

Case Study

Life Sciences: Global Data Integration

a-tune Professional Services

Contents

- The Challenge 3**
- The Solution..... 3**
- The Project 4**
 - Project Management 4
 - Technology 5
 - Domain Know-how..... 5
- Business Impact 6**

The Challenge

The R&D section of Aventis Pharma is distributed over five sites in France, Germany, Japan and the USA.

Almost exponentially increasing data volumes and the breaking up of functional "silos" in favor of a network-centric organization that focuses on the project team as a unit of innovation are the growing challenges of a multinational, dynamic research organization. Therefore considerable efforts were made at an early stage to consolidate the IT environment, which was rather variegated due to mergers.

For the early research phases (*pre-EDC*) it was possible to create global systems for the storage of screening, logistical, analytical and structure-related information with largely uniform data registration standards.

With the extensive introduction of global systems and standards, the foundation was laid for platform-based research across multiple locations and projects. While integrated systems and standards were available for data registration, on the retrieval and analysis side only isolated solutions were used – often these were specially tailored and customized for small groups and teams, without the possibility to use globally available data.

Aventis has taken up this challenge and introduced a program with the following objective:

To develop a system that allows access to all process and decision relevant information along the *Target, Lead* and *Candidate Identification* phases of the process chain.

The Solution

Within this global program *TLC* a solution was developed by DI&A IS (Drug Innovation & Approval Information Solutions – IT department for the support of pharmaceutical research and development).

„We (DI&A IS) are enabling product discovery, development and approval throughout advanced technology. By providing our customers – the scientists – with the technical framework to deliver the pipeline, we measurably increase productivity and reduce cycle time. Of course we have to ensure the complete alignment of business and IS objectives as well as compliance and quality. We achieve that by leveraging the creativity, expertise and team work of our global organization. Our core business is not software development, but providing best-of-breed solutions to our customers by appropriately combining and extending leading technologies available on the market.

That's what's making the difference!”

Dominique Herve, Aventis Pharma, responsible for Information Solutions DG in France and leader of the entire program.

Since a universal data warehouse approach to consolidate all data was rejected for strategic reasons, in favor of a distributed solution, the integration of the information is handled by the middleware IBM DB2 Information Integrator.

The actual application was created on the basis of a business intelligence (BI) solution – Brio Performance Suite.

A portal provides every user with access to the entire worldwide pool of screening, analysis, structure and logistical data. The basic functions of the BI solution were extensively expanded and tailored to different user profiles. Some highlights:

- Portal for easy, centralized access to all data and functionalities
- Export to common office and analysis applications
- Open interfaces for the connection of further systems such as workflow management for analysis tasks
- Modules for the management of lists and for structure searches, both interacting with the query modules and integrated with standard tools for drawing and editing chemical structures
- Automated, repeated processing of queries in the background, informing the user of data changes, as well as simplified user interfaces to standard queries for occasional users

The Project

To ensure the achievement of the objectives, a powerful project organization was put in place by Dominique Herve, the global leader of the TLC program. The program was broken down into separate projects, each one led by a DI&A IS project leader. The project teams were supported by a-tune throughout the entire life cycle from initiation to productive operation.

„The central competency areas of a-tune Professional Services - project management, technology und industry knowledge – were an important success factor for the project.“

Dominique Herve

Project Management

The time window for the project was as ambitious as the project objectives. The requirements analysis was therefore done as a use case analysis. This method delivers structured, high quality documentation of the requirements, which can be used directly as the basis for modeling and to search for suitable tools.

The a-tune Professional Services consultants moderated one day workshops at all research sites, during which the requirements were documented in a structured way as business cases together with selected key users.

In accordance with the DI&A IS strategy, the market was scrutinized for components and applications that would meet the requirements. Following a formal selection process, the final selection was made, again with the involvement of the end users, who evaluated the products and solutions using live demonstrations and real data.

Functionality that could not be bought in was designed and developed by an international development team.

a-tune Professional Services had project responsibility for the entire system design, implementation and integration as well as for the customization of the different components. Planning and control of development and test assignments within a geographically divided, international team as well as the efficient management of change requests and reported program errors is a great challenge. The a-tune Professional Services consultants relied on the tried-and-tested task management system a-tune tick@ to implement lean, efficient processes for the entire development cycle.

„The time objectives of six months for the development and integration of the entire system were very ambitious, and therefore the performance of the project managers was decisive for the success of the development. The processes introduced during this period with the help of a-tune have proved to be excellent even after the transition from project to product; tick@ has become a fundamental component for the further development of the system.“

Dominique Herve

a-tune's involvement did not end with the completion of a solution: for the roll-out of the new product a comprehensive training program for communication with the users was developed. a-tune supported Aventis with the implementation of the training as well as with the further support of the end users and the development of area specific solutions based on the platform that had been created.

Technology

The integration of distributed data and of old and new applications makes high demands on architecture design and planning, particularly in an inhomogeneous environment.

The wide technical basis of a-tune Professional Services – application development with COM/DCOM, VB, asp, JAVA, Oracle and DB2 databases, networks, operating systems – made it possible to develop sustainable solutions together with the team and to continue to constantly develop these in later project phases.

As with all projects carried out with a-tune Professional Services, the on-site consultants can always rely on the know-how of the entire a-tune team.

Domain Know-how

Particularly when working with scientific users in an R&D environment, a deep understanding of the business processes and the ability to see applications from the user's point of view are essential prerequisites for the successful implementation of an application.

„Our scientists are sophisticated and discerning customers. Their expectations of DI&A IS as a competent solution partner are high and the demands on the competency of our consultants are just as high.“

Dominique Herve

The a-tune Professional Services consultants are familiar with the working environment of the scientists and laboratory assistants from numerous previous projects in the Life Science area or from their own experience.

The requirements were efficiently documented in moderated workshops with users from the various functions and areas, from Target Identification to EDC Nomination. Prototypes were used as the basis for discussions in order to integrate the users in the entire implementation process and to test the suitability of solutions directly against the day-to-day procedures in the laboratory.

During and after the start of production, intensive cooperation with the users is necessary to ensure acceptance and optimal usage of the potential of the system. The a-tune Professional Services consultants provided support during the development and implementation of a multi-stage training program, tailored to the individual user profiles of the respective groups or project teams.

The various users groups in the laboratories quickly became apparent. Building on the technical possibilities of the system and in direct cooperation with the laboratories, reports queries and views were created. These meet, on the one hand, the general requirement of easy access to the information, even for inexperienced or occasional users, and on the other hand the specific requirements, such as those in the HTS or DMPK areas.

Business Impact

With the introduction of this system, a long-standing desire to be able to support a worldwide research organization with powerful IT systems was fulfilled:

Isolated systems and "knowledge management by email and Excel" were replaced with a centralized, portal-based solution. It is now possible, with only a few mouse clicks, to access information about described or available structures, their physical characteristics, their toxicological behavior and the available test results from HTS and LTS worldwide for all projects. The users decide, in accordance with their knowledge and requirements, whether to formulate their questions to the system themselves using drag and drop or whether to use predefined reports that can be run with one click.

Data for regular team or project reports can be collated at a speed previously unknown and reports created.

For the first time, the entire worldwide data pool can be used for comparisons and cross linkages. Informational islands and functional "silos" are broken down in favor of (cross-) project and platform oriented, functionally comprehensive research.

„Our scientists throughout the world can now profit from the entire information pool of the company. With TLC we have taken an important step towards achieving our overriding objective: to speed up the value chain by developing better compounds more quickly and by identifying and abandoning erroneous developments at an early stage.“

Dominique Herve



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