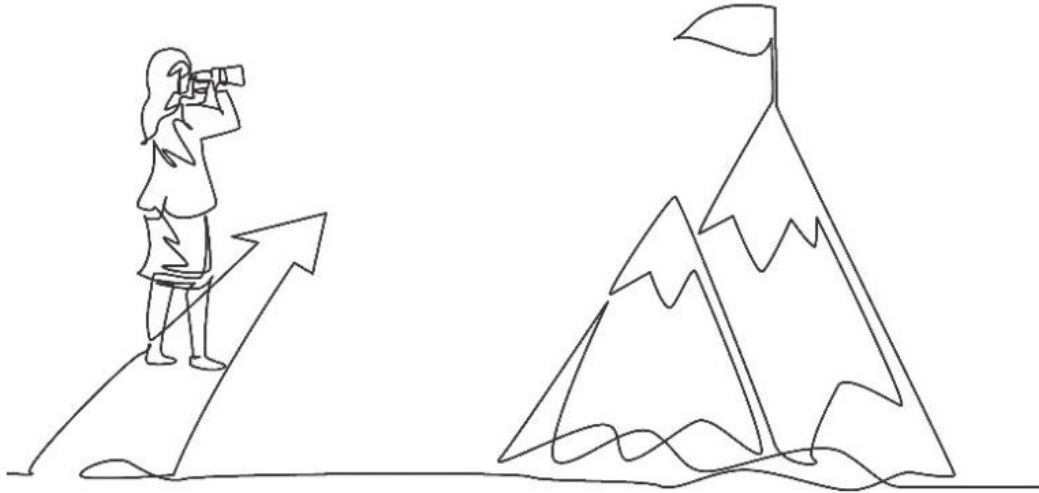




Compass ERP Integration Strategies



The modern organization can be incredibly complex. Yet when all the parts work harmoniously together, great deeds can be accomplished.



A. Traditional Integration Strategies

1. Overall Goal

The goal of Greycoat Software and our Compass system is to satisfy the business software needs of producers and distributors of hardscaping and construction materials. Our software is *vertical market* software, that is, the database and programs are rich in functionality that meets the specific needs of our target market. Satisfying those needs creates a USP (unique selling proposition) for our software.

(The unique features of our software are addressed in a 7 minute video:

<https://www.youtube.com/watch?v=aBjjW2W75mY>)

Most of our customers also have a need for *horizontal* software, by which is meant: generic software which is broad in application across multiple industries. For example, it would make no sense for our company to develop a word processor for our target market. There are various mass market word processor programs that are adequate for serving our customers' needs.

2. Integration with Accounting Software with Import-Export

And although our customers may have some highly specific Accounting needs, we do not provide Accounting software, per se. Our clients are better served through the use of leading brand Accounting software, generally including Accounts Receivable, Accounts Payable, General Ledger and Payroll functionality.

In terms of transactions, Compass provides the following options in passing data to the Accounting program:

- Invoice data into Accounts Receivable. Some of our clients prefer invoice totals be passed, and others wish to have all product detail presented as well. We offer both alternatives.
- Trucker payment information into Accounts Payable.
- Sales and or Cost of Sales into General Ledger.
- Production, Adjustments, Count and other Inventory transactions from the Inventory module. Shipment data can also be passed for Inventory purposes.
- Material and Equipment charge out tickets for Job Costing purposes.

Compass software itself does provide special Accounting-related features and subsystems. These include specialized job and equipment ledgers to track costs of trucking, or material deliveries to an internal job, such as road construction or landscaping.



As well our software provides Accounting related features such as:

- specialized invoice formats,
- calculation of payments to truckers,
- trucker statements,
- margin analysis,
- credit limit checking,
- other features which complement the core Accounting software program and may interact with it.

