



Implementation Brief: Active Endpoints' ActiveVOS BPMS - ENABLING DYNAMIC GROWTH

Enabling Dynamic Growth

Technology doesn't exist for its own sake—it ultimately serves the needs of the business. But when business needs change rapidly and dynamically, it can be extremely difficult for a company's IT infrastructure to keep up.

Yet when designed correctly, a good IT infrastructure not only keeps up with business change, but it enables greater, faster, and broader innovation. That's especially true when it comes to business process management (BPM). BPM solutions are one of the ways to automate, manage, and optimize business processes, enabling organizations to meet dynamic business needs effectively and efficiently.

Upside Research recently came across a good example of a company that has successfully adapted its traditional, statically-oriented IT infrastructure to meet more dynamic business needs through the use of SOA and BPM.

Western Governors University is an online university that was facing student management challenges as it continued to grow at a significant pace. Of particular urgency was finding a way to create a student change management system that could orchestrate the flow between legacy applications and new applications, and provide an online student interface where the students could enter their data via a web page. That data would then trigger different process-driven requirements for the university.

The university is in a rapid growth state, and was looking for a BPM solution, one that would be based on standards and could incorporate human tasks with automated processes. While many of the processes were student-management related, they reflect the types of problems that most organizations face as they continue rapid

COMPANY

Western Governors University (WGU)
www.wgu.edu
Founded: 1998
Student Population: 20,000

INDUSTRY

Education

CHALLENGES

WGU needed a dynamic IT infrastructure that could keep up with rapidly changing business requirements, without having to invest huge amounts of time or money. Specifically, WGU needed to find a way to automate and optimize its student change management process, as well as provide students with web-based access to manage their accounts. They also wanted to reduce the headcount required to manage the process.

KEY SOLUTION COMPONENT

ActiveVOS from Active Endpoints, SOA

RESULTS

- Student program change management process was reduced from 4 hours per student to a few minutes. This applied across entire 20,000 student population.
- Upside Research estimates potential FTE resource savings of over \$450,000 per year through the reduction in records management personnel required to manage the process from 5 total FTE down to .8 FTE.
- Increase in accuracy, reliability, and stability, reduction in errors and manual processing
- Successful establishment of services-oriented architecture, enabling change to occur more quickly than traditional systems allowed.
- Foundation of a baseline of services and an IT infrastructure for future, more dynamic applications, with a limited investment.

growth and have legacy and new systems that need to communicate. The broader issues this academic institution faced were: the need to convert manual processes, eliminate costly errors, reduce inefficiencies, and create flexible processes that reflected the changing nature of the online academic calendar, as well as reduce the manual resources and headcount required to manage the process.

The IT organization at WGU launched a search for a BPM system that was standards-based and supported a services-oriented architecture. WGU investigated multiple different tools but ultimately and quickly found ActiveVOS to be the only solution that came with the full set of functionality required out of the box. After considering several of the other solutions (including JBoss jBPM and coding a solution themselves), WGU selected the ActiveVOS business process management system (BPMS) from Active Endpoints. In this Upside Research Implementation Brief, we'll take a closer look at the university, its challenges, and its decision to select a model-driven BPMS over a set of non-integrated tools as the foundation for its SOA architecture. We'll also examine the business impact of its BPM deployment.

Business Problem

An organization is only as agile and responsive as the systems that form its backbone. Because processes are at the heart of any business, whether it is for-profit, government-based, or non-profit, there needs to be a foundation that enables processes to run efficiently and effectively. Without that process-based backbone, even the well-run businesses will struggle.

Western Governors University is truly a university without boundaries. Established as a non-profit online university founded and supported by nineteen U.S. governors, WGU has been rapidly increasing its student population as online higher education gains in awareness and popularity. WGU is 100% online, and today offers four different degree programs to mostly non-traditional students. There are no buildings or professors, only online mentors who advise students and help them move through a degree program using the Internet as their greatest resource.

