

DYNAMICS MINDS

Microsoft Dynamics 365
and Power Platform Conference

Pre-Day: MAY 26, 2024

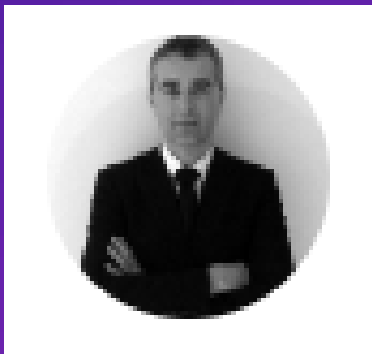
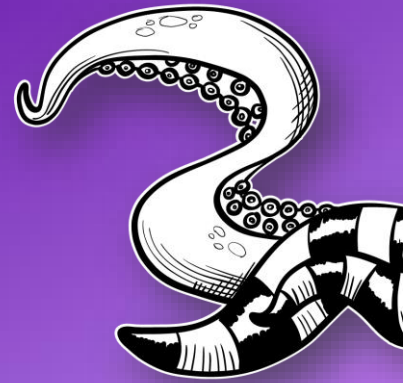
MAY 27 - 29, 2024

Portorož, Slovenia, Europe





Getting Data Out of Business Central and creation of Analytical Model



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Agenda

Getting data out of Business Central and creation of analytical model

- Introduction
 - Difference between reporting (BC) and analytics (BI)
 - Which BI modeling tool is better? Power BI or SQL (data warehouse)
- Getting data out of Business Central & NAV
 - History – Today - Tomorrow
- Creating Analytical model
 - Power BI
 - Data warehouse (SQL)

What will most affect analytical project for Business Central?

- Physics

- How to read BC data?
- How to get data out of BC?

- There are many excellent tools for modeling (Power BI, SQL, Fabric).
- You may hire consultant or buy a solution.
- Physics can be a limitation for the project performance, success and adoption.

In the BC product group, I own our analytics strategy and would love if you would include a few small things in your presentations (maybe in the end as part of references/call to action):

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If it helps, I made a deck available where you can copy slides from here:

