Intelligent Technologies – training and workshops for modern data analytics and Power BI

In Intelligent Technologies for more than 14 years we deploy analytical solutions into everyday practice. Since Power BI was launched in 2015 we also deploy, implement and train this leading tool. At this point in time we have trained over 100 companies.

Our core competencies:

- **Power BI** – adoption, data models and reports development, deployment and monitoring
- **Azure Data platform** (Azure SQL database, Azure DW, Azure Data Factory, Azure Analysis Services)
- **Data warehouses** – design and development of data warehouses (cloud/on-prem)

The list contains examples of past workshops that can be repeated or adapted to participants, their expectations, existing knowledge and the required output from the training. The content is always consulted in advance and the content is approved by customer.

The price does not depend on the number of participants, the recommended number is about 10 participants, more than 20 is not comfortable for the participants themselves (for basic courses there may be a larger number, a smaller number is suitable for specialized workshops).

For 2021, all trainings are carried out in a remote form. The primary technical delivery platform is MS Teams, another communicator can be used by agreement.

Training / workshop name	Number of days
Modern data analytics with Power BI	0,5
Power BI for report consumers	0,5
Power BI – introduction, report creation A-Z (most popular)	**1**
Power BI – report design with existing data models	1
Advanced Power BI	2
Advanced Power BI – data modelling	1
Advanced Power BI – how to create visually appealing reports	1
Advanced Power BI – paginated reports (Reporting Services reports)	1
Introduction into DAX	1
Advanced DAX	2
Power BI – problem solving (customer workshop, own data)	3
Power BI for administrators	1

Modern data analytics with Power BI

Content	Power BI demonstration, report examples, value of data analytics in current business climate
Audience	For future report consumers and designer, for management
Length	0,5 day (2h)

1. Use of modern data analytics into the current digital transformation environment
2. Benefits of data analysis for long-term increase of business competitiveness
3. Data visualization
4. How to work with a created report, analysis of data, change an existing report
5. Mobile view and integration with MS Teams
6. Comparison Power BI with other tools on the market

Figure 1 previous workshops

Power BI for report consumers

Content	Demonstration how to use existing reports and how to work with Power BI portal
Audience	Report consumers
Length	0,5 day

- Introduction to Power BI portal
- Existing report examples
- How to use built-in help
- How to navigate through report, drill-down, filter
- How to export data
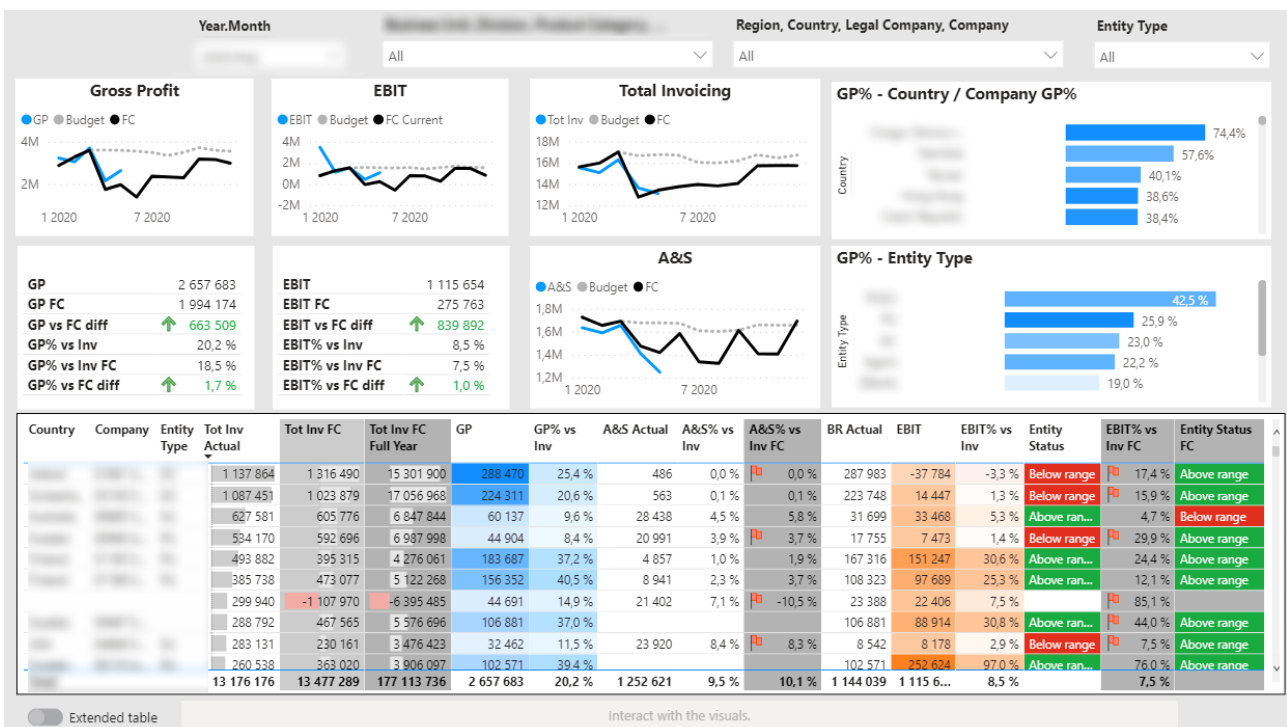- Mobile reports
- Report subscriptions

