

EMPLOYEE SYSTEMS  
TASK FORCE REPORT

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University of California  
Office of the President

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PART A: RECOMMENDATIONS, BENEFITS AND COSTS

- I. INTRODUCTION
- II. RECOMMENDATIONS AND BENEFITS
- III. COSTS

## I. INTRODUCTION

**The University of California's Payroll/Personnel (HR), Benefits, and Retirement Systems (collectively termed "Employee Systems") have served the University well over the years. They are complex, University-wide systems that perform reliably and correctly in meeting a broad range of requirements. From other perspectives, however, they are becoming outdated and do not support changing University organizational and customer-service objectives. Senior Vice President V. Wayne Kennedy in a memo chartering the Task Force (see Appendix A) recognized that it is time to reassess these systems, and to re-organize the work practices and services these systems are intended to support.**

The workplace and other extrinsic forces that place demands on Employee Systems have changed since these systems last underwent substantial revision.

- As the University anticipates a new wave of growth to accommodate tomorrow's students and the opening of a tenth campus, the University faces the need to streamline its administrative processes to ensure that such growth does not place impossible demands on already strained administrative resources. Technological improvements are critical to productivity improvements.
- Resources for administrative support have already declined significantly relative to growing demands further straining administrative processes. In particular, central support no longer scales to meet the increasing service demands of end users (faculty, students and staff) and both internal and external constituencies (legislators, Regents, etc.). The University can no longer afford the inefficiencies of the same data passing through multiple hands as such data is converted from one format to another or fed from one system to another; or potential liabilities that can occur from passing on erroneous information.
- Processes have become more complex as, for example, benefit and retirement options have expanded and as federal and state reporting and regulatory requirements have increased. Some of the University's older systems (such as benefits/retirement) cannot readily be adapted to accommodate changing needs; as a result they are surrounded by numerous ad hoc systems patched together to meet exigent requirements.

The “remaking” of Benefits and HR requires fresh approaches. Failure to address these issues propagates processes that are increasingly expensive to support and that can lead to inadequate service or high frequency of error.

- Faculty, student, and staff end users, increasingly pressed for time themselves, are demanding improved levels of service. Most, in today’s technological environment, are less tolerant of manual processes. They are demanding increased levels of self-service – easy access available at all hours – to replace dependencies on central staff and paper-based systems. Administrators responsible for business processes must be respectful of faculty, staff, and student time if the University is to maintain its leadership in teaching and research.
- The University can no longer rely on multiple layers of people checking people to ensure data accuracy and business process and systems integrity. Although accountability is ultimately a management responsibility, we must improve the level of systems controls to provide automated support where effective. To do otherwise exposes the University to risk and greater cost.
- While existing Employee Systems have served the University well, they are complex and highly interdependent. Changes to one system may have ramifications across other systems, making it difficult to be responsive to the rapid pace of externally and internally mandated changes. While it may be attractive to assume that the interdependence of systems can be easily eliminated, in reality this dependence must be recognized in future systems redesign.
- Campuses are making major investments in financial and research administration systems to meet pressing requirements for improved efficiency and effectiveness. The University’s Employee Systems must likewise be improved – and soon. There is a narrow window of opportunity: the University can choose, where appropriate, to do so in a coordinated manner across the institution, or will likely find itself doing so in a fragmented manner at greater overall cost.
- The University is facing difficult choices in choosing among competing priorities for increasingly limited resources. Administrative systems must compete with many other priorities. Further, several campuses are wrestling with the implementation of other systems, and cannot accommodate too much change at one time. This calls for careful

consideration of clear payoffs before advocating major new system initiatives.

The Employee Systems Task Force has responded to the above concerns and to other challenges laid out in the chartering memo. In doing so, it first developed a Planning Framework to guide its work (see Appendix B). To obtain feedback on services which are desired by end users of the University's employee systems, during the course of its work the Task Force conducted focus sessions with University employees, including faculty, staff, departmental management and personnel administrators, central campus administrative staff (Human Resources, Payroll, Benefits, and Retirement), and with retirees. Members of the task force also visited companies known as exemplars in the use of technology in providing HR/Payroll services and functions. It grappled with important policy issues and addressed regulatory obstacles to streamlining services and functions.

