invoice report?
- ☐ When are the administration fees applied?
- ☐ Are invoices printed and/or sent by email?
- ☐ Do you send statement of accounts to customers?

FOOD FOR THOUGHT – INVOICES IN MAESTRO*

- ☐ Do you charge interest or administrative fees in the case of late payments?
- ☐ How do you manage loans?

Last modification: May 22, 2024

PROJECT ISSUES AND CHANGE ORDERS

SUMMARY

As in many other business fields, modifications and contingencies are common in the construction field.

Project Issues in maestro*

Some functions have been developped in **maestro*** to meet clients' needs. The **maestro* Change Order** sub-module offers users many options linked to project issues allowing them to note, document, structure, and register these said issues. Reports can be generated. Furthermore, issue-type templates can be created in the software, speeding up and standardizing data entry. Thus, each project issue type can display personalized fields that must be completed. **Maestro*** offers templates for some types of project issues, such as:

- Daily Delivery Entry
- Project Incident
- Inspection Item
- Phone Log Entry
- Punch List Item
- Quality Issue
- Safety Issue
- Stop Work Order
- Request for Quote (RFQ)
- Etc.

Sub-project issues can also be created and linked to other project issues when a parental link unites them. In sum, the use of the **Issue Management** option in **maestro*** offers many advantages, including being able to create change orders and estimates directly through an issue.

Change Orders in maestro*

The **Change Order** sub-module, like many others, has for advantage the integration of other **maestro*** modules. Also, once its status is changed to *submitted* or *approved*, the transferred change orders can automatically update the budget of the project related to these change orders. If applicable, the material order and subcontract can also be generated. Furthermore, the change orders will be included in the invoicing contract.

It happens that a big change order (that would need more than 250 entry lines) is processed as a sub-project, independently from other change orders. Change order requests can also be grouped together to form only one big change order or sub-project. In sum, there is more than one way to account for change order expenses.

Expense Accounting Methods

There are many ways to account for expenses resulting from change orders, each with its advantages and disadvantages:

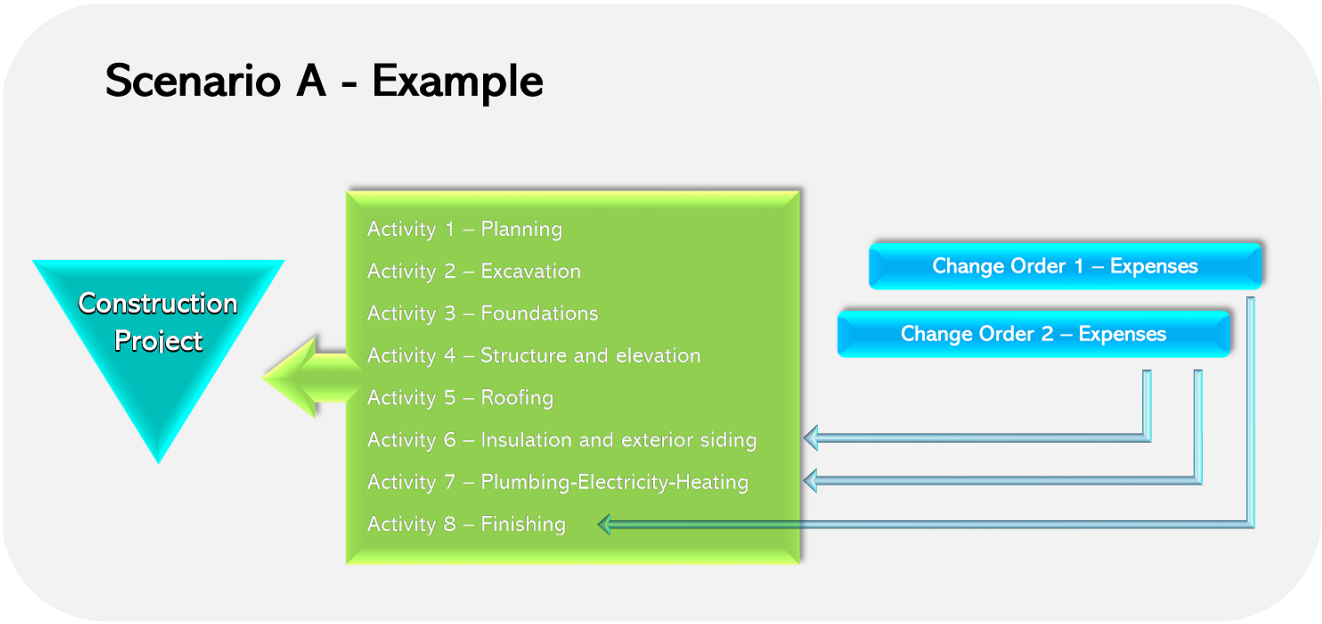
- Using the project's activities:
  - Pre-existing activities (Scenario A)
  - New activities (Scenario B)
- Through a sub-project:
  - A sub-project for all the change orders (Scenario C)
  - A distinct sub-project for every change order (Scenario D)
- Through a budget modification (Scenario E)

A company can decide to use one or more of these methods, based on the nature, size, and number of change orders.

Scenario A - Change Orders Integrated With Project Activities

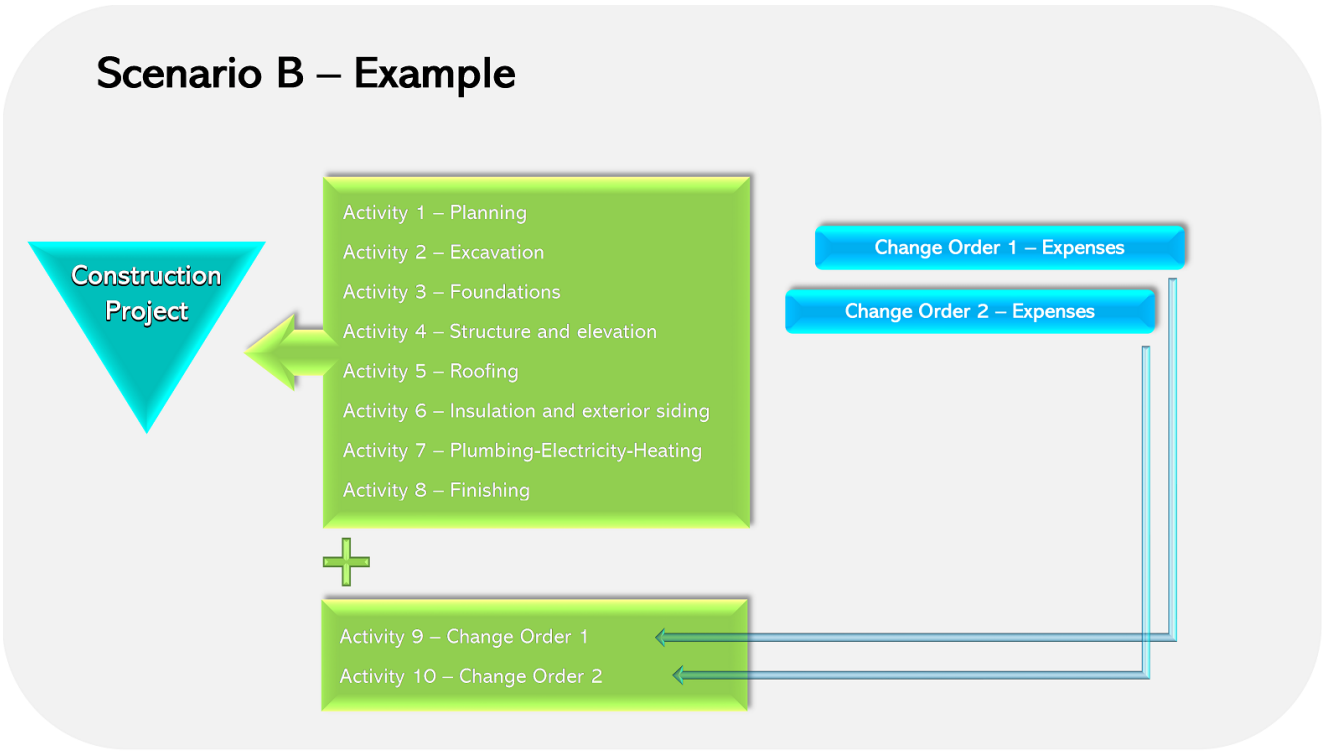
The change order's expenses are accounted and recorded in the project's existing activities, to which the change order is linked. These activities act as budgetary modification.

Maestro* makes it possible to identify the budget modification source (since it can be generated by a change order, but also by an estimate mistake, for example) and even to join the explanatory documents. When a user then performs data mining in a project, the nature of the modification is displayed.



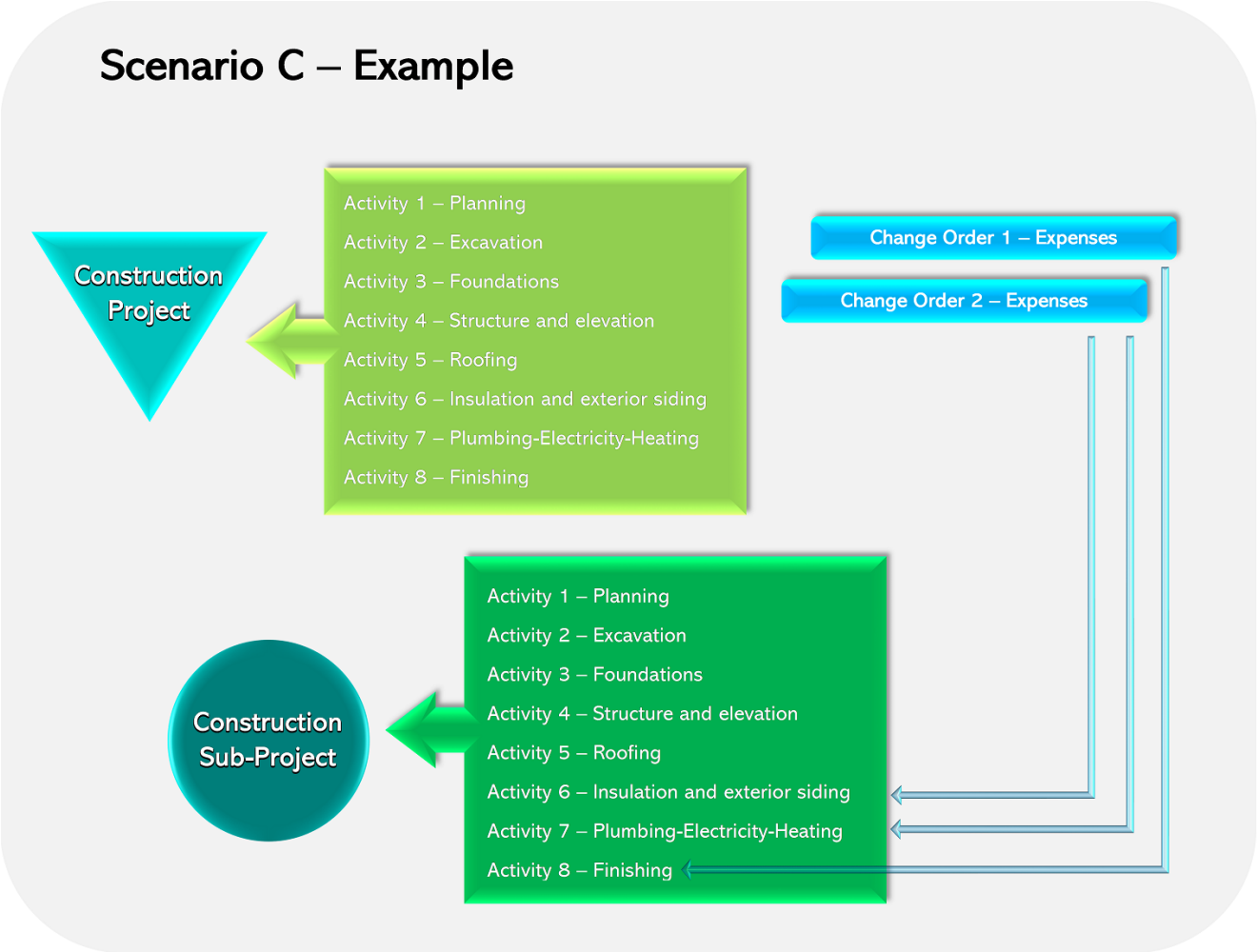
Scenario B - Change Orders Managed by New Activities

Each new change order has a new activity created and assigned to it in the project to which it is linked. Expenses for each change orders are therefore accounted for in a single activity, which belongs to the said change order.



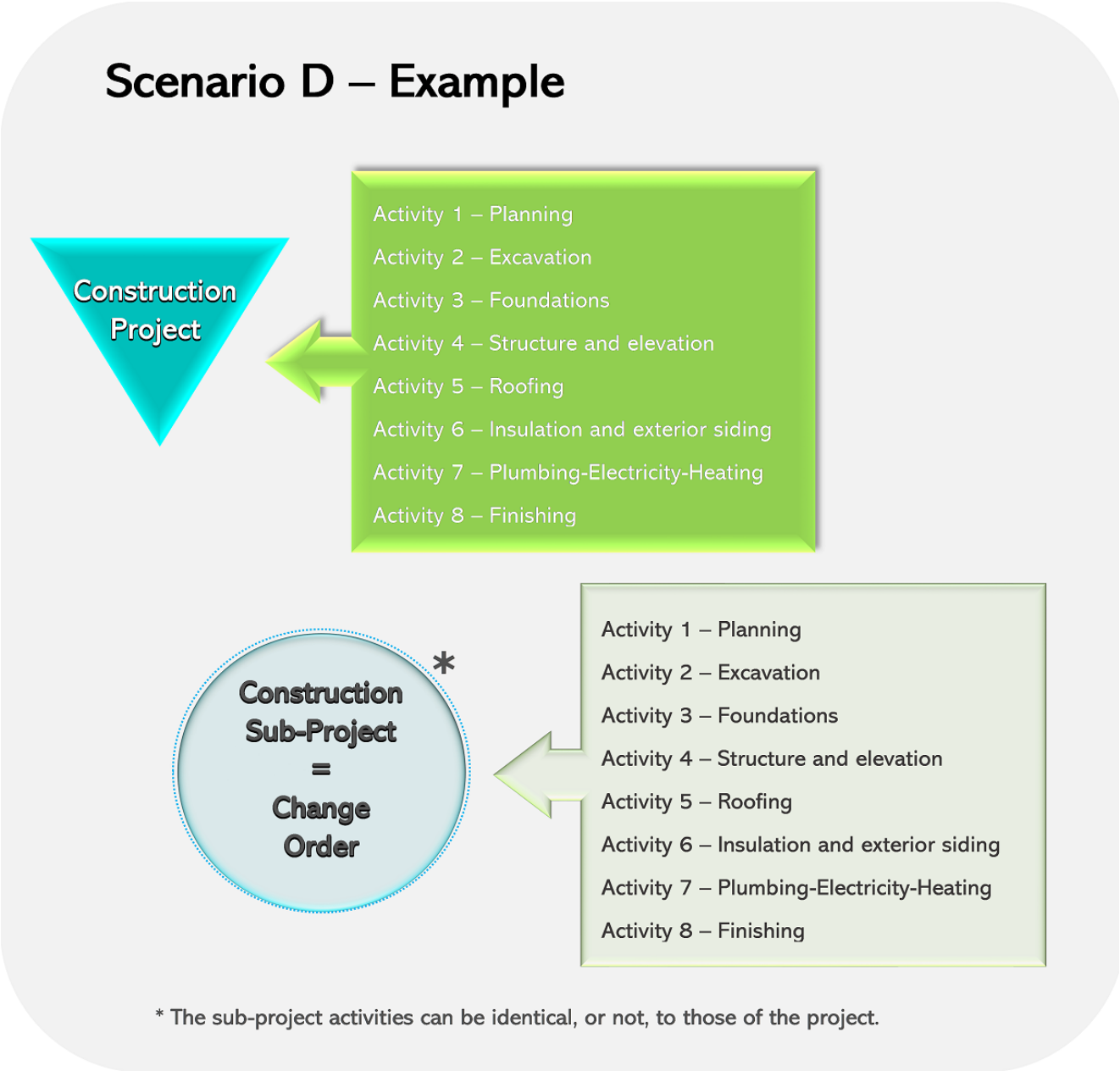
Scenario C - Change Orders Managed Together in a Sub-Project

A sub-project is created for all change orders; in it can be found the same activities as in the project. All change order expenses are recorded in the sub-project's activities.



Scenario D - Change Orders Managed Individually in Sub-Projects

A single change order is treated as a sub-project and its expenses are classed in the sub-project's activities. All other generated change orders are processed separately.



Advantages and Disadvantages of Each Method

Scenario	Description	Advantages	Disadvantages
A	All expenses generated by change orders are charged to the project's existing activities.	This method is very simple. With this method, it isn't required to precicely enter all the work site information	It is harder to isolate all information concerning change orders. This method does not allow

Scenario	Description	Advantages	Disadvantages
		concerning a change order (information that can sometimes be hard to acquire).	the follow-up concerning the profitability of change orders but pictures the profitability of the project as a whole.
B	A new activity is added to the project for every new change order created for this said project. All expenses generated by this change order are charged to its associated activity.	All information concerning each change orders are regrouped in one activity. However, even if the information is globally displayed, it is still possible to know the cost and revenus of each change order.	This method can generate the creation of many additional activities if there are many change orders for a project.
C	A sub-project regrouping all the change orders is created.	This method is simpler when there are risks of many change order occurences for a same project. Furthermore, it allows users to compare the project's real budget with the starting estimate, with change orders being accounted for separately.	Entering data is harder with this method. Users must be very rigorous when entering detailed information in **maestro***.
D	A sub-project is created for each change change order (or for a large-scale change order).	This method allows a very detailed follow-up of the project's profitability and change order's costs. It allows for a very precise follow-up, ideal when working with major change orders that involve substancial sums.	This method requires a very detailed follow-up of the information.

As previously mentionned, more than one method can be used by a company to manage change orders. Many factors need to be taken into account when deciding which method to use, and these method may vary from one project to another for a same client. This decision depends of many factors, such as the information provided by the construction site, the number and competence level of users entering the data, etc.

Change Order Management Scenarios

Here are some simple, but realistic, scenarios that happened to some clients. They portray how a project's change order management must reflect the nature of the work and the company: will material orders be placed at

the beginning or as the project advances, will employees be able to know if the work done is linked to a change order or the project itself, is the project major, are many change orders anticipated, etc.

