

## Compatibility of Elysys BI Product

Elysys BI (Business Intelligence) provides advanced business analysis capabilities for investment and financial management activities. This module is intended for use with **Elysys SFO**, **Elysys MFO** or **Elysys AM**.

## The Limitations of Transactional Databases for Business Analysis

The Elysys solutions use Microsoft SQL server database technology to store data in Dynamics NAV transactional SQL Server databases. The normal structure of transactional SQL databases is based on a multitude of relationally connected tables. **This table-based structure is ideal for:**

- entry and collection of data in the system
- assignment of security and other rights from the standpoint of the application

**Nonetheless, transactional databases are not suited for reporting and BI purposes. This limitation is due to:**

- the difficulty of linking data from diverse tables and visualising them in a format that is consistent across different types
- the continuous altering of a database through transaction entry and update (any snapshot of information that is captured during these processes can cause issues, such as locked fields or inconsistencies in the reported output)

*Because of the limitations of transactional databases, an alternative solution to business analysis is needed.*

## Elysys BI: Underlying Technology

Elysys BI was developed to leverage the capabilities of Microsoft SQL Server and a third party development tool and more precisely: The Elysys BI product incorporates two main applications:

- **Microsoft SQL Server Analysis and integration Services.** These SQL tools enable the creation and deployment of data warehouses and OLAP cubes.
- **Jet Enterprise automation tool.** This automation tool is a partner product developed exclusively for Microsoft Dynamics NAV to enable:
  - **quick and efficient design of data warehouses from Dynamics NAV databases**
  - **processing of information updates from the transactional database**
  - **implementation of processes per pre-defined scheduling rules**

## Elysys BI: Front End Visualisation Capabilities

The Elysys SFO, MFO and AM solutions include an Excel addon reporting tool that can be also used very effectively as a front end tool for Elysys BI to produce reports, etc. directly from the data warehouse. Furthermore users have the capability to:

- Use Excel (Pivot tables) standard tools to visualise underlying data
- Power BI®, Qlik®, Tableau® or any other SQL compatible front end tool

## Elysys BI - Functionality

### Comprehensive raw information

#### Elysys BI provides:

- A comprehensive data warehouse with all the historical investment data included in the Elysys modules
- A Microsoft Dynamics NAV core product data warehouse of all historical information from other finance modules, e.g. Bank, General Ledger
- Accompanied OLAP cubes for use by front end tools to create complex visualisation of underlying data

#### Note:

Data in the warehouses will reflect information imported during the most recent synchronisation. Synchronisation is done at least once every 24 hours (overnight) and at most every 4-5 hours. While the frequency of synchronisation is limited due to processing time, it can be overcome by investing in more complex and efficient server architecture. The Cloud option becomes an even stronger candidate when compared to On premise.

### Performance calculations - TWR

**Best practice** recommends basing the calculation of return on investments (ROI) and portfolios on daily cash adjusted returns. The results are then compounded geometrically to provide time-weighted returns (TWR).

**Elysys BI implements the GIPS recommended practice** for calculating the TWR investment performance within a portfolio which is then used to calculate the Portfolio TWR.

This technology enables Elysys BI to provide **powerful visualisation and analysis** of dynamic portfolio and investment performance across asset classes, currencies (including a predefined Global Currency, to consolidate across entities with diverse base currencies), industry sector and many other dimensions. Using Power BI® or other front end tool, data can be sliced and diced across any cube measure with the capability of drilling down to specific items.

### Future

Going forward Elysys will be very soon expanding the functionality of the Elysys BI product to include:

- IRR calculations, e.g. for Private Equity
- other investment risk measures, e.g. Value at Risk and Sharpe Ratio