Figure 2 Report example

business intelligence in action
Intelligent Technologies

Power BI - introduction, report creation A-Z, Dashboard in a Day

Content	Introduction into Power BI, full design and reporting circle (data load, transformations, data modelling, visualizations), report publication and sharing
Audience	Users without previous exposure to Power BI, beginners
Length	1 day

Data Transformation (Query Editor)
- Data import
    1. Supported data sources
    2. Interface and navigation in the query editor
    3. Data transformation options

- More data connection options

Data modeling - relationships and calculations
- Relationships between tables
- Calculated columns and calculated tables
- Measures
- Custom calculation and introduction to the DAX analytical language
- The most commonly used scenarios

Visualizations and reports
- Quick and easy start
- Available visualizations and settings
- Interactivity
- Filtering options

Power BI – report design with existing data model

Content	Report design on existing data models, no data modelling
Audience	Users that create reports with existing models
Length	1 day

Power BI reports
- Interactivity
- Filters panel and slicers
- Hierarchies
- Data browsing
- Details report
- Tooltips
- Bookmarks
- Ordering
- Tips

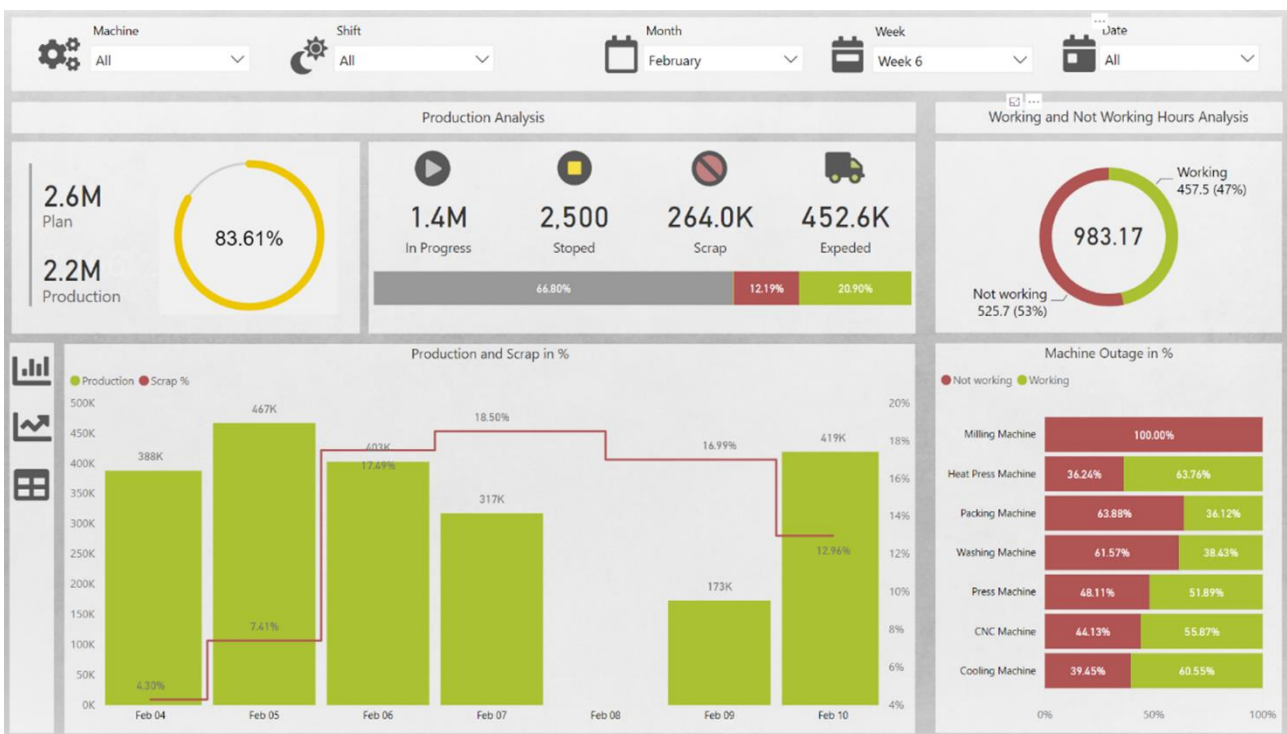**Step-by-step report design on own data (existing models)**