This final Task Force report also benefited from campus feedback received as a result of distribution of an Interim Report earlier this year. This feedback cautioned against proceeding on major HR systems replacement before laying the necessary groundwork through a process re-engineering study and careful evaluation of cost/benefits. It was urged to proceed immediately, on smaller scale, lower risk projects that would have near-term payoff and where there exists sufficient knowledge to proceed. This revised report reflects that advice.

The ESTF Report summarized here lays out general directions, project areas, priorities and strategies. It also estimates costs needed to implement near-term recommendations, and assesses the benefits of these recommendations.

## II. RECOMMENDATIONS

The Employee System Task Force recommends that the University proceed through a series of phases, where the early phases reflect relatively low risk, low cost investments and where there the Task Force believes there is sufficient knowledge to ensure moderate to high payoff. The ESTF also recommends that the University not proceed with major investments in replacement systems at least until the benefits can be more clearly ascertained and the complex interactions among Payroll, HR, and Retirement Systems can be more carefully clarified in the context of process re-engineering.

Following this guiding principle and in the light of the above challenges and issues, the ESTF makes a number of specific near-term recommendations. These

near-term recommendations, however, are framed in a strategic systems architecture context to ensure future relevance:

**A. Strategic Architectural Directions:** The Task Force recommends that the University pursue systems directions that:

1. Emphasize reliance on employee easy access and self service to reduce dependencies on centralized and manual support and business processes, and to improve service to employees.
2. Rapidly phase out the vestiges of paper-based forms and centralized print processes. These should be replaced by the use of Web-based access using desktop and other workstations; telephone access similar to today's Bencom capabilities; and kiosk-based access for employees who do not have ready access to workstations.
3. Evolve an Employee Systems architectural framework that (a) simplifies where possible the current complex interfaces among the different components of employees systems (b) allows for coordinated and, where possible, independent decisions about directions for each of these components, and (c) implements a modern technological foundation to support future change and improved functional delivery at lower risk of failures.
4. Eliminate redundant instances of data that lead to inefficiencies and errors arising from the asynchronicity and duplication of such data.
5. Streamline central processes and improve levels of service and controls.

**B. Immediate Phase 1 Projects:** As detailed more fully in Section VIII of this Report, the ESTF recommends that the University should immediately launch the following projects:

1. **Demographic Database:** The University should establish a logically unified, secure, employee Demographic Database containing basic information about each employee that shall be used to feed all other employee and other systems and databases across the University.
2. **Employee Self Service:** The University should launch a project to support Employee Self-Service in an expanding ring of applications ranging from update of employee demographic data to retirement

fund modeling and allocations and changes to W4's.

3. **Payroll System Enhancements:** The University should implement two specific short-term enhancements to the Payroll System that would yield immediate benefit in making the Payroll System easier to use, namely to add a graphical user interface and to provide improved support for Post Authorization Notification (PAN).
4. **Retirement System:** The University should replace the current Retirement System with a new system, based on modern technology, that would integrate the current centralized system and surrounding ad hoc systems; provide a more flexible platform; support improved controls; and provide significantly improved workflow and document management capabilities.
5. **Business Process Re-Engineering and Systems Study:** The University should undertake a detailed business process re-engineering and systems study – with the assistance of outside consultants – to determine possible directions for simplifying employee systems. The study should determine options to:
  - Simplify business processes and the interfaces among different employee systems functions, and determine how to decouple these functions to the extent possible.
  - Replace or modify HR and Payroll functions by streamlined, possibly purchased, systems.
  - Improve the integration of employee systems with financial and emerging research administration and financial systems. Systems that support research administration are under development by several campuses, and will depend on smooth integration with employee systems.
  - Implement a secure Employee Records Database to complement the Demographic Database that would contain all the additional records normally contained in an Employee Personnel File.
  - Improve integration with other systems and data warehousing activities to provide improved management reporting capabilities.

- C Phase 2 Future Systems and Interim Systems:** Depending on the outcome of Recommendation B5, above, the University will have options regarding modification or replacement of major employee systems, particularly the Payroll and HR systems, with the processes, benefits and costs clarified. The ESTF recommends, therefore, that the University should not implement any interim HR or other major employee systems pending the outcome and recommendations of this business process re-engineering and systems study. This should not preclude important maintenance changes or interfere with local implementation of ancillary systems – such as pre-employment tracking systems – that can run independently of employee systems without jeopardizing employee systems' data integrity.
- D. Design Principles:** The Task Force strongly recommends that the above projects shall be undertaken following the seven *design principles* detailed in Section V.
- E. Regulatory Relief:** The Task Force has identified several key areas where *regulatory relief* needs to be obtained, and recommends that these be brought to the immediate attention of the Task Force on Regulatory Reform. These are detailed in Section X.