<https://github.com/microsoft/BCTech/tree/master/samples/AnalyzeData/decks>

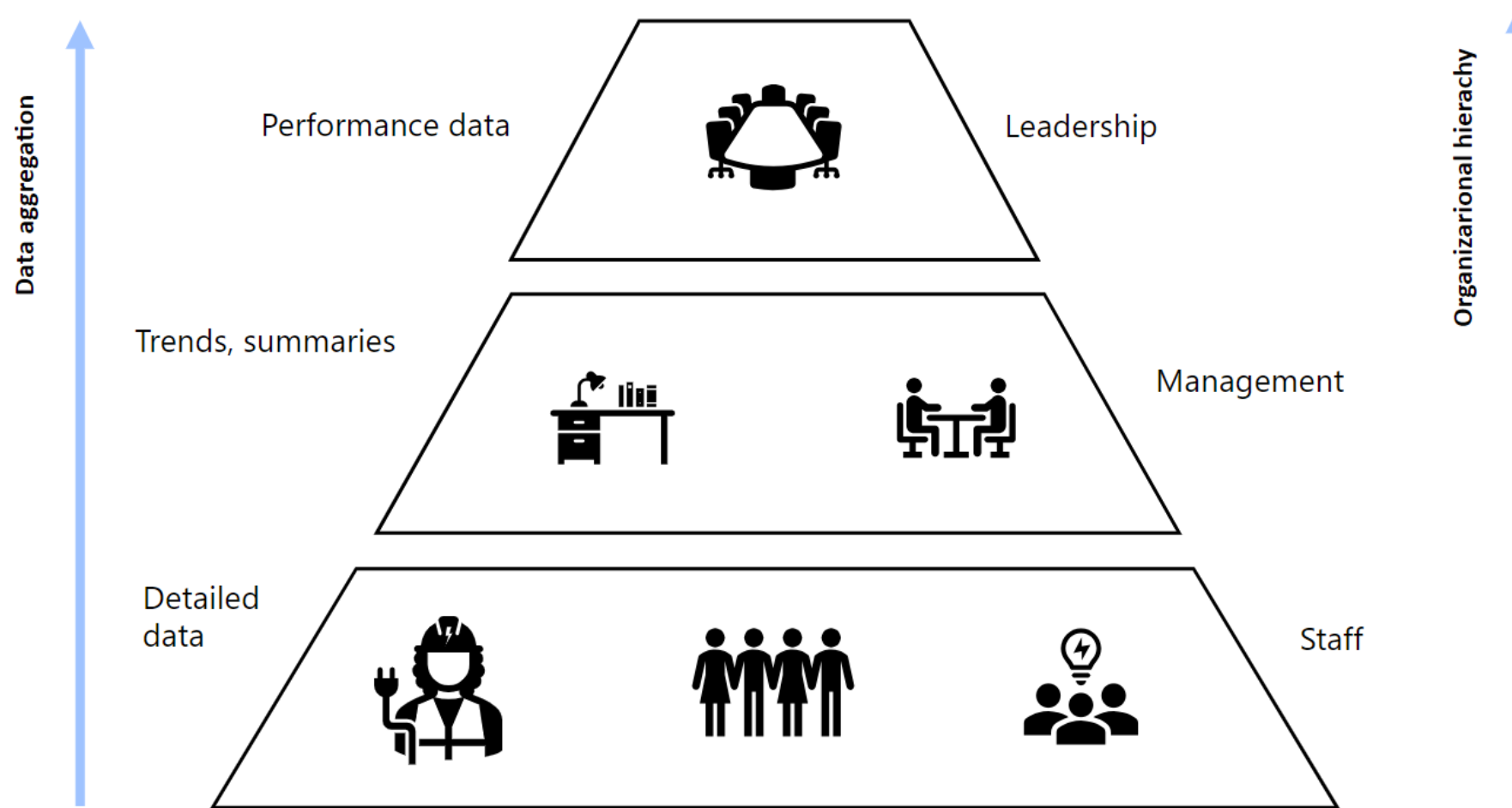
(deck is called "Standard slides for Business Central analytics sessions.pptx")

Hope you have a great time at the conference.

Reporting vs Analytics



Data aggregation and organizational hierarchy



Difference between reporting and analytics

(further away from the source = more technical possibilities = more effort needed for data transformation)

Concept	Reporting	Analytics
Do we create a new transformative model?	No. Data are in BC.	Yes. We create a new BI model : 1. Power BI report/service 2. Data Warehouse 3. Analysis Services (semantic model)
Are data live?	Yes	No. Refresh rate vary from 15 min to 1 day
Scalable / add new data sources	No / No	Yes / Yes
Accessible to users outside of BC	No	Yes
Scope of data transformation (BI content)	Small (level of subquery) Not complex model	Very complex models can be created (dev by SQL + dev by AS + dev by Power BI)
Benefits	Simple to design, BC skills	Transformative, scalable, new datasources
Handicaps	Limited design options Effecting BC performance	Challenge to design a model - requires BI skills (another BI technology) and BC basics
Is it easy to do transformations ?	Yes - requires BC skills	No
Build or buy (most often)	Build	Buy

2

Creating an analytical model

Part 1

Analytical model - which one to choose: Power BI or Data warehouse?

	Power BI	Data warehouse
What is the subject	product	concept
Product used	Power BI desktop	SQL, Azure SQL, Fabric
Scope of data (GB)	small	TB
Scope of datasources	many	few
Skills required	small to medium to high	high

Demo

Which is better?

Power BI App vs **Data warehouse-based**
Semantic model

Which is better?