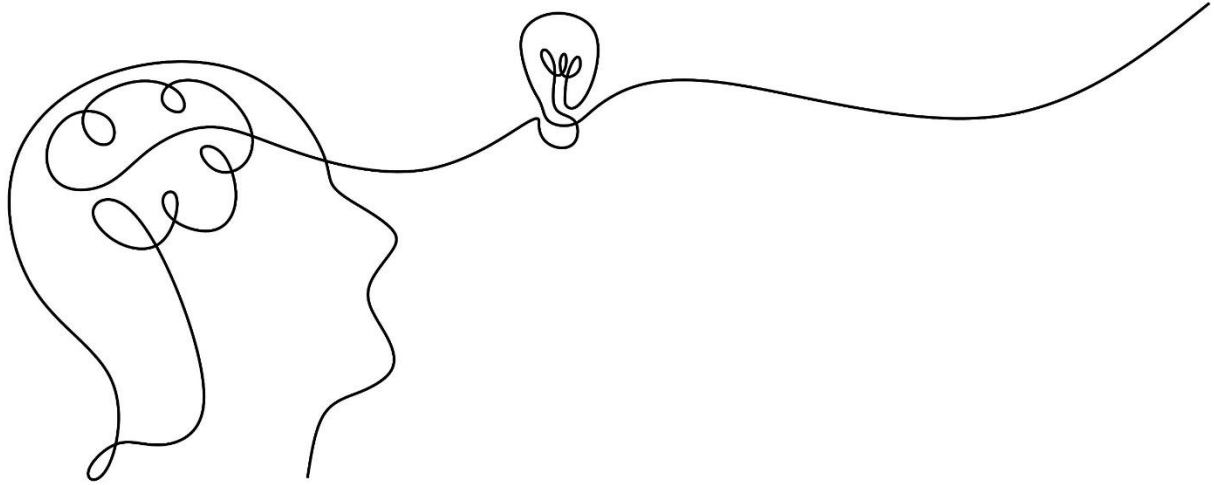
We can also guide our clients toward the most effective Accounting solution for their business based on Accounting software in use within our client base.

Further, Compass provides, or has pending, standard interfaces for some leading Accounting brand software programs. This includes: QuickBooks, Sage 50, Zoho Books, Microsoft Dynamics 365 Business Central, SAP and others. In most cases, we can configure our output transactions to the input specification of any Accounting program and to any given General Ledger chart of accounts without reprogramming.

3. Order Integration

Compass ERP is able to accept orders from various sources, either through an API, or in the form of a drop file. The source of the orders can be polled on a daily, hourly or minute by minute basis. The orders come in from third party software, from a CRM system or from a web based store front. Note that Compass does have its own quotation program, and a web based version will be available later in 2026.





4. Integration with Microsoft Office.

Because Compass has been written to .NET standards using Microsoft languages, our software provides widespread output to Excel and also to Word and other MS Office programs.

5. Integration with Email Server.

Compass can also connect to a variety of commercial email servers enabling automated email delivery for invoices, quotations, tickets, and a wide range of report summaries.

6. Recommendation on Invoice Practice

We strongly recommend use of the Invoicing function within the Compass software, not in a brand name Accounting or ERP program.

A variety of reports and ledgers directly result from the invoicing run. These include:

- Invoices to the customer. Compass produces a variety of invoices with content unique our target industry and customizable for each client.
- Trucker statements, for paying truck brokers, or accruing revenue to owned trucks.
- Inventory update, shipment, purchase delivery or transfer.
- Paying landholder royalties
- Government levies

Compass includes pricing features unique to the hardscaping and aggregate businesses, including:

- Surcharges such as fuel when fuel prices soar,
- Environmental levies,
- Government levies,
- Landholder royalties,
- Special quoted prices for an internal or external job,
- Multi-level standard pricing, usually at a retail or wholesale level,
- Special delivery pricing or zone-based prices or both.
- Taxes
- Handling of cash or charge collection at depot or on site.
- Ticket correction capability is greatly simplified in the Compass system.

Please watch our video on this subject: <https://youtu.be/TtRdsMrC4V4>

Producing these results in a brand name Accounting or ERP program is a significantly expensive and risky endeavour.

More discussion of this issue can be found in section [9. Issues in Interoperability with Other Software](#)



B. Advances in Software Integration

7. Real time integration

Integration from Compass to an Accounting program is now also available in real time, as well as the more traditional import-export processes. Traditional import-export processes move data sets back and forth between the Accounting software and Greycoat Compass. The import-export model does have one advantage: it provides a clear separation of responsibility between various departments, say Invoicing and Receivables, and allows sound balancing procedures as a cross check on data transfers running completely and correctly. But ledgers and files are not fully up-to-date as changes occur in Compass without being reflected in the Accounting software due to the periodic nature of updates.

Most traditional Accounting programs like **Sage 50c** and **Quickbooks** offer only the more limited import-export approach, which necessarily introduces a time delay in updating Accounting records. In a smaller business this may not matter; in a large business this may matter very much. Newer software like MS Business Central and other ERP products do provide a capability to update and retrieve records in real time, allowing these Accounting programs and Greycoat's Compass software to fully interoperate, constantly transferring data back and forth behind the scenes, and eliminating distinct operator controlled transfer processes.