Scenario #1 - Only fools don't change their mind!

Michael just took over as the head of a luxurious family-owned construction company. The latter having recently bought **maestro***, Michael wishes to use the software to its full potential, in order to manage change orders. These often occur, especially for the many additional constructions of his most recent development project. Indeed, his clients often change their mind or have new ideas during construction. He has become a master in the art of the "while we're at it". His spouse and three other employees will have the task of performing the entries in **maestro***. There is no shortage of work!

Observations:

- There are many projects to manage at once (at least 10 work sites), for a duration of at least 4 to 8 months.
- His clients generally want to view the details of every billable additions.
- The employees who's job is to enter data in **maestro*** are limited and do not have much experience with the software.
- Michael is passionate about numbers and wishes to follow-up on the profitability of the houses he builds.

Michael's choice: B, all new project change order will become a new activity.

This method will allow Michael to follow-up on his projects' profitability and offer his clients the detail of all modifications made during construction.

Scenario #2 - Know the opportunity that is right for you!

With her company now resting on solid foundations, Nathalie wishes to expand and miss no new business opportunities. A great occasion has actually presented itself; as she was just finishing the last details of an amphitheatre construction project, she was told that a major sports complex (with an olympic sized pool and all that) would be grafted to the initial building. The next nights promise to be short! But what could be better than changing your plans for the better?

Observations:

- The construction of the sports complex, which is being added to the main

building, is shaping up to be even grander that the original project by itself.
- One thing's for sure, Nathalie must manage her expenses carefully!
- Nathalie is ready to roll up her sleeves and employ any necessary resources to carry out her project.

Nathalie's choice: D, the change order will be managed as a sub-project.

Contrary to change orders she's had during previous projects, Nathalie has decided to manage this one as a project in itself. We are speaking about a change order for which there will most-likely be many expenses.

Scenario #3 - Problems are opportunity's favourite costume!

Everything was going great for John and his commercial construction company until the beginning of the COVID-19 pandemic. Needless to say that business slowed down. However, John knew this situation wouldn't last forever! He will soon build residences for seniors (*Maisons des aînés*). To do so, he has decided to go all out and rethink his whole work management and organization, as much on work sites as in the office. A new team is now in place, **maestro*** has been implanted, and his workers have access to **maestro*MOBILE**. There are less contacts between employees, the exchange and loss of physical paperwork is a thing of the past, and the company has already become more efficient! However, doubt remains... How should John manage future change orders related to the construction of retirement homes?

Observations:

- John now wishes to optimize everything and he has put in place the needed tools to get all the information he needs.
- John will have to manage similar constructions. Each retirement home will bring its share of unexpected events and change orders.
- John wants to compare his teams' efficiency on work sites, and, of course, the profitability of each construction.

John's choice: C, a sub-project will be created for all the change orders of a same retirement home

With his employees having all the tools they need, it should be easier to obtain detailed work-site information. But mostly, this new change order management method should allow John to compare the costs of one construction project to another, with or without change orders.

Charge Orders' Invoicing Methods

There are many different ways to bill change orders in **maestro***:

- By **Lump Sum** when it's a fixed amount.
- Through **Progress Billing** (generally when a significant modification is generated by a change order). The addition of a floor to a building, for example.
- By **Cost Plus Invoicing**, the most-often used option for the invoicing of private project change orders. This invoice method makes it impossible to over-bill a client and simply allows the addition of small profit percentages and administration fees. For example, if the change order is the shoveling of snow on a roof, the costs will consist of the hourly rate, a small profit, and administration fees.
- By **Enter a Sale (T&M) Invoicing** (in part used for the invoicing of construction work done in *FastTrack* mode).

REMINDER

- By project issue, we mean any and all situations that arise during a project, most usually during the construction work phase. **Maestro*** offers an option which records those issues and, if needed, transfers them as change orders.
- A change order consists of a modification made to the initial estimate, once the project has begun; often results in additional costs.
- Hundred of change orders can arise during a project. They can be coupled or not.
- In **maestro***, expenses linked to change orders can be managed in many ways: in the project's activities, in new activities, together or separately, in a sub-project, or through budgetary modifications.
- When transferred, change orders created through the sub-module with the same name, in **maestro***, can systematically generate material orders, subcontracts, update the project's budget, and generate an invoice. That's one of the advantages of working with an ERP system!
- It sometimes happen, in a project, that modifications must be made before writing and negotiating a change order. That is what we call *Fast Track Execution*.
- In **maestro***, change orders can be billed by lump sum, cost plus, through a progress bill, and by time and material. Furthermore, there are many ways to account for change order expenses.

· FOOD FOR THOUGHT - PREPARATION FOR IMPLEMENTATION

☐ How do you manage issues?

☐ What are the different invoicing methods commonly used by your company?

☐ How do you generally wish to account for your change orders?

· **FOOD FOR THOUGHT - PREPARATION FOR IMPLEMENTATION**
☐ Are some projects processed in *Fast Track* mode?

Last modification: April 30, 2024

WORKS IN PROGRESS MANAGEMENT

SUMMARY

INTRODUCTION TO WORKS IN PROGRESS MANAGEMENT (WIP)

Works in progress management is based on the accounting principle whereby matching revenues and expenses help determine the moment when costs must be expensed and matched to the revenues they contributed to creating. From a high-level point of view, works in progress management translates to making acounting entries that temporarily move expenses that have not yet been invoiced on the balance sheet OR posting non-invoiced expenses to revenues. That being said, it's the notion of transferring ownership of produced goods (or services rendered) that determines how works in progress must be accounted for.

When a construction project is completed (or a service rendered) without being purchased by a buyer while it was being built, the organization managing the project must capitalize the construction costs on the balance sheet. These costs are reversed upon the sale, which generally corresponds to the time of invoicing. This is called managing works in progress AS ASSETS.

If, however, the construction project (or service) is transferred to the buyer as it is completed, the costs are posted as expenses; then, at the end of the month, the project's progress is evaluated to determine the amount that should be invoiced. Afterwards, this amount is used to account for a revenue proportional to incurred costs [15]. This is called managing works in progress AS EXPENSES.

MANAGING WIP IN MAESTRO*

Works in progress can be managed as assets (often used by residential construction businesses) or as expenses (used by most organizations). In general, the organization's management mode, the type of work, the organization's internal policies, and the invoicing mode determine how works in progress will be managed. No matter which approach is preferred, it must last over time and from year to year. Some organizations use more than one approach depending on the nature of their activities and their projects.

Works in Progress Management Applied to Projects

Maestro* provides the possibility to configure a default works in progress management mode applicable to all projects. It's also possible, however, to select works in progress management modes specific to projects. In any case, the selected WIP management mode has no impact on project costs.

As Expenses

As mentioned earlier, managing works in progress as expenses means that a project's costs are systematically posted in expense accounts. At the end of a financial period, an accounting entry is made based on the evaluation

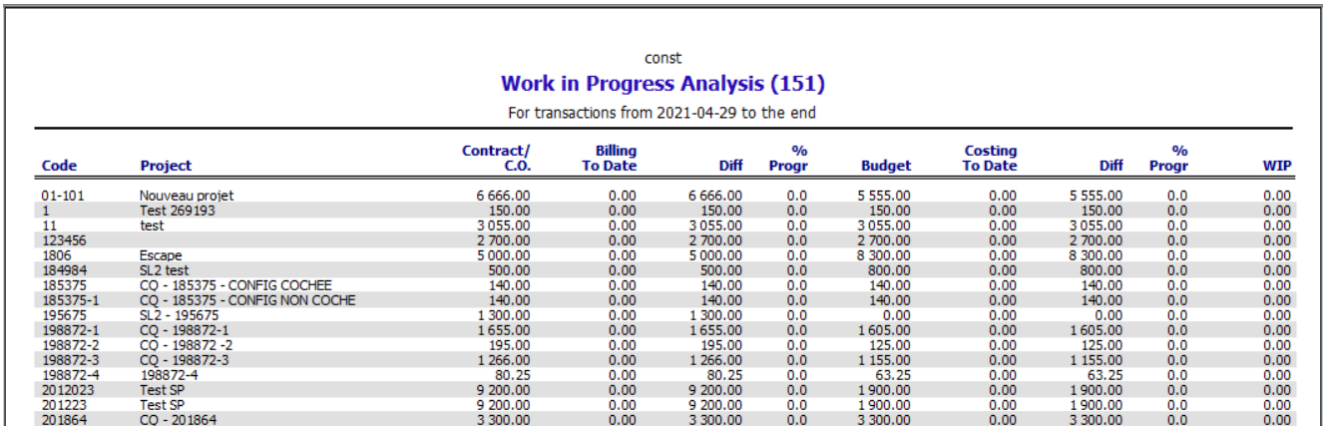
[15] If this amount is billed, it will be an account receivable. If it is not billed, it will be the amount of a work in progress to bill or an excess billing income. Warning! Do not mix up invoicing notions with the recognition of income. Though they often occur at the same time, companies sometimes bill in advance or at a later date in accordance with the work progress.

and actual use of purchased items or services used; this is done in such a way that expenses represent the real expenses incurred during the period, and a portion of these expenses are deferred to the next period. An income corresponding to the real expenses is obviously accounted for. Some basic **maestro*** reports, or other reports customized by the customer, can make the task easier and facilitate the estimation of the works in progress amount that is to be used to make the accounting entry and which may or may not be reflected at the project level.

Calculating Works in Progress for a Specific Period

As previously mentionned, **maestro*** offers works in progress reports to users. Once the parameters are completed and a date range is selected, it becomes possible, by displaying the difference between budgeted and actual project expenditures, to know the value that must appear in the works in progress general ledger account. This provides the user with the data to make the necessary accounting entries.

Below are two examples of **maestro*** reports that can be used to calculate works in progress for a set period. During the software implementation, other reports, specifically addressing the needs of the customers, can be created. Finally, some customers also choose to use more than one report to perform works in progress calculations; the report used depends on the project type or other characteristics.

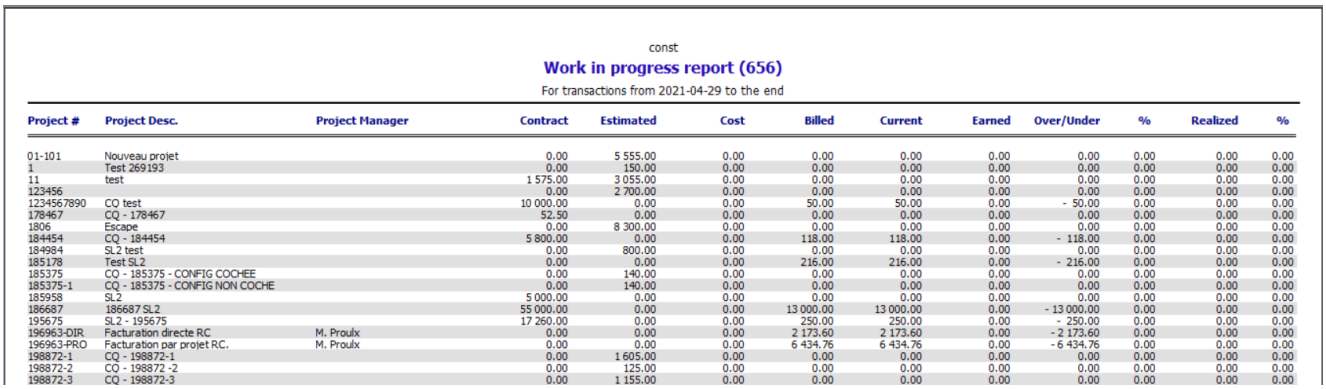


const

Work in Progress Analysis (151)

For transactions from 2021-04-29 to the end

Code	Project	Contract/ C.O.	Billing To Date	Diff	% Progr	Budget	Costing To Date	Diff	% Progr	WIP
01-101	Nouveau projet	6 666.00	0.00	6 666.00	0.0	5 555.00	0.00	5 555.00	0.0	0.00
1	Test 269193	150.00	0.00	150.00	0.0	150.00	0.00	150.00	0.0	0.00
11	test	3 055.00	0.00	3 055.00	0.0	3 055.00	0.00	3 055.00	0.0	0.00
123456		2 700.00	0.00	2 700.00	0.0	2 700.00	0.00	2 700.00	0.0	0.00
1806	Escape	5 000.00	0.00	5 000.00	0.0	8 300.00	0.00	8 300.00	0.0	0.00
184984	SL2 test	500.00	0.00	500.00	0.0	800.00	0.00	800.00	0.0	0.00
185375	CQ - 185375 - CONFIG COCHEE	140.00	0.00	140.00	0.0	140.00	0.00	140.00	0.0	0.00
185375-1	CQ - 185375 - CONFIG NON COCHE	140.00	0.00	140.00	0.0	140.00	0.00	140.00	0.0	0.00
195675	SL2 - 195675	1 300.00	0.00	1 300.00	0.0	0.00	0.00	0.00	0.0	0.00
198872-1	CQ - 198872-1	1 655.00	0.00	1 655.00	0.0	1 605.00	0.00	1 605.00	0.0	0.00
198872-2	CQ - 198872 -2	195.00	0.00	195.00	0.0	125.00	0.00	125.00	0.0	0.00
198872-3	CQ - 198872-3	1 266.00	0.00	1 266.00	0.0	1 155.00	0.00	1 155.00	0.0	0.00
198872-4	198872-4	80.25	0.00	80.25	0.0	63.25	0.00	63.25	0.0	0.00
2012023	Test SP	9 200.00	0.00	9 200.00	0.0	1 900.00	0.00	1 900.00	0.0	0.00
201223	Test SP	9 200.00	0.00	9 200.00	0.0	1 900.00	0.00	1 900.00	0.0	0.00
201864	CQ - 201864	3 300.00	0.00	3 300.00	0.0	3 300.00	0.00	3 300.00	0.0	0.00



const

Work in progress report (656)

For transactions from 2021-04-29 to the end

Project #	Project Desc.	Project Manager	Contract	Estimated	Cost	Billed	Current	Earned	Over/Under	%	Realized	%
01-101	Nouveau projet		0.00	5 555.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	Test 269193		0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	test		1 575.00	3 055.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
123456			0.00	2 700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1234567890	CQ test		10 000.00	0.00	0.00	50.00	50.00	0.00	- 50.00	0.00	0.00	0.00
178467	CQ - 178467		52.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1806	Escape		0.00	8 300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
184454	CQ - 184454		5 800.00	0.00	0.00	118.00	118.00	0.00	- 118.00	0.00	0.00	0.00
184984	SL2 test		0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185178	Test SL2		0.00	0.00	0.00	216.00	216.00	0.00	- 216.00	0.00	0.00	0.00
185375	CQ - 185375 - CONFIG COCHEE		0.00	140.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185375-1	CQ - 185375 - CONFIG NON COCHE		0.00	140.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
185958	SL2		5 000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
186687	186687 SL2		55 000.00	0.00	0.00	13 000.00	13 000.00	0.00	- 13 000.00	0.00	0.00	0.00
195675	SL2 - 195675		17 260.00	0.00	0.00	250.00	250.00	0.00	- 250.00	0.00	0.00	0.00
196963-DIR	Facturation directe RC	M. Proulx	0.00	0.00	0.00	2 173.60	2 173.60	0.00	- 2 173.60	0.00	0.00	0.00
196963-PRO	Facturation par projet RC.	M. Proulx	0.00	0.00	0.00	6 434.76	6 434.76	0.00	- 6 434.76	0.00	0.00	0.00
198872-1	CQ - 198872-1		0.00	1 605.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
198872-2	CQ - 198872 -2		0.00	125.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
198872-3	CQ - 198872-3		0.00	1 155.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

As Assets

Conversely, managing works in progress as assets means that expenses are accounted for in asset accounts, according to their nature and the configurations previously set in **maestro***. When closing a period, the costs recorded in the assets of projects, for which the end of the work has been indicated, will be automatically reversed to expenditure accounts.

This approach is usually interesting for projets that do not involve progress billing and for whose duration is limited in time, ranging from a couple weeks to a couple months. It is also the approach generally favoured by contractors in residential construction, for which income only arises when a house is sold, whereas the majority of the costs have already been accounted for. The idea is to record expenses in the period in which income arises.

For example, during the contruction of a condo tower (the master project), all units (the projects) will be built, including those that have not yet been sold. If works in progress are managed as assets, the unsold condos will make up a company asset. It will therefore be desirable to record expenditures on units only once they are sold.

Reverse Expenses That Were First Recorded as Assets

When a period is closed in **maestro*** (such as the end of each month), works in progress of projects for which the project end date falls within the period are reversed and expensed.

In the example above, a project end date will be associated with the project corresponding to the condo once the sale date has been established, so the works in progress amount on the project will be expensed when the period is closed in **maestro***.

Period

A financial year is divided in periods for each months of the year. Added to these is a thirteenth period corresponding to the closing of the financial year.

Once a period is closed, it is no longer possible to enter transactions on projects contained in the date range of that period. The **Projects** module uses the periods set in the **Accounting** module. If a period is closed in the **Projects** module, the other auxiliaries remain open and use the active period in the general ledger. When closing a period in the **Projects** module, it is possible to only close the period in this auxiliary. It is therefore possible to still enter transactions in other modules. However, the project periods must be closed in order to be able to close the accounting periods.

Periods must be closed following a chronological order. It is possible to close more than one period at a time. Finally, the **Reopen a Project Period** option makes it possible to reopen a closed period.

Works in Progress Management Applied to Service

When services are provided by companies (e.g. maintenance contracts, snow removal contracts, etc.), it is common for them to charge customers before the service is provided. They therefore need to manage income received in advance. When the expense is actually incurred or occurs, or is on a regular basis, a portion of the deferred revenue is removed and applied to the financial results of the period in which the expense occurs.

Obviously, if the billing is done after the fact, i.e. after the service has been provided, the costs will first be charged to work in progress and therefore temporarily placed on the assets side of the balance sheet. Once invoiced, a reversal entry will be made to remove the work in progress amount and apply it to the expenses of the current period.

