

**Is There Life After ERP and
Is It Better Than Before?**

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Overview/Abstract

This session will explore the lessons learned and new approaches taken by the California State University (CSU) to harvest the benefits of implementing the largest ERP project in higher education. While much has been written and said about ERP implementation techniques, good project management examples and the high cost of going forward with such initiatives, less has been articulated about life after ERP.

The CSU's implementation of PeopleSoft human resources, financials, and student administration has taken place over 7 years on 23 campuses and cost \$435 million US. IT is noteworthy that this is the time frame and budget that was planned for when the project began in 1999. So, for some, this would qualify as a successful IT project of extraordinary size and scope. But, is that the end of the story?

The CSU is measuring the success of its ERP project less by its completed implementation and more by what the university does with the state of the art administrative software platform it has put into place. A commitment to managing the university against a common set of administrative best practices made possible by the ERP was the foremost justification for launching the project seven years ago. Yet, the CSU is just beginning to determine how to make that commitment a reality across all 23 campuses.

The session will explore why a clear view of life after ERP is the most important criterion for making the decision to go forward with such a project and at what cost, scope and duration. How the CSU is addressing the appropriate use and potential abuse of its ERP will be discussed along with how this experience is applicable regardless of size or type of institution.

The CSU engaged Cap Gemini Ernst and Young (CGE&Y), a consulting firm, to assist in its evaluation both of short and long term benefits of the ERP implementation as well as to evaluate some future opportunities that could be

exploited to improve the overall operation of the University. The outcome of this joint effort between the CSU and CGE&Y forms the body of this presentation.

CSU Facts

A few facts to orient the reader to the California State University are in order before going forward with a discussion of the ERP project.

The California State University (CSU) is one of three public higher education systems in the state of California, the other two being the University of California system and the California Community College System. The CSU system is composed of 23 campuses and has 414,000 students supported by 44,000 faculty members and staff. It is the largest system of postsecondary education in the United States that does not include community colleges. The CSU prepares about 60 percent of the teachers in the state, 40 percent of the engineering graduates, and more graduates in business, agriculture, communications, health, education and public administration than all other California universities and colleges combined. Altogether, about half the Bachelor's degrees and a third of the Master's degrees awarded annually in California are from the CSU. It offers more than 1,800 degree programs in some 240-subject areas.

A Word About Governance

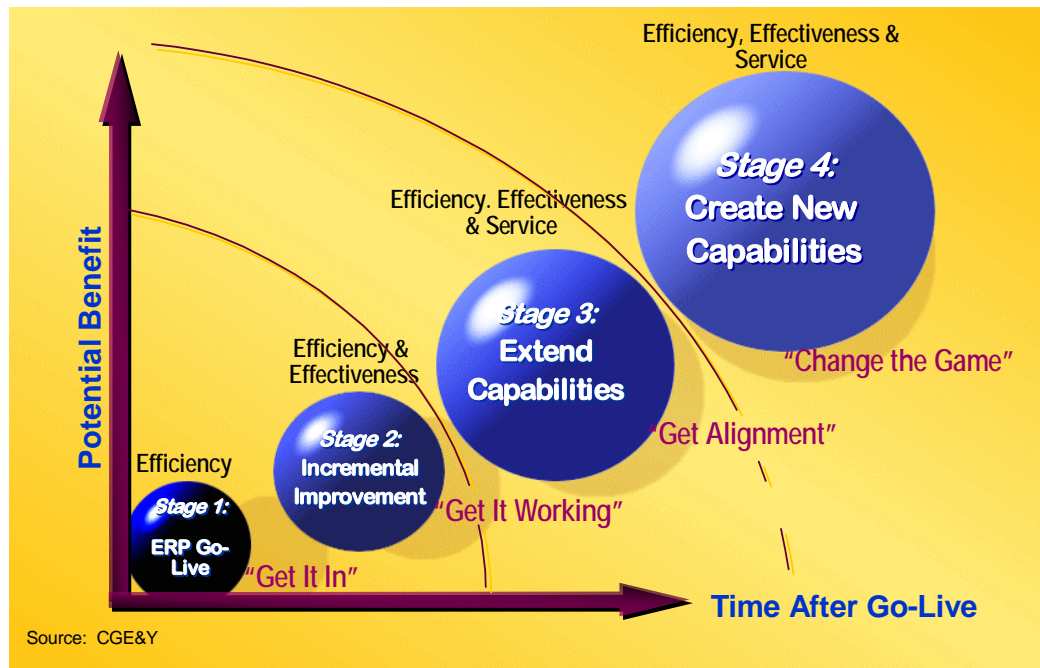
Among the critical success factors for the ERP project were the strong support from CSU senior management and the governance structure for the project. The CSU named a new Chancellor for the system soon after the project began to get organized. Initially, campuses were free to join the project as they deemed appropriate, but the Chancellor made it clear that the significant investment of time and resources that would be required necessitated all campuses to participate. This “all or nothing” mandate provided initial momentum that otherwise might not have occurred.