Figure 3 Report example

Advanced Power BI

Content	Successor to introductory course – advanced concepts, advanced loading data, data modelling
Audience	Report and model designers
Length	2 days

Power Query:
- Parameters in Power Query editor
- Custom functions in Power Query editor
- Optimization tips

Data sources
- Import vs live connections
- Semi-structured data sources - web
- Data source specific features
- Query folding
- Data refresh, incremental refresh

Data modelling
- Data modeling principles – dimensions,
- Relationships
- Ordering
- Time dimensions
- Advanced transformation with M language
- Data privacy Levels
- Model security

DAX
- DAX variables
- Quick measures
- Calculated columns and metrics
- Ragged hierarchies

Visualizations
- Drill through
- Tooltips
- Bookmarks as filters/visualizations switch
- Usage of different chart types - Waterfall, Pie charts, …

Power BI service
- Streaming datasets
- Power Automate and PowerApps integration
- Dataflows

Advanced Power BI – data modeling

Content	Successor to introductory Power BI course, data modelling (subset of 2 day Advanced Power BI)
Audience	Report and model designers
Length	1 day

- Basic concepts of data modelling
- Impact of good and bad data design decisions
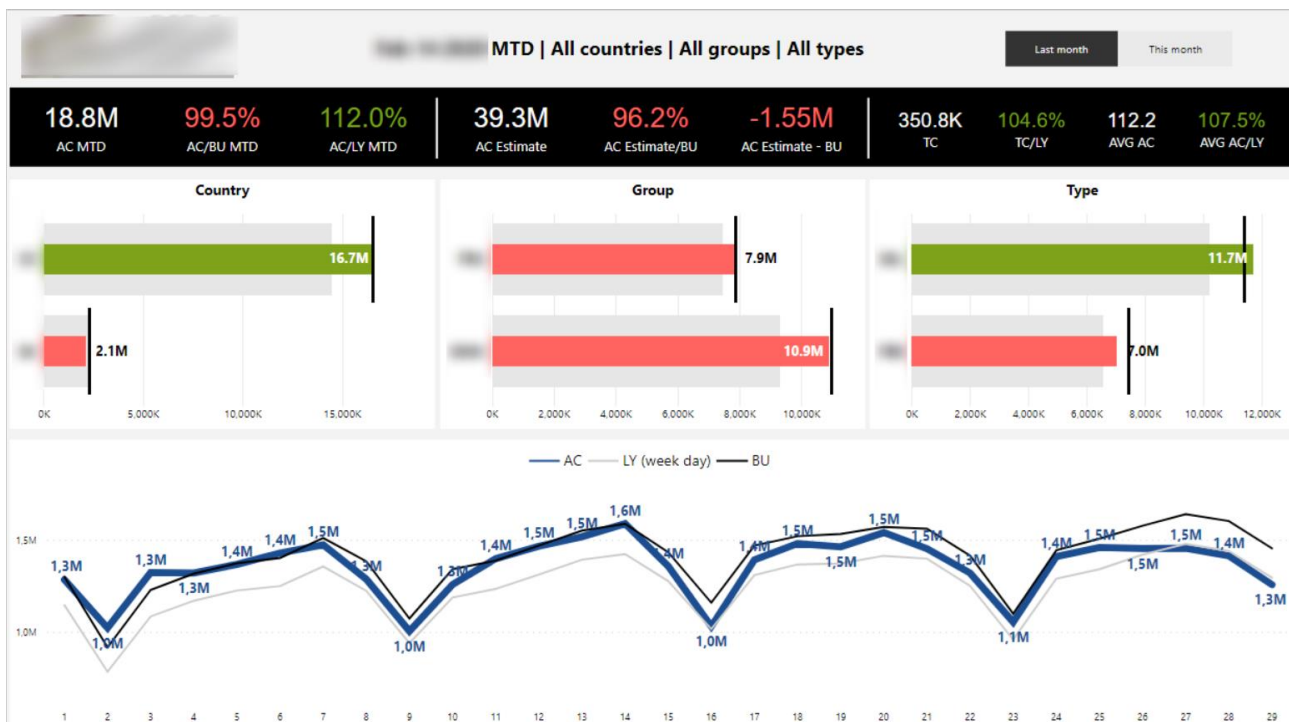- Basics of calculated columns and metrics
- Table relationships