Thus, shipment tickets and invoices will update the General Ledger when produced, not as part of a separate run. Customer records can be added to Compass, and almost instantly are updated into the vendor's Accounts Receivable/ Accounting program. Transactions which affect a separate Inventory program can update balances in real time. (Compass also contains its own Inventory and Scheduling program, but can also interact with a generic brand name Inventory and Scheduling programs.)

Figure 1 - The illustration above shows the core Compass modules, optional modules and the independent ones.



COMPASS ERP INTEGRATION STRATEGIES



Compass Integration Strategies

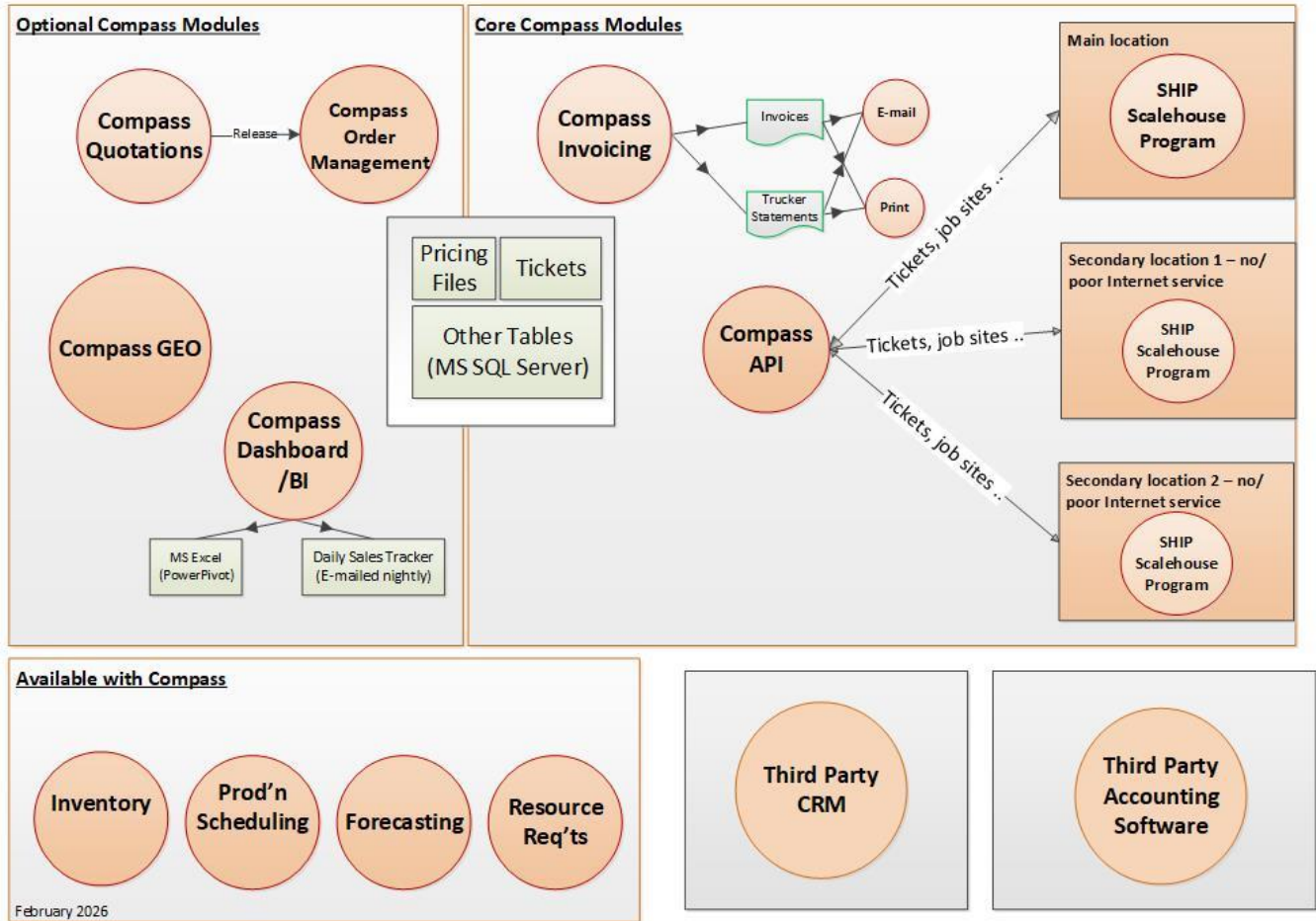


Figure 2 - diagram of Compass and external processes.