Secondly, the governance structure was campus-driven with support and staffing from the central systemwide office. Each campus has an executive sponsor who in most cases is the Chief Financial Officer and not the CIO. There are also Provosts and Student Affairs officers on the project's Executive Committee. This focus on user leadership from the campuses turned an “IT” project into a management improvement project. Several working groups manage different aspects of the project and are also heavily populated with campus leaders.

The ERP Life Cycle

The work with CGE&Y utilized an extremely useful diagram developed by the firm which helped the CSU better understand the stages of implementation of an ERP and more importantly, the path toward realizing all of its potential benefits. The diagram is included here for reference.

Lifecycle of ERP Benefits



Summary of Results

The CSU's lack of an enterprise approach prior to CMS led to variability across applications as well as variability among campuses. All campuses utilized the same finance system, FRS. Functional campus leadership has a history of working together prior to the Finance User Group (FUG) and other campus liaison organizations. Campuses were clustered around various Student administration packages, based on campus needs. And finally, Human Resources consisted of primarily local (manual) solutions.

Given the disparate business processes and systems used to maintain and administer student information within the CSU system, collaboration was difficult. Schools with similar legacy systems were able to collaborate to a certain extent, but localized customizations often hindered the development of leveraged shared solutions. With the implementation of the CMS initiative, schools are experiencing a greater level of collaboration than in the past—system set up

philosophies, business practices, modifications, and training materials can be developed and shared to the benefit of all campuses.

As CSU campuses vary in the sophistication of their legacy student administration systems, the impact of the CMS PeopleSoft implementation will vary as well. Net consideration, however, will likely yield significant improvements in automation, self-service capability, integration and communication across most, if not all, CSU campuses.

Automation: Loan Processing, Verification, Authorization and Disbursement Rules are all areas in which PeopleSoft delivered automation improved formerly manual or laborious processes.

Self-Service capability: On-line Applications, Course Registration, Grading, and Invoice Payment are examples of self-service functionality that has decreased the need for staff intervention. Staff and student receptivity to self-service functionality has been strong and positive.

Integration: Shared data throughout the various modules allows for a real-time view of data, contrasted to the delays in data accuracy experienced by batch updates between satellite systems.

Communications: As hard copy mailings are being replaced with electronic means of communication, printing and postage costs are decreasing sharply and the issue resolution cycle is becoming shorter and more efficient.

As campuses begin to gain comfort in using their new system, further opportunities for refining and improving their implementation will result. It is anticipated that workflow, once implemented, will expedite business processing within and across major functional areas. Additionally, the availability of integrated data will allow campuses to perform analysis and research to inform and guide their strategies around various areas such as recruiting, course offerings, financial aid awarding and others.

Prior to the implementation of PeopleSoft, campuses utilized varying degrees of technology for capturing and maintaining their HR data. Some campuses were very archaic and completely manual, while others amalgamated the data between stand-alone and manual systems. The effort required to generate reports was often time consuming because data was typically pulled from multiple internal sources or required reliance on Payroll personnel to generate HR data from Personnel Information Management System (PIMS). Each campus expressed issues in the lack of documentation for business processes and procedures.

Across all campuses, the implementation of PeopleSoft lifted the boundaries around HR and provided campuses the ability to rethink how to operate and what

services to provide. Some of the major benefits achieved by at least a single campus include:

Automated contract generation (part-time faculty) – reduces errors, streamlines process, and increases productivity

Better access to management information – provides accurate data to management, legislative, faculty, and regulatory bodies.

Tracking and management of new hire data – ability to collect various new hire data reduces compensation errors for part-time faculty/staff and complies with I-9 processing

Improved open recruitment process – utilizes competencies and reduced recruitment effort by 50%

Salary equity analysis – ability to perform equity alignments for new hires and existing staff

Pre-CMS, all campuses used the same finance system, Financial Reporting System (FRS). The commonality provided a foundation for sharing of ideas and cooperation across campuses. Over time the Campus Finance Departments made improvements where possible. With the advent of CMS, Finance representatives leveraged this shared understanding and experience with process re-engineering in the pilot and First Wave implementations. The campuses deserve recognition for their effort to continually improve processes, both before and as part of the CMS project.

