



Dynamics Analytics Excellence

Four Problems, One Fix That
Transforms Your Dynamics
Reporting Environment.

WHITEPAPER



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Introduction

This whitepaper is written to inform the reader on ways to fast track their organization toward Dynamics Reporting and Analytics Excellence. OmniData consultants have worked on over 100 Dynamics installations over the past fifteen years. In most cases the work was to improve the reporting environments, and/or to create a Unified Analytics Environment that uses data from Dynamics and other sources in the organization, to create a single source of truth.

We have identified four common problems that organizations experience when trying to improve their Dynamics reporting environments. More importantly, we have identified in this paper the fast track to solving these potentially expensive and time consuming problems.

This paper will save you time and money on your reporting customization. You will speed your time to insights, greatly improve supportability, and position your organization far more competitively to profit from your valuable data assets. Furthermore, you'll secure the future success of your analytics investment by creating an environment built entirely from Microsoft products.

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Executive Summary

The typical company we work with, has had a great deal of success with Microsoft Dynamics as their ERP system, usually to support their own recent rapid growth. If they have recently ported to Dynamics 365, they have gained further advantage by shifting their expenses from capital expenses to operating expenses. They have also positioned themselves for Microsoft's greatest level of supportability and the regular feature improvements that come with using a Microsoft Cloud application.

It is common, in our experience, given the proximity to Power BI and given this type of company's appetite for modernization as a competitive advantage, for the "ask" to be "can you please help us expand on the reporting capabilities of Dynamics?" Or for the majority, "Can you build a consistent, supportable Business Intelligence function that we can rely on to flexibly analyze the unique qualities of our business". This is true whether using a legacy version of Dynamics on-Prem or Dynamics 365. Happy to say that the answer to both questions is "Yes we can."

When dealing with these requests, we have noted that there are four common problems to be solved:

1) *One size fits all reporting gets folks started down the road with Dynamics, but often cannot meet the requirements of the more unique aspects of their business.*

2) *The organization has limited capability to consolidate their reporting, even their basic financial reporting, across multiple business entities, or across multiple data sets from critical applications outside of Dynamics.*

3) *On a more technical note, the complexity of the ERP data model may have quickly created customization problems that multiply. Or worse, have put critical reporting needs off at the mercy of high-priced data wranglers.*

4) *Raw Data extraction from Dynamics 365 presents unique challenges compared to the same activity for older Dynamics installations.*

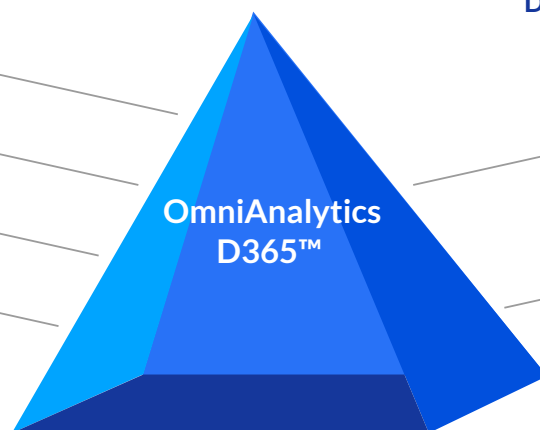
These organizations have all been hungry to create what we refer to as Dynamics Analytics Excellence. OmniData doesn't simply address these four problems in a piecemeal way. We enable organizations to accomplish Dynamics Analytics Excellence in an affordable, self-sustainable, supportable, and scalable way, with room for further customization. The installation should happen in weeks, not months. It should support simple reports and complex analytics.

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This paper elaborates on the Four main problems experienced in most Dynamics installations, and shares our collective experience in the form of: **OmniAnalytics D365™**.

4 Common Problems

- One-size fits all reporting
- Reporting across companies and systems
- Complex data models
- Accessing raw data from Dynamics 365



Dynamics Analytics Excellence



Dashboard



Reports

OmniAnalytics D365™ is a proprietary suite of tools and architecture that enable your business to next generation reporting and analytics.