## Implementation Strategy

**As detailed in Section VIII, the above project recommendations (Recommendation B) would be implemented through a combination of in-house development and purchased systems. Preference would be given to the latter where they exist, particularly in areas such as employee self-service. However, it must be recognized that this University is essentially unique in having its own retirement plan, and external software does not exist to support this area.**

In-house development would be pursued in a partnership among UCOP and campuses. Deployment of employee self-service would be accomplished via a series of carefully phased-in pilots with iterative development based on feedback from early adopter focus groups.

The maintenance model for employee self-service assumes a centralized University helpdesk for systems support analogous to what is used for Bencom and for Pathways. This may be outsourced. The centralized helpdesk may have to be complemented by exploiting existing campus helpdesk services.

## Benefits:

**As noted, the University is facing significant growth in students and faculty without commensurate increase in funding for administrative processes. As plans are being made for a new wave of growth to accommodate future students, commensurate increases in administrative funding is not realistic. It is imperative, therefore, that we streamline our administrative systems if we are to accommodate such growth without significant reduction in levels of service, accountability, timeliness, and accuracy; and to support growing functional complexity and increased research competitiveness. We must make the most effective use of resources through the sharing of systems development costs and efforts among the campuses wherever practicable.**

Benefits of systems improvements across enterprises as complex as the University of California are often difficult to quantify in financial terms. Such benefits are often distributed to the department level and are hard to recapture centrally to offset system development costs. Furthermore, such departmental benefits often accrue from streamlining of processes and improved levels of service rather than from reduced costs. They also accrue from cost avoidance in the face of workload growth, increases in demand for new functionality, and increases in complexity. Improvements can also lead to improvements in security and accountability.

The recommendations have these benefits in mind. In particular, the projects listed in Recommendation B have specific benefits to the University commensurate with the scale of the investment:

- The **Demographic Database** (Recommendation B1) provides a core functionality that would replace multiple redundant and overlapping databases – often containing erroneous or outdated information – that are scattered across campuses and the University. While it is hard to estimate the cost of such redundancy and errors, it is clearly significantly higher than the costs of maintaining a streamlined function that would serve multiple present and future needs, and bypass all of the reconciliation and redundant effort that characterizes the present environment that are so demanding of employee time. The Demographic Database provides the common data that reaches across all employee system applications.
- The **Employee Self Service** project (Recommendation B2) builds on the Demographic Database and results in:

- Significantly improved service to our faculty, staff, and student employees by providing “anywhere, anytime” access to and update of data and modeling of decision processes (such as of retirement options);
  - Streamlined administrative processes through reduction of process steps;
  - Reduced costs through avoidance of duplication of effort and through exploitation of Employee Self Service to minimize dependencies on centralized processes;
  - Reduced exposure to liabilities arising from human errors;
  - Reduced training costs; and
  - Improved controls and accountability.
- The **Payroll System Enhancements** (Recommendation B3) provide easier access and usability, removing some of the key efficiency bottlenecks at relatively low cost. This enables the University to extend the life of the current system, allowing for a more deliberate consideration of when, how, and whether replacement will be necessary.
  - Regarding Recommendation B4, there is an increased risk of failure and exposure to accidental or intentional misuse in attempting to prolong the life of the present **Retirement System** and the fragmented ancillary systems. Furthermore, its inflexibility is proving a serious obstacle to improved service delivery models and continued growth of accounts and service offerings. Replacing the system by a modern, integrated system would provide for greater flexibility and reduced costs in accommodating changes in function and new service delivery models; support greater accountability and improved controls; and provide significantly improved workflow and document management capabilities.
  - Analyzing the current complex interaction of central and campus employee systems with a view to future replacement or modernization and to providing significant improvements in functionality is a lengthy, time-consuming process. As noted above, we do not recommend embarking on such extensive replacement or modernization without such careful analysis of alternative approaches, business process re-engineering, and careful assessment of benefits (Recommendation B5). We believe such an analysis would be most expeditiously and cost effectively achieved through retaining the services of an outside consultant to assist in the proposed **Employee Systems Business Process Re-Engineering Study**.

