



A guide for Middle-Market CFOs and CIOs

Build vs Buy: Business Intelligence Solutions for ERP Systems

“Data is the new gold. To become a top-performing Finance team, you can’t just crunch numbers—you have to analyze them.”

-Alteryx



Introduction

Top companies around the globe are realizing not just the potential, but also the necessity, of analyzing data at scale to keep pace with competitors. 33% of financial leaders believe they need faster information for delivery and analysis—at the same time, the average impact of errors in operational spreadsheets is a whopping \$10M.

But how can you process unstructured data from ERP systems with both speed and accuracy in order to stay competitive and profitable?

The answer is Business Intelligence (“BI”) Solutions. **A BI solution is a must for any business that needs to:**

- ✓ **Consolidate multiple data sources**
- ✓ **Automate error-free reports**
- ✓ **Analyze data to solve complex business issues**

Despite the tremendous ROI potential, BI tool adoption is scarce in the middle market. Why? Historically, implementing a BI solution meant building one. And building a solution from scratch can be expensive, timely, and complicated.

But pre-built BI solutions have changed everything. Now middle market companies can access enterprise reporting capabilities at a price—and timeline—that make sense for their business.

If you want to start taking advantage of a BI solution but you’re not sure whether to build or buy, keep reading to learn more for a detailed comparison of costs and timelines.

Steps for Building a BI Solution

How much effort is involved in building a BI solution from scratch? Most people think it's as easy as buying an ERP connector. Unfortunately, it's a much more laborious and technical 5-step process:

Step 1: Deploy a connector to start transforming data

Most ERP's have a pre-built connector available to purchase from a 3rd party. These range from \$5-25k per year, and business often report the following challenges with 3rd-party connectors:

- ✓ **Poorly designed** – Unstructured data is not designed for usability, and altering how users view the data is a time-consuming and error-prone process that requires on-going management (i.e. these connectors show a back-end technical view of the data vs. how users expect to see the data to match the front-end user interface). Typically, this process calls for a technical developer to implement the connector and an ERP expert to transform the data.
- ✓ **Performance** – Most ERP's are designed to prevent data extraction and connectors tend to encounter error after error when pulling data on a consistent basis. As a workaround, it's possible to build incremental data loading processes, but that introduces the need for a dedicated data-warehouse.
- ✓ **Reliability** – Every time an ERP system updates (1-4x/year) the connector needs to be tested to ensure it's still compatible. If a 3rd-party vendor connector fails after an update, troubleshooting can pose a challenge to even the most skilled developers.

Steps for Building a BI Solution

Step 2: Build a data-warehouse

A data-warehouse is the central repository of integrated data processed by any BI Solution. Building a data-warehouse is a technical endeavor that requires a decent amount of up-front time, then management on an on-going basis. Here's how to build one:

- ✓ **Platform** - Decide where to build your warehouse (i.e. Azure, Snowflake, AWS) and then assign a developer—or hire a consulting firm—to build and maintain the warehouse.
- ✓ **Development** - Build processes to extract, transform and load data via a refresh schedule into the warehouse. Other considerations include scalability, updates, and security measures.
- ✓ **Monitoring** - Implement a monitoring process to ensure the warehouse remains operational and error-free so that your reporting/analytics is never inaccurate or offline.
- ✓ **Hiring** - Employ or contract a team of technical developers with a deep knowledge of ERP to manage the data-warehouse on an on-going basis.

Steps for Building a BI Solution

Step 3: Build The Data Model

The data-model is a set of instructions for how the transformed data interacts with the data-warehouse. It's a fairly complicated process that involves:

- ✓ **Star Schema** – Designing a proper schema is a delicate process that, when complete, allows tables to work as the ERP system would. Some things to keep in mind is that the Star Schema must be designed so it can reconcile reporting back to the ERP, scale as the business grows, and accommodate additional data sources.
- ✓ **Joins** – The data model will need to be joined together to facilitate the same sequential flow of transactions as the ERP system—meaning, it must be designed for unlimited joins in order to report/analyze business processes end to end.
- ✓ **Time Intelligence** – Building time intelligence across financial and operational reporting ensures that all reports reconcile back to the ERP for optimized and comparative reporting.
- ✓ **ERP Upgrades** – Any data model must keep current to prevent any loss of compatibility, which would otherwise crash the entire system. Regular testing is required before each ERP update to ensure compatibility.

Steps for Building a BI Solution

Step 4: Testing and Data Validation

At this point, it's time to test whether or not the built BI implementation is successful in reconciling back to the ERP. After building key reports (i.e. Income Statement, Balance Sheet, Aging Reports, etc.), the newly built system will either work or not. If it works, then great.