Common Problem 1

One-size fits all reporting

We all know that all businesses are not the same. The unifying factor in reporting for businesses is the balance sheet and the income statement, according to GAAP. Beyond that, the similarities diverge rapidly.

For instance, the inventory for the wine business depends on the grape crop waiting to be harvested out on a hillside. On the other hand, the inventory in the electronics business depends on electronics components to be delivered Just-In-Time from countries all over the world. The same over-simplified inventory or supply chain reports clearly won't support decision-making in these two businesses without customization.

Or, take Sales and Marketing, another seeming commonality across businesses. Usually the unifying element in Sales and Marketing is the prospect and the customer. Easy, right? Different organizations use different marketing channels. In addition, sales force organizations can be organized by product or organized by region, or both. Again, simple, out of the box reports need to be customized to meet the needs of different organizations. These reporting capabilities work well for simple organizations. However, as organizations grow in complexity, there is a need to create flexibility for reporting within larger businesses.

Coupled to this, is the fact that most deployments have customizations, adding additional data fields, forms or logic that is not exposed through the standard reporting structures and for which customized reporting needs to be built. It is estimated that as many as 20% of deployments have extensive customizations, 60% of deployments have some customization and only 20% have little or no customizations.

When an organization can't solve these reporting problems on their own, the delays and costs associated with the problem begin to compound. Technical resources may be deployed for one-off reports. When the problem is solved, there may be no scalability in the design of the solution. Repetition of management time and technologist time becomes a problem. Whole teams armed with Excel, use countless hours customizing relatively static reports to try and meet even simple requirements. As the reporting requirements grow in complexity, the customization problem escalates.

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Reporting across companies and systems

In the last 15 years of helping Dynamics customers, we have seen very few medium and large organizations with a single legal entity. Some of our customers having more than eighty entities in the same Dynamics deployment. While this is the exception, on average we see between five and thirty five entities for most organizations.

Trying to get, for instance, a cashflow forecast from 50 entities means switching between each entity running the report and ultimately consolidating the numbers in Excel to get to a final organization wide forecast. Add to that having to format reports and this labor-intensive task can easily rob your cashflow controller of half a day. By the time an aggregated report across multiple entities is completed in Excel, it may already be out of date. Doing this for multiple currencies add to the complexity.

Another scenario that we see with nearly every customer, is that data from external systems need to be used in conjunction with data from Dynamics to perform analytics. For most customers, this means extensive Excel based mapping to perform an analysis of data that needs to be reworked every time a new dataset becomes available.

One of our recent customers needed to integrate data from 200+ social media campaigns (on different platforms) to sales data from Dynamics to validate campaign effectiveness and marketing spend. It took a team of people over three weeks to get to a clear picture of this, only to have to be repeated when the second round of campaigns were completed four weeks later. The more valuable the exercise proved to be, the greater the requirement to speed up the process.

Efficiency in reporting and analytics is difficult to achieve when Dynamics' basic out-of-the-box reports are your only usable reporting platform. Conversely, get your data into a place it can be consistently accessed by Power BI, and you have created a bridge to Dynamics Analytics Excellence.

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Common Problem 3

Complex data models

Because ERP reports are sourced from complex data models, a common problem for organizations when trying to expand Dynamics reporting is to assign expensive ERP specialists or data engineers to solve the problem.

An ERP system is essentially a large interrelated store of company data. Databases for large ERP systems, like Dynamics, are designed in a way to make the capturing of data very efficient. The problem with this, is that it generates many tables of data, all containing a little bit of information that from a business perspective belongs together. For instance, it is not unusual for customer information or product information to be spread across as many as 50 interrelated database tables that all need to be stitched together in a report for business to be able to make sense of the data. A large system like Dynamics AX in the most recent version has more than 6000 tables.