Decisions about the management of the campus processes resulted in variability of benefits achieved by campuses. Pre-CMS, processes were centralized as a result of system limitations; the architecture and complexity of legacy applications did not allow for decentralization of process. Rather, administrative functions could be performed and information accessed solely by the administrative staff. PeopleSoft eliminated the barrier to decentralization; now it is a matter of policies and campus preferences that determine the level of involvement and responsibility of departments for finance processes in such areas as procurement. However, campuses have consistently achieved benefits of:

Reallocation of staff time from low-value yet necessary tactical tasks to higher-value strategic activities as a result of process automation

Productivity increases and error rate reductions due to consolidation of forms within a campus

Elimination of duplicative work required by disparate, non-integrated pre-CMS systems. System integration enables single data entry.

Reduction in backlog at the beginning of a new fiscal year as a result of only the previous year being available in the system throughout the close process. The ability to operate in multiple periods, previously unavailable under FRS, and the reduced time to close a fiscal year allows staff to remain current during the first 6 weeks of a new fiscal year.

Ability to negotiate better contract agreements and avoid penalties as a result of non-compliance with contract payment terms. Ensured compliance with vendor contracts is a result of the negative confirmation functionality or the ability to schedule and disburse payments to vendors unless stopped by the receiving department upon receipt of payment pending notifications.

In addition, campuses utilizing a decentralized approach to CMS have achieved even greater benefits; approvals processed outside the systems resulted in lag time and delays in addition to the actual time spent on the manual tasks.

Since the variability of campus processes and technology spanned a wide spectrum, extrapolating benefits found in this study is more complex than merely extending the values by the number of campuses. In order to understand the magnitude of the benefits, in total, a hypothetical campus model was prepared.

If a campus was in the same pre-CMS state (processes, technology and transaction volume) as the campus realizing the benefit and was able to take full advantage of the entire portfolio of benefits outlined in this study, the hypothetical campus would realize productivity gains of over 48,000 hours and avoid or eliminate costs of over \$2.3 million dollars across all applications. These benefits are significant given the early state of the implementation; these benefits are also limited to campus-specific gains and do not represent the full benefits the campus will achieve in a mature implementation let alone the system-wide or integration related savings yet to be realized once all campuses move to the CMS platform. However, the benefits represent attributes comprising a minimum baseline all campuses need to seek to achieve:

Self-service for students and employees: decentralizing processes, empowering the end user to make updates or initiate processes will decrease delays and error rates, ultimately leading to higher satisfaction of campus constituencies.

Electronic communication: replacing the amount of paper-based communications between the campus and students and staff with electronic means will decrease printing and postage costs and well as shorten resolution cycles.

Better access to management information at all levels of the campus: opening access to management information to a larger user base and provides faculty and staff the tools to contribute to the University in a manner previously unavailable. Moving from distributing reports on paper in the legacy environment

to providing electronic access to CMS improves the timeliness of the information as well as reduces costs.

Automation of processes, verifications and approvals: leveraging PeopleSoft delivered functionality will improve formerly manual processes and ensure compliance with campus, state and federal requirements.

Reallocation of assets: moving to a new platform enables each campus to make decisions as to how best to use the campus staff, hard dollar savings and Information Technology infrastructure freed up as a direct result of CMS.

Future Opportunities

The greatest benefits of CMS may be realized in the long-term. As previously discussed, most organizations realize benefits from their investment in ERP over a period of time and in phases. As the CSU completes the CMS implementation it will secure the benefits of automation and enhanced services on all of its campuses. However, the long-term benefits of the CMS investment can be more significant and strategic.

Once fully implemented, CMS opens to the CSU an opportunity to further rethink how it organizes and operates its administrative and student support services. Additionally, it provides an opportunity to generate management information that can significantly inform decision-making. For many organizations, the long-term benefits of ERP systems come from the more common business processes and more accurate and available information that are their underpinnings. These features have greatly enabled organizations with mature ERP solutions to reach greater levels of efficiency and improved decision-making and monitoring.

The investment in CMS provides CSU with a common business foundation on all of its campuses. When fully implemented, CMS will provide more common methods for defining data and insuring its accuracy, a common set of technology tools familiar to all CSU employees and a much greater degree of similarity as to how campuses operate major business processes. This foundation provides CSU with the opportunity to capture significantly more benefits in the future. These benefits could include:

- Increased Administrative Efficiency
- Improved Resource Utilization through Better Information
- Efficient and Effective Links to 3rd Party Partners
- Enhanced Staff Development and Retention

Increased Administrative Efficiency

The CSU's legacy technology left campuses with few options other than to create and maintain a full set of administrative services on each campus. The CMS

system will offer the CSU an opportunity to challenge that model. Increasingly, organizations are creating shared service centers to support the administrative needs of multiple divisions. Most often used to provide financial and human resource support, shared services both leverages greater economies of scale to reduce cost and enhances service by making the full expertise of the organization available to all constituents.