### III. IMPLEMENTATION COSTS AND ON-GOING COSTS

**The Task Force believes the above benefits of the Recommendation B for Phase 1 activities far outweigh the costs, even though the benefits are difficult to recapture centrally and are thus hard to quantify in a meaningful ways. As summarized in Table I on page 14, the Phase 1 projects detailed in Recommendation B above are estimated to require an additional investment by the University of \$8.075 million over the next 2 years and continuing maintenance costs of \$1.8 million, including continuing helpdesk support costs.**

**Of the \$8.075 million two-year initial investment, \$4.8 million is new incremental funding for implementation and deployment, including \$1 million earmarked to assist in campus deployment. The balance of \$3.275 million consists of mostly campus redirected people resources for deployment, particularly initial training and support.**

This additional investment excludes the cost of modernizing the Retirement System that has already been committed by the UCOP HR/Benefits Department paid for out of retirement operations funding.

Excluding the modernization of the Retirement System, the initial incremental investment represents less than \$35 per employee annually for each of the next two years, and the maintenance costs represent about \$12 per year per employee. As noted, there are offsetting benefits in reducing administrative "friction" caused by excessive paperwork and duplicate processes, in lowering exposure to liability, and in improving service to employees.

\$5.7 million of the approximately \$8 million initial investment is the estimated cost of implementing and deploying Employee Self-Service capabilities. Of the \$5.7 million, \$3.6 million is the estimate of campus training, implementation and local customization costs (as noted above, \$1 million of this would be funded directly from new funds), but actual expenditures will depend on campus specifics of how such costs can be integrated into other on-going programs. The Employee Self-service component is to use the Web as the means of user entry, requiring as little training above normal Web training as possible.

The ongoing costs of \$1.8 million annually are net, incremental costs to current expenditures. For example, the costs for support of the demographic database are assumed to represent the net costs to support of Demographic Database as part of central systems (Payroll, Human Resources, and Retirement and Benefits).

Whereas it would be premature to estimate the project costs for new Payroll, HR, or Comprehensive Employee Records Database systems and projects pending the outcome of the business process re-engineering study (Recommendation B5), it should be recognized that any one of these projects could singly cost the University well over \$30-50 million based on the experience of other institutions as well as our own experience. The Task Force does not believe it to be wise to undertake projects of this magnitude without much clearer rationale and cost/benefits, given competition for funds. The projects of Recommendation B represent a more limited investment justified on their own merits based on present knowledge and understanding, and can proceed independently of the outcome of the business process and re-engineering study.

The ESTF recognizes the need for careful process to determine the source of the requested \$4.8 million in incremental funding required for Phase 1 and for appropriate review in guiding the distribution of those funds should the recommendations be accepted.

The underlying project rationales, schedules, sequencing and assumptions are detailed in Section VIII. The above financial data are summarized in the following Table. Additional supporting detail is provided in Appendix D.

EMPLOYEE SYSTEMS TASK FORCE PROJECT COSTS (\$Thousands)	YEAR 1		YEAR 2		TWO-YEAR TOTAL		ANNUAL ON-GOING MAINTENANCE COSTS (3)			
	Incremental Costs (1) Funding	Redirected Costs (2)	TOTAL COSTS	Incremental Costs (1) Funding	Redirected Costs (2)	TOTAL COSTS		Incremental Costs (1) Funding	Redirected Costs (2)	TOTAL COSTS
<b>Immediate Projects</b>										
Demographic Database	\$ 1,000	\$ 500	\$ 1,500	\$ -	\$ -	\$ -	\$ 1,000	\$ 500	\$ 1,500	\$ 100
Employee Self-Service	\$ 1,000	\$ 1,000	\$ 2,000	\$ 2,100	\$ 1,600	\$ 3,700	\$ 3,100	\$ 2,600	\$ 5,700	\$ 1,650
Payroll Enhancements							\$ -	\$ -	\$ -	
Graphical User Interface		\$ 175	\$ 175	\$ -	\$ -	\$ -	\$ -	\$ 175	\$ 175	\$ 25
PAN Enhancements	\$ 200		\$ 200	\$ -	\$ -	\$ -	\$ 200	\$ -	\$ 200	\$ 25
Retirement/Benefits System	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Business Process Reengineering and Systems Study</b>	\$ 500	\$ -	\$ 500	\$ -	\$ -	\$ -	\$ 500	\$ -	\$ 500	\$ -
<b>TOTAL</b>	<b>\$ 2,700</b>	<b>\$ 1,675</b>	<b>\$ 4,375</b>	<b>\$ 2,100</b>	<b>\$ 1,600</b>	<b>\$ 3,700</b>	<b>\$ 4,800</b>	<b>\$ 3,275</b>	<b>\$ 8,075</b>	<b>\$ 1,800</b>