Figure 4 Report example

Advanced Power BI – how to create visually appealing report

Content	Successor to introductory course, advanced visualization concepts
Audience	Report designers
Length	1 day

- Why it's important to tell stories with data
- Data visualization process
- How to choose chart type
- Custom visuals
- Colors, fonts, themes

Figure 5 Report example

Advanced Power BI - paginated reports (Reporting Services reports)

Content	Introduction to paginated reports (Reporting Services reports in Power BI)
Audience	Report designers, Reporting Services developers
Length	1 day

- Report design
- Connecting to data sources (PBI datasets or relational databases)
- Use of parameters
- Data visualization
- Report interactivity
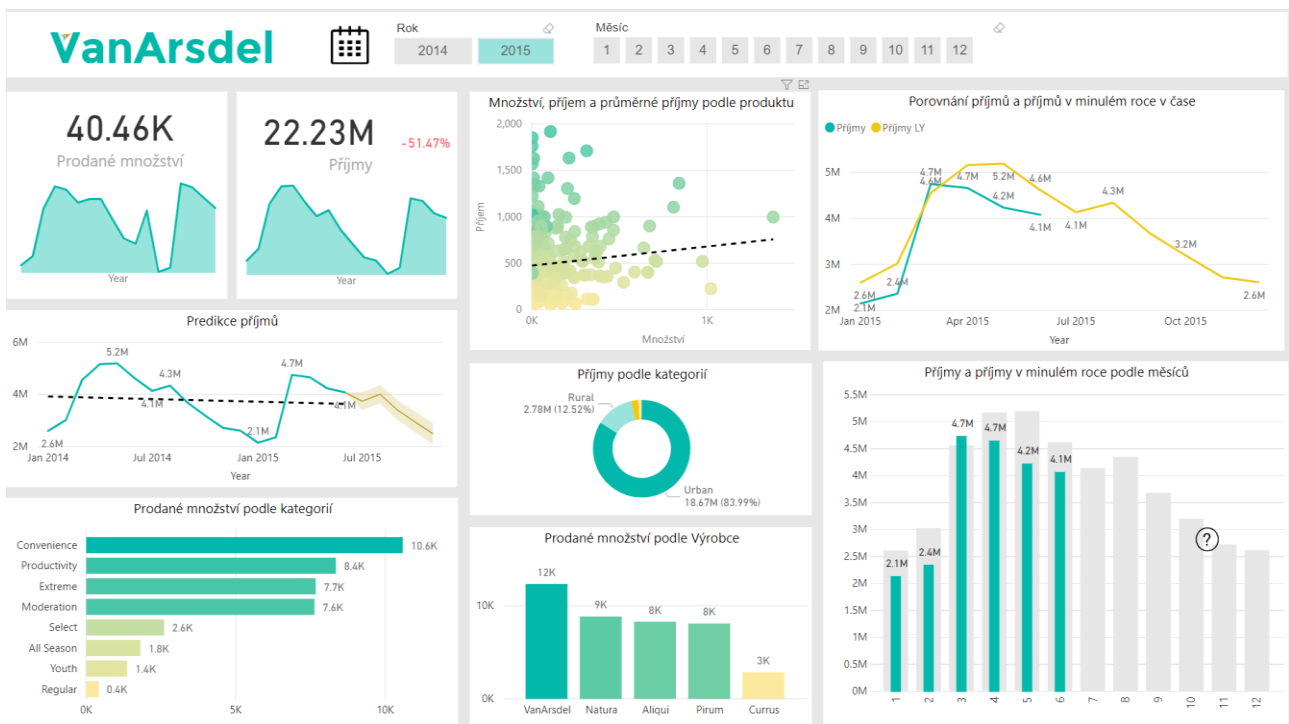- Report publishing
- Export to PDF and Excel