This means that expanding on the most basic ERP reports can be a very specialized job requiring years of experience with a systems data model. So, if an organization takes this journey one report at a time, using expensive data engineering or architectural resources on each small step, that organization can quickly find themselves unnecessarily dependent on those same expensive data engineering resources for reports.

The problem quickly compounds in the following ways, when custom reports get generated by the most expensive resources, without order and planning:

- 1) Repetitive, unsupportable code libraries get created and propagate.
- 2) Those same Data resources are taken away from more highly leveraged tasks, producing and reproducing reports that may have originally been conceived as one-offs.
- 3) Management decisions now depend on the most expensive talent being used ineffectively.

In addition, some organizations have not even gotten this far, because the required talent is not available. As you read the solution below, the organization that waited and read this paper in the interest of planning, will be the organization that achieves competitive advantage through Dynamics Analytics Excellence.

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Accessing raw data from Dynamics 365

The older the Dynamics installation, the more organizations have found ways to work around Common Problems 1, 2, and 3. In the on-premises versions of Dynamics, customers often connected directly to the database to build a reporting and analytical environment utilizing the raw data from the database level.

Dynamics 365 offers a next generation platform, enhancing the Dynamics product line. However, in Dynamics 365, direct access to the database is no longer possible as the Software as a Service (SaaS) environment eliminates access to the database level. While this is exclusive to the online version of Dynamics, with the growth numbers discussed earlier it is rapidly becoming the reality for many customers.

Bringing this into focus along with problem 1 & problem 2 adds more reporting and analytical complexity for customers in the online versions. If you need to access data, you are limited to 2 mechanisms:

a. Bring Your Own Database (BYOD)

BYOD is a method to export data entities to Azure SQL DB Platform as a Service (PaaS), storing data in a standard relational format. It provides you the ability to schedule an extract parts of the live database to create an off-line version of a subset of your data. The raw data in the BYOD can then be accessed and used for reporting and analytics. While this seems like a simple process, the complexity of extracting data from an online SaaS platform that runs 24/7 poses challenges.

- Not all the entities or tables from the actual database are replicated to the off-line copy. This means that reporting and analytics may be impacted by a lack of data.
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- Entities have to be configured for export, and the entities have to be designed to work well with change tracking to enable performant incremental updates.

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- Connecting a reporting tool to this data requires a deep understanding of the Dynamics data model as described in problem 3.
- Exporting the data takes time when you have many companies – even when you use change tracking.

b. Trickle Feed Data Lake (TFDL)

TFDL is a new mechanism developed by Microsoft to incrementally update data from the Dynamics 365 environment to an Azure Data Lake Storage Gen2 (ADLS) environment. The data is trickles through and is not reliant on a single large scheduled update process making it more suitable for up-to-the-minute reporting while placing less strain on the platform.

Data in the ADLS environment takes on a very different structure from that in a relational database as it is no longer stored in a table format. Data is now stored in a file format and structured according to the data entities that have been created.

- Exposure and adoption of a new technology is low in many customers resulting in a gap of understanding in how to access the data.
- Organizations still must develop and maintain data entities
- Complex transactional logic and especially integration with other sources, is still a challenge

Even with the most streamline data extraction/trickle feed process, the issues discussed in Problem 1 and Problem 2 and to some degree Problem 3, still hamper most customers from achieving analytics success.

How do we solve these problems?

Fortunately, all the problems described above can be bridged and the process is simple, if you have the right tools and skills to make it happen. It can be done in weeks instead of months, giving your company an opportunity to leapfrog your competition and creating value from your raw data assets.

At OmniData, our OmniAnalytics D365™ package is the asset in our asset-based consulting approach. It allows us to apply the benefit of years' worth of experience to any Dynamics environment, taking you from 0mph to 60mph in just weeks instead of months.