NOTES:

- (1) Incremental new funding required for project implementation. Includes programmers, software acquisition, hardware etc. Includes \$1M over 2 years to help support campus implementation costs.
- (2) Allowance for campus deployment costs, incl. training and support, local modifications etc. Payroll Graphical User Interface, however, would be campus-developed with campus personnel.
- (3) Central on-going costs only, including centralized 2nd-level helpdesk support. Excludes on-going campus costs because of difficulty of separating from regular activities and campus-to-campus variations. Campuses will need to estimate these costs.

TABLE 1: EMPLOYEE SYSTEM PHASE I PROJECT COSTS

PART B: SUPPORTING INFORMATION:

- IV. BACKGROUND
- V. SYSTEM FEATURES AND PRINCIPLES
- VI. NEEDS IDENTIFICATION
- VII. EMPLOYEE SYSTEM COMPONENTS
- VIII. PROJECT OVERVIEWS AND IMPLEMENTATION STRATEGIES
- IX. PROJECT SCHEDULE
- X. REGULATORY OBSTACLES

#### IV. BACKGROUND

The systems which gather, store, process and report on employee data have been developed at different times, with some more modern than others. Although the Payroll/Personnel System underwent a major technology and functional upgrade which was completed only a few years ago – the results of which are still being implemented at some campuses -- many of the benefits of the system only reach out to departmental offices and not to employees themselves. Furthermore, the Payroll/Personnel interface is character-based and does not integrate with graphical interfaces being implemented in major systems on many campuses.

In addition, the current Payroll/Personnel system may not meet all of the needs for a full-featured Human Resource system. There are HR functions, such as applicant tracking and salary administration, that are not being addressed by systems installed on all campuses.

Unlike the Payroll/Personnel system, the Retirement System has not undergone major change since 1983. Many labor-intensive processes in the UCOP Benefits Department can be streamlined with the support of modern workflow technologies. Service improvements such as bencom.fone which depend on voice-response systems do not include provision for similar, easy-to-use workstation access which provide another means of access for those with necessary equipment to take advantage of the capability afforded by this technology. The retirement system also supports only a character-based interface. And, because the system is not supported by a relational database, reporting is limited and inflexible. Further, there are redundant and ad hoc systems disjoint from the main system that lead to much manual reconciliation, additional workload and potential for error.

Employees of the University are still required to complete too many multi-part forms, many of which request redundant information. Forms are required when employees are hired, in order to change health enrollments, to update addresses, and perform similar functions. Additionally, there are too many manual processes required for employees to complete simple transactions such as changing the number of Federal tax withholdings. Volumes of information are still communicated to employees and annuitants in printed form, whether or not they prefer to receive it in that form. Information, particularly demographic and other personal information, on employees and other members of the community is still at times collected redundantly and exists in too many different databases,

some of which are unlinked or improperly synchronized. Yet these same databases are increasingly in demand to drive processes for which they were not originally intended.

Employee records are stored in too many locations, many in paper form, to permit timely and efficient access and retrieval. An employee's records may exist in the current employing department, the benefits office, the human resources office, the payroll office, the UCOP retirement office and others. When an office needs to have access to records outside its domain, considerable effort and delay may occur.

## V. SYSTEMS FEATURES AND PRINCIPLES

Following the precepts of the Planning Framework (see Introduction), the Task Force has identified certain system capabilities and system design principles as being required to satisfy the goals of service, effectiveness, efficiency and accountability (established in Senior Vice President Kennedy's chartering memo) to address the shortcomings of employee systems outlined above. These are as follows:

- All new systems acquired or existing system enhancements will include a graphical user interface
- Design will facilitate interoperability of applications
- System design will provide data needed for increased levels of accountability
- All new systems will be designed to reduce or eliminate centrally produced reports and use of paper forms for input
- All new systems and capabilities will be accompanied with adequate training, though systems should be designed to exploit modern technologies to reduce future training demands
- Privacy and security of personal and other confidential information will be given special attention during selection, design and implementation of employee systems
- All systems will be implemented in concert with the reengineering of business processes, as appropriate

## VI. IDENTIFICATION OF NEEDS

The Task Force identified employee systems needs through a variety of means as indicated above. Particularly important were the focus group sessions and visits to the exemplar sites: Hewlett-Packard, Intel, Pacific Bell and Levi-Strauss (see Appendix G for summaries of the visits to these sites.) During the focus group sessions employees expressed strong interest in easily accessible and updateable information about themselves, that is, Employee Self-Service. Focus group interest ranged from the ability to model one's retirement annuity online via a Web-based system to the ability to review and update insurance beneficiary online. The visits to the exemplar sites revealed a rapid trend in the private sector towards implementation of this type of functionality.