Figure 6 Report example

Introduction to DAX

Content	Introduction to DAX, important concepts and first metrics
Audience	Novice report designers
Length	0,5 – 1 day

- Working on simple demo data
- The most common scenarios and features
- Basic syntax and concepts
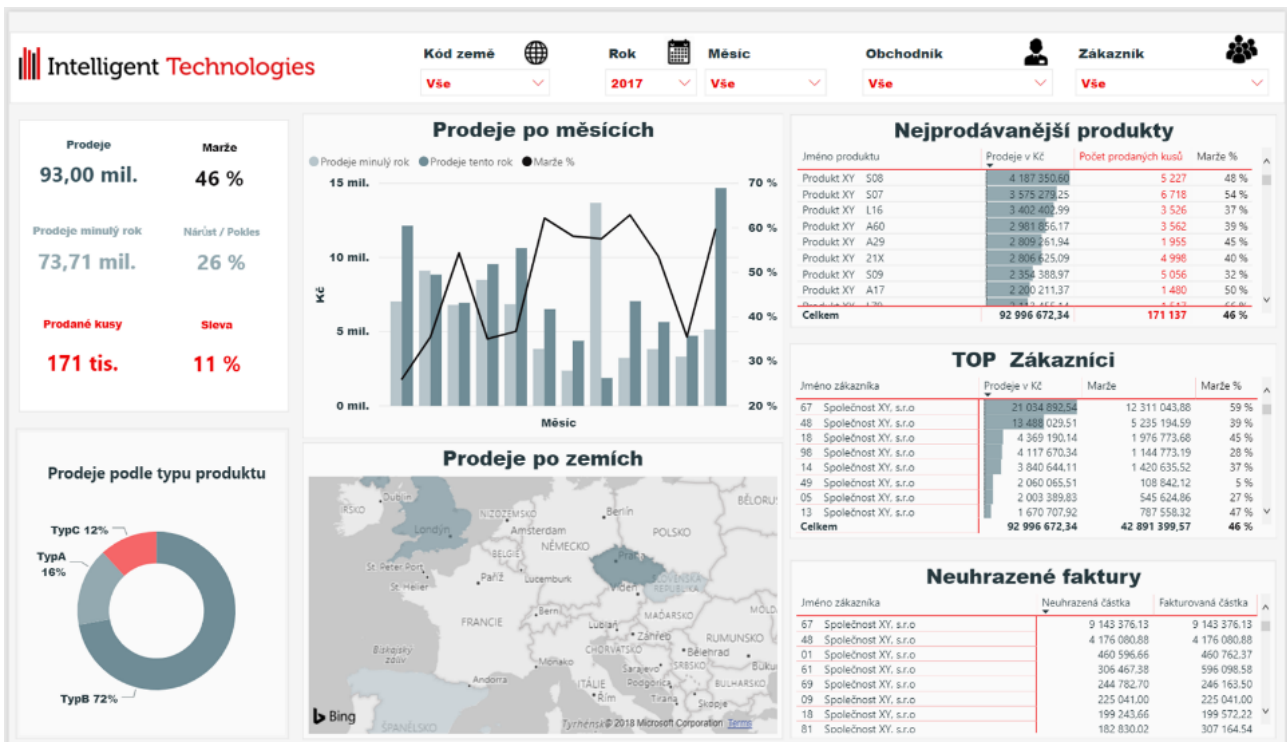- Calculated columns, measures, calculated tables
- Variables
- Time functions

