

# **Building Automation into Existing Business Processes**

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## **EXECUTIVE SUMMARY**

We embarked on a case study with the University Research Foundation (URF)<sup>1</sup> to document how a novel information system can automate information flow and streamline inefficient business processes. The research methodology chosen was the action research approach, as the researchers, along with three additional parties, were intimately involved with the development and implementation of a novel information system we call process manager technology (PMT). The goal of PMT was to automate discovery disclosure (inventions and discovery of new methods) tracking. The results of the PMT are mixed. Discovery disclosure tracking involves contract establishment, research and development, ongoing monitoring, and close out of inventions and discoveries made by principal investigators (PIs) working for URF. PMT development for the contract establishment process has not yet begun. The research and development process is still underway, but should be fully automated within the year. Ongoing maintenance has not yet begun. Full automation of the “close out” process is in place and the manager in charge of that process designed the system. The CEO of URF continues to champion PMT for discovery disclosure. Once PMT has proven to be viable for discovery disclosure, he wants to expand the scope to other processes within URF.

## ORGANIZATION BACKGROUND

Management of the discovery disclosure process is focused on the Space Research (SR)<sup>2</sup> entity within the aegis of the University Research Foundation (URF). This is because SR houses the majority of principal investigators (PIs) involved in notable (fundable) inventions and discoveries. SR is a not-for-profit research corporation owned by URF. The URF is responsible for executive management, government/commercial reporting, and operational management of SR (Dave Norton, personal communication, March, 2002). SR has designed, fabricated and operated over 400 payloads, including shuttle experiments, small satellites and satellite-based sensor systems. Core competencies include infrared and hyperspectral sensor development, data compression and processing, cryogenic systems, and sensor calibration. SR generates approximately \$50 million dollars of funding (see *Appendix A*) for its various research projects (URF Annual Report, 2002). The sources of funding by agency (see *Appendix B*) include the Ballistic Missile Defense Organization (BMDO) 39.7%, Air Force 20.6%, Navy 18.6%, NASA 15.5%, Private 2.0%, Other DoD 1.5%, Other Federal 1.4%, National Science Foundation (NSF) 0.4%, and state funding 0.4% (URF Annual Report, 2002).

Government agencies such as the Department of Defense (DoD), U.S. Space and Missile Command, Naval Research Laboratory, Air Force Research Laboratory, Office of Naval Research, and NASA require its funded recipients to report on project status periodically (SR Corporate Compendium, 2002). Also, each time a project is officially closed, the funding agencies require proper documentation and notification. Since the existing information systems (IS) infrastructure is not capable of accurately dealing with the SR status reporting complexities, URF management is constantly under extreme time pressure to develop accurate and complete reports to project sponsors.

## SETTING THE STAGE

Discovery disclosure involves tracking the progress of inventions and discoveries made by PIs. Discovery disclosure is actually four major activities — contract establishment, research and development, ongoing monitoring, and close out. Contract establishment involves registering the discovery or invention with the funding agency and all of the associated paperwork. Research and development involves all of the support provided by URF management to PIs before and during the contract or grant period. Ongoing monitoring involves tracking the progress of a contract or grant on a periodic reporting basis. Close out involves properly reporting evidence of promised discoveries and inventions to the funding agency and all the associated paperwork.

Twelve months ago, URF had no automated means of tracking the discovery disclosure process. Managers had to manually track down PIs to inquire about the status of various projects.

It is the responsibility of research and development managers to help PIs secure information about related contracts and grants to maintain a continuous flow of funding. Research and development is therefore involved before contracts and grants are secured as well as during the project activity period. However, the information they need to do their jobs requires them to personally contact PIs on an ongoing basis even though PIs are recording their activities on the system. The reason for this problem is that the

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