The scope of growth the university has seen in recent years is staggering – from 2005 to 2010 alone, the university grew from 3,000 students to 20,000. WGU is driven by a mission to expand access to higher education through online, competency-based degree programs. The original charter of the university was to provide the college experience to underserved populations, many of them rural or non-traditional. Since its beginning in 1998, WGU has flourished into a national university, serving over 20,000 students from all 50 states. In addition, WGU helps U.S. citizens around the world, including military personnel in war zones such as Iraq and Afghanistan, continue their studies.

Western Governors University is growing at an astonishing rate and our processes are currently a mixture of manual tasks and code buried deep inside Java or PL/SQL code. We were getting buried with the maintenance of these processes.

We had a lot of tightly-coupled processes that made changes difficult and made for very rigid software. Quite often we'd change something and it would have unintended consequences.

That's why moving to SOA and a more loosely-coupled architecture was so important to us. Loose coupling isolates processes and makes changes much easier.
David Reflexia, Senior Software Architect, Western Governors

The challenge the university faced was its rapid growth, and the underlying antiquated systems that couldn't handle the increased flow of data and influx of students. The president of the university has

established a goal for being able to introduce new degree programs into the university relatively quickly, in weeks and months rather than the traditional months to years-long process that most brick-and-mortar universities employ.

One example of the types of processes that were preventing the university from managing its growth was the student program change process. This process impacted all 20,000 students over the course of a year, because the university was frequently changing the elements of its degree programs and adding new options. For each time a degree program was changed or a student decided to change to a different program, the administrative office had to complete a series of manual processes to make the change. The entire process was taking up to four hours, and making it difficult to manage with the scale of the student population. The manual nature of the process also increased the opportunity for errors, which required additional work to fix. The results were a major administrative headache. The IT department identified this process as the first to convert to its new services-based architecture.

Solution Details

Decision Process

Because of the focus on rapidly addressing new opportunities – a focus established by the president of the university – the IT department has been tasked with building an infrastructure that can support the rapid change and rapid growth that the university is experiencing. Spearheading the selection process was David Reflexia, Senior Software Architect, Western Governors University. As a result, when the IT department set out to look for a BPM solution in April 2009, it had several requirements:

- **Standards-based.** The IT department was a strong proponent of standards-based technology, and it identified this as the first requirement for the BPM solution. Proprietary solutions were immediately eliminated. According to Reflexia, “vendor lock-in is expensive and creates problems down the road.”
- **Price.** Price was a factor in the selection process because the overall move to a services-based architecture was new for the university and this project and BPM tool selection would be the first experiment to test the architecture. As a result, it was difficult to justify a seven-figure price tag for the BPM solution.
- **Ease-of-use.** The IT department was involved in every process that existed or was changed at WGU. One of the objectives of moving to a services-based architecture was to find design tools and a user interface that could possibly be used by a less-technical member of the staff. Eliminating the need to code every time a change is made was a key requirement of the new tool.

“We switched to Java from .ASP and PL/SQL code but found that that wasn't enough for our needs. It didn't give us the speed we needed to get things out the door quickly enough. We did our research on SOA and BPM and decided that Active Endpoints was definitely a vendor worth looking into. The Active Endpoints designer allows us to change our processes quickly without a lot of programming.”

David Reflexia

- **Support.** Having easy access to experienced support resources was very important to WGU. In addition to online support and 24 hour support WGU wanted easy access to experienced consultants who could guide them through best practices for their first major SOA project.

Based on these requirements, WGU quickly narrowed their search down to JBoss jBPM, ActiveVOS, and custom coded Java-based solutions. Reflexia ruled out some solutions, such as the one from JBoss, since it required more programming expertise and he felt it wouldn't be suitable for end users. Specifically, Reflexia was looking for a model-driven solution that wouldn't require extensive coding or developers to create or modify. "I didn't want a code-based IDE," said Reflexia. "I wanted the visual modeling environment that BPM allows for. A code-based solution can get complex and you need a developer to understand it."

Reflexia and his team felt ActiveVOS stood out early on from its competitors, mainly because of its standards-based foundation and the visual nature of the ActiveVOS design tool. A surprise feature of the tool that Reflexia valued was the documenting features. "The Designer allowed me to visually show the process by which we were creating processes, effectively providing documentation," Reflexia said. "ActiveVOS's Designer gave us a transparent solution that allows us to model a business process and get feedback from business stakeholders without technical knowledge on their part. People that don't know anything about software development can look at a model, if it's labeled well, and understand it."