Power BI App vs Data warehouse-based Semantic model

Power BI app
26 visuals



Semantic layer on top of Data Warehouse
28 visuals



Compare two analytical model

- one created by Power BI
- one created by SQL

(From now on we only talk about analytics, no more reporting)

Comparing two analytical models

Which one is better?

Bicycle (Power BI)



Car (Data Warehouse)



<https://www.youtube.com/shorts/3n2GwCadfxM>

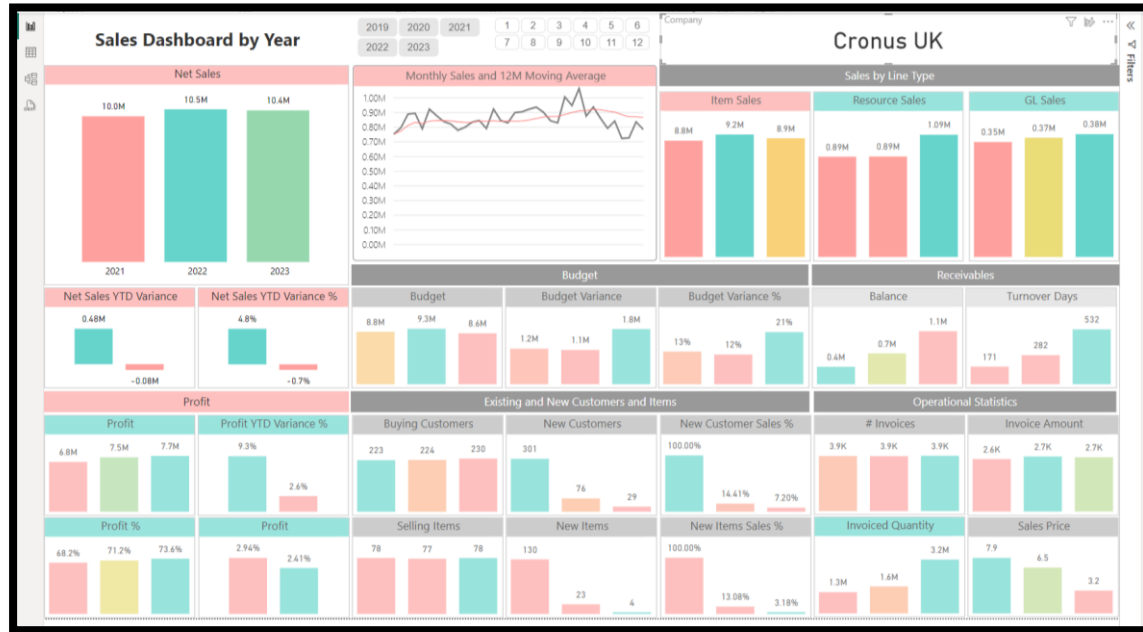
Comparing two analytical models

Which one is better?

(It is probably not clear at first sight)