REMINDER

- In **maestro***, WIP can be managed as assets or expenses.
- Managing a WIP as an expense means that costs incurred for a project are systematically recorded in expense accounts. At the end of a financial period, an accounting entry is done based on the evaluation and real use of purchased items or services used, so that the expenditure is representative of the actual expenses incurred in the given period and so a portion of it is carried over into the subsequent period. An income corresponding to the real expenses is obviously accounted for.
- On the opposite, managing works in progress as assets means that expenses are recorded in asset accounts. When closing a period, the costs recorded in the assets of projects for which completion has been indicated will be automatically reversed to expenditure accounts.
- Various reports are available and can be created in **maestro*** to facilitate the calculation of works in progress periods.
- In **maestro***, using a method to calculate works in progress does not exclude other methods; the calculation method may be different from one project or service to another.
- Just like for the projects, there are various way to calculate the works in progress of service companies.

· FOOD FOR THOUGHT – IMPLEMENTING WORKS IN PROGRESS IN MAESTRO*

- ☐ What is the nature and duration of the majority of your projects?
- ☐ Which invoicing method(s) do you use?
- ☐ Do you manage works in progress as assets, as expenses?
- ☐ Does your company offer services? If so, how and when is invoicing performed?

Last modification: February 27, 2024

COST CENTRE VS PROFIT CENTRE NOTIONS

It is possible to identify departments, in all companies, that are basically income generators; the professional services and manufacturing departments are good examples. Conversely, other departments, services, or projects seem to take advantage of cost centres, at first; we can think of the accounting or warranty service departments, for example. **Maestro*** makes it possible to follow up on all expenses made inside the same administrative cost centre. However, it also makes it possible to make the latter into a profit centre, in which various costs/expenses are rebilled to other departments, services, or projects, based on a calculation method defined by the company. This allows for the company to get a more realistic profitability for said profit centre.

SOMMAIRE

WHAT IS MEANT BY COST CENTRE AND PROJECT CENTRE

Firstly, it's important to understand the cost centre and profit centre notions.

Cost Centre

A cost centre can be defined as a responsibility centre, with no objective of making a profit. It is a grouping of charges and/or expenses established in function of a particular criteria, such as a period, a product, an order, a project, a work site, etc. Though they are essential to the business' operations and to generate income, cost centres are often considered as entities which generate financial loss for companies.

Profit Centre

A profit centre, on the other hand, is defined as an autonomous unit in a company; it has its own products/income, as well as its own charges/expenses, and makes its own profits or losses. It is a responsibility centre for which a profit or profit margin objective has been set.

COST CENTRE AND PROFIT CENTRE IN MAESTRO*

In **maestro***, the cost centre and profit centre accounting notions can be applied, among others, to projects. It does not take effect through specific configurations or an indicator, but through the possibility given to users to charge a project's expenses to another project, to make a null cost centre out of it, or to rebill the use of targeted project elements at a selling rate. In short, we isolate certain general expense costs or administrative expenses, to then redistribute them to projects, based on the proportion of use or in exchange of the corresponding income, in return of its use.

Example Applied to Small Tools

Many companies who use **maestro*** decide to create a project that groups the whole of their small and medium tools. At first glance, we could think that this small tool project is a cost centre. New tool expenses are attributed to it, as well as maintenance and repair fees, the purchase of replacement parts, etc. However, it's possible to make this small tools project a profit centre. How? By applying, for example, user fees on small tools (at a determined selling rate) for concerned projects every week, based on the number of hours worked. The small tools project will now have an income, making it possible to cover expenses incurred and making the project a profit centre.

More concretely, a company that works in landscaping, will be able to, for example, bill $2/hour fees to all of its excavation projects for the use of small tools. Indeed, it would be much too complex to bill the use of every single tool, given the large amount to use. Therefore, on the one hand, all purchase and small tool maintenance costs

will be charged to the small tools project. On the other hand, all income generated by the weekly or monthly use of those tools in landscaping projects will be paid to the small tools project, making it a profit centre. A landscaping project with 30 hours of excavation work would find itself charged $60 for the use of small tools, generating an income equal to the charge sum for the small tools project.

In short, the objective of transforming a cost centre into a profit centre is to simplify follow-ups, and the profitability of general administrative expenses and expenses which may be considered extras. Furthermore, it is also possible to transfer internal income to the latter, so as to charge projects for the use of these types of services or materials.

Other Applications in maestro*

Many projects that are first cost centres, can thus become profit centres for which the profitability can be followed. That is the case, for example, of equipment, vehicles, but also of certain employees. Whereas in most construction companies, employee and schedule costs are divided over various projects to which they are assigned, in other companies, professional employees are assigned to projects in the form of an internal service agreement. In this last case, it is possible to enter billable hour transactions for projects on which they were working, and charge the salaries to their departments. On this subject, **maestro*** allows the entrance of distinct hours for billable hours. The project is charged a schedule expense, configurable in the given project, and the employee's department is credited an equivalent income. Subsequently, the employee's whole salary is counted in their home department.

To know how equipment and vehicles can be managed as profit centres, please read the documentation concerning Equipment Management.

Here are some project examples that could become profit centres, and that can be added to the small tools example:

- Company equipment
- Heavy equipment
- Internal professional services, such as engineering
- Estimation department
- Etc.

In **maestro***, the **Transfer of Funds** option allows an automatic cost charge, based on a percentage and from an activity code, or any other source (gross salary, gross salary and marginal benefits, hours, total real amount). On the one hand, **maestro*** generates an additional expense that can be charged to projects having contributed to the calculation of the source and, on the other hand, it saves an income for a specific project. The **Transfer of Funds** option is the one that would be used to charge the $2/hour fee to the excavating projects who use small tools in the previous example.

Two other **maestro*** options, **Project-to-Project Transfer** and **Advanced Project-to-Project**

 **Transfer**, make it possible to divide project costs through accounting entries done using **PAG**s.

REMINDER

- A cost centre can be defined as a reponsibility centre, with no objective of making a profit.
- A profit centre, on the other hand, is defined as a value-generating entity and a business unit that is generally an income source.
- In **maestro***, its possible to charge a project's expenses to another project, in exchange of a corresponding income, to make it a profit centre.
- Furthermore, it's possible to spread income in various sources to link sale costs, and thus establish a gross profitability per project.

FOOD FOR THOUGHT – COST CENTRE AND PROFIT CENTRE IN MAESTRO*

- ☐ How do you redistribute your project costs?
- ☐ Do you buy and maintain equipment and assets?
- ☐ Do you charge the use of equipment in your projects?
- ☐ Do you rent your equipment to third-parties?
- ☐ Do you wish to charge administrative or general expenses to projects?

Last modification: April 04, 2024

SECURITY AND ACCESS MANAGEMENT IN MAESTRO*

If there's an area where Maestro puts in a lot of effort, it's security! Like any enterprise resource planning software, **maestro*** leverages and works with a large amount of confidential data. While some of this data can be shared with key users, there is a portion that must be restricted to very few users. To meet the many different needs of its clients in terms of security management, Maestro offers a variety of functionalities dedicated to that purpose.

SUMMARY

User-Based Security Profile

Before anything else, each employee that will work with **maestro*** has a user profile created for them. Various security accesses and settings are attached to that profile, ensuring that this basic security level is assigned on an individual basis.

The maestro* Administrator

Each organization must first designate one or several **maestro*** administrator(s). An administrator actually has every right and access to the software. They are in charge of creating the others users' security profiles as well as carrying out the majority of the **maestro*** configuration.

User Code and Number

Each new **maestro*** user is assigned a user code and number. With the exception of **maestro*CLOUD** users, whose code should be their email address, there are no restrictions when assigning a user code. This code, paired with a password, enables users to access **maestro*** and/or **maestro*MOBILE**. As for the user number, it is generated by **maestro***. It cannot be modified and is linked to the data themselves.

It is recommended to never reuse a user name. In addition, the user code's history is stored and statistics on the user's various accesses can be provided.

Password

Like any good software, the access to **maestro*** is protected by a password. Originally given by the administrator, it can be modified by the user themselves according to a preset schedule and/or the next time they log on to **maestro***.

Please note that passwords used to access **maestro*** 3.05 MSSQL must comply with the rules below:

- Consist of at least eight characters
- Contain characters from at least three of the four following categories:
  - Uppercase letters of the Latin alphabet (A to Z)
  - Lowercase letters of the Latin alphabet (a to z)
  - Base 10 digits (0 to 9)
  - Non-alphanumeric characters such as: exclamation mark(!), dollar sign ($), number sign (#) or percentage (%).

As well, the user code cannot be used as password.

It goes without saying that **maestro*** passwords must never be shared with anyone. Furthermore, after creating a new user's security profile and issuing their original password, the **maestro*** administrator

can log on as that user to check their configuration and accesses.

To learn more on password best practices, refer to the appendix titled ***Password Management Best Practices***, located at the end of this document.

Access Types

Each user is also assigned an access type corresponding to the **maestro*** product(s) to which they have access as well as their the connection type . A user can have access to:

- **maestro*** only (through the internal network connection);
- **maestro*MOBILE** only (i.e. the application);
- the **maestro*MOBILE** employee mode (which only enables users to complete timesheets in the **maestro*MOBILE** application);
- **maestro*** and **maestro*MOBILE**;
- **maestro*CLOUD** (when a user accesses **maestro*** through a Web service).

Needless to say, the **maestro*** access type doesn't necessarily provide access to all **maestro*** modules, functionalities, and data. Initially, only those modules purchased by the client are available; several other parameters play a role in access assignment.

Though an administrator can create as many exclusive **maestro*** user accesses as needed, the quantity of **maestro*MOBILE** users is limited to the number of **maestro*MOBILE** licences purchased by the organization. Therefore, when a new employee requires a **maestro*MOBILE** licence, the administrator must either deactivate an existing ***MOBILE** user or purchase an additional licence.

Security per Project

Here again, **maestro*** allows the application of security per project on an individual basis, enabling users to access information on all projects, selected projects, or projects of a specific type or category.

Assigning types and/or categories to projects makes project security management easier. It ensures that administrators don't have to individually indicate if each **maestro*** user can access the project's information when creating a new project.

Moreover, it is possible to allow or deny viewing amounts and/or quantities entered for each of these projects' revenue or expense group.

It's also worth mentioning that it's possible to restrict access to each account created in the accounting structure through the creation of security groups and the further allocation of a security group code to each of those accounts.

Access to Employee Data

For each user, the administrator must specify what kind of access they will have to employee information, either full access to all employees, no access at all, access to a specific group of employees, or to some employees only. If the access to one or several employees is assigned, it becomes necessary to specify if this access should be restricted or not. When it must be, it is possible to hide the employees's contact data, allow or deny access to document management, and hide or show the employees' ID (number, name, SSN) and/or their salary (rate, amount) in reports and inquiries. As well, when a user can access **Employee management**, the administrator can decide to allow viewing and modifying specific information only. This way makes sure that only payroll employees have access to the information required for them to perform their tasks and nothing more.

Access to Companies

When the organization manages more than one company, **maestro*** allows identifying to which one(s) a user will have access when logging on to the software.

Also refer to the security as applied to a company section.

Individual Restrictions

Besides the accesses already introduced, a wide variety can be added – also on an individual basis:

For instance, the administrator will be in charge of granting (or not) specific access rights and restrictions to the vast majority of **maestro*** modules and options that will apply to:

- various financial statements and reports;
- transaction transfers;
- viewing information on equipment, service contracts, and quotations (restrictions applied by tab);
- quotations, change orders, orders, etc., based on their status;
- viewing profitability and orders and sales amounts;
- creating credit notes and/or modifying order prices;
- modifying budgets and viewing project totals;
- viewing quotation prices;
- confirming timesheets and modifying those that have been transferred sont;
- creating and/or duplicating reports and dashboards in **maestro*BI**;
- etc.

In **maestro***, there's also a functionality that copies a source user's security settings to another. It's especially useful for employees that have a comparable position and/or tasks, for instance, employees from the Accounts Payable department. In fact, it's much quicker and safer to copy an existing security profile – even if it means tweaking it later on – than to create separate security profiles for each user if their profiles are virtually identical. This functionality is also used for employee departures and arrivals to duplicate similar security profiles. Display parameters (such as a grid's visible columns) can also be

copied from one employee to another.

Document and Email Protection

In **maestro***, a contact is any entity that an organization deals and communicates with, and for which information such as its details (phone number, etc.) must be listed. These contacts may be individuals, businesses, or even locations. It's why **maestro*** contacts includes employees and users, customers, suppliers, subcontractors, etc.

For each of these contacts, it's possible to specify a password that will be required to open attachments sent through mass mailings. This functionality is particularly interesting when sending pay stubs to employees!

In short, **maestro*** offers a high level of accuracy when it comes to individually providing or restricting access.

Multi-Factor Authentication for maestro*CLOUD Users

Nowadays, a single-password authentification has become insufficient. Clients that have the *Microsoft Office* suite installed on their workstation benefit from the **Multi-Factor Authentication** access type, also known by its acronym *MFA*. The MFA helps authenticate a person using two (2) of the three (3) following factors:

- something that the person knows (generally a password);
- something the person owns (often a telephone);
- or somehting the person "is"(using biometrics).

The use of **maestro*CLOUD**, however, is not done from *Microsoft Office*; users must instead go through the SMTP communication protocol to transfer emails from **maestro*** to an email server and vice versa. Notable fact, using SMTP requires that the multi-factor authentication be activated to ensure that only recognized sites have the permission to transmit emails through *Office 365*. To benefit from a multi-factor authentication with SMTP, Maestro proposes two alternatives to its **maestro*CLOUD** clients. The main solution involves generating in *Office 365* a special password that provides access to *Office 365* and set up this password in **maestro***. For more information on this topic, refer to the document titled *Office 365*, Multi-Factor Authentication, and **maestro***.

User Group-Based Security Profile

In conjonction with a user's individual security profile are the security profiles linked to the user groups that a user is a part of. Every user created in **maestro*** must be assigned to a user group. This means that a second security level is added to to the first (individual) one. It's main purpose is to limit the access to **maestro*** modules and options. These restrictions s'apply to all users that are part of the group. When there's a change made to the security at the user group level, all the group's users are impacted.

A **maestro*** user group can then be described as a group of employees that have similar profiles and/or roles. User groups are created based on the size, employee composition, and needs of the organization. For example, they could be the following groups: *management*, *regular employees without access to payroll, regular employees with access to payroll, project managers*, *mobile technicians*, *administration*, etc. For each user group, the administrator must specify the security types, access levels, and module accesses. The administrator also decides how many user groups should be created to ensure the optimal conditions in managing the organization's security.

A user can only be linked to one user group.

Access Levels

Each user group is also assigned to one of the possible **maestro*** access levels which, depending on the installation type, can be *Administrator*, *Local Administrator*, *Standard*, ***maestro*MOBILE*** *Employee*, and *Technical*.

As mentioned earlier, the **maestro*** administrator – who is a *main* or a *head* user – holds access to all the modules purchased by the organization. This is the person in charge of granting access rights in **maestro*** and setting up security-related parameters. This person is assigned the *Administrator* access level. A *local administrator* also holds access to all modules, however, they are limited to the companie(s) to which they have access (see the section on security by domain). Employees who only access **maestro*MOBILE** to complete their timesheets have a ***maestro*MOBILE*** *Employee* access level whereas all other employees are assigned the *Standard* access level which corresponds to customized accesses. Last, the *Technical* level is reserved for technicians who deliver technical support as well as, sometimes, make the backups and perform the **maestro*** updates. This access level provides them with access to **maestro*** to ensure the system is functional without letting them see sensitive data (such as the organization's fininancial information).

Module Access

Other than providing the possibility to restrict which options user groups can see, as well as limit their access to only view information – or instead be able to insert, modify or delete it, **maestro*** offers the opportunity to select precisely each option, option group, sub-module, and/or module that a given user group can access. It is therefore possible to display the **Payroll** module in the **maestro*** menu exclusively for the payroll employee group and the administrator. In the same way, the access to some of the **Accounting** module's options and their view can be restricted for the majority of user groups and it is possible to limit the access to each account created in the accounting structure through the creation of security groups and the further allocation of a security group code to each of those accounts.

Security Applied to a Company

In addition to individual and user group security, there are also functionalities that can be used to apply measures at the company level.

Security Types

Maestro* provides the possibility to specify if the security must be:

- global; or
- local.

When the **maestro*** security is said to be *global*, it means that the security settings apply to all companies within the client's organization (including the test company). In contrast, a *local* security indicates that the security settings only apply to the current company. In situations where a client holds more than one company, it may be a good idea to implement a different security for each company. Another client may however wish to apply the same restrictions accross all companies. Besides, when security is applied globally, any change made to the security settings impacts all the other companies. It's the security type recommended by Maestro for the vast majority of organizations.

Any security change made to a test company will affect all the other companies in a global security context.

Every organization using **maestro*** has a test company created at the time of the go-live. It is a replica of the actual **maestro*** company in which the organization carries out its business. As its name indicates, the test company is used for testing, training new maestro* users, etc. All transactions executed in the test company are fictitious.

Security by Domain

Security by domain can be applied when an organization owns more than one business or division. It involves controlling the access to **maestro*** by company groups and restricting the access of some employees, user groups, or administrator users to the companies that are part of a company group. Furthermore, security by domain allows limiting access to data specific to one or several domain(s), the same way that **maestro*** restricts option access by user group.

Using security by domain offers the possibility to add a new administator access level: the local administrator, also called the assistant administrator. Users with that security level have access rights similar to that of the administrator, but are limited to the companies that are part of the domain specified in their user group. This allows the regular **maestro*** administrator to delegate the security management of each domain to certain people, without giving them access to companies that are not part of the domain for which they are responsible. Each domain has its own security settings and ensures, for instance, that a vice-president of finance can access information from all companies whereas a director of finance is limited to the companies that are part of his domain.

