Case Study

CLEVAR VISION

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Customer: King Saud University – National Plan for Sciences & Technology

الخطة الوطنية للعلوم والتقنية

The National Plan for Sciences & Technology

Project Name: Scientific Tracking System

Project has been implemented during 2009 - 2010

Background:

The Program of The National Plan for Science and Technology at King Saudi University is responsible of managing several types of scientific researches to be implemented in the university. It is important for the Program to utilize advanced technologies in managing and tracking the scientific researches that the researchers submit in easy and faster way.

Recently, the Program has been given privileges and responsibilities which include following-up and managing all the researches submitted to King Abdulaziz City for Science and Technology, not to mention the researches which are supported by SABIC, all this imposed the Program Administration to search for a solution that helps managing and following-up variety types of researches.

Business Challenges:

There are hundreds of scientific researches to be submitted every year with different topics supported by different administrations and organizations plus the diversity of life cycle of these researches. There are many challenges the Program faces, which could be overcome by making scientific researches management and follow-up system.

The most important challenges faced by the Program of The National Plan for Science and Technology can be summarized as the following:

1- The Program of The National Plan is responsible for many research institutions, noticing that each institution has its own way in providing and processing the researches (in terms of inputs and outputs and restrictions).
2- Different institutions in the Program will result in many roles and responsibilities to be distributed to several people. Therefore, having the information reached to the appropriate person in timely manner is one of the most important points and the difficulties faced by the management of the Program.
3- The importance of conducting an internal arbitration process for scientific researches before having them sent to King Abdulaziz city or outside the country to make sure of the researches originality and to verify that its ideas and content meet with the general objectives of The Program of The National Plan.
4- The importance of reducing the time for communicating with all actors associated with the process of scientific research (like: researchers, arbitrators, program managers and administrators of subprograms), with ensuring the integrity of data transmitted among them.

5- The need for an archive which contains all the researches that have been submitted to The Program of The National Plan for Science and Technology as well as comprehensive statistics to allow specifying the future plans and trends which are related to researches financing and aligned with the overall objectives of the Program.

The Solution:

Based on the Program requirements and business challenges, an integrated professional solution has been presented; allowing managing and organizing all operations linked to the scientific researches. The presented solution relies on dynamic environment (**Elixir**) to ensure a simple data transfer among the parties contributed in the research management & tracking processes. This environment also supports the idea of having several research institutions and different life cycles. Elixir environment has been chosen to develop the infrastructure of the system, using this environment has the following benefits:

1- Elixir Supports the Work Flow Management procedures which contribute in facilitating the scientific research processes, starting from the submission of the research, and then internal and external arbitration operation, ending with making the proposed scientific research as a scientific research project which would be managed through the system.

2- A Dynamic Environment, which helps in identifying several research institutions and specifying the differences between them with regard to the life-cycle of scientific research.
3- Elixir Supports Dynamic E-Form and provide the ability to change the content of the form.
4- Role Based Access, which contributes in solving diversity problems of the user's roles and privileges.
5- Providing many options regarding communication, alert, and tasks (such as e-mail, mobile phone... etc.), this will solve communication problems with all participants (parties) who contribute in the scientific research process.

The problem of plagiarized research detection has been resolved as well by applying the following:

1- Add an action or procedure to the life cycle of scientific research to allow arbitrating the proposed research internally before sending it to King Abdulaziz City for Science and Technology.
2- Rely on a global database (Turnitin Global Database) which examines the proposals and make sure of their authenticity by comparing with millions of published researches, books, papers, and web pages stored within the database.

Results:

The Scientific Researches Management and Tracking System has helped increasing productivity of the members of the National Plan for Science and Technology and other people such as researchers, arbitrators, directors of programs and subprograms... etc.

The most important benefits and objectives that have been achieved are:

1- Change the paper based system to computer based system work.
2- Save time and effort to all parties participating in this system by reducing the costs of communication and ensuring the integrity of information transmitted to all concerned people.
3- Managing the internal arbitration procedures and making sure of the originality of the research content before being sent to external arbitration.
4- Establishing an archive for research proposals (either accepted or rejected proposals) as well as the projects with their related information.
5- Implement all the functions and tasks related to the scientific research project (expenses, advance payments, project teams, devices, technical and financial reports... etc.).
6- Provide full statistical information needed by The Program of The National Plan to identify future trends and policies in financing and supporting scientific research.