# GEM SYSTEM

## ANNA PREDICTIVE MANAGEMENT DELIVERY REFERENCE

—— For client e-shop 4home
(e-shop with equipment for house, apartment and garden)

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## Deadline for delivery of the 2020–2021 solution

4home has been operating on the market since 2004 and specializes in the sale of goods for the house and apartment and garden. 4home serves over 1,000,000 customers in 5 European countries a year. In light of strong customer demand, the company focused on the need to streamline the way it manages all purchase and sales orders.

## ✔ Solution Description

Based on a new generation of Business Intelligence (BI) solutions company based on modern MS Power BI technology was implemented system for Automatic Purchasing Design (ANNA),which is based on predictive purchasing management.

The solution is based on product and warehouse data retrieved from the NAV system via an integration database (mainly purchase and sales orders) or from a data warehouse.

The second part of the solution is the implementation of a predictive sales model of individual products for the following period. This model is intended to calculate, based on the available data of previous periods, the sales numbers on a day-by-day basis. The output of this model is information about the number of units of expected sales for the following period. The predictive model is calculated on a daily basis. The calculated data is made available in the Power BI environment for user reporting.

The final phase of the delivery was the implementation of the Automatic Purchasing Proposal System (ANNA) in the form of detailed report sets. The aim of this system is to predict and efficiently manage purchases per warehouse that are based on current stock levels, forecast sales and lead times. Based on the report, it is possible to react in advance to the scheduled quantity of purchase orders with respect to the logistics capacity.

## ✔ Technologies Used

On-Premises Data Gateway was installed on the customer's gateway server as a communication bridge between data sources and the presentation layer. Gradually, the individual functionalities were implemented in Power BI (Desktop) and for the necessary data was connected from the source system Microsoft Dynamics NAV or from the data warehouse (MS SQL Server). The created reports were published to the Power BI cloud environment in the form of three reporting views according to the required user permission levels.

## ✔ The Solution Used

Microsoft Power BI which is an interactive data visualization software developed by Microsoft with the primary focus of on Business Intelligence and is part of the Microsoft Power Platform. Power BI is a set of software services, applications and connectors, that work together to transform disparate data sources into comprehensive, visually engaging and interactive insights. Data can be entered by reading directly from a database, web page or structured files such as spreadsheets, CSV, XML and JSON. Power BI provides cloud-based BI (Business Intelligence) services, known as "Power BI Services", along with a desktop interface, called „Power BI Desktop". The key components of the solution are, for example, the Power BI Desktop through Power BI Service or Power BI Gateway to Power BI Report Server or Power BI Visuals Marketplace. Power BI offers data warehouse functionality including data preparation, data preparation and interactive dashboards. In March 2016, the company Microsoft released another service on its Azure cloud platform called Power BI Embedded. One of the main differentiators of the product is the ability to load custom visualizations.

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