For CSU, the long-term opportunity is to rethink what aspect of financial, human resources and student services must uniquely exist on a campus and what could be obtained through a similar type of shared service center. For example, could the purchasing transactions of many or all campuses be supported through a shared procurement center? Or, does the highly regulated and rule based processing required for financial aid applications make it an attractive candidate for a shared service? In the case of procurement opportunities would exist to lower the overall cost of buying goods and services through the economies of a shared center. One staff could negotiate and monitor vendor contracts on behalf of the whole system but generating efficiencies and better leveraging the buying power of the CSU. In financial aid, a shared service center could better pool and share the CSU's expertise in financial aid policy and regulation while deriving economies of scale in activities such as needs analysis.

Shared services is not an entirely new concept to higher education. Widespread adoption of shared services has been slowed by both the natural cultural resistance to a change of this kind and by a lack of sufficient technology to enable the delivery of quality service to a remote customer. The CMS project is beginning to remove many of those hurdles.

Shared services differ from merely centralizing services in several significant ways. First, there must be a well-defined customer-service provider relationship between the center and the campus. Performance metrics must be set and monitored and reinforced with financial incentives and penalties. Secondly, there are multiple options from which the University or campus may select the shared service provider. In some cases the Chancellors office could operate the shared services (as is the case with the current HOSS and SOSS organizations). Or, a single campus could become a service provider to other campuses in their region.

A Place to Start

While the design and migration to shared services may become a long-term strategy, there are some more immediate actions that the CSU is taking to increase the benefit of CMS. Currently, there is no structured method for sharing best practices between campuses. While many campuses have discovered some of this on their own, the CSU is developing a more systematic way to identify and promulgate examples of how its campuses are optimizing their use of CMS. This information should pertain to both how the campus has configured

PeopleSoft as well as the individual business processes that it supports. For example, campuses that have fully decentralized their business processes are achieving greater levels of productivity than those that have not. Those campuses that have not can now revisit that decision armed with the lessons learned and results achieved by those that have.

This is just one of many potential opportunities for CSU to learn for itself. The widespread adoption of internal best practices will have two benefits: It insures that all campuses are achieving the optimal productivity gains and improved service; and it creates an even greater degree of commonality in how the campuses operate in administrative support areas. This in turn facilitates the transition to strategies such as shared services that can further those benefits.

Improved Resource Utilization through Better Information

A second long-term benefit of CMS will come through the improved access to management information that it provides. CMS captures significantly more extensive and accurate information from each of the administrative transaction that the System conducts. This in and of itself is a benefit. However, when combined with better training, reporting and analytical tools this data can create valuable information.

For example, CMS enables academic advisors to spot early signs of a student struggling academically and intervene earlier. This could yield improved retention and graduation rates.

Improved access to real-time and historical registration data will help campuses make better decisions regarding class schedules. Extra sections can be added as demand warrants with greater accuracy and clarity. Deans and department chairs can make more effective decisions regarding allowing extra students into a class vs. adding a new section. Opportunities can be identified to help more students graduate on time by providing greater access to required courses. Finally, adjunct salary budgets can be used more effectively.

Financial data can be used collaboratively among campuses to negotiate better pricing from vendors. This benefit can accrue for campuses and the CSU. Campuses will have a consolidated view of purchasing history that in turn can be used to maximize leverage with vendor with vendors. Or perhaps it can be used to find opportunities to consolidate purchasing within a campus or across multiple campuses. In cases where appropriate, the University can expand system-wide agreements to take full advantage of the power of the CSU.

Efficient and Effective Links to 3rd Party Partners

Another cross-industry benefit of investments in ERP solutions has been to more effectively share information with outside entities which are integral to the organizations operations. In the case of a manufacturing company, that could

mean the electronic exchange of parts inventory and order information with its suppliers. In the case of the CSU it could mean better links to California's K-12 systems and community colleges. The CMS system can facilitate the electronic exchange of student transcripts and other records. This could in turn facilitate a more seamless transition for a student from high school to community college to university.

Or, the CMS could enable CSU to conduct more business with its suppliers electronically. Orders for routine supplies could be placed electronically and automatically. Invoices and payments could also be supported with minimal additional processing. These types of electronic exchanges have proven to both cost less to transact and improve services through faster turn-around time and reduced errors.