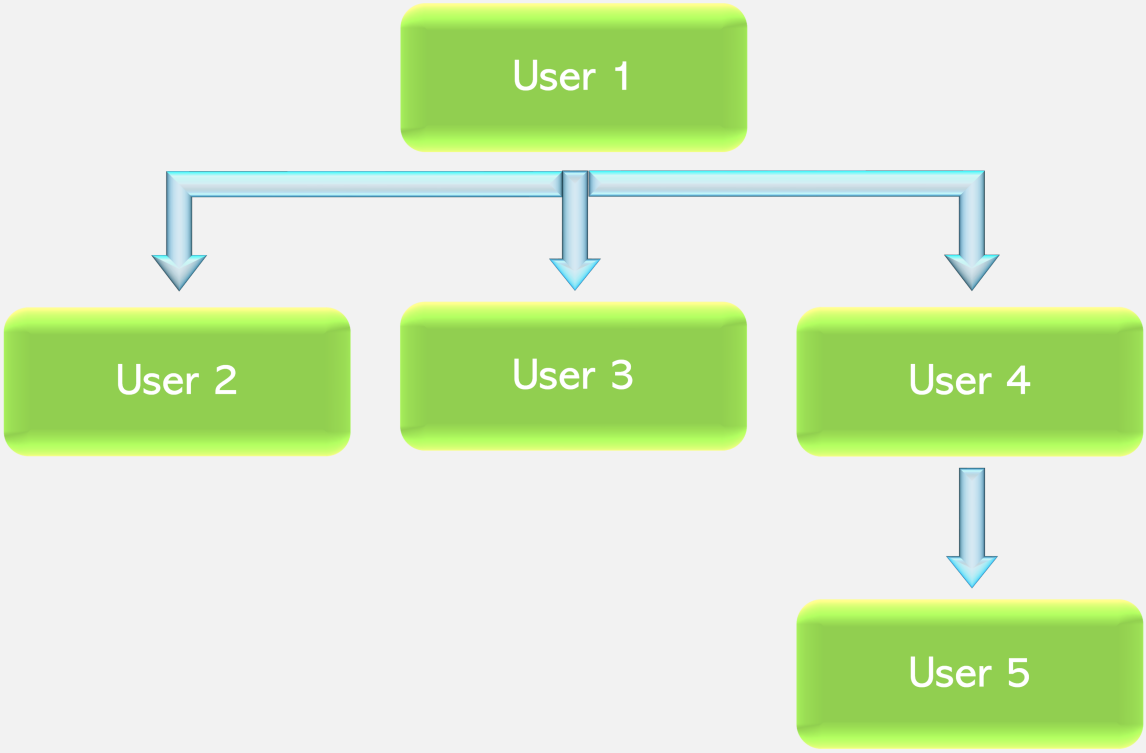
Security by domain is sometimes used when companies are managed through the multidimensional mode.

User in charge and transaction modifications

When needed, a *user in charge* can be assigned to any **maestro*** user. If required, this user in charge can modify the transactions created by the user they are in charge of. Whether as a result of different work schedules, unplanned sick leaves, summer vacations or a simple error, an employee may be required to make changes to an existing transaction, even if they weren't the one who created it.

Lorsqu'un responsable est identifié pour un utilisateur, le responsable peut modifier les transactions de l'utilisateur mais ce droit est généralement à sens unique. En effet, dans plusieurs cas, le responsable représente un supérieur hiérarchique qui peut avoir, à l'occasion, à modifier une transaction existante initiée par un de ses employés. Il va de soi qu'il ne souhaite pas, en revanche, que ses employés modifient ses propres transactions.

Example of Responsibilities Applied Hierarchically

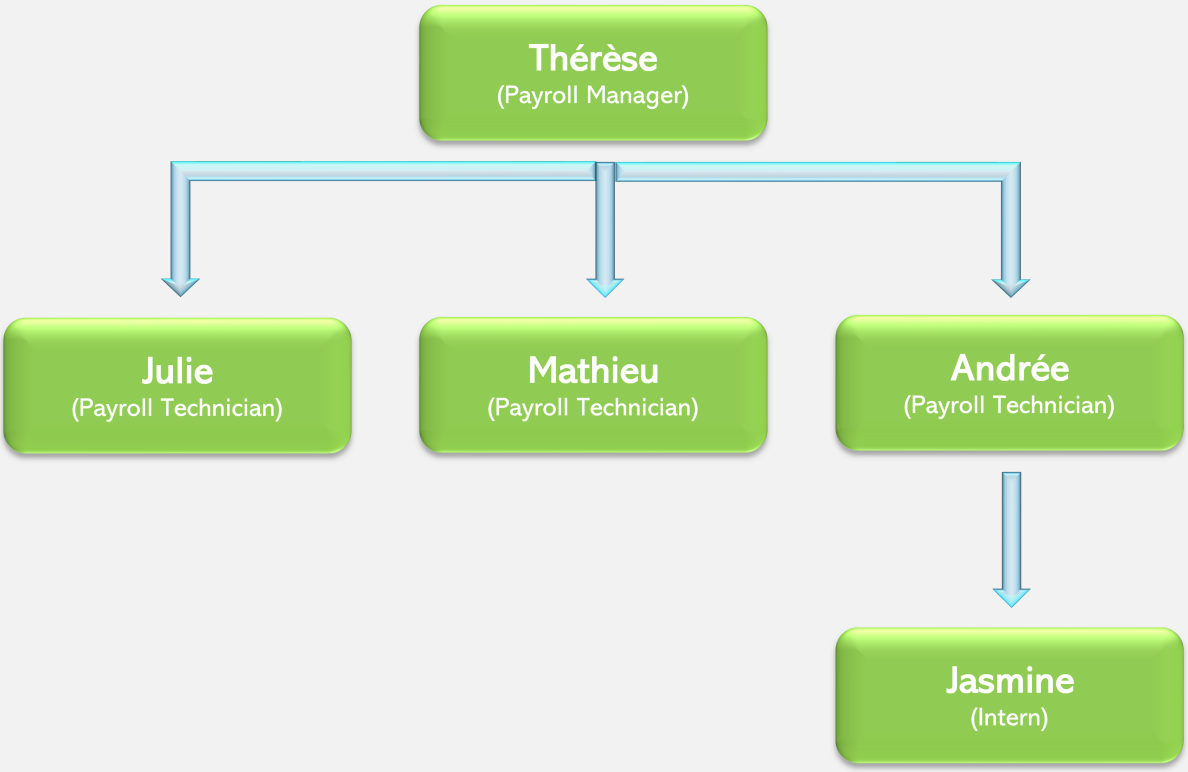


In this example, user 1 is directly responsible for users 2, 3, and 4, and they can modify these users' transactions.

User 4 is directly responsible for user 5 and can therefore modify this fifth user's transactions. Consequently, user 1 also becomes responsible for user 5 and can modify their transactions as well.

Except for user 1 and 4, no other user can modify a transaction for which they are not the author.

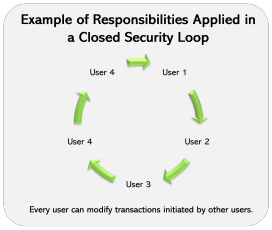
Responsibilities Applied Hierarchically to the Payroll Department at *Marteaux et Cie*



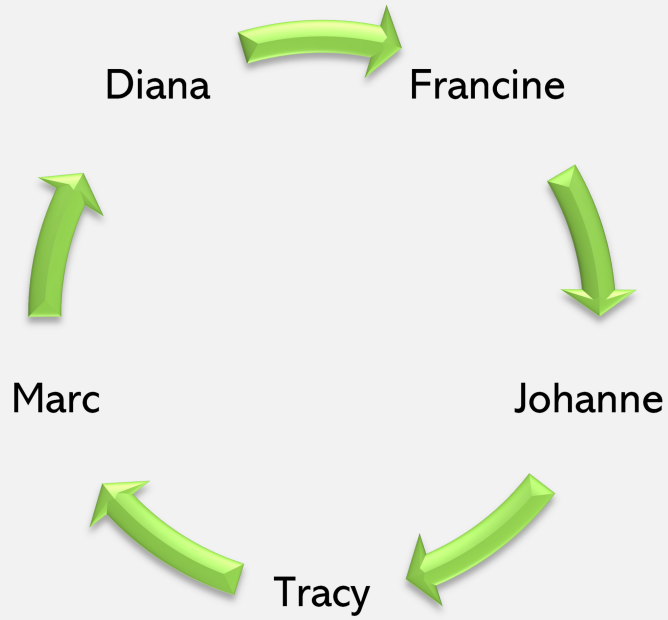
Again at Marteaux et Cie, we have decided to implement hierarchical responsibilities in the **Payroll Department**. Why? As all employees work with sensitive and confidential information, it is preferable for Thérèse, payroll manager, to be the only one able to view every employee's salary and make modifications when needed. Since Andrée has many years of experience in the field and because we wished to offer her more responsibilities, she has been given the task of supervising Jasmine, an intern for the summer. Therefore, both Andrée and Thérèse are responsible for correcting her work if needed. Otherwise, each department employee manages their own work.

There are teams and/or circumstances where it's preferable to have users that can modify each other's transactions and are all in charge of each other. What is called a "closed security or responsibility loop" is frequently found in teams where all users have the same role or perform similar tasks. Every member of the

group shares the same access rights when having to modify a peer's transaction, as they're all part of the same group (or security loop).



Example of a Closed Security Loop Applied to Accounts Receivable at *Marteaux et Cie*



Marteaux et Cie is a large company working in the commercial and industrial construction/renovation field. The **Accounts Receivable** team is made up of five employees: Francine and Johanne, who work three days a week, Tracy and Marc, who work full-time, as well as Diana, hired for a three-month internship.

All employees have identical tasks and share every project. Since Marc, Tracy, and Diana can be called upon to modify transactions initiated by Francine and Johanne, who work part-time, and since the intern's work is subject to being reviewed and modified, it has been decided that the company's **Accounts Receivable** team would work in a closed loop. This loop also has for effect of facilitating work during vacation periods or when an employee is absent one day for health reasons.

Financial Restrictions

Beyond individually-based restrictions applicable to viewing and modifying amounts and prices, **maestro*** provides functionalities that allow additional control.

Approval Process

There's a functionality in **maestro*** called Workflow Management that allows users to set up various mechanisms to obtain approvals and alert specific key players. This option sends an email or a text message to one or several recipients regarding a particular operation, for instance, a goods receipt totalling over $50,000. Many scenarios can be configured to adequately meet your needs.

Guide Access

Guide is a Web portal intended for all **maestro*** and **maestro*MOBILE** users. The portal allows users to access **maestro*** updates, create tickets to get help from Maestro's Software Support, and, most importantly, to access the **maestro*** documentation (how tos, technical references, **maestro*EXPRESS**, etc.) available to clients to solve problems or errors encountered with the software. A username and password for each user is necessary to access the portal and determines the user's access type. These are allocated by the Software Support team.

Privilege Level	Access and Restrictions
User	The *User* level allows viewing various **Guide** topics and documents. It's the level assigned to the majority of **maestro*** and **maestro*MOBILE** users. People in this level are not authorized to create tickets, follow up on them, or contact Maestro's Software Support.
Assistant - Tickets Assistant - Download Assistant - Tickets and downloads	The *Assistant* level (also called *Assistant Administrator*) enables users to view documents and access some functionalities (downloads and adding tickets) based on the selections mades when their profile was created.
Administrator	The *Administrator* level provides access to all **Guide** options and functionalities. It allows to view documents, download updates, create/view tickets, contact the Software Support team, and authorize the addition of new users.

Only Maestro's Software Support can create accounts and assign access.

Security Limitations

Despite all the functionalities set up in **maestro***, security remains an aspect where vigilance is always required. Any smart alec could obviously decide one day to view project information and/or show interest in tables used to generate reports, lists, and pivotal analysis – and access them to drill down or infer to finally figure out the host of some static information.

Table

" ...A table is a set of data elements (values) using a model of vertical columns (identifiable by name) and horizontal rows, the cell being the unit where a row and column intersect."

Source: https://en.wikipedia.org/wiki/Table_(database) September 26, 2020

REMINDER

- The **maestro*** administrator has access to all the modules purchased by the organization. It's the persone in charge of granting **maestro*** access rights and setting up security-related parameters.
- Access rights are assigned on an individual basis as well as by user groups.
- Like all good systems, the **maestro*** access is controlled by password; in that respect, Maestro recommends using the best practices.
- Several access types can be assigned to users depending on the product and connection type used.
- It is possible to apply individual restrictions to **maestro*** modules and options and limit access projects, companies, and employee data.
- Documents and emails originating from **maestro*** can also be subjected to additional security.
- Access levels and module accesses are determined by the employee's user group.
- A **maestro*** functionality called the *security loop* allows some users to make changes to transactions created by other users.
- Companies can be grouped into domains in order to duplicate administrator rights for those domains and create local administrators for each one.
- The security of the created companies can either be *global* (and identical for all) or *local*.
- The **Guide** portal access is also protected by password.

· **FOOD FOR THOUGHT – IMPLEMENTING SECURITY MANAGEMENT IN MAESTRO***
☐ What are the user groups (users that have the same tasks) in your organization?
☐ To which **maestro*** modules and functionalities should these user groups have access?
☐ Should these users be able to view and/or modify and/or add data in the options to which they have access?
☐ If you have more than one company, should the security be the same for all of them?
☐ Should users be able to make changes to transactions created by others users?

APPENDIX – PASSWORD MANAGEMENT BEST PRACTICES

The **maestro*** access is protected by a password. It is essential for all users to select it wisely and adopt safe practices. After all, it's the organization's data that is at stake!

Here are the recommended practices:

1. **A password should not be known information**

   It can never be stressed enough: nobody should be able to guess a password. Too often, number sequences, birth dates, and words such as "welcome", "hello", "password", etc. are used. In short, any word that can be linked to you by others or that have a simple semantic meaning must be avoided.

2. **A password should be modified at the slightest suspicion**

   A serious business or organization will never ask you to give them your password by email or by phone. If there's a doubt, the password should be changed as soon as possible.

3. **It is recommended to regularly change your password**

   Work-related passwords (computer, session codes, etc.) should be changed every three months as they generally are sensitive information.

4. **A password must be strong and complex**

Probably one of the most important instructions is to use a password that is uncommon or hard to decipher by pirates. It is essential to create strong codes. To do so, create password that :

- have a minimum of 12 characters
- are a mix of upper- and lower-case letters
- include special characters (examples: &"#_^) and numbers.

A strong password must be composed of 4 different types of characters: upper case, lower case, number, and ponctuation mark or special character (€, #...).

Also avoid simple logical sequences such as 123456, azerty, abcdef, etc. that appear on most common passwords lists and are the first combinations cybercriminals will try to crack your accounts. In addition, never use common expressions, song titles or lyrics, film titles, or quotes.

"For the seventh year in a row, 123456 topped the Worst Passwords List produced by internet security firm SplashData."

French Canadian Broadcasting Corporation, released on December 19, 2019

Some methods to create a strong password

- The first letter method: Beatles - Yesterday, all my troubles seemed so far away, which provides *B-Y,amtssfa;*
- The phonetic method: doctor enaba 5 E.T, which provides *drEnaba5Et*;
- The Schneier method: Where oh where is my pear? Oh, there, which provides *W?ow?imp::ohth3r*;
- The method involving four or five randomly selected words, such as good horse tack battery;
- The method that includes a foreign language word, by instance good cheval tack battery.

NOTE: Above all, avoid using predictable techniques such as replacing an "E" by "3" or "a" by "@". Such techniques give a false impression of security and make the password very vulnerable to automated guessing attempts attacks.

5. **A password must be confidential; it should never be shared!**

There are many occasions where someone may be tempted to share a password: a trustworthy colleague forgot his own, and is looking for a quick way to save time, etc.Would you share your PIN that easily?

PIN

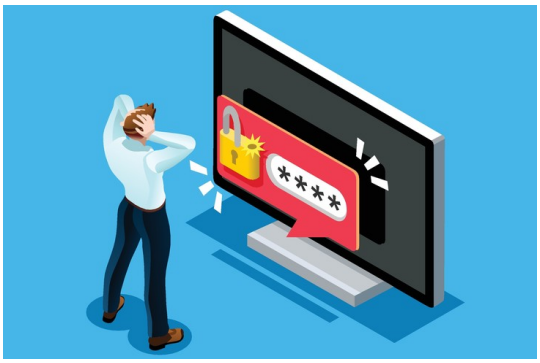
PIN means Personal Identification Number. A PIN is a confidential code consisted exclusively of numbers that is used to authenticate the holder of a chip card (debit or credi card, for example).

6. **A password should only be used for a single account and a single software**

It's recommended to use separate passwords for each account even if they all belong to the same person. Hackers will be quick to use your Facebook password to crack your other accounts, be it Twitter, Instagram, email, etc. It is however possible to use the same pattern and change the numbers or special characters according to the platform or software. Devices will be just as hard to crack than completely different passwords.

7. **Password should not be centralized in a document, whether soft or hard copy**

Who never scribbled a password on a scrap of paper? Even though many people do it, it doesn't mean that it's a behaviour that should be copied. :-) There now exist password managers that fill this purpose while providing much more security.



Password Managers

These tools, also called "password vaults", help centralize passwords in a secure way (files are encrypted). The files can be accessed through a super password.

The best known password managers are KeePass, ZenyPass, and Password Safe. Other tools also receive high marks from specialized sites, like Dashlane or LastPass.

The key however is to remember the super password and protect it properly by avoiding unsafe Internet connections!

8. **Avoid reusing a password**

Though it may be tempting to reuse a password, this practice is strongly discouraged.

To learn more about recommended practices for password management, refer to: https://www.canada.ca/en/government/system/digital-government/online-security-privacy/password-guidance.html

Sources:

https://www.economie.gouv.fr/particuliers/creer-mot-passe-securise

https://start.lesechos.fr/apprendre/universites-ecoles/mots-de-passe-les-7-bonnes-pratiques-a-adopter-1176387

Last modification: May 24, 2024

EQUIPMENT MANAGEMENT AND FINANCE PROCESSES

Whether it be a piece of equipment or a machine, **maestro*** grasps all material that can be used for a project. Tools, heavy equipment, fabrication tools, and company vehicles; all can be considered as equipment, whether they belong to the company or are rented.

SUMMARY

PROJECT COSTS ALLOCATION

Since the use of equipment is preponderant in most construction projects and companies, it is important for its use to be reported and to know its financial impact. The allocation of costs to construction projects, such as those linked to the use of equipment, makes it possible to know the actual project costs. However, it is important to understand and validate them. To evaluate whether the equipment's hourly rate is reasonable, Maestro recommends the creation of a project for each piece of equipment and to charge the usage income to the respective project. If, for example, the equipment project turns out to be very profitable, it could possibly indicate that the hourly usage rate is too high, and/or that the construction project costs are overestimated. Conversely, if the equipment project is in deficit, this could mean that the equipment is not used at its fullest, and/or that we overvalued the construction projects' profitability by funding them with hourly usage rates that were too low.

There are usually two methods used to charge the use of equipment t construction projects: entering the hours of use and allocations.

By Hour Entry

In the various worked hours entry methods in **maestro***, it is possible to specify if pieces of equipment were used, and for how long. This makes it possible, is part, to associate equipment and tool usage costs to the project, and thus, get more accurate project costs.

