TeamQuest®

Planning and Implementation of IT Service Optimization at the Law School Admission Council (LSAC)

Case Study

TeamQuest specializes in IT Service Optimization

TEAMQUEST®

Client Info at a Glance

Company: Law School Administration Council

Location: Newtown, PA

EDUCATION

Company Overview: The Law School Administration Council (LSAC) is a nonprofit corporation that provides programs and services to more than 200 law schools in the United States, Canada, and Australia. Headquartered in Newtown, PA, 30 miles north of Philadelphia, it develops and administers the Law School Admission Test (LSAT) to approximately 150,000 law school candidates globally each year.

Business Value of TeamQuest: LSAC has been able to streamline its infrastructure to completely fulfill its service demands. LSAC is now applying capacity planning to support a massive roll-out of new applications to hundreds of law schools throughout North America, accomplished without server overload or network bottlenecks.

Summary

In reviewing ways to leverage best practices to improve service delivery, LSAC discovered that TeamQuest IT Service Optimization (ITSO) was a good entry-point methodology to position LSAC for the longer-term goal of implementing IT Infrastructure Library (ITIL) in the enterprise. ITSO follows a logical process of planning and provisioning for IT services, managing the performance of those services, and adapting to changes along the way. The basic ITSO process is to understand business objectives, prioritize services, assess risk levels, establish service levels, plan and provision services, and manage service performance. LSAC engaged TeamQuest to provide expertise to facilitate the ITSO implementation, thus gaining more immediate benefits. By establishing an ITSO framework in tandem with TeamQuest software, the company has been able to streamline its infrastructure to completely fulfill its service demands. For the current year, LSAC successfully negotiated its peak activity period with no service shortfalls, while adding new services at the same time. LSAC is now applying capacity planning to support a massive roll-out of new applications to hundreds of law schools throughout North America. This is being accomplished without server overload or network bottlenecks.

The Drivers

LSAC's IT infrastructure was found to be under-provisioned when it experienced unexpected demand levels during its peak period for processing law school applications in late January to mid-February 2007. The application-processing systems fell behind, creating serious delays for the law schools and their applicants.

After careful study into the causes of the capacity shortfall, the Technical Services Group (TSG) determined the need for a Continuous Improvement Program. TSG is composed of network infrastructure

and engineering, database-management (Oracle, SQL) services, operations, print services, and technical support. After researching numerous options, the team decided to implement ITIL, starting with TeamQuest's ITSO methodology and experience, as a means to improving service delivery. Mr. Goldman has an ISO 9000 background and immediately saw the value of ITSO for establishing processes that would upgrade the level of service that could be provided to LSAC's users.

According to Mr. Goldman, "I decided to bring in TeamQuest as the company had a firm grasp of ITIL as well as possessing the capacity-planning tools we needed to move forward. This move made the difference between success and failure in our ITIL efforts. All the people I have worked with at TeamQuest really cared and provided LSAC with excellent service. I can't say that about many of the other vendors with whom I have had to deal."

How It Was Done

The project plan consisted of product evaluation and selection of additional tools during the January to March 2007 period. The team decided to purchase the TeamQuest Product Suite, which includes TeamQuest View, Alert, Model, and Web Reporting.

From March through June, the new tools were installed and staff were trained on how to use them. (Recently, LSAC upgraded to the newest release of the products — Release 10, with the additional capabilities provided by TeamQuest Model, IT Service Analyzer, and IT Service Reporter. The upgrade progressed very smoothly, and training only took a couple of days.)

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With installation and training accomplished, TeamQuest consultants came in to help LSAC implement best practices and processes related to ITIL/ITSO. This took place during the June to December period and was instrumental in overall success.

Service Optimization, System Performance, and Capacity Management

Service Optimization, System Performance, and Capacity Management (SPM) are the terms LSAC uses to describe its ITSO/ITIL processes and best practices. The terms were developed by Mr. Goldman in order to popularize ITSO concepts within LSAC. This led to the development of the TSG mission statement:

"To provide world-class IT services using system management best practices."

LSAC supports world-class law schools, so it is only appropriate that these schools receive exemplary services from a world-class IT organization. TeamQuest facilitated and documented a strategic approach, as the team developed customized best-practice processes to manage and deliver IT services proactively to the law schools.

According to Mr. Goldman, "To convince the CIO of the proposed value of our work, I focused on starting with service improvement. My plan was to start by building best-practice processes and then using them, combined with our analysis tools, to quantify our existing problems and develop solutions. These solutions would then be implemented using the new ITSO processes."

LSAC started off by determining the optimal configuration for its custom, internally developed applications. Baseline

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performance data were then captured using TeamQuest agents on the servers. The subsequent analysis enabled the prediction of the performance level of the new applications. With this data, LSAC can model production volumes and predict how well its systems will cope with anticipated levels of growth. The ease of use of the tools helps LSAC perform sensitivity analyses to determine differences in provisioning positions between high and low usage forecasts. "There is no doubt that the new processes and tools have brought a more scientific approach to our operations," said Mr. Goldman. "Through this experience, we learned that if you can't do accurate capacity planning, you can't accomplish your IT infrastructure goals."

Once the concept was proven, ITSO processes were put into place to address four core disciplines in the organization: event monitoring, performance management, performance reporting, and capacity management. Besides determining optimal performance levels using meaningful and measurable metrics, performance can be compared to informal Service Level Agreement (SLA) metrics in freely available Web reports. Previously, few performance reports were produced. Now that ITSO processes are in place and maturing, LSAC has over 200 reports available.