Enhanced Staff Development and Retention

All industries that have invested significantly in technology have continued to realize that they are still only as good as their workforces. In fact, as more technology is added organizations become more dependent on maintaining a workforce with the skills and knowledge to take advantage of the improved information these systems provide. Technology like CMS can help efforts to develop the workforce as well. By implementing a common system on all its campuses, the CSU has embraced a similar set of technology tools and business processes on all campuses. This creates two opportunities that can improve the staff development and retention.

First, common tools and processes make it more cost effective to train new and existing staff. The CSU can create many more shared training courses that can be developed once and used by all campuses. The more consistent business processes become across campus the greater this capability.

Second, employees will be able to more readily move among CSU campuses without significant retraining. This can help reduce turnover by enabling staff to more effectively compete for jobs at other campuses as they seek promotion. While this may create more movement between campuses it will help to retain staff that would have otherwise left the CSU System. In addition, the cross training can mitigate risk by providing viable back ups for critical staff in the event of untimely yet unavoidable absences.

Conclusion

The benefit analysis conducted with CGE&Y concluded that the CMS project has achieved benefits, is in the process of realizing additional benefits and now has a

foundation in place to attain further successes that would otherwise not be achievable under the pre-platform. In summary, we found:

While still at an early stage of maturity in the lifecycle of an ERP, the portfolio of quantifiable realized benefits found on campuses visited for the study total over 48,000 hours of productivity gains and \$2.3 million in actual cost savings.

The campuses are continuing to achieve new benefits as the implementations progress from various levels of completion, transitioning from Stage 1: ERP Go Live through Sage 2: Incremental Improvements in the lifecycle of ERP benefits.

Other opportunities exist for the CSU to maximize the value of the ERP approach. CMS is a foundation. Once fully implemented, CMS opens to the CSU further opportunity to rethink how it organizes and operates administrative and support services.

CSU campuses, whether First Wave or in various stages of implementing CMS software, are identifying areas for potential improvement. The benefits realized are the new minimum capabilities CSU can expect from campuses. Some examples of capabilities campuses should strive to achieve include:

Self-service for students and employees: decentralizing processes, empowering the end user to make updates or initiate processes will decrease delays and error rates, ultimately leading to higher satisfaction of campus constituencies.

Electronic Communication: replacing the amount of paper-based communications between the campus and students and staff with electronic means will decrease printing and postage costs and well as shorten resolution cycles.

Better access to management information at all levels of the campus: opening access to management information to a larger user base and provides faculty and staff the tools to contribute to the University in a manner previously unavailable. Moving from distributing reports on paper in the legacy environment to providing electronic access to CMS improves the timeliness of the information as well as reduces costs.

Automation of processes, verifications and approvals: leveraging PeopleSoft delivered functionality will improve formerly manual processes and ensure compliance with campus, state and federal requirements.

Reallocation of assets: moving to a new platform enables each campus to make decisions as to how best to use the campus staff, hard dollar savings and Information Technology infrastructure freed up as a direct result of CMS.

Since each campus is unique, a boiler plate cannot be applied universally, without deviation. Rather, the CSU has taken the position to allow campuses to determine the best manner to move forward. Individual campus needs may require deviation from the norm; however, this should be the exception, not the rule. These guidelines offer the art of the possible and attaining the full value from the CSU's investment in CMS is dependent on each campus striving to maximize the value from a technology and business perspective. Both First Wave and remaining campuses can benefit from:

The CSU putting in place an infrastructure to share internal best practices.

To date, campuses have made a valiant effort; however, the size of the University and magnitude of the administrative systems require a more structured and centralized approach. The CSU can prioritize initiatives and opportunities across the campuses and capture significantly more benefits from a strategic investment.

Continued improvement of processes and policies at First Wave campuses.

Since CSU is characterized in an early stage of the implementation, transitioning through Stage 2 of the ERP Life Cycle, opportunities exist to capture increased efficiencies and improved effectiveness. Campuses recognize the need to get through a full business cycle using the new system in order to identify and correct any issues that arise. In addition, many users recognize the campuses are still on the incline of a learning curve. Once campus constituencies are more familiar with the capabilities and possibilities of the new system, a second round of improvements may be forth coming. With the constraints of the legacy systems removed, the users need to become acclimated with a new range of possibilities.

As the CSU completes its implementation of the largest ERP project in higher education, the possibilities to move beyond tactical efficiencies and increased effectiveness to a strategic improvement in its overall management and operations are plentiful. Whether the University has the stamina and perseverance to achieve such improvement remains to be seen.