To do so, **maestro*** allows the allocation of four hourly rates for the use of each piece of equipment configured in **maestro***; these latter being identified with the help of a code. The first rate generally represents the use of the equipment alone, whereas the others might include, for example, the use of gas and/or more users. A company could, for example, define the following rates for the use their equipment:

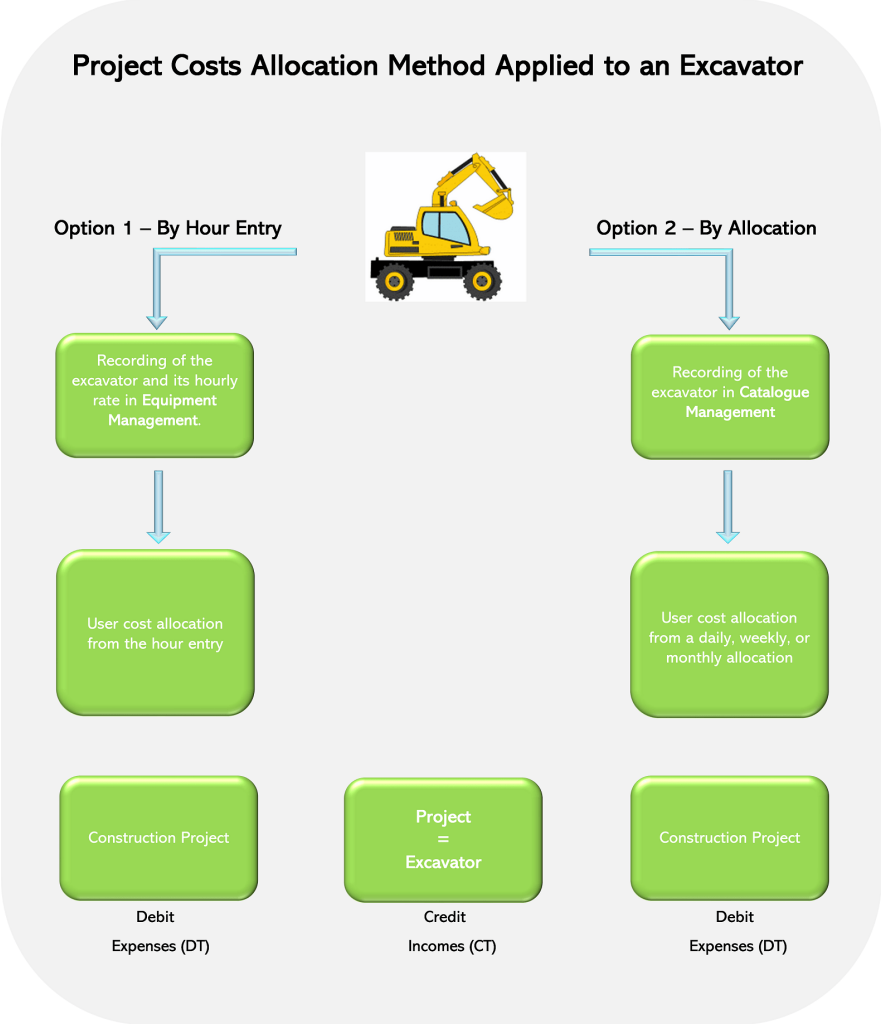
- With operator only.
- With gas.
- With operator and gas.
- Standby.

The rate can be selected when entering the number of hours of use. Better yet, it can be chosen upon the creation of the construction project in **maestro***. Thus, for a long-term project that uses a lot of machinery, a company can prefer to account for gasoline as an expense, and directly apply it to the construction project. In this example, the rate, selected by default, for the construction project and selected equipment, consists of the use of equipment rate only. If, on the contrary, the equipment is used for various projects, the preferred rate will be with operators and gas, for those projects. The same logic applies if there is allocation, or not, of an operator, or of all other costs to a piece of equipment.

This method is usually used to apply large equipment, heavy machinery and/or vehicle usage costs to construction projects.

By Advanced Allocation

Another way of doing consists of listing the equipment, or a part of them, in the **maestro*** catalogue, and then set a daily, weekly, or monthly allocation. Recurring equipment usage costs will be applied to the designated construction project and, in return, an allocation will be systematically paid to the project linked to the equipment used. This method is often preferred to apply small tool usage costs, or when a piece of equipment is used long-term on a project.



EQUIPMENT AND PROFIT CENTRE

As previously mentioned in the chapter on profit and cost centres, the equipment project can be considered as a cost centre. However, it is possible, and recommended, to make sure that it becomes a profit centre by applying an income to the equipment project, generated by the use of equipment on construction projects. Indeed, the fees charged to construction projects for the use of equipment can translate into income that counterbalances

the equation and makes it possible for the equipment project to become a profit centre. This also makes it possible to monitor its profitability. This profit centre can be limited to the one equipment project, or it can regroup many projects of a common nature or trait (generators, parking), according to the business's analysis needs.

Whether the company owns or rents the equipment, the costs must be considered and applied to the profit centre:

- Maintenance
- Repairs
- Damping
- Funding
- Insurances
- Registrations
- Gas
- Tires
- Rental fees
- Etc.

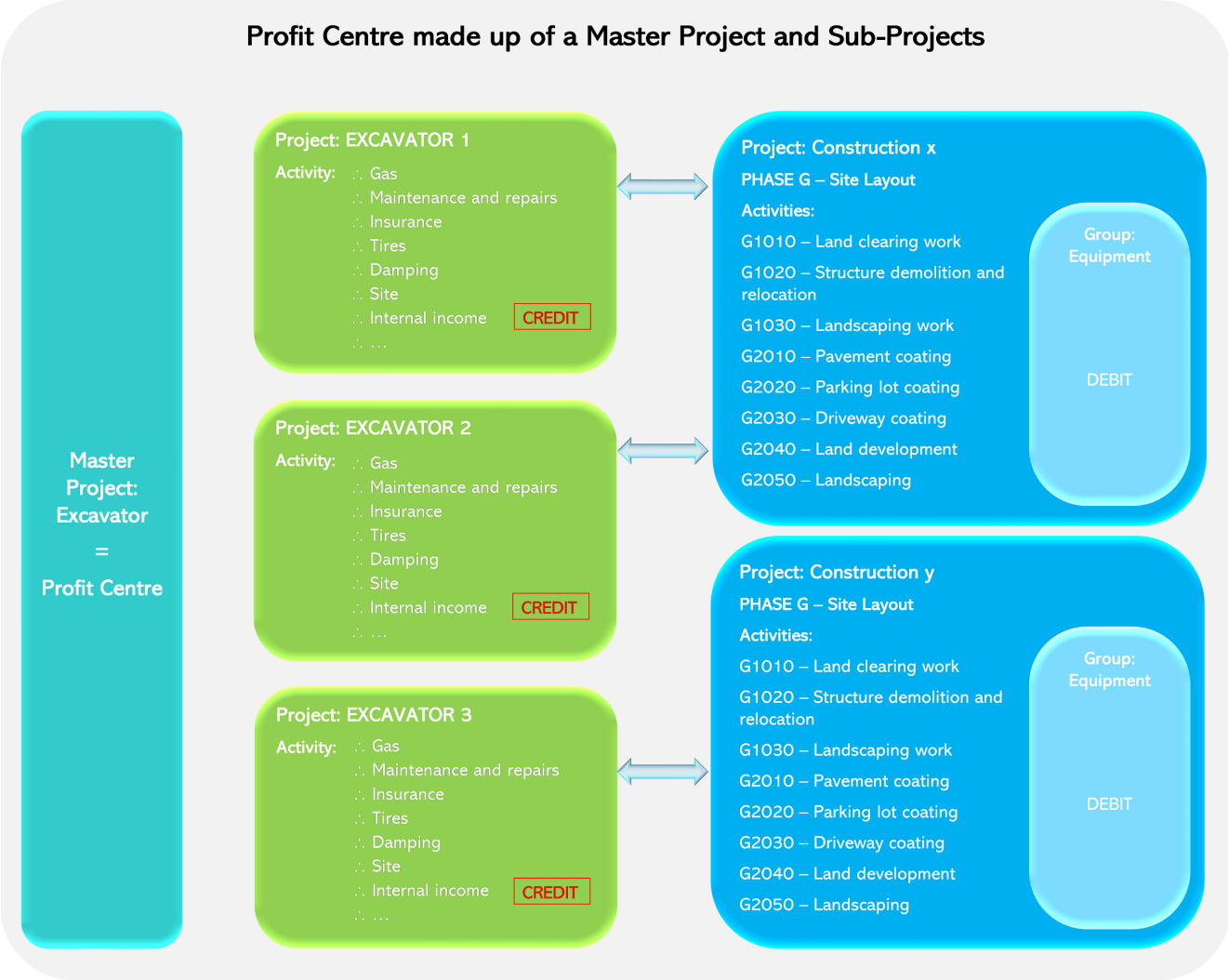
Equipment Management Options

There are several ways to manage equipment and monitor their profitability in **maestro***. Only one method can be used, but it is also possible to use more than one, depending on the quantity of equipment, their characteristics, the available information coming from the construction site, and the wants/needs of the company.

Option A

Creating a Profit Centre made up of a Master Project and Sub-Projects

Large equipment and/or equipment of the same nature can be managed as a profit centre; each equipment, in itself, makes up a sub-project, and the set of equipment sub-projects is overseen by a master project, which regroups all sub-projects. An identical project structure is used for each sub-project (equipment), and expense and income activities are displayed there. There are activities for usage fees, such as repairs, maintenance, damping, etc., as well as a usage income activity, that which provides the accounting counterpart of usage charges, the former being applied to construction projects through the entrance of hours.

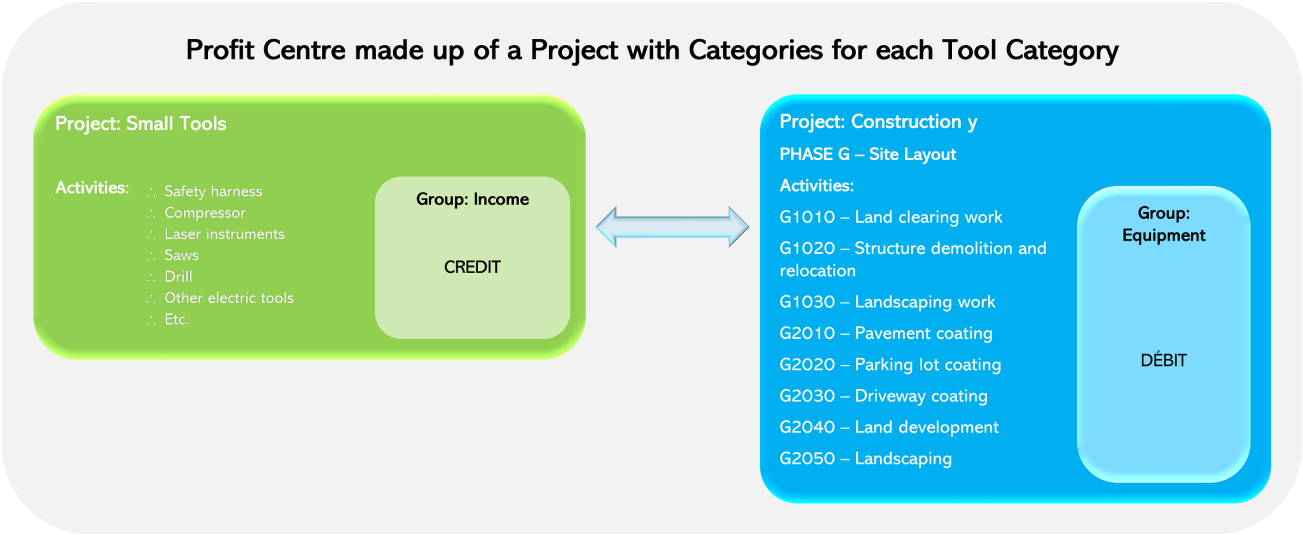


Option B

Creating a Profit Centre made up of a Project with Activities for each Tool Category

This option advocates for the creation of a project, for all equipment, and the creation of activities for each major equipment category. This is a common way of managing small tools since the creation of a distinct project for each of them would make it more complex. This method also makes the project a profit centre; the usage costs are charged to the construction projects and, as for the corresponding incomes, they are allocated to the project created for the equipment. Two options are offered to the user concerning the allocation of usage expanses to construction projects:

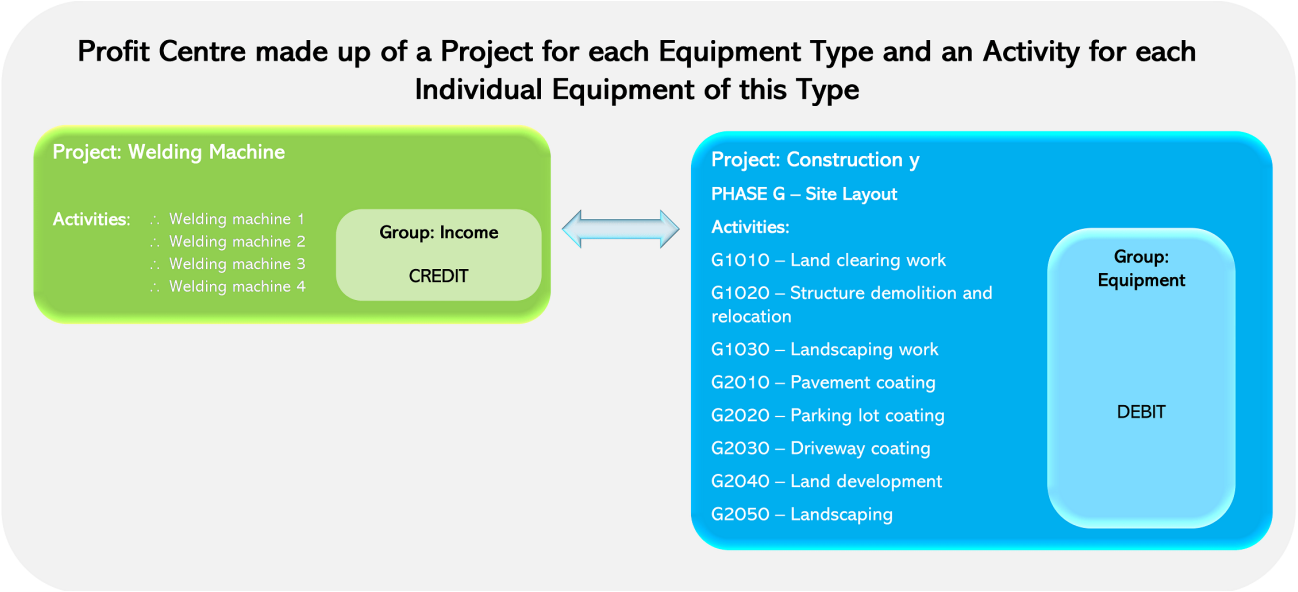
1. By hour entry, corresponding to the number of hours the equipment was used (option B1).
2. By allocation, applied at an x rate and made possible by using the **maestro*** catalogue (option B2).



Option C

Creating a Profit Centre made up of a Project for each Equipment Type and an Activity for each Individual Equipment of this Type

Option C proposes a method inspired by the previous two. A project is created for each equipment type, which makes it possible to benefit from a global portrait of this equipment type, then an activity is associated to each equipment individually, allowing a very close follow-up. This method also makes the project a profit centre; usage costs are charged to construction projects, and, as for the corresponding incomes, they will be allocated to the specific equipment project and activity used.



Option D

Creating a Cost Centre made up of a Project with Activities for each Tool Category

This method implies that equipment usage costs are not applied to construction projects, but instead regrouped to create a general company expense.

Advantages and disadvantages of these options

Option	Description	Advantages	Disadvantages
A	• A profit centre • **A master project for an equipment type** • Sub-projects for each individual equipment • Detailed and standard activities for each sub-project • Cost allocation from the hours of use entry	• This option makes it possible to benefit from all information per equipment, in addition to having all information concerning the whole equipment group.	• To benefit from data this precise, it is first necessary to have access to information from the construction site, and have a process and the necessary resources which makes it possible to capture this information and enter it in **maestro***.
B1	• A profit centre • One project for the equipment • **One activity per equipment category** • Cost allocation from the hours of use entry	• This method is obviously the easiest to manage and implement since it does not follow up on each individual equipment. For example, it is not necessary to know exactly which compressor has been used.	• Since less information is available, it is obviously harder to pinpoint the problem, if it should happen, and/or identify the specific source. For example, if the compressor activity is in deficit, research will be less conclusive.

Option	Description	Advantages	Disadvantages
B2	• A profit centre • One project for the equipment • One activity per equipment category • **Allocation of usage costs and incomes from an allocation**	• It is possible to save and have many detail elements concerning the equipment, these latter being listed in the **maestro*** catalogue.	• It is necessary to have a resource dedicated to the equipment, and that is responsible for entering information in **maestro***.
C	• A profit centre • One project per equipment type • One activity for each individual equipment • **Cost allocation from the hours of use entry**	• This option, in part, consists of a hybrid method of options A and B, and provides a relatively interesting quantity of information.	• This method also requires for information from the construction site to be captured and entered in **maestro***.
D	• **A cost centre** • One project per equipment • One activity per equipment category	• No data entry must be performed concerning the use of the equipment on the construction site.	• Equipment usage costs are missing from the project and can distort the pofitability of the latter.

Lastly, companies that own the **Preventive Maintenance** module (which allows, in part, to plan maintenance according to the number of hours or kilometres used and notify the user when maintenance is required) will be able to generate work orders from the equipment. These work orders will, afterwards, be charged to the applicable profit centre.

REMINDER

- In **maestro***, the term equipment or machinery refers to any material piece which can be used in a project, regardless of its size, or whether it is rented or not.
- It is recommended to create projects for major equipment and make them profit centres; it is then possible to evaluate the projects' profitability.
- Applying equipment usage fees to construction projects can be done by attributing hours, or by applying an expense amount at a specific frequency (allocation).
- Other costs can be charged to an equipment profit centre, such as insurance fees, maintenance fees, buying tires, etc.
- Users have many options in which they can manage equipment in **maestro***, apply costs and incomes, and obtain the information they need.
- Equipment usage rates can be defined in **maestro*** and selected by default for each construction projects.