The next step was a proof-of-concept project with ActiveVOS. WGU spent a month designing and modeling the student program change business process, working in conjunction with a part-time consultant at Active Endpoints who helped advise them on best practices for a services-oriented solution. The proof-of-concept was successful and the university made the decision to purchase ActiveVOS.

Implementation

With the decision made to start with the student program change process, the IT department got to work quickly installing ActiveVOS and beginning to design and build the process. Because that process touched most of the systems that exist at WGU, it was a good test case for how well ActiveVOS would help enable services-based architecture to interact with legacy applications. The build time went from May 2009 to August 2009, when the process went into production. WGU implemented XAware as its data persistence layer with its existing Oracle Database at the same time, so there was an added complexity to the project. But, despite this, the entire project took only three months and the results were very satisfactory.

"We were really impressed with the quality of advice and consultation that we received from Active Endpoints. Not only could we get them on the phone when we needed them, they knew their stuff and seemed genuinely interested in helping us achieve our objectives, even when it came to working with other vendors."

David Reflexia

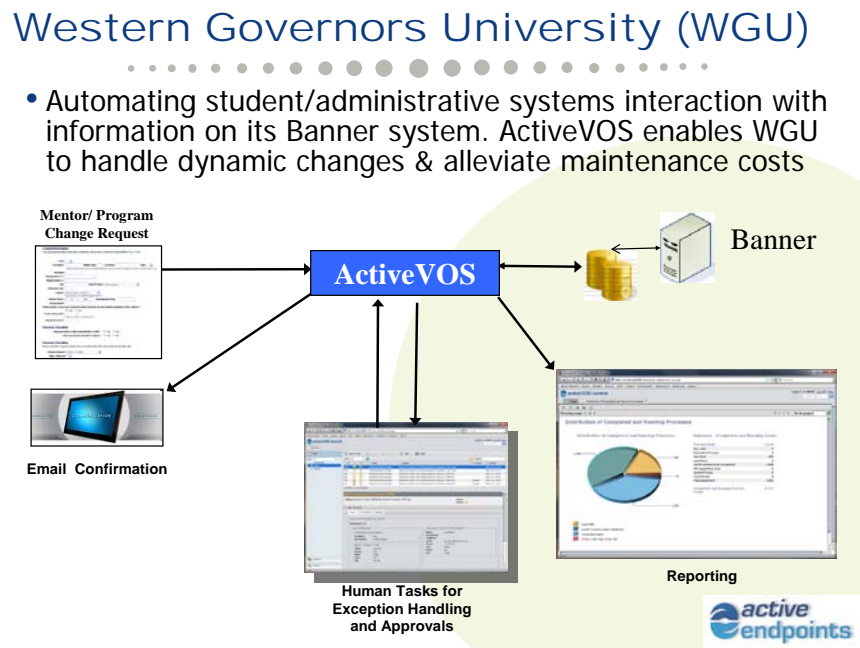
Throughout the project, WGU used Active Endpoints' support and consulting services when needed. Although Active Endpoints provides 24 hour support and online support, WGU primarily the company's QuickStart program, which gave WGU access to an experienced consultant who provided SOA and implementation best practices advice for the project. WGU leveraged the consultant's expertise for roughly 10 hours per week for the first month, and then tapered down to one hour per week by the third month. The Active Endpoints' consultant also assisted in the integration of other third-party solutions.

Because the services-oriented architecture was new for the university, Active Endpoints' consultants were able to help the IT department get up to speed more quickly with the new technology and standards.

Architecture

Western Governors University has a number of systems that form the foundation of its virtual university. It uses SunGuard's Banner platform as an ERP system for the students (see figure 1). The CRM system that WGU utilizes is from Campus Management. These are the two primary systems, and the IT department builds new technology around them to facilitate growth.

