

# The Business Intelligence Strategic Game

As of summer 2022



The Business Intelligence Game is a learning and teaching serious game in order to teach the participants the concepts, methods and technologies of Business Intelligence (BI). It was designed as a strategic game for business analytics. In the past, we used it for workshops in an international setup and for regular classes with teams of students. Depending on the knowledge about BI, the role of the lecturer turns to a coach.

The business scenario: AdventureBikes is a bicycle company that produces bikes with their own brand. Next year, AdventureBikes will open some more physical shops in selected cities. The students have to create a small business plan in order to open a bike store. They work in a small team with max. 4 students, they have to think about a location, a product mix, an employee mix and some marketing activities. Their budget is 500.000 Euro for the first year.

After the presentation of the business plan, students type in their data into a web application. Sales data will be generated in the background, based on their decisions.

Student will learn methods and applications of BI that will help them to analyse data to make better decisions and ultimately achieve good sales and turnover from their bikes. At the beginning, the BI Game is competitive, but finally all teams end hopefully with a positive revenue.

The target groups for the BI Game are both:

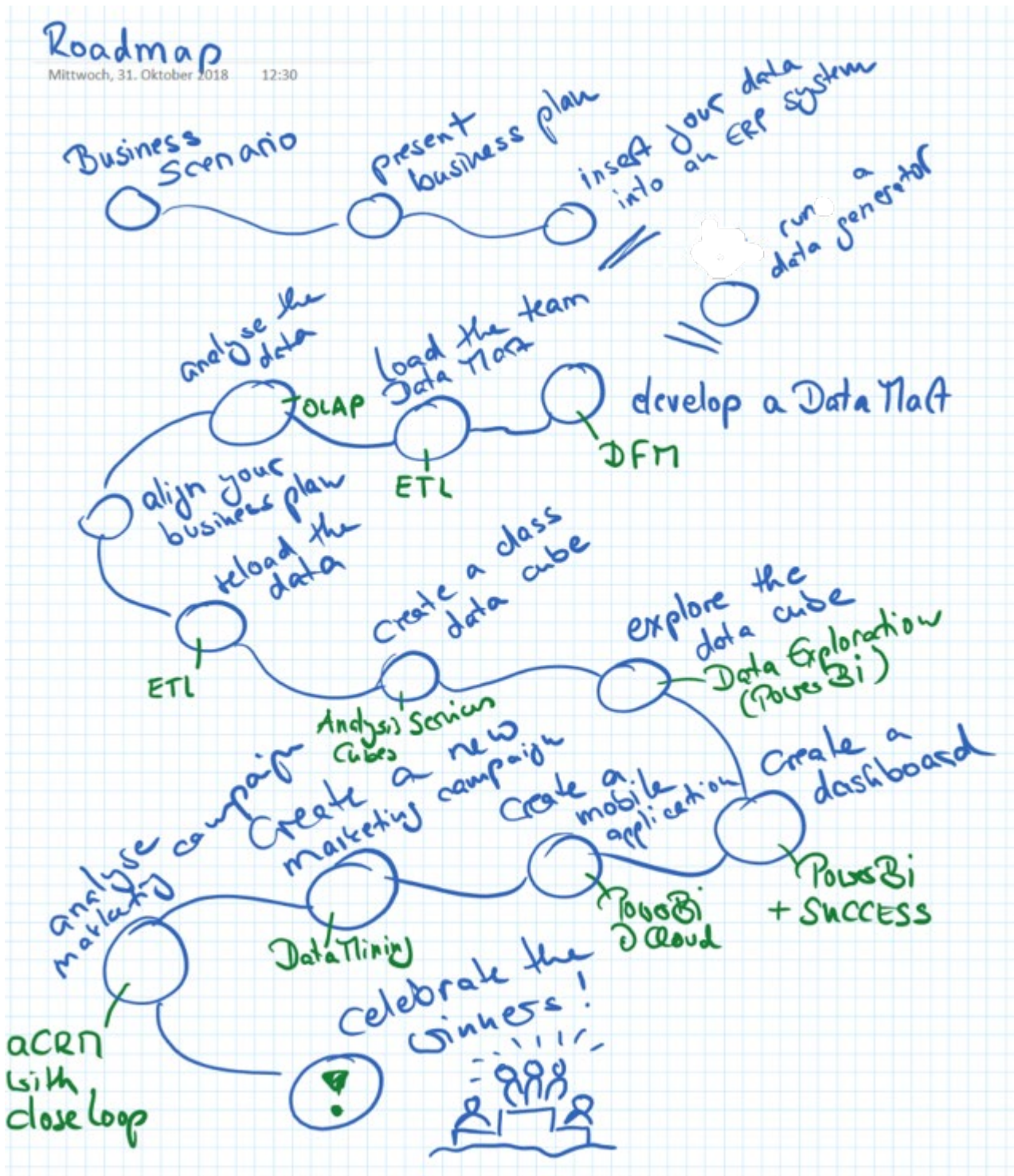
- business students with some basic IT knowledge who want to learn about the application of business analytics
- IT students who want to build a business analytics application from scratch

