••• 14

ADMIRE

At a Glance

**Project title**
Advanced Data Mining and Integration Research for Europe

**Contact person**
Dr Parsons Mark Ian
The University Of Edinburgh, Epcc
m.parsons@epcc.ed.ac.uk

**Website**
www.admire-project.eu

**Total cost / EC contribution**
4,241,573 € / 3,001,662 €

**Start date / end date**
March 2008 / May 2011

Scope

The world is undergoing a digital-data revolution. More and more data is born digital. Almost every business, government and organisational activity is driven by data and produces data. Science, engineering, medicine, design and innovation are powered by data. To thrive in this new environment requires new strategies, new skills and new technology.

ADMIRE has created a single, comprehensive platform for knowledge discovery. As an example, analytical customer relationship management (ACRM) is an established field in business analytics. Its aim is to make use of operational customer data to enable the measurement, analysis and, ultimately, the optimisation of customer relationships – but it is struggling to manage the increasing tides of data in privately-held customer databases, and increasingly in public data sources such as social media sites. ADMIRE has applied data-intensive methods to ACRM in the telecoms domain, demonstrating that not only can traditional knowledge discovery and business intelligence processes be supported by ADMIRE’s data-intensive architecture and tools, but also that it accelerates the development of methods and delivers agile data exploration.

Advances

Since 2008, the ADMIRE Project has combined data-intensive strategies, skills and technology to create a single platform for knowledge discovery, combining data access, integration, pre-processing, data mining, statistical analysis, post-processing, transformation and delivery. ADMIRE has created:

- DISPEL, a powerful, Java-like language for describing complex data-intensive workflows.
- A Java and web-service-based software platform designed to run distributed data-intensive workflows in a streaming fashion, avoiding data bottlenecks.
- Rich semantic descriptions of workflow elements based on a common network of ontologies.
- A library of 150+ standard workflow elements for accessing, integrating, transforming and moving data.
- Visual programming tools based on the eclipse platform.

ADMIRE software is free, open-source and already in use in scientific applications throughout Europe.

Positioning in global context

There are many firms and groups engaged in producing better tools and methods for knowledge discovery. We believe the strategies and technologies offered by ADMIRE are unique in the open-source world, and broader in scope and potential reach than many if not all commercial offerings in the data integration and workflow management space.
**Contribution to standardization and interoperability issues**
ADMIRE is based entirely on web standards, using Java as a primary implementation language, http-based web services for communication and Eclipse as a basis for its tooling.

**Target users / sectors in business and society**
ADMIRE is targeted at three categories of expert:
1. professional users of data who need to improve the path from data to knowledge within their own organisation;
2. professional developers of the tools, methods and software that comprise data-intensive workbenches and that accelerate the path from data to knowledge;
3. professional data-intensive engineers who build and run the systems that provide the computational power and data handling needed to accommodate the growing demand for data-intensive applications.

**Overall Benefits for business and society**
ADMIRE aims to assist researchers in companies, governmental organizations and academia who are supporting strategists and decision makers or who are developing new knowledge.

**Examples of use cases**
Traditional attempts to understand environmental risk have relied on large-scale simulation, of weather, for example. These simulations are notoriously difficult, and in terms of supporting decision-makers in charge of managing a major river system, alternative approaches based on sifting historical and real-time data can offer more pragmatic solutions. ADMIRE has applied the use of data-intensive computing to the management of a river system and the prediction of river flood levels, providing domain experts at the Slovak Hydrometeorological Institute with access to new data sources and new knowledge-discovery tools. ADMIRE provides a single, comprehensive solution which integrates, assimilates, filters and analyses river data, weather data and other sources of information across multiple sites.

**Achievements**
The ADMIRE Book.
The ADMIRE Software Platform – public beta.
The ADMIRE Workbench tools – public beta.