Power BI app

26 visuals, 25 tables



Data Warehouse + Semantic layer

28 visuals, 50 tables



Demo

#1

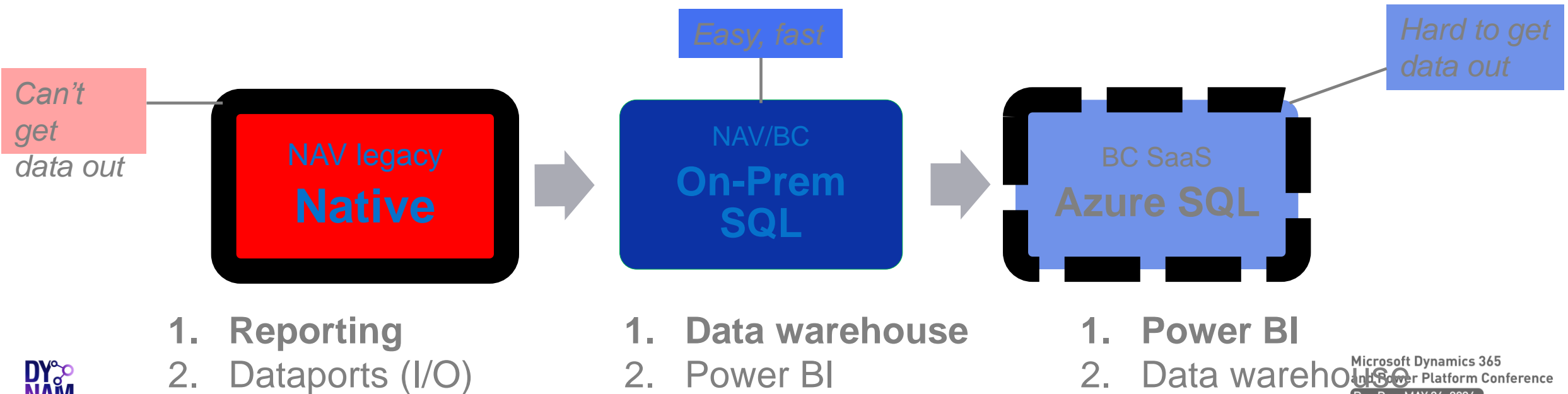
Getting data out of Business Central

On-premises, access to BC databases was simple and available.

In the cloud – not any more.

Quick history of NAV/BC database

- On Premise
 - Native database (NAV) → reporting
 - SQL database NAV/BC → reporting, **data warehouse**, Power BI
- Azure SQL
 - **BC SaaS** → reporting , **Power BI**, data warehouse

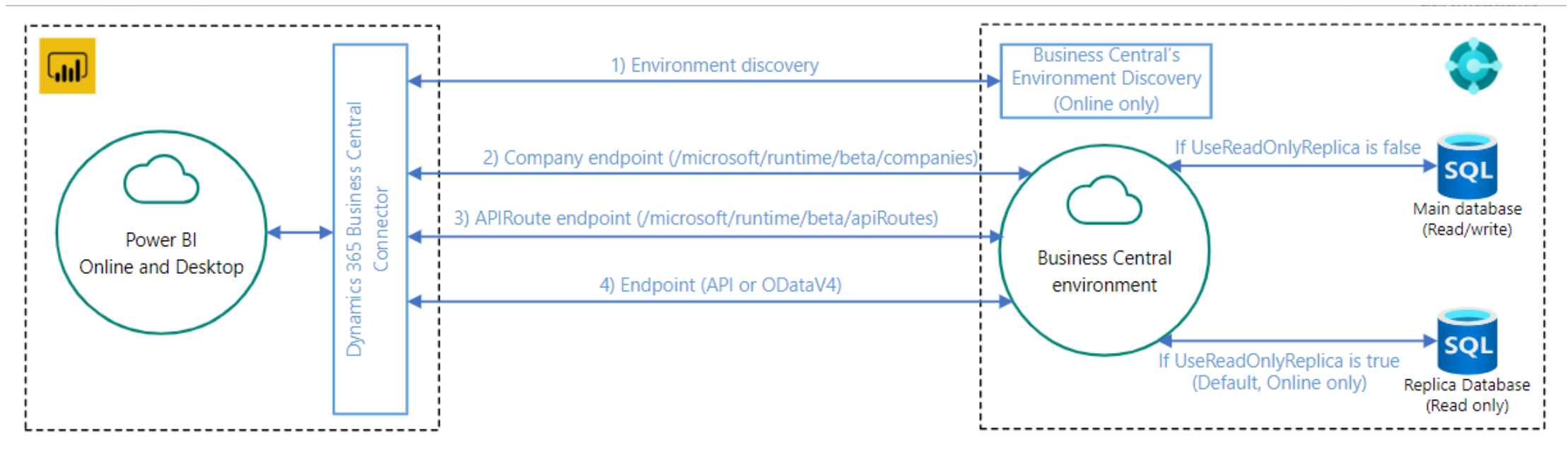


History of getting data out of Business Central



Database type	Native	SQL	Azure SQL
OS	DOS, OS2, Windows	Windows	-
ERP data location	On-prem	On-prem	Hosted (azure)
ERP db access type	Dataports (I/O objects)	Direct T-SQL read	ODATA
IS reading data scalable	No	Yes	Not really - Odata
Ready for analytical purposes	No	Golden era of analytics (simple)	Manage small, less efficient will large data
Concerns	Very limited usage Low performance	Nothing but costs (new hardware + SQL license)	Security + performance