Figure 7 Report example

Advanced DAX

Content	DAX, calculated columns and metrics, concepts and common modeling scenarios
Audience	Advanced report designer
Length	2 days

- Everything is done through examples
- More detailed outline:
    - History
    - Basic syntax
    - Calculated columns, measures, calculated tables
    - Measure groups
    - Scalar and tabular functions
    - Contexts
    - Variables
    - Time-intelligence
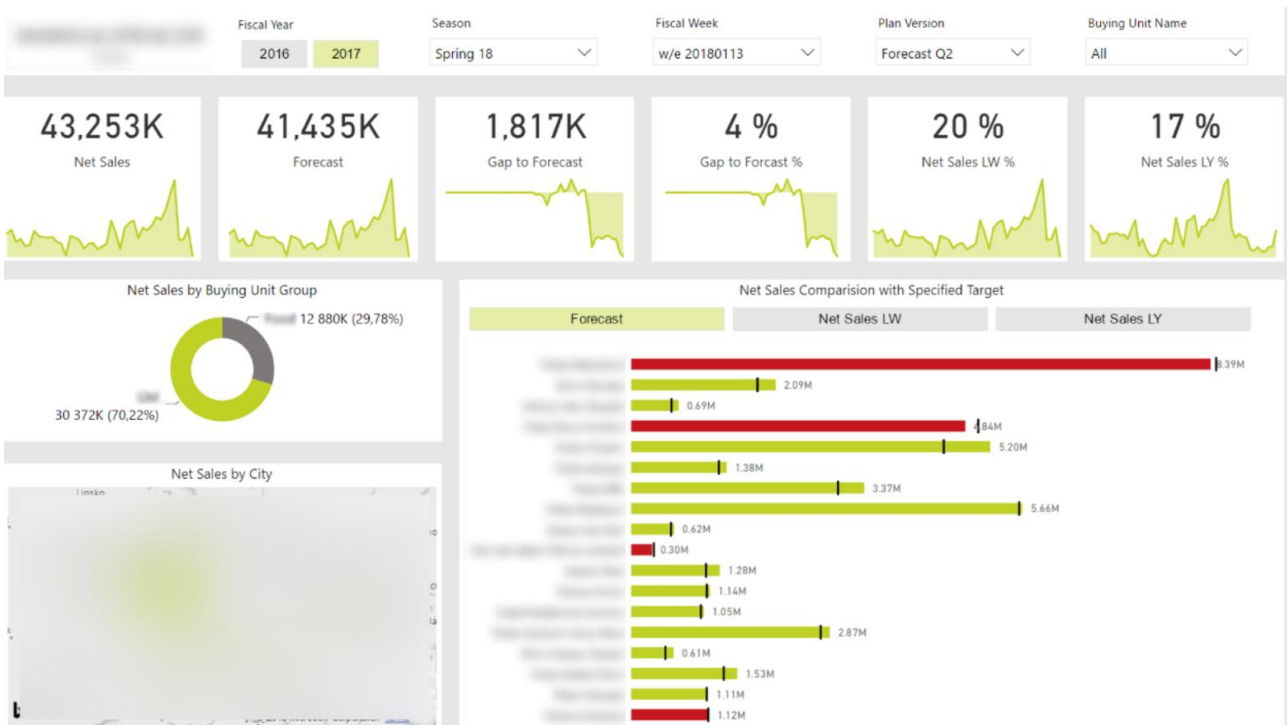   - Advanced features
    - DAX as a query language

Figure 8 Report example

Power BI problem solving – custom workshop, own data

Content	Discussion and demonstration of typical data modelling problems, custom workshop
Audience	Report designers facing specific problems and questions
Length	2 - 3 days