We do this by deploying an Azure based modern data warehouse with a pre-built reporting & analytics focused data model and included is a set of reports and dashboards, all built in standard Microsoft technologies like Microsoft Excel and Power BI. An automated process populates the data model with data from Dynamics several times per day, or if required in time intervals down to minutes. The pre-built reports and dashboards immediately populate with the new data, along with any additional reports you have customized and added.

Doing this, creates an environment, populated with the standard data from Dynamics, that is simple to use, yet fully customizable. Issues of supportability and scalability are all relegated away because of full compatibility within the Azure stack.

OmniAnalytics D365™

D365

Raw Cloud Access
(BYOD TFDL)

Dynamics

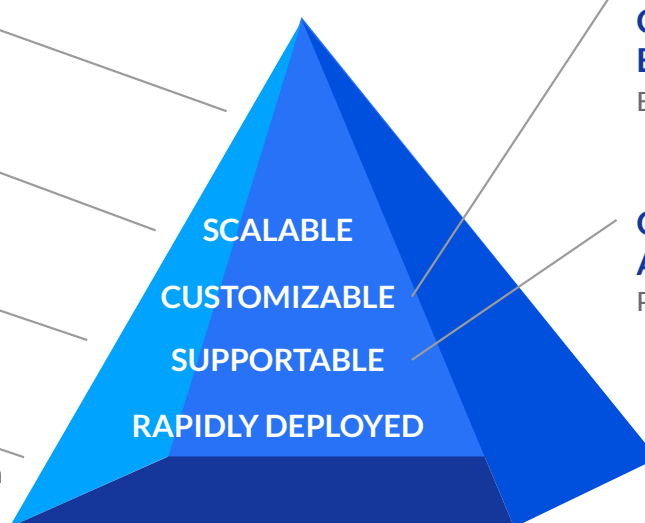
Alternatively

Apps

Marketo,
Salesforce, Workday

Cloud

AWS, Azure,
Google Cloud Platform



Reports & Dashboards Customized to your Business

Excel & Power BI

OmniAnalytics Accelerators

Power BI

The OmniAnalytics D365™ solves all four of the major reporting and analytics problems observed in the whitepaper.

How does OmniAnalytics D365™ address the common problems observed earlier?

Common Problem 1: One-size fits all Reporting

- Building a centralized data repository with a fully extensible data model allows you to add any customizations to the environment without impacting your Dynamics environment.
- In addition, this allows you to cater for any business specific customizations in your Dynamics environment without expensive data engineers having to build static report for each change.

Common Problem 2: Reporting across companies and systems

- Because our experience in Dynamics and Data, the OmniAnalytics D365™ has built in functionality to report everything from sales to inventory and through to General Ledger, AP and AR across all companies down to the very lowest level. It is easy to drill in and focus in on a specific company and analyze relevant data for that company. You can combine companies to analyze data.
- Additionally, because OmniAnalytics D365™ sits outside of the Dynamics database, you can now add any additional sources to the environment, without impacting on Dynamics. This means that if you wanted to add something as simple as an Excel file containing budget information, it is done very easily with data from the file becoming available alongside data from Dynamics.

Common Problem 3: Complex Data Models

- Data that resides in the centralized project repository has already gone through our simplification process to bring together all the required table re-structuring to create an easy to understand logical data model tailored to your business.
- For instance, there is one table for customer with all the standard attributes. If you have a customization in your Dynamics environment specific to the customer, it is immediately available in OmniAnalytics D365™.

Common Problem 4: Accessing raw data from Dynamics 365

- Having worked with both data extraction and trickle feed processes we have experience getting the best results from either option.
- In addition, we have refined our starting point data models to understand the data while immediately providing the customer with the benefits described above.

OmniAnalytics D365™, including our accelerated Power BI Reports, gives you the ability to springboard all the common problems faced while providing you with out of the box functionality. This includes business unit specific, analytics ready, data for finance, sales, inventory, accounts payable, accounts receivable and payments as well as detailed reports and dashboards, covering the most common questions, for each of these business units.

