

Strategy Engagement for Renowned Higher Education Institution

Edgewater Technology consultants provide recommendations for the implementation of technology for one of the oldest institutions of higher learning in the United States.

Edgewater Technology's Consultants:

- Conducted an on-site evaluation;
- Worked with key personnel to identify specific obstacles within the production operations for the new system;
- Formulated a structured software development life cycle;
- Assisted with formalized software test plan development for critical modules;
- Facilitated the investigation, analysis, diagnosis and resolution of data quality issues;
- Provided a definition of critical software development and quality assurance processes.

Higher Education

As one of the oldest higher education institutions in the United States and with more than 13,000 students enrolled during an academic year, this institution has focused primarily on its business at hand: providing higher education. As its enrollment numbers grew and more demands were placed upon its information technology (IT) systems, the institution realized that its legacy systems were beginning to show their age. Its legacy system has been in operation for more than 20 years, providing management of all nonfinancial information pertaining to students including Student Records, Housing, Admissions, Advisors, Academics, Classrooms, Scheduling, and Academic Calendar. The antiquated system runs on Unix against a series of flat files, without any unifying database, and with various user-modifiable scripts that run critical processes and that supplement the actual application components. With the lack of internal resources, the organization decided to outsource the process of evaluating its existing IT systems and the task of making recommendations where improvements could be made.

Chapter One

The project to replace their aging legacy system with a new system initially had begun 4 years prior when a software development and consulting firm other than Edgewater Technology was hired to design and develop the new system.

In order to ensure that the project continued to progress and be ultimately completed, the institution decided to hire an Associate Registrar for their Information System Department who would specifically focus on this initiative. After careful evaluation, the Associate Registrar recommended hiring a new consulting firm to assess the readiness of the software for deployment. This assessment included evaluating the readiness of the development/support organization to deploy and support this application within the Registrar's Office (RO) and ultimately across the entire institution. Having already worked with Edgewater Technology from a previous engagement, the Associate Registrar knew first hand of Edgewater Technology's proven capabilities.

Class Begins

The initial engagement that Edgewater Technology was hired to complete was a deployment readiness audit to identify the specific issues that were preventing a successful deployment. They were also asked to assist in formulating a plan that would get the new system into production and operational. Working in conjunction with the Associate Registrar, key components of the engagement were identified:

- Assess the readiness of the software and the institution to support production operations.
- Formulate a deployment plan for bringing the software to completion and rolling it out across the institution.
- Formulate a technology blueprint and strategic direction to support ongoing design of the new system and development activities both now and into the future.

- Identify a series of metrics and criteria on which to measure the RO and their performance in terms of supporting the information management and processing needs of their various user communities.

Edgewater Technology's consultants worked with key personnel within the RO to identify specific problems and obstacles to production operations for the new system. Edgewater Technology recognized the organization had very little in the way of structured software development processes enabling them to manage and improve the delivery of the new solution. Edgewater Technology worked with the institution to formulate a more structured software development life cycle and recommended a series of interventions that would enable the institution to bring the quality of the delivered software to a higher state of production readiness. The institution retained Edgewater Technology to assist directly with formalized software test plan development for a number of critical modules. The institution also retained Edgewater Technology to facilitate the investigation, analysis, diagnosis and resolution of various data quality issues that had arisen over the course of the software development effort.

Edgewater Technology's consultants made recommendations that the institution perform the following testing elements to ensure the system meets its current and future needs prior to deployment:

- *Formal Requirements Definition & Test Planning* – End Users and Systems Analysts define itemized requirements to meet the needs of the user communities, and define specific test sequences to ensure the correct and complete satisfaction of each requirement specified.
- *Unit Testing* – Software developers conduct testing of their own code modules to ensure the specific requirements are satisfied.
- *Regression Testing* – A series of comprehensive test sequences to ensure that no new defects or deficiencies in previously working components are introduced with a new software release. This type of testing is particularly well suited to automated testing tools.
- *Integration & System Testing* – Prior to release of the software for User Acceptance testing, the development team builds a series of software releases and performs comprehensive tests verifying that code modules interact correctly with all other modules in the system and satisfy all test sequences.
- *User Acceptance Testing* – Upon successful completion of Regression and Integration testing, the release is migrated to a 'production-like' User Acceptance test environment where the User Acceptance team, comprised primarily of business users, verifies that the business requirements have been met.

- *Parallel Testing* – Upon acceptance of the software as complete and correct by the end users, the new software is run in parallel for a defined period of time (typically over 1 or more well-defined operational cycles (e.g. a semester, a calendar cycle) to ensure that the results of the new system match the corresponding results from the old system.

Edgewater Technology provided a definition of critical software development and quality assurance processes to the institution which also included a risk management plan. Based on these deliverables, the institution is working to institute all of the process improvement recommendations provided by Edgewater Technology.

Another Semester

As the engagement moved forward, Edgewater Technology was also asked to focus on establishing a Quality Assurance & Test Plan and to begin formulating detailed testing plans for the software under development. Through information gathering, Edgewater Technology discovered the institution's database and its content (the data) were not ready for production operation. The institution also requested Edgewater Technology to expand its efforts to include a detailed analysis of specific data problems, and assistance in fixing/cleaning up these problems.

Technologies and Tools Leveraged:

- Microsoft Word
- Microsoft PowerPoint
- Microsoft Access
- Oracle SQL