As the processes matured, the next goal was to proactively predict issues and address them before they resulted in delays or downtime. Before, the team reacted to an outage as quickly as they could. With the new analysis tools, they are able to find the root causes if a problem occurs and manage the environment to prevent recurrences.

According to Mr. Goldman, "We wanted to use SPM processes to forge much stronger bonds between technologists and our application and business groups. Doing so enabled us to better predict the impact of application changes on production environments with a view to minimizing issues after the go-live date."

New Application Deployment

Leveraging its previous successes, LSAC chose to use SPM to support the development and launch of its next-generation law school application called ACES2. This new software is used by member law schools to maintain prospect and applicant information, allowing admission-office personnel to track and report on students from the time they enter a school's system as prospects until a decision is made regarding their acceptance to that school. The older application was supported on a school-provided server. Because data transfer from LSAC occurred only once a day, some reasonable level of downtime could be experienced during non-peak periods without serious consequences. The new application is predominantly hosted centrally by LSAC and supports near real-time updates of data. LSAC's systems now need to be up to 24/7.

The roll-out approach has been a staged implementation over a two-year period. It was critical for the conversions to the new application to go smoothly, and the staged approach has permitted the team to respond to issues as they are identified. The team was able to use the TeamQuest modeling tools to predict capacity positions during each month of the roll-out. As the roll-out reached each new stage, the team was able to validate its work and make refinements where necessary. LSAC will continue to use this process for the remainder of the ACES2 roll-out.

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LSAC also leveraged SPM to assist with Service Continuity/Disaster Recovery planning. The improved process and capacity-planning tools have proven useful in predicting mission-critical application recovery scenarios on recovery-site platforms. Initially, the team used the TeamQuest processes and tools to evaluate different sourcing options. The team was able to provide senior management a series of different SC/DR scenarios at different price points — two weeks, one week, 24-48 hours, etc. This permitted senior management to make more informed decisions.

According to Mr. Goldman, "The benefits of the ACES2 and SC/DR work included an increase in the perceived business value of IT within LSAC. By markedly improving the efficiency and effectiveness of IT, our efforts were acknowledged publicly by senior management for transforming LSAC into a mature and proactive IT-driven organization. We really take pride in the fact that we have fully aligned our planning and provisioning efforts with the overall business objectives of senior management. None of this would have been possible without the addition of best practices and supporting tools. In our case, TeamQuest and its ITSO processes were the key factors in optimizing system performance and IT services."

In terms of ROI, TeamQuest brought reduced hardware costs for ACES2 through timely acquisition practices. It has enabled the ACES2 application to achieve desired service levels during the staged deployment to a growing number of law schools. LSAC now has the performance capacity to cope with surges in demand without effort. At the same time, it can now manage performance proactively to accommodate future expansion or unexpected shifts in traffic behavior.

Existing Application

LSAC developed a service that enables candidates to apply to law schools using an online process known as e-apps. In 2007, LSAC systems attained a peak transaction rate of 658 transmits-per-hour (TPH); this occurred at the end of January on the last day before a key law school application deadline. That rate equated to 8,229 law school applications processed for that peak day. The transaction rate exceeded LSAC forecasts and therefore bottlenecked its systems, resulting in unsuitable performance. Processing delays raised the possibility that thousands of law school applicants would miss their application deadline. This would have adversely affected the law schools

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as well as their applicants. LSAC was motivated to ensure that such delays could never again occur.

LSAC employed modeling tools to analyze the e-app processes running on six supporting servers. The analysis revealed that response time worsened slowly until it reached 375 TPH when it hit the knee of the queuing curve, at which point response time suddenly deteriorated rapidly. Considering 2007's peak transaction rate of 658 TPH and allowing for desired growth, LSAC set a peak volume requirement of around 1,500 TPH. Using TeamQuest, the team modeled the transaction process using what-if scenarios, which revealed that the systems would be able to satisfy approximately 1,937 TPH by adding five application servers. LSAC used that information to upgrade the infrastructure accordingly. As a result, during the 2008 peak day, LSAC processed 9,132 applications with no processing backlog or major computing issues. This represented 11 percent growth compared to the previous year.

In order to track performance, LSAC used the TeamQuest IT Service Reporter to create an E-apps Performance Tracking Report. Mr. Goldman said, "This showed that, like tax day, most prospective law students' leave things to the last minute. The good news, however, is that we had more than enough capacity. In fact, we actually used slightly less capacity than we predicted."

Future Plans

Although LSAC has had excellent results to date, improvement efforts will be ongoing. Mr. Goldman says, "We will be using our ITSO processes to refine the workload definition on our servers. As our applications change each year, we will continue to utilize TeamQuest while working closely with development and QA to accurately predict performance. That will form the basis of our provisioning efforts moving forward.

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"Overall, the successes using TeamQuest ITSO processes provide more confidence in the results LSAC will obtain. TeamQuest, therefore, has been instrumental in helping us to become mature much faster than we could have imagined. We have evolved from having no SLAs and few metrics or reporting to the point where we have reached an advanced stage in ITSO implementation.

"We will sustain our SPM program using continuous improvement processes. New projects will be initiated annually using ITIL and ITSO best practices. Due to the high value they bring, we will continue to invest in TeamQuest tools and consulting services. By continuing to partner with TeamQuest, we can continue to cope with growth without performance delays while fully aligning IT with the business goals of LSAC."

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