ActiveVOS uses web services to seamlessly integrate with ERP, CRM, databases, and other enterprise-scale applications. Because of the standards-based aspect of the solution, everything can be wrapped in a web service. ActiveVOS then uses executes WGU's BPMN process model using BPEL to manage the interactions between users, reporting processes, back-end systems, and business logic.



*Figure 1 - Western Governors University SOA-based student change management system
(source: Active Endpoints)*

Business Benefits

The new solution using ActiveVOS has changed the student management system for Western Governors University significantly. By making ActiveVOS the backbone of its student management system, WGU is realizing numerous benefits, including reduced errors, improved efficiencies, and being one step closer to providing students with web-based access to their accounts.

One large immediate benefit WGU realized from the project was a large savings in human resources required to manage the process. Previously, approximately five employees (FTEs) of the record management department managed the process. After Reflexia's team deployed the Active Endpoints' solution, only two employees were needed, and only part time.

Based on median salary data provided by Salary.com, Upside Research estimates this translates into a total savings of more than \$450,000 per year in records management personnel costs¹. Instead of dedicating these expensive resources to this process, these personnel are now free to work on other critical business processes and needs.

There are several other benefits to the new, ActiveVOS BPM-based solution:

"ActiveVOS will continue to be the cornerstone for our process management. We're already expanding what we've done in the first project and will be using it for other business processes. It's much faster to deploy now that the foundation has been set."
David Reflexia

- **Time savings and efficiency.** The most striking result of the solution was the impact it had on the student change management process. The time required to make a student program change was reduced from four hours down to a few minutes. Without those types of process efficiencies and time savings, the University would not be able to grow to 20,000 students or support its future growth estimates of 30%-40% per year.
- **Flexibility.** With the standards-based architecture, everything can be wrapped in a web service, enabling systems to communicate with each other more smoothly.
- **Process optimization.** The new process automates many of the steps, absorbing information from student accounts, populating the ERP system, and then communicating this information to the necessary departments via email and triggers approval processes along the way.
- **Easier human task integration.** The ActiveVOS-based SOA solution that WGU created has created a foundation for future process improvements for any WGU business challenge that involves a human process (such as exception handling) and system-to-system processes.

In addition to those immediate benefits, WGU has identified that the ActiveVOS BPMS will also enable them in the future to address regulatory requirements more efficiently. Like many organizations, WGU needs to not only meet internal and external regulatory requirements, but it needs to be able to efficiently adjust its processes as needed to respond to regulatory changes. By using ActiveVOS, WGU can now do that effectively and efficiently. For example, WGU could use ActiveVOS to help streamline or manage regulatory-related financial aid processes.

Upside Analysis

The challenges that Western Governors University faced are common across many industries. Most businesses have legacy and newer applications and a need for some part of their user audience to access important information via the web. And, like WGU, finding an open, standards-based solution that can effectively link all of the various systems together into a cohesive foundation on which to operate can solve many of the challenges that exist with manual, error-prone business processes.

Western Governors University made a strategic decision in selecting ActiveVOS for its BPM tool. It used ActiveVOS to test a services-oriented architecture concept for the university, to see if it would provide greater flexibility and response to change that the university needed. The ease-of-use of the designer was a major component of its decision, as was the standards-based nature of the tool. According to Reflexia, "It's a powerful tool that we can use to more rapidly deliver the changes we are so frequently asked for."

"Building a BPM solution using the ActiveVOS designer is faster than building it in almost any other language."

David Reflexia

Since August 2009, the IT department has written several more applications using ActiveVOS, and believes they went even more quickly because the foundation has been set. They are currently expanding the student program change management process and will be adding other processes, including allowing students to pay tuition online and moving students from prospects to students.

ⁱ **Financial Assumptions**

Before WGU rolled out the ActiveVOS solution, the process required 100% of 5 records management employee's time. Now, after deployment, Upside Research estimates that only 40% of two records management resources are required.

Salary.com specifies \$108,417 as the median, fully loaded salary for records management professionals. As such, the total value of resources previously required was \$542,085 (5 * \$108,417). Now, after the deployment of the Active Endpoints-based solution, the total resource requirement is \$86,734 (.8 * \$108,417). That results in a total savings of \$455,351 per year in FTE resources.