FOOD FOR THOUGHT – EQUIPMENT MANAGEMENT IN MAESTRO*

- ☐ Your company is the owner of what type(s) of equipment?
- ☐ Are there many such equipment?
- ☐ Is any of this equipment rented, by you and/or your customers?
- ☐ How is your equipment assigned, and then used in each of your projects?
- ☐ Are they kept in inventory?
- ☐ How is the use of equipment charged to projects, or even to customers?
- ☐ Is an hourly rate applied to the use of machinery?
- ☐ Do these rates differ from one project to the next?
- ☐ How do you currently evaluate the profitability of your equipment?
- ☐ How are expenses, such as gas, insurances, etc., currently recorded?

Last modification: April 04, 2024

PAYROLL

Throughout the years, Maestro has developed several options and functionalities to meet its customers' needs in terms of payroll. A variety of methods can be used to carry it out and addition manage fringe benefits, whether the payroll is processed in-house or done by a third party through outsourcing.

As **Maestro*** enables the daily management of a company's operational and financial data, it can link hours charged and allocated to projects and those that need to be paid to employees. Just like all our other modules, the Payroll module is integrated.

SUMMARY

IN-HOUSE PAYROLL PROCESSING

The first step of the payroll process, when it's done in-house, is entering worked hours. Since **maestro*** enables dispatching hours per day, users can monitor project costs at all times. To obtain the most accurate project costs possible and ensure the accuracy of the accounting data, it's essential to record social benefits – called fringe benefits in **maestro***.

Fringe Benefits(FB)

The term *Fringe Benefits* is used in **maestro*** to describe all employer costs or expenses that are added to a salary to benefit employees. Simply put, fringe benefits correspond to what are commonly called social, employee, or marginal benefits.

Balanced Mode (or calculating payroll while balancing fringe benefits between payroll and projects)

When the balanced mode is used to process payroll, it indicates that **maestro*** records fringe benefits for the current payroll. All worked hours are paid and all paid hours are linked to one or several project(s).

Considering fringe benefits amounts are not yet known, an estimated rate can be defined at the work category level. As a result, the employee's salary amount AND the estimated fringe benefits rates are allocated to the project. When the time comes to process payroll, the project-dispatched hours are automatically imported to payroll where adjustments can be made, such as adjusments to banked hours management or applying default hours for employees that didn't complete their timesheet. It is also possible to run an option that verifies if overtime should be added before processing the actual payroll. This can prove itself useful when some employees work irregular schedules. They may not have done overtime on a daily basis, but could have over a pay period's total hours. Once all hours have been processed by payroll and the latter has been completed, the fringe benefits amounts applicable to payroll for each employee are now available. All entries previously allocated to projects can then be corrected and posted accordingly.

Exemple simplifié des écritures réalisées par maestro*, pour la paie

Au niveau du projet	Débit	Crédit
Dépense - salaire	100 $	
Salaire - couru		100 $
Dépense - BM	20 $	
BM - courus		20 $
	120 $	120 $

Au niveau de la paie	Débit	Crédit
Salaire - couru	100 $	
BM - courus	20 $	
Diverses déductions		15 $
Salaire à payer		105 $ (100 $ + 20 $ - 15 $)
	120 $	120 $

This method enables posting project hours on the date they were carried out; because the salary expense is posted when it is incurred, the resulting financial statements are much more accurate. It also saves time when a pay period overlaps different financial periods; no manual adjustement is required. Additionally, the application of a temporary cost (salary plus estimated fringe benefits rate) affects projects and allows users to benefit from significant project costs. The temporary cost is then corrected when the fringe benefits are adjusted.

The **Overtime Calculation** option facilitates calculating hours that are paid overtime or double rates. The calculation is based on predetermined rules and simplifies the payroll processing for the paymaster (for instance, when payroll needs to be completed for over a hundred employees).

Normal Mode (or calculating payroll without balancing fringe benefits between payroll and projects)

Although this method is not used as much by companies, processing payroll in **maestro*** using the normal mode means that all costs pertaining to fringe benefits are managed as temporary costs. However, in reality, **maestro*** allocates the actual fringe benefits from the previous pay without balancing them between projects and the current payroll.

To use the normal mode to process payroll, it's necessary to indicate that hours must be posted directly in the **Time Management** module's **General Settings**. The same thing must also be done on the payroll side. The only downside in this case is a probable gap between the estimated fringe benefits rate in the projects and the actual rate in the payroll processing. This creates a residual difference in the **Accrued Salaries** and **Accrued Fringe Benefits** accounts which will require periodic manual adjustments.

OUTSOURCED PAYROLL PROCESSING

Some companies decide to assign payroll processing to an external service provider. In this situation, several methods – all involving both advantages and disadvantages – can be considered. However, before appointing a recognized third party to process their payroll, these companies must take into account that the resulting payroll data will necessarily have to be imported back into **maestro*** to ensure that project costs are allocated and reflect actual values. Even when an external provider is used, it is still necessary to create and configure employees in **maestro*** as well as enter the information related to hourly rates, unions, etc.

Since its beginnings, Maestro has supplied interfaces more or less developed to transfer hours and/or process payroll with the following providers:

Provider	Provider and/or **maestro*** interface features
Ceridian	Export hours
Cognicase - CGI Payroll (Nethris)	Export hours to Cognicase
CGI Hours	Import hours and accounting entries from CGI
Kronos	Import hours into the **Enter Hours** option, in the **Project Time** submenu of the **Time Management** *WARNING: Only Kronos' previous version is supported*
ADP Payroll	Exclusively for American payroll Export hours and import accounting entries
Desjardins Payroll Services	Export hours and import accounting entries
Perfect Payroll	For American payroll processing

Allocating Worked Hours to Projects BEFORE Payroll is Produced by a Service Provider

Scenario No. 1

- **Only importing accounting entries**
- **Without balancing fringe benefits between Payroll and Projects**

When payroll is processed by an external provider, it often results in delays before the salary costs are linked to projects; the duration of the entire payroll process depends on the provider. To address this situation, Maestro offers an alternative which is to allocate salary expenses to projects progressively, as they are incurred, offset by accrued salary (liability account). In addition to producing an updated financial management at all times, this method enables:

- automatic hour compilation to generate the export file for the external provider;
- intercompany management if needed;
- accurate management of banked hours;
- automatic financial adjustment when pay periods overlap two months;
- accurate and updated project costs.

Although each provider has its own distinctive features, this procedure's resulting actions are generally as follows:

1. Dispatch hours in **maestro*** projects;
2. Export worked hours to the external provider;
3. Payroll processing completed externally;
4. Import accounting entries back into **maestro***.

There may still be gaps between the data initially entered in **maestro*** and the imported entry, which is why some adjustments may be required. Users may also notice that this method doesn't include a step that balances project fringe benefits with the actual payroll fringe benefits. The procedure thus consists of an hour entry in **maestro*** followed by an export where hours are compiled per employee (i.e. no project-related information is provided). Indicating hours for all employees is crucial, even administrative employees. A timesheet must therefore be completed by everyone, without exception. Once the payroll process is finalized, the external payroll service normally produces a general accounting entry that is imported into **maestro***; this entry contains various deductions (such as government remittances). It is essential to ensure that this entry's salary accounts match the accrued salary and fringe benefits accounts used in projects. Where salary rates are the same (both in **maestro*** and the system used by the external provider), salary amounts should cancel each other out. If not, the ensuing gap must be identified as it will help in finding the origin of the configuration error. As mentioned previously, a slight gap may remain between the fringe benefits estimated in the projects and the actual fringe benefits amount. An adjustment entry is then required.

Scenario No. 2

- **Importing accounting entries and payroll data**
- **Balancing fringe benefits between Payroll and Projects**

When the external payroll system allows it, it can be interesting to import into **maestro*** both the accounting entry and the employees' pay. In addition to enabling the employer to directly view the salaries paid to its employees without resorting to reports or referring to the service provider, this method allows the use of the functionality that reconciles fringe benefits between project and payroll. It ensures there are no cumulative gaps in the accrued fringe benefits account.

The actions resulting from this method are generally as follows:

1. Dispatch hours in **maestro*** projects;
2. Export worked hours to the external provider;
3. Payroll processing completed externally;
4. Import salaries into the **maestro*** payroll module;
5. Reconcile fringe benefits between projects and payroll;
6. Import the accounting entry into **maestro***.

It is also possible to use the **maestro*** financial transfer functionalities to make adjustments when the detailed payroll – which consists of both the salaries and fringe benefits – is imported. This approach is more complex and requires that the information of the external system be available. It does nonetheless prove itself to be highly interesting, especially if an external service is used to process American payroll.

Allocating Worked Hours to Projects AFTER Payroll is Produced by a Service Provider

Some companies decide not to enter hours in **maestro*** before sending them to the service provider. Hours are compiled through an *Excel* spreadsheet or using a tool distributed by the provider. Payroll is then processed and the resulting entry, which contains the cost breakdown per project, can be entered into **maestro***; salary costs are consequently allocated to the appropriate projects. All things considered, this method delivers the expected results, although with some limitations: loss of information regarding employees who worked on various projects together with a significant delay between the moment costs are incurred and when they are finally allocated to projects.

Maestro* Importation Methods

When the employer starts by entering payroll data using an interface or the provider's software, the provider is responsible for the entire payroll processing and afterwards sends an import file so that the processed data is transmitted to **maestro***. Importing the data in **maestro*** is done through an *Excel* file. Data can be imported per project, employee, or all employees at once. An importation template will however have to be supplied by the client to ensure that the payroll provider returns the appropriate variables in a predetermined order after completing the payroll process.

DEDUCTIONS AND EARNINGS PROCESSING IN MAESTRO*

Occupational Health and Safety Deductions

In Canada, employers must pay the deductions related to the financing of the occupational health and safety scheme which permits, among other things, compensating employees that have been exposed to occupational injuries. In **maestro***, occupational health and safety deductions can be managed at either the project or payroll level. The rates pertaining to those deductions are set by various organizations such as the *Commission des normes, de l'équité, de la santé et de la sécurité du travail* in Québec (CNESST), the *Workplace Safety & Insurance Board* (WSIB) in Ontario, the *Workers Compensation Board* (WCB) in Manitoba and Alberta, etc.

It is important to remember that the payment of provisions is compulsory for Quebec employers. Although the actual amount of health and safety deductions to be paid is calculated at each pay, according to the rates entered in **maestro*** and prescribed by the CNESST, Quebec employers are required to pay installments. Indeed, as the number of workers and hours worked can vary considerably from one season to another and cause deficits in certain cases, it has been established that provisional amounts must be paid throughout the year. This characteristic distinguishes Quebec employers when it comes to processing health and safety at work premiums.

In addition, the amounts of occupational health and safety deductions payable (actual and provisional) are calculated, in **maestro***, according to surpluses which can be configured as being annual or weekly. In practice, however, only the salaries of jobs subject to the CCQ have a maximum weekly contribution.

Processing at the Project Level

Managing the occupational health and safety deductions at the project level allows for the association of an employee's worked time to one or several W/C - CSST activities, each of the latter being linked to classification units. An employee can therefore be assigned to several activities during a single week, even sometimes within a single work day. This results in very accurate processing for situations where, for instance, an employee performs various tasks for a specific project.

Processing at the Payroll Level

When occupational health and safety deductions are managed at the payroll level, it means that the classification units are linked to trades and/or work categories. Once worked hours are entered in **maestro***, the trades or work categories of the affected employees generate salary amounts for the related classification units.

Miscellaneous Earnings

Maestro* provides the opportunity to create different types of earnings. It is possible to indicate if all or any of them are subjected to withholding taxes and contributions, and if so, based on which proportion:

- Income
- Bonuses
- Commissions
- Child/Spousal Support
- Deductions
- Expense Reimbursement
- Vacation
- Earnings

REMINDER

- In all situations, salary and fringe benefits charges must be allocated to projects.
- Several options are available to process payroll, allocate salary charges to projects, and calculate and apply fringe benefits.
- Payroll processing, even when it is outsourced, still requires initial data entry in **maestro*** and importing payroll entries.
- Even if payroll is outsourced to an external service provider, worked hours can be allocated to projects without having to wait for the importation of the payroll entries.
- Occupational health and safety deductions can be managed at the project or payroll level. Quebec however is different from other provinces as Quebec employers must manage CNESST provisions.
- Several types of earnings can be configured.

· FOOD FOR THOUGHT – PREPARING THE PAYROLL IMPLEMENTATION

☐ How are labour costs integrated into your projects?

· FOOD FOR THOUGHT – PREPARING THE PAYROLL IMPLEMENTATION

- ☐ Do you wish to calculate the actual payroll cost including the calculation of fringe benefits?
- ☐ Is your payroll processing attributed to an external service provider? If so, which one?
- ☐ Do your company's activities take place in one or several provinces? Are your employees likely to work in more than one province?
- ☐ Are you planning on using the US payroll or submitting certified pays?
- ☐ How many employees are usually on the payroll list (minimum and maximum)?
- ☐ When are your employees paid (weekly, biweekly, etc.)?
- ☐ What earnings can be attributed to your employees during a year?
- ☐ Do you manage:
  - a pension plan;
  - a collective insurance;
  - wages garnishments;
  - advances?
- ☐ Do your employees benefit from special deductions?
- ☐ Do you manage banked time?
- ☐ How do you recuperate employee advances, if applicable?
- ☐ How are vacation hours accumulated?
- ☐ How are vacation hours paid?
- ☐ Do some of your employees work for more than one trade?

Last modification: February 27, 2024

PROJECTIONS, BUDGET, AND CONTINGENCIES

Project management goes hand in hand with risk analysis. Furthermore, there are numerous methods to manage project costs, just as there are many cost variations in the construction industry. Whatever the preferred method is, it is important to keep tabs on projects and their budgets during the progress of the construction work. To this effect, here are the various methods suggested by Maestro and possible with the data generated by the software.

SUMMARY

REMINDER - BASIC CONCEPTS

What is a Budget?

In the context applicable to **maestro***, a budget can be defined as the sum of incomes and the sum of foreseen expenses for the realization of a project. A cost budget refers to a budget monitored by the project manager, for example, and usually consists of an amount that results in the sum of expenses / project costs; this is equivalent to a quotation from which profit is subtracted. There is also the sales budget, which consists of the sum of revenues generated by the project; it is equivalent to a quotation. Finally, a revised budget consists of using the original budget to which changes were made. These budget revisions can be internal (i.e., when a mistake is found in a quotation) or external (i.e., if a customer asks to make changes to the initial quotation).

A budget can also refer to quantities, the latter being decisive in the calculation of the former. It should be noted that unit costs are based on actual and produced quantities, where applicable. Quantities are also used for the calculation of projections.

What is a Projection?

A projection is a new total amount budgeted according to actual data accumulated up to a specific date, plus all future budgeted items. A projection in no way replaces a budget; it is distinct and additional information. In the context of a project, a projection is established when the former is in progress. It is therefore necessary to cumulate the data from the work already done and add what remains to be done.

What is a Contingency?

A contingency refers to a provision for unforeseen events. It is directly linked to the projection. since it is a future estimate of unexpected expenses to come. In short, a contingency is a cost provision, the exact details of which are not clearly defined, that is added to the actual and incurred costs to make a projection. This is the case, for example, when a project manager knows that unforeseen and additional costs will have to be borne by the company following the discovery of mould in walls, even though the extent of the problem has not yet been assessed and no estimate has yet been received[16].

A contingency can therefore be defined as a likely estimate of the data that allows us to make a projection. More precisely, a contingency allows to reevaluate the progress costs of a project using estimated values,

[16]Even though the present explanation a contingency refers to actual and committed costs, contingencies also exist for incomes. Furthermore, a contingency could be linked to a reduction of the planned costs. This could be the case, for example, if the construction work is done quicker than anticipated and finished before the predetermined end date, therefore reducing the costs.

without having any accounting repercussions and staying as close to reality as possible. Even if contingencies generally appear during construction work, they can sometimes be known before the project even begins, particularly if there are uncertainties in some elements of the quotation. In a way, these are amounts set aside for exigencies, unforeseen but statistically predictable increases in costs. A contingency therefore allows for adjustments to be made during the construction process in order to give a more accurate idea of the future costs, and thus get closer to the projected costs.

It is important to remember that using contingencies in **maestro*** and in the context of calculating projections does not generate any financial transactions. The purpose of contingencies is simply to help calculate projections since, during this calculation, it is required to identify the values entered in contingencies. Projections are therefore manual and managed by users. The values are taken as is, without any processing.

PROJECTION METHODS IN MAESTRO*

In **maestro***, there are a dozen methods available to the user to calculate the final cost (projection) of a project while it is in progress. Some of these methods allow for the follow up of unit costs (most specific to civil engineering or specialist companies) and/or the follow up of lump sums. The method can be selected in the project itself (allowing for an appropriate projection method to be used for the project) or by project types (if project types have been set).

The Contingency Method (Advanced or Not)

While the term contingency refers to risk planning and a means to deal with unforeseen situations, in **maestro*** it is actually an amount or quantity that is added to a project, by activity or by group. This amount or quantity is then used to perform calculations and make a projection for the project.

The Budget Method

The budget method simply asks of a user to look at the projects to analyze whether the committed costs are greater or less than those planned, and if the financial projections still correspond to the initial budget. That way, if the actual costs plus the committed costs equal less than the initial budget, the projection equals the budget. If, however, the actual costs plus the committed costs equal more than the initial budget, the projection then equals the sum of the real and committed costs.

Committed Costs (to calculate projections)

Committed costs in **maestro*** refer to project expenses to which the company has already committed itself: orders, stock orders from catalogue, subcontracts, etc.

The Linear Methods

To calculate a projection, the various linear methods consist of determining a unit cost for the produced quantities and applying this cost to the remaining quantities to be received to complete the project.

Linear Method with Actual Unit Costs - By Group

Making a projection with this method simply asks that you multiply the actual unit cost, on the reevaluation date, by the planned quantity (budgeted). However, if the actual quantity is greater than the planned one (budgeted), it is the actual quantity that is used to calculate the projection.

