

CASE STUDY: INFOSYS DATA MANAGEMENT SYSTEM AIDS CROP SEED SELECTION

SYNOPSIS/SUMMARY:

Crop seed selection: The client, R&D organization, developed commercial strains of crop seeds for high-quality infusion. The new crop seed varieties developed, aim to ensure a steady supply of high quality seeds to the parent company. They help contract growers reduce the usage of fuel, water, chemicals and energy, yet increase the quality and quantity of yields.

OBJECTIVES:

The crop seed breeding program requires specialized skills and is highly people-centric, which makes it time-consuming and difficult to manage. Data collected from multiple sources need to be analyzed quickly and in a unified manner for effective decision-making. However, the crop seed research data was stored in Excel files and MS Access database, without an efficient process flow in place.

DISCUSSION:

A multi-disciplinary project team of domain consultants, technical architects, and data architects from Infosys worked with the client's scientists and IT team to create the Agronomic Research Management System (ARMS), a Web-based solution using the Microsoft .NET technology to address data management and analysis needs.

Analysis revealed that the client's data could be viewed only in two ways:

Recent – the most recent harvest – up to one year

Historical – historical data must be accessed and compared to recent information in a finite timeframe (put historical information in a current context)

ARMS was designed to enable scientists to look at data in a way they could not before – it provided unified access to a single source of data, a graphical interface for schematic layouts of field trials and automated analysis of key parameters for selecting high-quality crop varieties.

Infosys developed analytical and statistical scripts / macros to enable the client choose the best crop seed strains. Data architects worked with the IT team to define and develop the data model required for the project and to facilitate the DQR process.

A robust, stand-alone laboratory data management application was also developed based on a two-tier architecture for real-time data capture from analytical instruments and synchronized it with the ARMS Oracle database. However, there was a technological challenge in providing a high performance Web-based system interfaced with third-party software for data capture from laboratory instruments. This was overcome by leveraging the technical expertise and reusable components made available by Infosys Microsoft .NET Center of Excellence.

The reusable components included:

- Data Access component for the stand-alone VB.Net application provided by MSASP security component (a role-based access control developed by Infosys)
- UI prototypes developed in ASP.NET during the requirements elaboration phase helped reduce rework during development and helped train inexperienced programmers

Tools used were:

- InFlux – proprietary tool from Infosys for defining effective IT solutions was used for as-is process modeling at the pre-sales stage
- Rational XDE during design phase and later for updating the detailed design models.

Results:

The Infosys solution provided the client significant time and cost savings, improved its ability to analyze data, and aided decisions in the selection of high-quality crop seed.

Benefits

- Robust data collection, management, and analysis methods
- A secure and protected data environment
- Data storage practices that offer scalability and reduced testing rework
- Improved maintainability, standardization, control, predictability, and traceability of data
- Enhanced decision-making capabilities in choosing better variety of crop seed and better quality end products
- Better audit and control procedures
- Lower costs due to automation of labor intensive tasks and elimination of redundant work
- Overall cost reduction due to streamlining of the traditional crop breeding process
- Reduced time-to-market for new varieties of crop seeds



CONCLUSION:

Global Delivery Model helped to overcome delivery challenges of the dynamic environment, crunch time, and to keep onsite presence to a minimum.

REFERENCE:

<https://www.infosys.com/industries/life-sciences/case-studies/Pages/data-management-system.aspx>

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