If not, a technical developer and/or ERP expert will have to dive back into all the prior work to determine what went wrong between steps 1-3.

Step 5: Build Formulas and Reports/Analytics

A BI Solution is not valuable unless reporting is accurate. To build reports and analytics, each report needs a custom-written formula to calculate KPIs, showcase data relationships, and display quantitative data the way one would expect to see it.

The authoring of these formulas are usually prepared by a person with deep functional knowledge of the underlying ERP system and strong experience with BI tools. In most cases, building reports requires a 2-person team.

When Does Build A BI Solution From Scratch Make Sense?

While buying a pre-built BI Solution is often the best decision from a cost and time standpoint, there are some cases in which it is more beneficial to build from scratch. Some of these situations include:

- ✓ **Data Privacy** – If your data is regulated (i.e. HIPPA or Government) to the extent that you must refrain from allowing non-employees and 3rd-parties from accessing your data, in-house BI development is the only option.
- ✓ **Operational Data Sources** – If the majority of your data resides in operational data sources rather than an ERP, it may make more sense to build your own operational data-warehouses and import ERP data once a month for month-end reporting purposes.

Additionally, with modern BI tools you are not limited to choosing a single BI solution. In some situations, it may make sense to have two data-warehouses, one pre-built and one built internally, that are joined in your BI tool for consolidated reporting. This is a use case most often found in enterprise-size companies.

Steps For Buying A BI Solution

Instead of building from scratch, you could simply purchase a pre-built BI solution from a company that specializes in building and implementing BI tools.

Pre-built BI solutions are developed by hands-on vendors that are experts in BI and your key data sources (i.e. ERP systems). There are lots of BI vendors in the market, however, the vendor you select truly must also be an expert in your ERP system, otherwise these projects fail. These pre-built BI solutions must specifically designed for your ERP based on all its technical uniqueness. A generic approach across all ERPs cannot be used since each ERP technically operates so differently.

These pre-built BI solutions should include at a minimum:

- ✓ **A pre-built ERP specific connector**
- ✓ **A Pre-built set of ETL processes/data-warehouse**
- ✓ **A data model that replicates your ERP system's data structure**
- ✓ **A large library of pre-built reports to help start your reporting journey**



Steps For Buying A BI Solution

Instead of hiring developers to create and maintain the solution from the ground-up, buying a BI tool comes with unlimited access to the vendor's IT support. If you run into an issue with your BI solution, you can just reach out to your vendor for help.

Aside from eliminating the costs of hiring skilled developers, buying a BI tool from a vendor is also a much faster process. These products are designed to be quickly implemented, and the process takes only a week or two before you can start building reports.

When choosing a vendor, you can—and should—**select a vendor that is certified by your ERP system**. If you decide to buy instead of build your BI solution, always ask your vendor for a walkthrough so you can begin building your own reports immediately. However, you can always ask your vendor to custom-build your formulas and reports, which is a pretty simple process for a vendor that knows the ins and outs of your ERP system.

Timing Considerations

	Build	Buy
Build/Deploy a connector and transform data	4–6 months	Included in platform
Building data warehouse	6–12 months	Included in platform
Building data model	2–4 months	Included in platform
Testing and data validation	1–3 months	1–2 days
Building baseline KPIs and reports	3–6 months	Many platforms include pre-built reports
TOTAL	1–2 years	Less than 2 weeks



Conclusion

When deciding whether to build or buy software, there's one key question to ask:

Is building from scratch going to result in a differentiated enough product from those that already exist?

If the answer is no, you're probably better off buying software because the benefits are minimal when another already has a functional solution that took years to develop. You wouldn't build a new messaging system for your company instead of using email, would you?

This is especially true for time-intensive, complex software like BI solutions. The costs of building from scratch are huge and require hiring multiple experts that work for highly competitive salaries.

If you do decide to buy, make sure the pre-built solution is built by experts who specialize in your ERP and are certified by your ERP in some capacity. Every ERP is different, and you'll want someone who knows the details of your particular system.

About ZoneReporting

ZoneReporting is the 1st and only pre-built Power BI solution for the following ERP's:
NetSuite and Intacct.

ZoneReporting has 100+ live customers using their pre-built Power BI solution spanning 10+ countries.

With a less than 2-week implementation – ZoneReporting provides a completely replicated instance of NetSuite and Intacct to their customers with 40+ pre-built reports designed by former CFO's and COO's.