Scenario1a)

Example of Data Available in maestro*

Activity	Description	Budget ($)	Budget (qty)	Actual Costs	Actual Quantities	Committed Costs	Projection
B2030	Outside doors	$2,500	5	$1,800	2		$4,500

Projection	=	Actual Unit Cost	x	Planned Quantity (Budgeted)
$4,500	=	($1,800 / 2)	x	5
$4,500	=	$900	x	5

Scenario 1b)

Example of Data Available in maestro*

Activity	Description	Budget ($)	Budget (qty)	Actual Costs	Actual Quantities	Committed Costs	Projection
B2030	Outside Doors	$2,500	5	$4,000	6		$4,000

If the actual quantity is greater than the planned quantity (budgeted)

Projection	=	Actual Unit Cost	x	Actual Quantity
$4,000	=	($4,000 / 6)	x	6
$4,000	=	$666.67	x	6

Linear Method with Pessimistic Unit Costs - By Group

This projection method is based off the comparison of the planned unit cost (budgeted) to the real unit cost. If the actual unit cost is greater than the planned unit cost (budgeted), then it is the actual unit cost that is multiplied by the planned quantity (budgeted). If, however, the actual unit cost is less than the planned one, it is the planned unit cost (budgeted) that will be multiplied by the planned quantity (budgeted). And in order to get a glimpse of the worst case scenario, the planned quantity (budgeted) is replaced by the actual quantity, if the latter is greater.

Scenario 2a)

Example of Data Available in maestro*

Activity	Description	Budget ($)	Budget (qty)	Actual Costs	Actual Quantities	Committed Costs	Projection
B2030	Outside Doors	$2,500	5	$1,800	2		$4,500

Comparing the Planned Unit Cost (Budgeted) vs the Actual Unit Cost

($2,500 / 5) vs ($1,800 / 2)

$500 vs $900

Projection = Highest Unit Cost x Planned Quantity (Budgeted)

$4,500 = $900 x 5

Scenario 2b)

Example of Data Available in maestro*

Activity	Description	Budget ($)	Budget (qty)	Actual Costs	Actual Quantities	Committed Costs	Projection
B2030	Outside Doors	$2,500	5	$2,600	6		$3,000

If the actual quantity is greater than the planned quantity (budgeted).

Comparing the Planned Unit Cost (Budgeted) vs the Actual Unit Cost

($2,500 / 5) vs ($2,600 / 6)

$500 vs $433.34

Projection = Highest Unit Cost x Actual Quantity

$3,000 = $500 x 6

Linear Method with Optimistic Unit Costs - By Group

This projection method is also based on the comparison of the planned unit cost (budgeted) to the actual unit cost.

To perform the necessary calculations of the linear projection method with optimistic unit cost, it is mandatory to use the highest unit price (between the actua; unit cost and the planned unit cost (budgeted)) and to multiply it by the remaining quantity to be received (the planned quantity minus the quantity received to date). To this must be added the sum of expenses to date for the acquired quantity.

Scenario 3

Example of Data Available in maestro*

Activity	Description	Budget ($)	Budget (qty)	Actual Cost	Actual Quantities	Committed Costs	Projection
B2030	Outside Doors	$2,500	5	$1,800	2		$4,500

Comparing the Planned Unit Cost (Budgeted)	vs	the Actual Unit Cost
($2,500 / 5)	vs	($1,800 / 2)
$500	vs	$900

Projection	=	(Highest Unit Cost	x	Remaining Quantity to be Received)	+	Actual Costs
$4,500	=	($900	x	(5 - 2))	+	$1,800
$4,500	=	($900	x	3)	+	$1,800
$4,500	=		$2,700		+	$1,800

> The three methods that follow, the activity-based methods, are identical to the group-based methods, with the only exception that the planned quantities (budgeted) correspond to the quantities to be received and the actual quantities come from the **maestro* Production** option.

Linear Method with Actual Unit Costs - By Activity

Making a projection using this method simply consists of multiplying, for the activity, the actual unit cost by the quantity to be produced. However, if the actual quantity, which comes from the **Production**, is greater than the quantity to be produced, the actual quantity is used to calculate the projection.

Linear Method with Pessimistic Unit Costs - By Activity

This projection method is based on the comparison of the planned unit price (budgeted) to the actual unit cost. If the actual unit cost is higher than the planned unit cost (budgeted), the actual unit cost is multiplied by the

quantity to be produced. Otherwise, if the actual unit cost is less than the planned one, the planned unit cost (budgeted) will be multiplied by the quantity to be produced. And in order to get a glimpse of the worst case scenario, the quantity to be produced is replaced by the quantity in the **Production** option, if it happens to be greater than the former. In sum, this scenario suggests the use of the higher unit cost and the greatest quantity to calculate the projection.

Linear Method with Optimistic Unit Costs - By Activity

This projection method is based on the comparison of the planned unit cost (budgeted) to the actual unit cost.

To perform the necessary calculations of the linear projection method with optimistic unit cost, it is mandatory to use the highest unit price (between the actual unit cost and the planned unit cost (budgeted)) and to multiply it by the remaining quantity to be produced (the planned quantity minus the quantity received to date). To this must be added the sum of expenses to date for the received quantity.

Progress Percentage Method - Addition of Delays/Gains

This projection method calls upon the progress percentage entered by the user in the **Project Progress** option to calculate the loss or gain.

The calculation's formula is the following:

Projection = Total Amount Planned (Budgeted) + Actual Expenses - (Progress % x Total Amount Planned (Budgeted))

Scenario 4

Example of Data Available in maestro*

Activity	Description	Budget ($)	Budget (qty)	Actual Costs	Actual Quantities	Progress %	Projection
C1010	Internal Partitions	$15,000		$350		10%	$13,850

Projection	=	Total Amount Planned (Budgeted)	+	Actual Expenses	-	(Progress %	x	Total Amount Planned (Budgeted))
$13,850	=	$15,000	+	$350	-	(0.1	x	$15,000)
$13,850	=	$15,000	+	$350	-		$1,500	

Progress Percentage Method - Expense Rate

This method involves dividing the real expenses by the work progress percentage, i.e. :

Projection = Actual Costs / Progress %

> ⚠ If most of the expenses are made at the beginning of the project, rather than as the goes on, this can lead to a disproportionate projection.

Scenario 5

Example of Data Available in maestro*

Activity	Description	Budget ($)	Budget (qty)	Actual Costs	Actual Quantities	Progress %	Projection
C1010	Interior Partitions	$15,000		$1,300		5%	$26,000

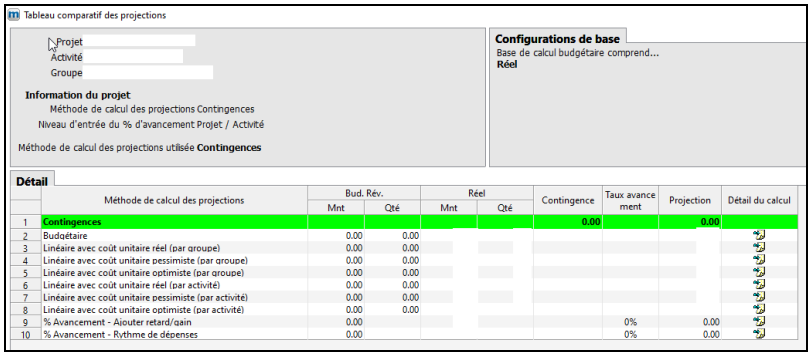
Projection	=	Actual Costs	/	Progress %
$26,000	=	$1,300	/	0.05

SUMMARY OF THE DIFFERENT METHODS

Method	Characteristics	
The Contingency Method (Advanced or Not)	Requires a monthly input of contingencies (either amounts or quantities) so that **maestro*** can then calculate a projection for that project.	
The Budget Method	Is the comparison between actual and budgeted costs.	
Linear Methods		
By Group	Linear Method with Actual Unit Costs - By Group	Calculation based on the use of the actual unit cost.
	Linear Method with Pessimistic Unit Costs - By Group	Calculation based on the use of the highest unit cost (between the budgeted and actual cost) and the greatest quantity (between the planned and actual quantity).
	Linear Method with Optimistic Unit Costs -	Calculation made using the highest unit cost, the remaining quantity to

<table>
<tr><th>Method</th><th colspan="2">Characteristics</th></tr>
<tr><td></td><td>By Group</td><td>be received, and the already committed costs.</td></tr>
<tr><td rowspan="3">By Activity</td><td>Linear Method with Actual Unit Costs - By Activity</td><td rowspan="3">The linear methods by activity are quite similar to the linear methods by group, with the difference that the planned quantities (budgeted) correspond to the quantities to be received and the actual quantities come from the maestro*Production option.</td></tr>
<tr><td>Linear Method with Pessimistic Unit Costs - By Activity</td></tr>
<tr><td>Linear Method with Optimistic Unit Costs - By Activity</td></tr>
<tr><td colspan="3">Progress Percentage Methods</td></tr>
<tr><td>Progress Percentage Method - Addition of Delays/Gains</td><td colspan="2">Calculation which takes into account the total budgeted amount, the progress percentage, and the actual expenses.</td></tr>
<tr><td>Progress Percentage Method - Spending Rate</td><td colspan="2">Calculation based on the actual expenses and the progress percentage.</td></tr>
</table>

Maestro* allows to see at a glance the summary results of each of the PAG (project-activity-group) projection calculation methods in the **Project Inquiry** option.



REMINDER

- **Maestro*** allows the input of contingencies, either as amounts or quantities.
- A dozen methods are offered to users in **maestro*** to calculate the final cost (projection) of a project when the latter is in progress.
- Some methods use the actual unit cost, the highest unit cost, produced quantities, actual expenses, and/or progress percentages. Furthermore, the method can be selected in the project itself (allowing for an appropriate projection method to be used for the project) or by project type (if project types have been set).

Last modification: May 28, 2024

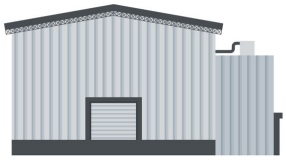
MAESTRO*'S MULTIDIMENSIONAL MODE

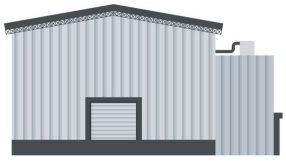
Many corporations possess more than one business location, division, or even more than one company[17]. These frequently share resources; employees, inventory items, equipment, etc. These same companies can also have common customers and suppliers.

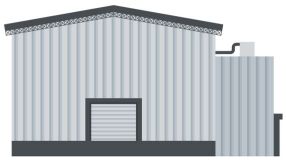
It is to answer these kind of needs that **maestro*** has developped a set of functionnalities combining options such as the consolidation of financial statements and the production of intercompany entries: the multidimensional mode!

It is important to state that, in **maestro***, it is possible to consolidate financial statements without using the multidimensional mode.

SUMMARY







[17]To avoid all confusion in this document, the term "entity" has been used to represent the business spaces, divisions, and companies belonging to a same corporation.

- ***Reminder***
- ***Maestro*'s Multidimensional Mode - Food for Thought***

WHAT IS MAESTRO*'S MULTIDIMENSIONAL MODE?

Maestro* offers to corporations that own more than one company (various legal entities) and share ressources a software mode named the multidimensional mode. These entities can consist of companies belonging to the same shareholders, but that are better to manage separately.

Advantages and Characteristics

The use of the multidimensional mode offers certain advantages compared to the individual management of companies in **maestro***. Among other things, it allows for significant time savings since the functionalities are adapted for the management of multiple companies. As will be explained a little later in the document, accounting entries are generated automatically between the different entities when comes the time to share resources, incomes, and expenses; those are called intercompany entries. Furthermore, the multidimensional mode has the effect of homogenising structures and processes since every entity is created from the same common base. Finally, this management mode facilitates the pooling, or not, of data for the production of miscellaneous reports and other consolidated financial statements, allowing for a global or sectorial view.

Please note that the multidimensional mode is not automatically used when a company is made up of multiple entities. Some conditions must first be met.

Using a Single Chart of Accounts

The multidimensional mode is first characterized by the use of a single chart of accounts for all compagnies entered in **maestro***; these therefore use the same general ledger account numbers. It is the addition of prefixes, specific to each company, that allows to discriminate between transactions. Consequently, all transactions can be linked to an entity.

Sharing of Common Resources

Other than the chart of accounts, **maestro***'s multidimensional mode allows to share common resources. In fact, it is an essential condition to the use of this mode. It is possible to apply basic configurations to all the companies and to create individual lists for each of them. These lists may include data concerning suppliers, customers, employees, items, equipment, projects, etc.

Some of the resources that can be pooled are:

- A general ledger chart (accounts, groups);
- Employees, customers, and suppliers;
- Inventory products;
- Equipment;

- Lists and catalogues;
- **Maestro*** operation configurations;
- Etc.

Using a Single Data Directory or Memory Partitioning Number for all Companies

Though each entity can be identified using a distinct prefix, and therefore each transaction, all data is grouped together in a single directory when the multidimensional mode is used in a Pervasive version of **maestro***. Other directories can be used in parallel for companies that are not managed in multidimensional mode.

When a **maestro*** MS SQL version is used, all values of every company or entity are regrouped in the same database, whether **maestro*** is in multidimensional mode or not. The partition number happens to be what is unique when using the multidimensional mode. If every company is managed separately, each will possess their own partition.

Partition

With SQL server, all data contained in partitioned tables and indexes (also called partitions) are horizontally divided into units that can be spread across various filegroups in a database. Partitioning can make large tables and indexes more manageable and scalable.

Source: https://docs.microsoft.com/en-ca/sql/relational-databases/partitions/create-partitioned-tables-and-indexes?view=sql-server-ver15, January 21, 2021

Consolidating Reports

Authorized users are able to generate legal entity reports, in order to only view data that comes from transactions identified using a prefix. However, they can also generate reports that are said global or consolidated, regrouping all entities or only targetting specific ones.

In short, the multidimensional mode offers many features, such as:

- The production of reports by taking into account an infinite number of company or entity grouping combinations;
- The integration of companies in financial statements by taking into account a participation rate that can be different for each entity;
- The automatic management of intercompany transactions, including:
  - Payroll production by a central company, when costs are distributed in multiple companies;
  - The management of an inventory for each company when the material is used by all companies in the group;
- Etc.

Maestro*'s multidimensional mode has repercussions on many other available features. Though we see it being implemented more and more, it requires the presence of very specific conditions, since the data sets of all entities will be grouped to form a single data set.

The multidimensional mode can be difficult to install following the initial installation of **maestro***. Therefore, it should be thoroughly thought out beforehand. The way in which the multidimensional mode is installed will greatly influence the methods and ways of thinking about work, support, programming, etc. If **maestro***'s multidimensional mode need to be set up following the initial installation, it will be necessary to select a main entity, give it a prefix, and then reinstall all other entities (or companies) from scratch.

To Whom is maestro*'s Multidimensional Mode Intended?

Maestro*'s multidimensional mode is generally required when a company is made up of more than one entity. However, this mode can also be used in the case of a single company with multiple business locations. It is still necessary to ensure that there is a real need; the **maestro***'s multidimensional mode is useful if all the business units have at their disposal common ressources and if they share them.

If the need is limited to the production of departmental reports or the separation of the general ledger accounts, there are probably better solutions. For example, it is possible to create one or more company consolidated reports only used to perform daily entries or to produce financial statements. In short, when more than one entity needs to be managed with **maestro***, the multidimensional mode is not necessarily required, nor is it defaultly installed since it introduces a certain complexity, especially when comes the time to copy data to create a test company.

There are two underlying conditions that must be met to install **maestro***'s multidimensional mode.

1. First, the company must possess or plan to own more than one legal entity. These entities, or companies, must have common data lists.
2. Secondly, this data (also called resources) must, in addition to being common, be shared and used from one company to the other. Intercompany transactions will therefore have to result from it.

1st Scenario - J-P Gypse Enr.

Karen is the main shareholder, with her partner Jean-Philippe, of J-P Gypse Enr., a large-scale company specialized in plasterboard installation and interior finishing. They sometimes work as subcontractors but sometimes also hire subcontractors themselves. They work in both the commercial and residential fields. Furthermore, as they are located in Gatineau, they sign contracts for renovation or new construction work in both Quebec and Ontario. Their employees are therefore very mobile. Karen, Jean- Philippe, and their team will start working with **maestro*** and **maestro*MOBILE** next summer. They possess two entities - a management company and the plasterboard installation company in question. Management is carried out in the office located in a commercial building and equipment and material is stored in a warehouse they own and in plasterers' trucks.

Observations:

- The company possess' two entities; a management company and a plasterboard installation company.
- J-P Gypse Enr. employees work in company office (located in a commercial building), in a warehouse or at customers' premises.
- J-P Gypse Enr. performs renovation and construction work in both the commercial and residential field, in Quebec and Ontario.
- Shareholders wish, among other things, to evaluate project performance as a whole, but also by province, by type of work, and by industry sector.

Karen and Jean-Philippe's choice: Instead of using **maestro***'s multidimensional mode, which isn't really relevant in this case, the company will instead use a project-based approach and will assign a type, category, and/or department to each project in order to generate the desired financial reports.

2nd Scenario - Rob & Brothers Inc.

Martin's and his brother's company has been offering excavation and formwork services for two generations now and will soon start using **maestro***. Over the years, a subsidiary for bulk transportation and a seasonal snow removal company have been added. Situated in Red Deer, Alberta, the company has an administrations office and two garages and parks for its vehicles. The machinery is moved from one location to the other, depending on the needs. This is also the case of certain employees who, upon the arrival of colder weather, trade excavation work for snow removal work. In sum, at Rob & Brothers Enterprise, multitasking is rule!

Observations:

- The company possesses three entities.
- Both material and machinery are used by all three entities, according to needs.
- Some employees are called upon to work from one entity to the other.
- It is just as important to be able to analyse the financial profitability and to carry out follow-ups at subsidiary level as it is for the company as a whole.

Martin's choice: **Maestro***'s multidimensional mode will be used at Robert & Brothers Enterprise. Various entities use shared resources.

