

Introduction

The purpose of this Executive Summary is to briefly describe the often-overlooked type of organizational changes and expenses related to maintaining an ERP (Enterprise Resource Planning) system infrastructure in place. These costs can be, pretty much across the ERP landscape, significantly reduced if the application is implemented with minimum customizations.

Changes due to the implementation of ERP (Enterprise Resource Planning) tools

The implementation of an ERP system and client/server environment produces a shift in the organization's way of carrying out their daily business. The main structural changes to address this shift should be carried out within the functional areas and not only within the organizations' IT (Information Technology) area. Unfortunately, most organizations have significantly changed their IT environments without the corresponding improvements in their functional processes.

ERP tools, by definition, have blurred the clear division between technical and functional activities. These tools have actually provided the functional user with a significant increase in power to perform duties and tasks that were not at their reach in the past since they were essentially technical tasks and required programming skills to execute. The functional user's "sphere of influence" has expanded by reducing their need to be technical and providing powerful tools to perform a larger number of technical tasks.

Furthermore, these new ERP tools are very flexible and provide the user with an overwhelming array of options that need to be evaluated by the same functional user who understands the organization's business processes. Unfortunately, since the functional user's role during the mainframe or legacy system was limited to very few options due to the old system's rigidity, the multiplicity of decisions offered by ERP tools and their execution still, mistakenly, fall on IT personnel, who are not prepared to make these business decisions.

Functional departments must expand their user capabilities and become "owners" of the new system, and avoid reducing their internal capabilities and knowledge of the system after implementation. A significant training effort needs to begin early on to address the new system's knowledge gap within the functional departments.

At the same time, with the advent of ERP tools, the sphere of IT activities (but not the time and resources needed to perform them successfully) can actually be reduced. Now IT can focus on the "core" IT functions, which deals more with the infrastructure – network, infrastructure performance, and hardware – rather than with the applications. Today, users can own a much larger portion of most any application. IT needs to make sure that the infrastructure needed is effective and efficient, reliable, accessible, and delivers what the applications and users require and expect.

University Profiles – Cost of ownership dimensions

The following examples are real universities that we have contacted to survey their staffing and application status. Even though this is a high-level and not very consistent description of the organizational effort required to maintain the new ERP systems installed, it still provides a realistic outlook of the overall maintenance cost. Note: Even though higher education institutions that run several different ERP tools incur these costs, they would still need to incur somewhat similar type of costs regardless of the application software purchased.

University 1

The university has been running a new Student Administration system since 1999. They also run the same ERP's HR and Finance applications. Within IT there is an Administrative Systems Group responsible for maintenance development and upgrades. The following is their personnel breakdown:

- This university has 1400 staff and faculty and 7500 students
- Student Administration Support Group - 8 people
- Student Administration System Managers – 5 people. Each manager is in charge of a single module, i.e. Financial Aid
- Student Administration Infrastructure Group - 4 to 5 people. They also support other systems not only the student administration system, however, 90% of their work is dedicated to the ERP system in general and about 70% of this just to the Student Administration application
- Administrative System Support – 8 people dedicated to HR and Finance
- On the functional side they have 6 Powerusers who do troubleshooting and query reporting

Overall, this university dedicates 25 people to all three ERP applications; approximately 16 FTEs to Student Administration without including the power users located in the functional areas.

University 2

This university is running Student Administration modules except for Financial Aid. They are also running the ERP's system web module for student access.

- They have approximately 1500 staff and faculty
- They have approximately 6,000 students
- The IT department has 1 FTE dedicated exclusively to the application of system maintenance fixes/patches to the overall ERP system applications
- Overall, IT dedicates 5.5 FTE for the Student application maintenance: 2 DBAs, 1 Patch resource, 2 system administration resources

The users have formed a university user group that is chaired by their Functional Analyst, who resides in the functional departments and also does training and query writing

University 3

This university is running only the student administration application and it has been live since 1998. They have the core modules in production: Registrar/Records, Admissions, Student Billing, and Financial Aid.