Employee Self-Service enables significantly improved service through increasing the hours during which information is accessible to an employee, the timeliness of information being provided, and the type of information being provided (for example, projection and modeling capabilities). Information can be accessed anywhere there is a network connection or a telephone -- from office to home, and on the road. While employees benefit directly, routine University administrative workload can be saved by reducing phone calls, in person requests for information, requests for projections and the like. The Task Force strongly endorses a strategic shift in the provision of services towards Employee Self-Service. The Bencom service now available by telephone exemplifies the kinds of capabilities that can be provided, but even the Bencom services need to be made available over the Web.

Needs were also identified by central administrative units struggling to find means of addressing increased service demands with levels of staffing which are in most cases less than they were in the 80's. Such central units, like their counterparts in the private sector, want to exploit the benefits of Employee Self Service in reducing unnecessary central processing of data which employees can enter and review themselves. Additionally, they have identified other features and functions, which will streamline payroll, benefits, human resources or retirement processing.

Similarly, the central UCOP Benefits office has identified a series of systems enhancements, some based on Employee Self Service and others which facilitate internal operations, which are required to meet the challenges presented to the Task Force.

Subsequent to identification of needs, the Task Force categorized needs and established priorities. These are summarized in Appendix E. Each need was reviewed in the context of the charge to the ESTF. A number of worthy and important needs were identified as being outside the scope of the ESTF. Those categorized as outside the scope included:

- updates to the existing A21 Effort Reporting system to provide a Web interface and improved reporting, and
- systems capability to assist in compliance with contract and grant cost sharing documentation requirements.

While the ESTF agrees that these areas are deserving of attention and endorses projects to further their implementation, these areas are not recommended for action under the umbrella of the employee systems initiative.

A number of needs were categorized as best handled on a campus-by-campus basis. These were identified based on a number of criteria:

- where needs were closely related to campus operational procedures, which may vary without jeopardizing University policies. An example of such a need is online position requisition and employment application capabilities, or
- where campus objectives or priorities vary, again, within University policy constraints. An example of such a need is position control, where some campuses have identified this as a priority but where others haven't and, further, where the specific needs among those with an interest in position control vary.

The remaining needs were reviewed for priority. Each need was assigned a priority of high, medium or low. Factors considered in determining priority were:

- whether addressing the need contributes directly to the goals of Employee Self Service,
- whether addressing the need reduces workload,
- whether addressing the need improves accountability, and
- whether addressing the need improves data integrity or quality

Each low priority project was dropped from further consideration.

The resulting needs were next further categorized into those that are global, that is, not specific to one central administrative office or type of function (e.g., payroll, human resource, benefits, etc.) and those that are not.

Appendix E lists all needs, categorized by global, high and medium priority, low priority, campus, and projects outside the scope of the charge to the Task Force. In addition, Appendix F expands on the description of Benefits systems reengineering project, items 1044 A, B, C and D in Appendix E.