From a time perspective, the BI Game is very flexible. During the last years, we have used the BI Game more than 40 times for

- 1 week workshops with national and international students together, in Stuttgart and / or abroad
- At HdM in the bachelor program we use it as a regular class each semester in order to implement new scenarios, test new software and keep the game actual and stable
- At HdM in the data science master's program we use it to apply data science and AI algorithms to it.
- At AVANS university in the Netherlands, the BI Game is part of the regular IT course

The BI Game or parts of it can be used for a

1. Unit: Basics of data warehousing and BI (3 hrs, lecturer)
2. Unit: Introduction to AdventureBikes business case (2 hrs, lecturer)
3. Unit: Create and present business plan (5 hrs, students)
4. Unit: Enter data into a web based ERP system (1 hrs, students)
5. Unit: Explain Dimensional Fact Modell, create a data mart with DFM (2 + 2 hrs, lecturer, students)
6. Unit: Explain ETL process, develop ETL process with MSF Integration Services (2 + 3 hrs, lecturer, students)
7. Unit: Explain OLAP, analyze data with MSFT Excel PowerPivot (3 hrs, lecturer, students)
8. Unit: Gain insights, present and revise decisions (2 hrs, students)
9. Unit: Explain Cube concept, build data cube across all stores (2 + 3 hrs, lecturer, students)
10. Unit: Explain Self-Service BI, analyse cube data with MSFT PowerBI (2 + 3 hrs, lecturer, students)
11. Unit: Explain Data preparation, add weather data from web to dashbar (1 + 2 hrs, lecturer, students)
12. Unit: Explain Data Science process, apply analytical CRM (2 + 3 hrs, lecturer, students)
13. Unit: Explain BI based Business Planning, create a writeback cube (2 + 3 hrs, lecturer, students)



After the project, participants will have the following competencies:

- Know different variants of data warehouse architectures
- Know and apply different methods for semantic modeling of data marts
- Know and apply advanced methods for relational modeling of data marts
- Know and apply different methods for multidimensional modeling of data marts
- Know advanced extraction, transformation, loading of data with an ETL tool
- Know the differences between data cubes and tabular models
- understand components for enterprise self-service business intelligence platforms
- be able to integrate data science techniques into a business intelligence environment
- Understand BI-based planning and build a planning model

The project is based on a business game. The following free products from Microsoft will be used as BI tools.

- SQL Server Relational Database (Database Engine)
- SQL Server Multidimensional Database (Analysis Services)
- SQL Server Integration Services (ETL-Tool)
- Microsoft Excel Pivoting (OLAP-Tool for analysing Data Sets)
- Microsoft Excel Power Pivot (OLAP-Tool for analysing Star Schemata)
- Microsoft Power BI (Data Visualisation, Dashboard Design)
- Dimensional Fact Modelling (Multidimensional Modelling)

Other BI tools are welcome.

Programming skills are not required.

### Links

- [www.bi-academy.eu](http://www.bi-academy.eu)