1. Tailor-made workshop, both content and scope
2. A list of focus areas will be created in advance, which users would like to discuss, prepare a scenario, get familiar with the environment (data sources...), this will take place before the workshop itself
3. The workshop then answers individual questions and goes through areas of interest – in detail with several suggestions of possible solutions
4. Possible areas of interest: date table (date calculation), how to model M:N relationships, how to incrementally load data, how to secure models (row level security), how to create a financial income report, how to connect to the data source API, ...
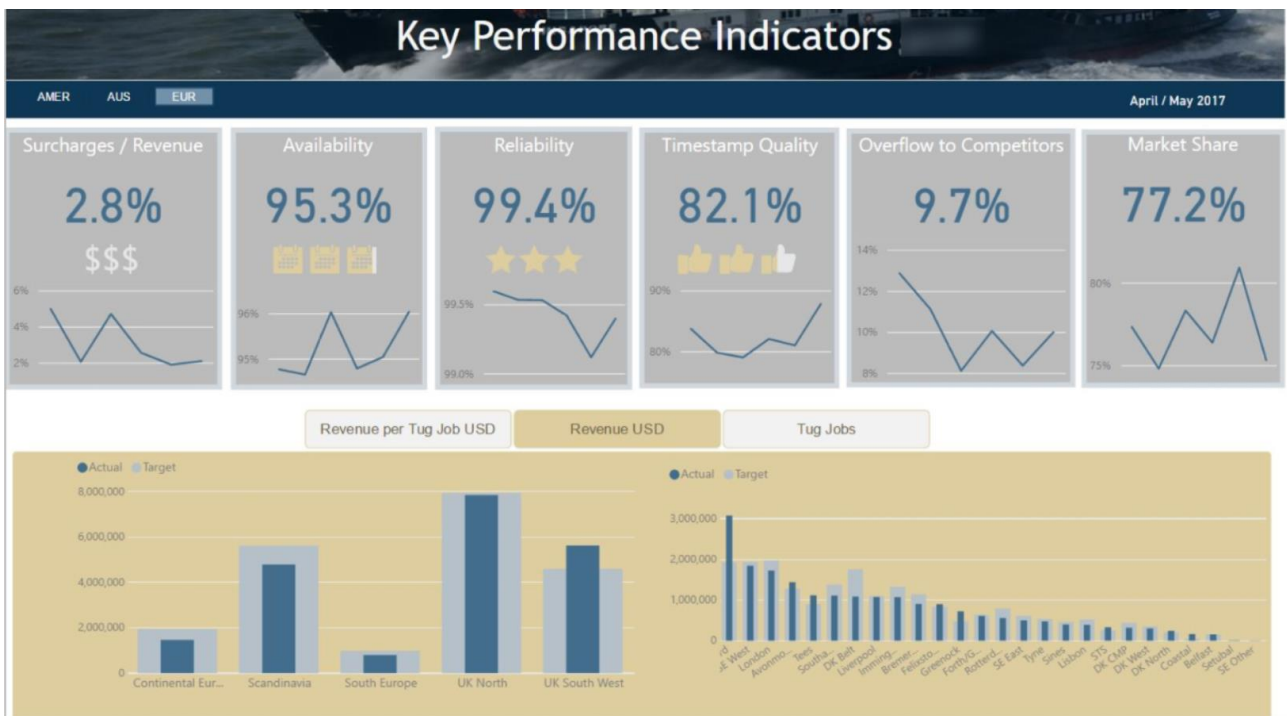

Figure 9 Report example

Power BI for administrators

Content	Overview of administrative topics, licensing
Audience	Administrators
Length	1 day