## VII. EMPLOYEE SYSTEMS COMPONENTS

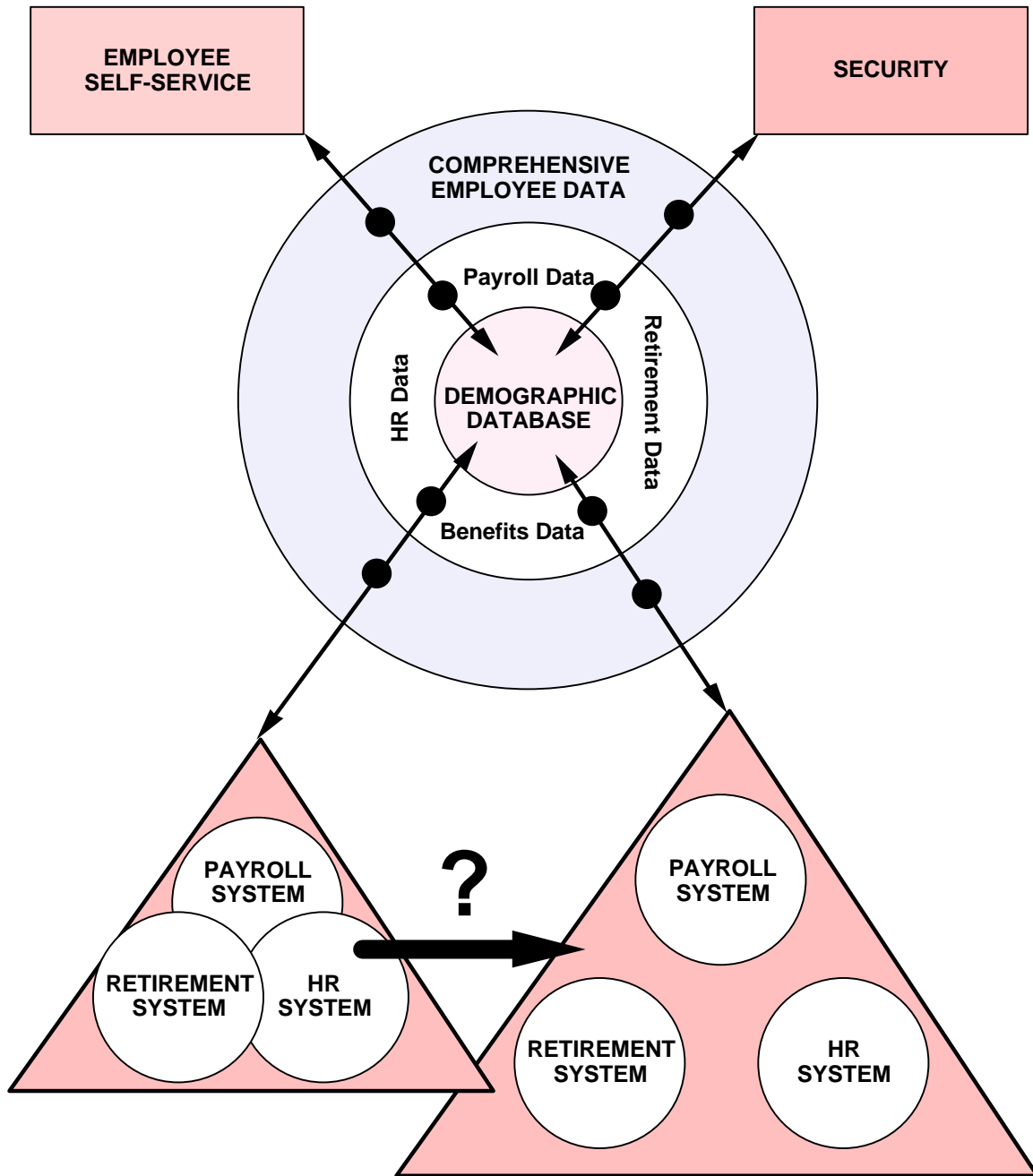
The nature of these system requirements and the need for close integration of various systems requires development of a framework to assure non-redundant data and integration of the various system components at the conclusion of all development and implementation activities. This technical framework can serve as the roadmap for implementation of individual projects, which will be undertaken.

The identification of the different types of data and applications provides the basis for development of the long-term data and systems framework. As depicted in Figure 1 below, there are six different types of data in three concentric circles and various applications (employee self-service, payroll, retirement, security, etc.) which interact with this data for inquiry, modeling and update functionality. This schema provides the context for the Task Force's recommendations.

The three data circles represent interdependent but logically distinguishable data. The innermost circle represents the demographic data that can be thought of as essentially directory information. The middle circle essentially represents the type of data contained in today's Payroll/Personnel and Retirement Systems, augmented where there is complementary data contained in ancillary systems. The outermost circle represents other HR data typically contained in paper-based personnel files but augmented by data that today is often disaggregated across different departments or even campuses.

The two alternate graphical representations of payroll, HR and retirement systems reflect the current model on the left, with significant overlap among these systems, data, and functions; and on the right a conceptualized model where there are significantly fewer interdependencies. The question mark indicates the Task Force's concern that such separation of function may be difficult to achieve, at least not without significant process re-engineering. One purpose of the proposed re-engineering study is to assess the degree to which

this may be accomplished as a prerequisite to determining strategies for future directions, including the possibility of new and separate HR systems, for example.



