Case Study: Predictive Education boosted by Microsoft Power BI

Vila Franca de Xira is a dynamic Municipality near Lisbon, Portugal, with 26.000 students in 58 public schools, including all the education levels.

The Municipality Education Strategic Plan, redefined in 2016, set clear and ambitious goals related with students and teacher's performance improvement, in a context of permanent support for skills development and resources innovation.

Defining common and specific policies, objectives and milestones for schools aligned with this strategy, and ensuring clear and reliable tools for monitoring progress achievement, is crucial to Regional and Municipality Education stakeholders as their role in Education is strongly reinforced by the Government policies to decentralize Education management and development.

> The Municipality Education Managers identified two urgent needs: a) **an education information model** with Key Indicators and Reports targeted to define the path to the required performance improvement objectives, covering the multidimensional education context b) **an information system** that could ensure data collection from the actual schools systems, multidimensional data processing and flexible and adaptive front-end presentation tools to enable work with key Indicators and Reports for on time progress monitoring, tendency analysis and predictive vision of results and inherent actions to ensure success.

It was recognized that satisfying these needs was a big challenge, as these two faces of the same coin are strongly connected and require a project team with significant experience on Education Strategy implementation linked with strong skills on Education Decision Support Systems implementation.

This context of clearly identified top management strategy and intention for action was the perfect challenge for the **KSTK Predictive Education Solution**.
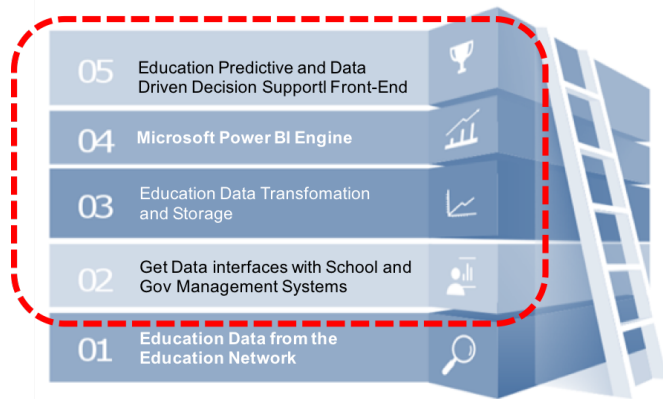
The Solution involved:

- The **KSTK Senior Consultancy on Education Strategy and Performance Evaluation**
- The **KSTK Predictive Education application platform**, an Education Intelligence and Predictive system, based on the Microsoft Power BI strong data analysis engine, designed to support Sustainable Education Managers in their monitoring, analysis and predicting data driven decision-

making processes, based on Indicators and Reports, in a context of always up-to-date information and simple, effective and structured access.

A project team involving Municipality Education Managers, School Directors and KSTK Senior Consultants was created to:

- Define the Education Information Model – Phase 1 – A common set of Key Performance Indicators for Schools and the Municipality.
- Define the key data required for the Education Information Model, and sources.
- Implement the technical interfaces with the Schools systems to get the required data
- Implement the Predictive Education application platform based on the MS Power BI Services.

05 Education Predictive and Data Driven Decision Supportl Front-End
04 Microsoft Power BI Engine
03 Education Data Transfomation and Storage
02 Get Data interfaces with School and Gov Management Systems
01 Education Data from the Education Network

The Project Team, with multiple and complementary skills, motivated by the challenge of the innovative project, created the fundamental *power lab* that enabled recognized quick wins.

Managers and Consultants strong experience and state of the art technology were a crucial accelerator for this project.

In two months time of the project,
- A full set of 145 Indicators in 5 Criteria were defined and agreed for a one year project implementation
- The data for enabling those Indicators was collected from the school systems
- The Predictive Education Platform is alive with the critical top priority 50 Indicators

"The Predictive Education solution from KSTK is a key tool for the Municipality in the critical path for the data driven performance optimization in Education in our schools network."

Dr. Fernando Paulo Ferreira – Vice-President, Municipality of Vila Franca de Xira, Portugal

KSTK is a Participant of the **Foundation Millennium@EDU Sustainable Education**, and fully committed to international projects related with the Education Sustainable Development Goals of Unesco.

KSTK is Partner of **CIES-IUL**, the Center for Research and Studies in Sociology of the University of Lisbon, a recognized and leader institution in Public Policies definition and implementation.