7.1. CORE COMPASS: PRICING, INVOICING AND SCALEHOUSE MODULES

The core Compass modules are the Scalehouse or Shipping module and the Invoicing module which includes pricing functionality.

Ticket: 01*338540 - GCAGG*2025

Product	Equipment #	Quantity	UM	Gross Price	Material Price	Ext. Override	Extension	Delivery Charge Rate	Delivery Pay Rate	Delivery Override	Delivery Extension	Delivery Profit	Other Quantity	Other UM	Note
1001 - Granular A		1410.0000	KG - Klogram	\$17.10	\$17.10	<input type="checkbox"/>	\$366.11	\$0.00	\$0.00	<input type="checkbox"/>	\$0.00	\$0.00	47200.9702	LB	Delete Note
2012 - Bag- Black Cedar		1.0000	EA - Each	\$50.00	\$50.00	<input checked="" type="checkbox"/>	\$50.00	\$0.00	\$0.00	<input type="checkbox"/>	\$0.00	\$0.00	1.0000		Delete Note

A section of a priced ticket, ready for billing.

The Compass Invoicing program takes care of the unique aspects of pricing and billing construction and hardscaping materials.

Compass Invoicing and pricing processes provide special industry related features including:

- fuel surcharges and levies,
- product pricing by weight, volume and per unit,
- various methods of handling discounts,
- effective and through dates on all price list lines, tax rates and special charges,
- delivery pricing by zone or specific destination quote, also by truck type.

Compass can work with third party scalehouse programs but in most cases our clients use our own well regarded scalehouse program, known as SHIP. To ensure maximum up-time the Scalehouse module runs with its own local database copy and a background process synchronizes data with the central office location. If Internet connectivity is lost, scalehouse operation is not affected in the least. Nor do latency issues and intermittent connectivity drops affect program operation. Transfers run automatically, in the background, whenever a connection is available, to move tickets or other records of shipping activity to a central office server or to the cloud (Azure), and new pricing, job site and customer information out to the shipping locations.



COMPASS ERP INTEGRATION STRATEGIES

Figure 2 – Top level screen used to run deliveries and print tickets in a scalehouse environment.

Note that the central Compass office system can be run on a Windows Server, a Windows PC, or in the cloud using Azure with remote desktop.



7.2. OPTIONAL COMPASS MODULES: QUOTATIONS, ORDER MANAGEMENT AND DELIVERY SCHEDULING

These modules may or may not be useful for a given Greycoat client.

Quotations are most useful when bidding deliveries into road construction or general contracting bids where a formal written quote is required. Operations that tend toward retail trade with set published price lists may not require a formal quotations module.

The Order Management module is provided for those producers who use a web storefront to collect orders for construction or hardscaping materials or for those who take orders for which production and/or delivery is scheduled. Specialty sands, bagged product and specialty quarry products do tend to require the order management module to manage delivery requirements and delivery order scheduling.

However, many pits and quarries *do not use* Order Management given that they produce commodity products ordered on demand and provided from stock inventory. Where these modules are of use, best practice is to use these modules within the Compass software, offering full integration to the other Compass modules. However, Compass can work with third party vendors and offerings that also offer these functions.

8. CRM and Quotations

Greycoat does not supply a CRM module; our approach is to provide interfaces from our Quotations and scheduling module to couple to CRM offerings of other vendors. The Scalehouse module can send an email to the recipient indicating product is on the way.

A browser based version of the Quotations module is due to be released in 2026.



9. Business Intelligence (BI)

Since Compass uses Microsoft SQL Server as storage for all data, Microsoft Power BI can access all Compass data through a gateway, whether that data is stored on a local server or in Azure.

In addition, Compass provides a number of dashboards through PowerPivot and is providing an upgrade of these PowerPivot sheets through Microsoft Power BI.

10. Inventory, Production Scheduling and Resource Requirements Planning

Greycoat's Inventory module offers HTAP, or hybrid transaction/analytical processing, to help reconcile and correct month-end inventory movement issues, and process cycle and period or quarter end counts. With HTAP, errors or changes such as incorrect product identification can be corrected and reposted immediately, or prices, quantities, mix tables, unit factors and other data can be corrected and the relevant inventory transactions reposted to correct balances. Negative balances on some SKUs, or growing undepleted balances, are a sure sign that product misidentification has occurred somewhere during the production and shipping cycle. Easy to correct with HTAP capability.