Business Central integrates with Power BI through a connector using OData



Conclusion

Which one is better?

- **Short distance**
Bicycle (Power BI)



- **Long distance**
Car (Data Warehouse)





APPENDIX

Microsoft documentation



Microsoft documentation about analytics (as seen from the end users)

The screenshot shows the Microsoft Learn documentation page for Dynamics 365 Business Central. The page title is "Analytics, business intelligence, and reporting overview". The breadcrumb trail is "Learn / Dynamics 365 / Business Central /". The article is dated 05/01/2024 and has 6 contributors. The "In this article" section lists links to "Analytics needs in organizations", "Using Financial Reports to produce financial statements and KPIs", "Using key performance indicators to meet your business goals", and "Ad-hoc data analysis". The main content starts with "Small and mid-sized companies rely on built-in analytics and reporting capabilities they can use out-of-the-box to help keep track of their business. Business Central provides reports and analytics tools that cover basic and complex business processes for such organizations. You can also do ad-hoc analyses directly from your home page." Below this is a section titled "Analytics needs in organizations" with the text "When you think about analytics needs in organizations, it might help to use a mental model based on personas described on a high-level, and their different analytics needs." The left sidebar contains a navigation menu with "Analytics, business intelligence, and reporting" expanded, showing sub-items like "Analytics overview", "Analytics by functional area", "KPIs, dashboards, and financial reports", "Ad-hoc data analysis", "Use reports in daily work", "Built-in reports", "Develop reports", and "Analyze data in business intelligence tools". The right sidebar has "Additional resources" including "Training" (Module: Configure Business Central for Excel and Power BI - Training) and "Documentation" (Report overview - Business Central, Analyzing Report Data with Excel and XML - Business Central, Working with dimensions to track and analyze data - Business Central). A "Download PDF" button is at the bottom left.

Analytics per functional area (finance, sales, purchase, inventory, ...)

Filter by title

- Business Central documentation
- Welcome to Business Central
- New and planned
- > Get started
- Business functionality**
 - Overview of business functionality
 - > General business functionality
 - > Finance
 - > Financial analytics
 - Sales**
 - Sales overview
 - Sales analytics**
 - Sales analytics overview**
 - Create sales analysis reports
 - Ad-hoc analysis of sales data
 - Built-in sales reports
 - Walkthrough: Conduct a sales campaign
 - Walkthrough: Set up and Invoice sales prepayments
 - Register new customers
 - Make sales quotes
 - Invoice sales

Learn / Dynamics 365 / Business Central /

Sales analytics

Article • 04/30/2024 • 2 contributors

In this article

- [Analytics needs in sales](#)
- [Use financial reporting to produce financial statements and KPIs related to sales](#)
- [Finance reporting across business units or legal entities related to sales](#)
- [Ad-hoc analysis of sales data](#)
- [Show 4 more](#)

Businesses capture lots of data during daily activities that supports business intelligence (BI) for sales managers:

- Opportunities
- Sales quotes
- Sales orders
- Sales invoices

Business Central provides features to help you gather, analyze, and share your organization's sales data:

- Ad-hoc analysis on lists
- Ad-hoc analysis of data in Excel (using Open in Excel)
- Built-in sales analytics tools
- Built-in sales reports

Feedback

Additional resources

Training

Module [Analyze Dynamics 365 sales data - Training](#)

Microsoft Dynamics 365 has multiple analytical options to help organizations drive business decisions that are based on past sales numbers and trends. For example,...