- They have 2000 students
- The university dedicates 4.0 FTEs to the student administration system – 1 FTE reports to the Dean of Student Affairs and is the Functional Analyst; the other 3 FTEs are IT resources that perform Database administration, system administration, (including the application of fixes and upgrades), and report writing activities
- The salary expense of maintaining this group is approximately \$225,000 a year and it includes the cost of the Functional Analyst. This amount is approximately a third of the overall IT salary budget, which includes academic computing, Administrative computing, and Instructional Technology
- This organization had a decent amount of changes done to the ERP student system's delivered processes and functionality

University 4

This school has a student body of 1500 FTE and approximately 150 faculty FTE and this information is related only to the student system.

A team of 5 people supports the new ERP system, which they've had since 1999. This team performs the following functions:

- 1FTE dedicated to reporting management and maintenance
- 1 FTE dedicated solely to the web maintenance, including all self-service, advising, and registration.
- 1 FTE dedicated to Institutional Advancement support
- 1 FTE as an all-around technical support person. Fulfills the role of DBA, SA, can write Unix scripts and has a strong understanding of technology in general
- 1 FTE who supervises the IT team, runs the IT functions in general, and is the only one who applies changes/upgrades to the database.

They have a web-enabled request system to where users submit changes, fixes, etc.

University 5

This is a consortium type of arrangement that groups six colleges with 3400 students. The consortium's IT group provides one hundred percent of the ERP system support. These colleges could not provide the service that the consortium is able to provide at the cost that they do. The colleges have no administrative IT personnel (they do have academic IT support though). They have one server that houses separate databases for each college, with no common database. They have not moved yet to web functionality.

This organization has five programmers where each one mostly supports one module in the student system.

- 1 FTE dedicated full time to printing services (they have centralized publishing services)
- 1 FTE for Courier services
- They have a position open for a full time System Administrator and will fill it soon – they are currently understaffed

The IA and Financial Aid modules are the most intense from a maintenance angle; also, out of the three systems (HR, Finance, and Student) the student system represents the lion share of the total effort required to maintain and improve it.

University 6

This organization is more complex than a typical undergraduate college due to the fact that they provide different Programs, not only at the undergraduate level but also at the graduate level. They house all three applications, HR, Finance and Student. However, they have not implemented any web functionality yet. Their total student body number is approximately 4,200 with approximately 300 faculty members.

They are very understaffed in their IT director's opinion. They have 2.25 FTEs assigned as follows:

- 1 FTE: programmer, changes/fixes and upgrades, DBA and analyst
- System Administrator – .25
- 1 FTE – Reporting for all users and exclusive Institutional Advancement or Development Office support
- They need, at least, 1 FTE more (vacant position), for a total of 3.25 FTE

University 7

This university has about 2800 students (headcount) and about 150 faculty members. They offer undergraduate and graduate degrees. They have had a new student administration system for about 10 years and they run all three applications (HR, Finance, and Student) in production. They are just installing Cognos and use Blackboard as course management tool. They are interested in gaining some insights from the Claremont Colleges on the benefits and challenges of a centralized system for their four campuses. Currently they are completely separate but plan to consolidate IT services.

- 1 manager for the three applications. Also functions as the DBA
- 1 programmer – will focus on fixes/patches.
- 4 system analyst/programmers – with functional and technical expertise. These resources have a strong understanding of the module functionality and also can perform application changes, troubleshoot testing, screen changes, etc.
- This organization relies heavily on “super-users” that “live” in the functional areas and not only have a strong understanding of their department’s functions but also a solid grasp of the system

Changes and Fixes – Regardless of the type of ERP system being used, the process of applying changes and fixes (patches) is complex and time consuming, especially in heavily customized environments. This process is considered a mission critical process that requires full attention and even requires a strong understanding of the functional impacts as well as the technical procedures including programming languages. A solid testing process is key to catching problems before the impact the production environment

In addition to the salary cost you must consider some additional expenses:

- The System’s Maintenance license. This license provides access to support and free availability of upgrades and fixes. The license is calculated differently by vendor (i.e. can be calculated on a student FTE basis and will vary from university to university). However it is a yearly cost that must be considered when purchasing any software package and the vendor is the only one qualified to define that amount.
- User and Vendor Conferences: It is convenient to send some or all of your ERP system related staff to some user and vendor sponsored conferences. If you sign-up in advance the cost of travel and enrollment can vary from about \$1,900 to \$2,700 per person

Hopefully this information helps you gain a better understanding of some of the costs involved in maintaining an ERP system.