Inventory Date	Tag	Location	Part ID	Part Description	Lot	Inventory Count	Book Balance	Adjustment
2018-09-28	643	Waterloo Qu...	1100	Granular A	1000000.0000	72501.611	32549.28	
2018-09-28	644	Waterloo Qu...	1101	Granular B	100.0000	53.00	47.00	
2018-09-28	645	Waterloo Qu...	1108	Sand Fill (Encrusted)	11120.0000	0.00	11120.00	
2018-09-28	646	Waterloo Qu...	1107	Sand Fill	122.0000	2837.76	-2715.76	
2018-09-28	647	Waterloo Qu...	1110	High Performance Bedding	111111.0000	-22864.48	339715.48	
2018-09-28	648	Waterloo Qu...	1113	Cable Sand	1000.0000	0.00	1000.00	
2018-09-28	649	Waterloo Qu...	1116	Olive Stone	6000.0000	2945.50	-2945.50	
2018-09-28	650	Waterloo Qu...	1202	6.3mm Screenings	1333.0000	3016.00	-1683.00	
2018-09-28	651	Waterloo Qu...	1203	Asphalt Sand	66666.0000	-744977.82	811343.82	
2018-09-28	652	Waterloo Qu...	1206	1/2-Inch	887.0000	-184241.87	187668.87	
2018-09-28	653	Waterloo Qu...	1213	1/8mm Clear Stone	4564.0000	-634828.59	639352.59	
2018-09-28	654	Waterloo Qu...	1200	Concrete Sand	22222.0000	-778026.98	806280.98	
2018-09-28	655	Waterloo Qu...	2000	1/4-Inch	11111.0000	8021.00	3090.00	
2018-09-28	656	Waterloo Qu...	9000	Pat - Granular A Raw	33333.0000	488584.82	-465221.82	
2018-09-28	657	Waterloo Qu...	9001	Pat - 6.3mm Rounded Sto	22222.0000	1800.00	-2832.00	
2018-09-28	658	Waterloo Qu...	9002	Pat - Asphalt Mix	112.0000	-7955.00	8062.00	

Third party Inventory and Production Scheduling modules can interact with the core Compass modules through a well defined API.



11. Issues in Interoperability with Other Software

The goal with advanced integration strategies is to have two or more systems operate as one system with data movement between systems occurring in the background, that is, without direct operator involvement.

There are two key risks to be aware of.

11.1. SEMANTIC INTEROPERABILITY UNCERTAINTY.

Greycoat Compass operates and describes itself in terms of industry specifics like: haulage, quotations, zones, government levies, tonne-mile rates, weight conversions ... and hundred of other terms.

These terms lose meaning in generic Accounting software, which uses terminology universal to all businesses.

From the perspective of integration design, one has to be sure that the Accounting software does not attempt to do too much, or one ends up with a highly customized and impossible to maintain customized program.

And every time the Accounting software incorporates new changes in AI and other areas, the customization has to be updated as well. Thus software “improvements” to generic brand software can become a significant liability to the organization.

11.2. TWO TRUTHS

The Accounting software program and Compass should never represent two versions of the “truth”. **One way this commonly happens is that adjustments are made in the Accounting numbers, without changing the underlying Compass detailed records. This can complicate an audit, and also make reconciliation with customer disputes a very difficult process.**

Integration points have to be chosen intelligently. For example, just connecting a weigh scale or shipping function to an Accounting Invoicing program, as described elsewhere, can lead to various issues, in having two disparate sets of shipping records.



11.3. A SOLUTION

It's important to integrate at the correct points between Compass and other software such as CRM, web storefronts and Accounting solutions.

Greycoat offers carefully designed, pre-packaged integration logic for newer Accounting programs like Microsoft Business Central and Zoho Books.

12. Other Greycoat software products, outside Compass

Greycoat provides two products which can run in connection with Compass or in standalone mode. Both are cloud based.

12.1. COMPASS GEO

GEO is a map based delivery quoting system which provides capability to divide a market area into delivery zones. Typing an address shows its location on the map, and locates the delivery zone, providing delivery times costs for the product from one or more supply locations. The delivery times are developed using Google's driving time database.

12.2. LEMS

LEMS is an independent land and environmental management system running in Azure.

12. Contact Information

For more information on all our products, please visit our web site

www.greycoat.ca

Or, for further information, please contact:

sales@greycoat.ca | 519-746-6666 | greycoat.ca