Certification

[Microsoft Certified: Power BI Data Analyst Associate - Certifications](#)

Demonstrate methods and best practices that align with business and technical requirements for modeling, visualizing, and analyzing data with Microsoft Power BI.

Documentation

[Sales reports and analytics - Business Central](#)

See which sales reports and analytics are available in the standard version of Business Central so that you can keep track of your business.

[Ad-hoc analysis of sales data - Business Central](#)

Learn how to use the data analysis mode to analyze sales data.

[Simpler workflows across business areas - Release Notes](#)

Various common user tasks have been made easier.



Financial Analytics (in docs)

Filter by title

- Overview of business functionality
- > General business functionality
- > Finance
- Financial analytics
 - Financial analytics overview
 - Handling finance reporting across business units or legal entities
 - Financial reporting (Implementing financial statements and KPIs)
 - Prepare financial reporting
 - Row definitions in financial reporting
 - Column definitions in financial reporting
 - Walkthrough: Use financial reporting to make a cash flow forecasts
 - Set up and publish a KPI web service based on financial reporting
 - Analyse data with statistical accounts
 - Analyse data by dimensions
 - Ad-hoc analysis on finance data
 - > Built-in finance analysis tools
 - > Built-in finance reports

Learn / Dynamics 365 / Business Central / Business functionality /

Financial analytics

Article • 06/04/2024 • 5 contributors

+ Edit

Feedback

In this article

- Analytics needs in finance
- Finance KPIs
- Using financial reporting to produce financial statements and KPIs
- Finance reporting across business units or legal entities
- Show 5 more

Businesses capture a tremendous amount of data during daily activities that's supports valuable business intelligence (BI) for decision makers:

- Sales figures
- Purchases
- Operational expenses
- Employee salaries
- Budgets

Business Central contains many features to help you gather, analyse, and share your organisation's finance data:

- Financial reporting (for financial statements and KPIs)
- Ad-hoc analysis on lists
- Ad-hoc analysis of data in Excel (using open in Excel)

Additional resources

Training

Learning path
[Configure and work with analytics and reporting in finance and operations apps - Training](#)
Business leaders can make important decisions in their company if they have accurate insight into the underlying financial and operational data. A...

Certification

[Microsoft Certified: Dynamics 365 Fundamentals \(ERP\) - Certifications](#)
Demonstrate fundamental knowledge about the finance and operations capabilities of Microsoft Dynamics 365.

Documentation

[Built-in finance reports in Business Central - Business Central](#)
Explore the built-in financial reports in the standard version of Business Central.

[Build Financial Reports Using Financial Data and Account Categories - Business Central](#)

Describes how to use financial reports to create various views and reports for analysing financial performance data.

[Analyse data by dimensions - Business Central](#)

Microsoft documentation about analytics (as seen from **developer**)

Learn / Dynamics 365 / Business Central / ⊕ ✎ ⋮

Introduction to Business Central and Power BI

Article • 05/01/2024 • 11 contributors 👍 Feedback

In this article

- What you can do with Power BI and Business Central
- Get ready to use Power BI
- Next steps
- See also

Note

Azure Active Directory is now Microsoft Entra ID. [Learn more](#)

It's easy to get insights into your Business Central data with [Power BI](#) - a data visualization system from Microsoft. Power BI retrieves Business Central data so that you can build dashboards and reports based on that data. Power BI provides a flexible alternative to reports built in Business Central, enabling you drill down and customize the visualization, and even merge data from different companies in Business Central. Some Power BI reports can also be embedded in Business Central and viewed without leaving the system. More complex dashboards are better experienced from the Power BI web site.

<https://learn.microsoft.com/en-us/dynamics365/business-central/admin-powerbi?toc=%2Fdynamics365%2Fbusiness-central%2Fdev-itpro%2Ftoc.json>

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