USING THE MULTIDIMENSIONAL MODE

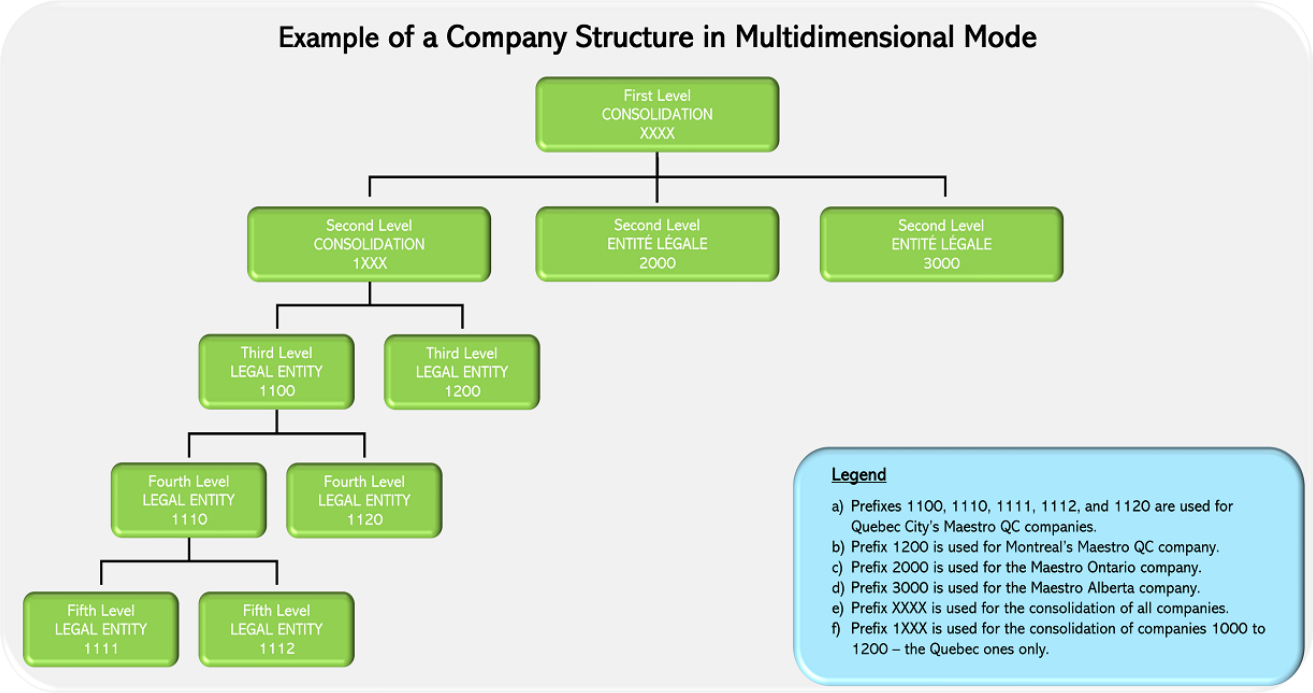
As previously mentionned, the use of **maestro***'s multidimensional mode rests on using unique prefixes for each company which allows to associate a company to a transaction. These prefixes make it possible to make intercompany entries. Furthermore, since all data is regrouped in a single database, it is much easier to create consolidated reports by applying filters to select, or not, transactions based on their linked prefix. Let's take a closer look.

Company Prefixes

A prefix is assigned to each company entity. Thus, it becomes possible to generate transactions between the different entities by specifying the prefix to which each transaction is linked and, consequently, the accounting entries. These prefixes are generally made up of numbers and limited to a maximum of 10 characters.

Example 1

In the following structure, shown as an example, it has been decided to use four-character prefixes. The first number identifies the province where the entity is located, the second is used to specify the host city, the third represents the division, whereas the fourth allows to distinguish the place of business.



Example 2

Again as an example, a company operating in the energy and heavy construction sector in several provinces could decide to assign its prefixes according to the following logic:

Division	Identification	Province	Identification	Subdivision	Identification
Energy	1	Newfoundland	1	Service	1
Heavy Construction	2	Nova Scotia	2	Equipment	2
		New Brunswick	3	Construction Work	3
		Quebec	4	Maintenance	4
		Ontario	5		

The prefixes that would result from such a codification would offer a possibility of 40 different entities, as follows:

Entity	Prefix	Entity	Prefix
Energy - Newfoundland - Service	111	Heavy Construction - Newfoundland - Service	211
Energy - Newfoundland - Equipment	112	Heavy Construction - Newfoundland - Equipment	212
Energy - Newfoundland - Construction Work	113	Heavy Construction - Newfoundland - Construction Work	213
Energy - Newfoundland - Maintenance	114	Heavy Construction - Newfoundland - Maintenance	214
Energy - Nova Scotia - Service	121	Heavy Construction - Nova Scotia - Service	221
Energy - Nova Scotia - Equipment	122	Heavy Construction - Nova Scotia - Equipment	222
Energy - Nova Scotia - Construction Work	123	Heavy Construction - Nova Scotia - Construction Work	223
Energy - Nova Scotia - Maintenance	124	Heavy Construction - Nova Scotia - Maintenance	224
Energy - New Brunswick - Service	131	Heavy Construction - New Brunswick - Service	231
Energy - New Brunswick - Equipment	132	Heavy Construction - New Brunswick - Equipment	232
Energy - New Brunswick - Construction Work	133	Heavy Construction - New Brunswick - Construction Work	233
Energy - New Brunswick - Maintenance	134	Heavy Construction - New Brunswick - Maintenance	234
Energy - Quebec - Service	141	Heavy Construction - Quebec - Service	241
Energy - Quebec - Equipment	142	Heavy Construction - Quebec - Equipment	242
Energy - Quebec - Construction Work	143	Heavy Construction - Quebec -	243

Entity	Prefix	Entity	Prefix
		Construction Work	
Energy - Quebec - Maintenance	144	Heavy Construction - Quebec - Maintenance	244
Energy - Ontario - Service	151	Heavy Construction - Ontario - Service	251
Energy - Ontario - Equipment	152	Heavy Construction - Ontario - Equipment	252
Energy - Ontario - Construction Work	153	Heavy Construction - Ontario - Construction Work	253
Energy - Ontario - Maintenance	154	Heavy Construction - Ontario - Maintenance	254

Of course, only entities that really exist should be created in **maestro***.

While most software developers have adopted the relatively simple solution of adding a company identifier to the data, not all have designed it in the same way. As such, the two most frequent errors encountered in systems that claim to be multicompany are:

- An identifier is added in all of the software's files, no exception;
- A sequential identifier is used (a number instead of a code).

In **maestro***, a careful selection of the files in which the company identifier needs to be present has been made. For example, while it is logical to add it to transactions, it is not always desireable to do the same for all master files; for while it is possible for two companies or divisions to do business with completely different suppliers and customers, the reality is that we most often meet companies where this kind of data needs to be shared.

Intercompany Entries

When a transaction is generated in **maestro***, an entity is linked to the accounting equation through the use of a prefix. By default, the amounts are charged to this same entity. However, **maestro*** multidimensional mode allows to specify entities linked to transactions and to generate these transations between various different entities[18]. Intercompany entries are accounting entries automatically generated by **maestro*** when an amount must be charged from one entity to the other. Indeed, the software systematically creates the adjustment through intercompany accounts receivable and intercompany accounts payable when a transaction is carried out between two entities.

Intercompany entries are not specific to purchases only. They are also carried out, for example, when the employee of a company managed in multidimensional mode works for different entities of the said company in the same pay period. If the latter is linked to a master entity, it is this entity that will carry out and process the pay cheque. However, each hour worked for another entity will be subject to an adjustment and, consequently, **maestro*** will generate intercompany entries.

Simplified to the extreme, the intercompany entries that would result from an expense incurred by one company but charged to another could resemble those illustrated below.

Example

Simplified Example of an Intercompany Entry Where an Expense of $500 is Made by Company 1001 but is Charged to Company 2001			
Company No.	General Ledger Account	DT	CT
1001	To-be-paid Account		$500
1001	To-be-received Intercompany Account	$500	
2001	To-be-paid Intercompany Account		$500
2001	Expense	$500	
Total		$1000	$1000

In multidimensional mode, each entity has its own intercompany accounts receivable and accounts payable. For example, a company made up of four entities will have four intercompany accounts receivable and four intercompany acounts payable, therefore allowing each entity to carry out transactions between each other.

[18] A transaction may involve as many different entities as needed.

Using Masks

Attributing prefixes to entities in **maestro*** allows for all sort of ressources to be shared and displayed for all entities. However, it may be necessary to filter, select and/or limit the access, display or analysis of data to only some of them. Masks ensure that ressources can be hidden and unused in certain circumstances or for certain entities. For example, a mask could be applied to a certain supplier in order to limit its display and use to two entities only. This supplier would therefore become invisible for the other entities and could not be used in transactions generated by the latter. As the name suggests, a mask is used to mask and exclude data linked to part or all of a prefix. The use of said prefixes also allows to use masks (illustrated by an X) to combine entity data and as filters. In fact, filters can be used for several purposes in **maestro***. That is the case for the generation of reports, such as project costs, accounts payable or receivable, financial statements, etc.

It is possible to add a mask to various resource types: employees, customers, suppliers, items, equipment, projects, etc. When it is possible to apply a mask in **maestro***, a button appears, allowing the selection of said mask.

For example, when printing the accounting report, applying filter 1XX to the entities of the second example would result in the consolidation of all the financial activities of the *Energy* division. Inversely, applying filter XX2 would result in being able to view all financial activities linked to the *Equipment* sub-division only.

It is not uncommon to see various entities of a same company working on a project. **Maestro***'s multidimensional approach allows to only create one project while making it possible for several or all entities to enter costs and revenues for this project. These can therefore also perform the follow up of their respective profits and losses, while allowing the management team to generate consolidated financial reports for the project as a whole. Of course, each entity may have its own budget, but allocated with a view to carrying out a joint project.

TAXE REMITTANCES

Single Corporation

One of the legal obligations of incorporated businesses is to remit taxes to the government. This task proves to be quite simple, in multidimensional mode, for businesses made up of several companies, but that make up a single and unique corporation. Indeed, in intercompany exchanges, the taxes paid by one company are collected by another, but they make up the same corporation.

Distinct Corporations

The process is more complex for producing the reports needed to remit taxes for several separate companies with different shareholders (as is often the case for companies where **maestro***'s multidimensional mode is installed). For **maestro***, the value of the account receivable corresponds to the value of a sale made to a

different business unit. At the end of the fiscal year, the **maestro*** user will have to create an accounting entry equal to a fake sale, in order to generate the taxes and eliminate the value entered in the account receivable. In return, they will have to create a purchase in the second business unit to enter the taxes. The following is an example of the accounting entries that will need to be made:

Example of an Entry Generated by the Head Office's (HO) Purchase of Office Supplies for Another Corporation Entity (Ent)

Account	DT		CT	
	HO	Ent	SS	Ent
Office Supplier		$ 100.00		
GST Charged on Sale	$ 5.00			
QST Charged on Sale	$ 9.98			
To-be-paid Account			$ 114.98	
Interco - To-be-received Account	$ 100.00			
Interco - To-be-paid Account				$ 100.00

Example of an entry that should be created at the end of a financial exercise (by the head office) to simulate a sale.

**** The amounts to use are those displayed for entities' to-be-received accounts (intercompany), found using the trial balance.***

Account	DT	CT
	HO	HO
GST Charged on Sale		$ 5.00
QST Charged on Sale		$ 9.98
Interco - To-be-received Account		$ 100.00
To-be-received Account	$ 114.98	

Example of an entry that should be created at the end of a financial exercise (by entity) to simulate a sale.

Compte	DT	CT
	Ent	Ent
GST Charged on Sale	$ 5.00	
QST Charged on Sale	$ 9.98	
Interco - To-be-received Account	$ 100.00	
To-be-received Account		$ 114.98

Though **maestro*** automatically generates intercompany transactions, it does not generate end of period entries.

NUMBERING AND COUNTERS

In multidimensional mode, the counter management requires special attention. Some customers ensure that a single company makes the payments for all companies. For others, it is necessary to make the payments and other transactions through each company (they are all responsible for their accounts payable). Usually, customers do not appreciate having a single numerical sequence for all companies. However, it is necessary to obtain unique numbers for each transaction that requires them (order counters, invoice numbers, cheque numbers, etc.). One way of doing this is to use masks and thus force the use of prefixes.

Though the use of multiple currencies is not specific to the multidimensional mode, the presence of multiple divisions often means that more than one currency may be used at any given time. It goes without saying that the main monnetary units used my Maestro Technologies' customers are Canadian and American currencies.

The use of more than one currency adds its own grain of complexity since **maestro*** must perform conversions from one currency to the other, based on the previously selected preferences. Intercompany transactions must also take into account the currencies associated with the transaction amounts since an additional one is generated to convert the amount to the appropriate currency and at the rate indicated in the **Currency Management** option, thereby affecting the account receivable and the account payable.

CONSOLIDATED REPORTS

In multidimensional mode and when preparing consolidated reports, it is essential to respect and follow the *International Financial Reporting Standards* (IFRS) norms, as well as those from the *Accounting Standards Board* (AcSB), used to standardize the display and presentation of financial data. Also, income cannot be accumulated.

It is the customer's responsibility to identify the incomes of a sister company (or sister division) and to substract them from the consolidated report so as to cancel out incomes and expenses that come from intercompany transactions.

Accounting Consolidation

Accounting consolidation consists of preparing the financial statements of a group of companies. It aggregates the accounting records of each of the companies in the group and makes restatements as if they were a single entity.

Source: https://fr.wikipedia.org/wiki/Consolidation_comptable, June 20th

INVENTORY MANAGEMENT IN MULTIDIMENSIONAL MODE

Another interesting feature of the multidimensional mode is the sharing of an inventory, if the latter is managed through the catalogue. Indeed, a single catalogue is used and shared between entities. The inventory's quantities and values are managed through locations and localisations, specific to each entity. When items in an entity's location are transferred to a location attached to another entity, a financial transaction is automatically generated to reflect the physical and financial change of the items. A similar transaction is also automatically generated when an item is transferred from an entity's location to another entity's project. This approach simplifies purchases between the different entities of a same company.

SECURITY MANAGEMENT IN MULTIDIMENSIONAL MODE

In **maestro***, security configurations can be applied either locally or globally. This means that security and access settings can be the same for all entities (global security) or different from one entity to the other (local security). When a security is said to be global, any changes made to its settings will be replicated in all other entities. On the contrary, if the security is locally managed, all entities will have different settings and the selected parameters may differ from one entity to the other.

To apply a specific security to certain entities of a multidimensional company, it is also possible to use a security domain. Indeed, the company can decide to limit access to specific data for certain entities, the same way it can limit access to certain options for employee groups. To do so, a security domain will have to be linked to an employee and a prefix.

This (applying security domains) requires the installation of an option that is not there from the outset and needs to be configured. This option ensures that each entity will have its own security parameters. A financial vice-president will be able, for example, to have access to all information, whereas the access will be restricted for the financial directors of each entity.

EMPLOYEE MANAGEMENT IN MULTIDIMENSIONAL MODE

Maestro* makes it possible to limit, if necessary, the companies in which an employee works so that the employee can only be selected from the desired companies. What's more, it is also possible to select a payroll company in the employee file. This configuration prevents an employee who is called upon to work for different companies to receive a pay cheque (as well as T4 and RL-1 slips) from each of these companies.

MOBILITY IN MULTIDIMENSIONAL MODE

The various **maestro*MOBILE** interfaces take into account the configurations set in **maestro***. As these are essentially operational functionnalities, the prefixes and divisions are taken into account, just as they are in **maestro***. Whether a company is installed in multidimensional mode or not, the **maestro*MOBILE** user uses the app the same way. It is the operations that can be performed in **maestro*MOBILE** that, once transferred or completed in **maestro***, generate intercompany transactions if needed. It is therefore important for employees to be linked to the appropriate company so the financial transactions linked and generated by a daily entry may be accurate.

ALTERNATIVES TO THE SINGLE USE OF THE MULTIDIMENSIONAL MODE

The Project Approach

An alternative approach to the multidimensional mode, characterized by assigning prefixes to entities, is to use the fields dedicated to the management of projects by type, category, and/or department to distinguish divisions, provinces, sub-divisions, etc. (please refer to the document concerning the Management of projects in **maestro*** for more information). This information is sent to the **Accounting** module and can eventually be used as filters to generate financial reports (view the document concerning Financial statements in **maestro*** for more information).

The disadvantage of this approach is that it is not possible to automatically generate intercompany entries when revenues or costs have to be allocated from one entity to another.

The Project and Divisions Approach

In order to limit the number of prefixes used (see example 2), consideration may be given to combining the use of prefixes in multidimensional mode with the use of project types, categories, and/or departments. For example, company divisions could be assigned a prefix and sub-divisions a department each.

This method also offers a number of possibilities for the generation of financial reports. However, it makes it impossible to consolidate project cost reports and accounts receivable or payable. Unless each entity has its own set of activities, the approach combining prefixes and projects does not allow more than one entity to work on a same project. It also goes without saying that intercompany entries cannot be generated for project types, categories, and departments.

REMINDER

- **Maestro*** offers to corporations that own more than one company (various legal entities) and share

REMINDER

ressources a software mode named the multidimensional mode

- The multidimensional mode offers various advantages and features, such as the use of a single chart of accounts, a single data directory or partition number, the sharing of common resources, the possibility to generate consolidated financial reports, and functionalities adapted to the managing of multiple companies.
- To use the multidimensional mode, a company must own more than one legal entity and have common resources which are shared between said entities.
- The use of the multidimensional mode in **maestro*** relies on the use of prefixes, which are specific to each company and allow to associate transactions to the latter.
- We call intercompany entries the account entries automatically generated by **maestro*** when an amount must be charged between entities.
- Masks make sure these resources can be hidden and unnused in certain circumstances or for certain entities. The use of prefixes also allows to use masks to combine the data of different entities and act as filters.
- Counters, the **maestro*** catalogue, employee management, and **mestro*MOBILE** have been developped to easily adapt to the multidimensional mode.
- Security, when **maestro*** is used in multidimensional mode, can be managed globally, locally, or by domain.
- The multidimensional mode is not systematically used when a company manages more than one entity; some alternatives are available and may be better suited to the customer's needs.

MAESTRO*'S MULTIDIMENSIONAL MODE - FOOD FOR THOUGHT

- ☐ How many companies will use **maestro***?
- ☐ How are these companies linked?
- ☐ Which intercompany operations need to be performed?
- ☐ Are the performed intercompany operations taxable?
- ☐ Are all companies, if applicable, consolidated?
- ☐ Does each company manage its own payroll?
- ☐ Does each company manage its own accounts payable?
- ☐ Does each company manage its own accounts receivable?

MAESTRO*'S MULTIDIMENSIONAL MODE - FOOD FOR THOUGHT

☐ Do your companies share:

- the same start and end of year dates
- the same inventory
- the same resources
- the same general ledger account structure
- the same employees
- the same equipment
- the same bank accounts
- etc.

☐ Do you have a head office, satellite offices, a warehouse, etc?

☐ Please describe your global financial structure.

☐ How are your customers and suppliers coded?

☐ Is your codification and classification system consistent?

☐ Does access to certain information need to be restricted, for either employees and/or entities?

☐ Are you planning on expanding the company in the near future?

☐ Do you plan on acquiring other companies?

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