- Power BI tenant settings - creating, data region
- Role - Global Administrator, Billing Administrator, Power BI Administrator, Reports reader, Premium Capacity Administrator, App Workspace Administrator, Embedded Capacity Administrator, AAD Administrator
- Power BI Admin Center
  - Tenant-level settings
  - Custom visuals distribution and management
  - Embed codes, public reports
- Gateway installation and setup
- App Workspace settings
- Monitoring Power BI usage - Usage metrics for tenant and for reports, Audit logs
- Automatization - PowerShell cmdlets, Power BI REST API
- Power BI Premium management
- Applications roll out
  - Power BI Desktop (Web, Microsoft Store, IT Deployment tools)
  - Mobile applications
  - On-premise gateway
  - Power BI Publisher for Excel
  - Analyze in Excel - MS AS OLE DB Provider
- User licenses
- Security – AAD integration, workspace access, RLS
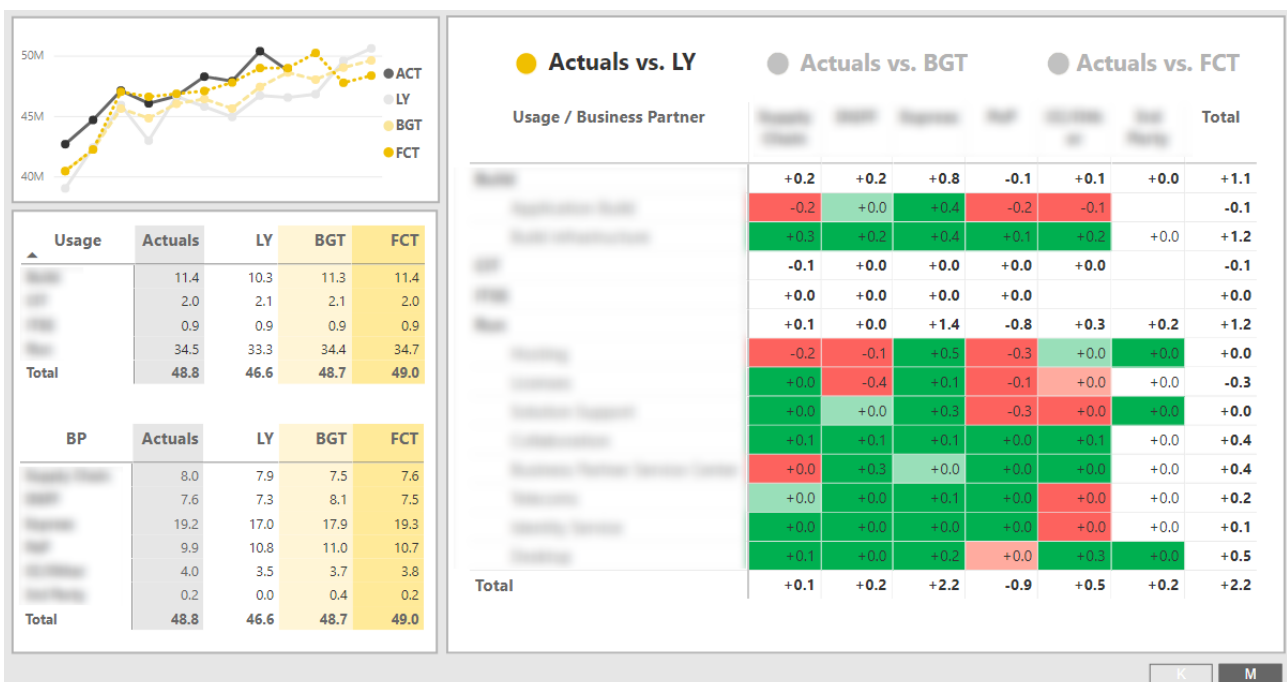- Data Privacy, Data Classification

Figure 10 Report example

About Intelligent Technologies

Our company implements spectrum of business intelligence, data warehousing and performance management solutions. Our solutions utilize the whole suite of Microsoft BI tools, enabling users to make more informed business decisions and to improve performance of their organizations on all levels – strategic, tactical and operating. We offer analysis of firm processes and optimization, design of BI strategy, design of data warehouse, development of OLAP cubes and creation of business reports and their optimization.

Company was awarded in **Microsoft Industry Awards for year 2012, 2014, 2015, 2016, 2017, 2018 and 2019** in area **Data management and Business Intelligence** with project for Marks and Spencer, DB Schenker, NOTINO, and BISNODE, Delmart, ITW.

I'm looking forward to our future cooperation.

On behalf Intelligent Technologies,
Radim Hampel, director

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