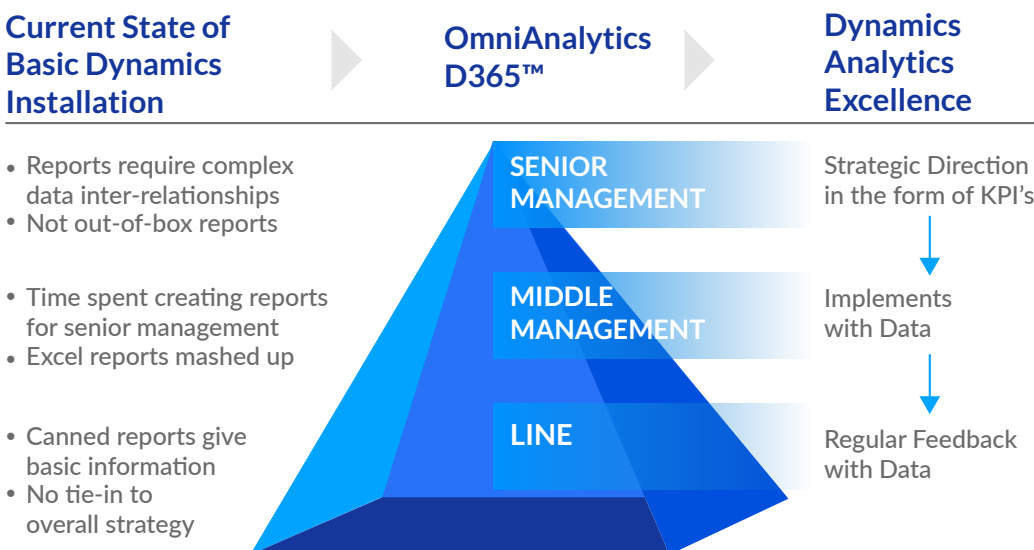
And once everything is deployed, the data model and reports can be customized to cater for any business specific customizations made to your Dynamics environment and for any additional sources of data you might want to integrate.

How does this change my business?

There have been a lot said about data and its power to drive change in organizations. But for data to be a catalyst of change it needs to be accessible. People need to be able to easily and intuitively work with data, raise their data literacy and allow it to feed into their decision-making cycle.

By deploying our centralized data repository, you create a starting point for analytics in your organization. Allowing you to easily analyze accurate and frequently updated data for major business functions, across entities, with maximum flexibility.

OmniAnalytics D365™, including our accelerated Power BI reports, gives you the ability to springboard all the common problems faced while providing you with out of the box functionality.



Dynamics Analytics Excellence enables management to set company wide goals with key performance indicators, updated regularly, synchronizing the workforce to common goals and regular feedback.

Conclusion

Dynamics provides an excellent and extremely stable set of solutions, allowing you to run almost all aspects of your business, seamlessly in the system. When however, it comes to reporting and analytics from Dynamics, the complexity of your organization will dictate your need for flexibility to solve some of the common problems listed.

At OmniData, we deal with these problems every day, and have managed to solve them by applying years' worth of experience in Dynamics and Data to it. To understand the next right step for your organization, OmniData can conduct a detailed assessment of your current Dynamics reporting and analytical environment. The assessment is designed to create a baseline understanding of where you are on the reporting and analytics journey and provide a bespoke roadmap of next steps to help you move to Dynamics reporting and analytics excellence.

Interested? Schedule a callback to discuss the assessment.

About OmniData

OmniData provides products and services at every phase of the data lifecycle. We are Microsoft Gold Data and Analytics partners who exist to cultivate your Data Estate, and to spread data literacy to every person in your organization. Call on us for any advice on your Modern Data Estate or next-generation analytics and reporting efforts. We're here to help, whether it's implementation of OmniAnalytics D365™, a live POC, or just pointing you in the right direction. Find out how we can accelerate your time to data insights 10X.