**Figure 1: Schema Indicating Interrelationships of System Functions and Data**

A noteworthy component of the system framework is an integrated employee records repository that provides for retrieval of records which may currently be stored in an academic department, human resources department, benefits department, payroll department and possibly other locations. While illustrated as a standard application, the records system would be installed optionally by each campus.

## VIII. PROJECT OVERVIEWS AND IMPLEMENTATION STRATEGIES

The following approaches are recommended for implementation of the four project areas identified for immediate initiation. It should be noted that a number of individual project areas could be implemented simultaneously. The exception is the Demographic Database that is central to the employee systems initiative and needs to be undertaken as a first step.

### **Demographic Database**

Represented as the inner circle in Figure 1, the Demographic Database will contain core information about individuals, principally – but not exclusively – directory information. This information would be logically unified, although this does not preclude physical decentralization for reasons of performance and reliability. This information would be used to drive most applications that depend on such data and eliminate the current scenario of multiple replicated, redundant, and often inconsistent databases – applications ranging from Employee Self-Service to access to the California Digital Library. For employee data, the Demographic Database would spring from the technology that now supports Bencom. It would also be used to support the need for Universitywide authentication of individuals to ensure secure access to information.

Although closely tied to the data contained in the middle circle of Figure 1, and indeed for employees may be driven by the overall requirements of employee systems, demographic data can be logically distinguished from the business processes that make use of it. The same is true of student data. Recognizing this logical separation powerfully leverages the uses to which such data can be put.

As a core application that must interface with various applications and that is central to the development of the University's authentication strategy, this system most likely will be developed in-house but consideration should be given to whether a purchased application could provide a more cost effective solution. This strategy recognizes that certain vendor packages appear to have databases which could serve as a foundation for University needs in this area; however,

these systems may not have the base technologies necessary to serve optimally as a foundation for improved network authentication and other requirements.

## **Employee Self-Service**

Employee Self-Service depends not only on the data contained in the Demographic Database, but also on data (the middle circle of Figure 1, for example) that is bound to specific business processes. Employee Self-Service must not only provide employee secure access to information about themselves, but also enable them to modify data about themselves which they “own”, such as their home address and other information contained in the Demographic Database. The integration of the various functions and data demands careful attention to security – authentication, authorization, and approval.

Examples of Employee Self-Service capabilities include:

- Entry and update of employee “owned” demographic data;
- Health, welfare and other benefit enrolment for new hires;
- Modification of such data during open enrollment or, as appropriate, at other times;
- Employee access at any time to data about themselves, including payroll and benefit data.
- Access to vacation and sick leave balances;
- Modeling of retirement data;
- Modification of W4’s;
- Time reporting.

While some factors suggest in-house development (the needs in this area reflect University-specific policies and practices and require interfacing to a number of different systems), there are a number of companies which market Employee Self-Service products which can be customized to individual institutional needs. Though this customization requires considerable effort, a review of commercial Employee Self-Service products should be undertaken to determine the suitability for University needs. Additionally, the University currently employs an Interactive Voice Response (IVR) system for providing access and update to various individual health and welfare information, a system that could be the basis for Employee Self-Service systems as well. Only if products cannot be customized to meet the University needs in a more timely fashion and at lower cost than custom development, should the University not choose to purchase an existing ESS product.

Since ESS will be developed in a client-server environment, the opportunity exists for local customization of clients, provided this does not jeopardize data integrity. This suggests a collaborative development model across campuses, and the sharing of locally-developed applications facilitated through a Universitywide framework.

## **Payroll**

The existing payroll system is highly customized to meet the University's complex systems of pay and benefits. Payroll and HR are highly intertwined in the Payroll/Personnel System, and there are strong linkages with the Retirement/Benefits System. The Task Force does not recommend proceeding with replacement of either Payroll or HR before conducting a much more detailed re-engineering study as recommended.

However, pending the outcome of this re-engineering study the Task Force does recommend proceeding with two relatively low-cost enhancements that would have realize immediate benefits and that are outside the scope of normal maintenance:

1. The addition of a graphical user interface to the Payroll/Personnel System, a capability that the University decided to defer when the Payroll/Personnel System was enhanced three to five years ago in the face of higher priorities and, at that time, immature technologies. However, the demand for easier departmental access to the Payroll/Personnel System suggests that this work should now proceed, at least to the extent that it does not require significant process re-engineering.
2. Provision of a capability to batch PAN transactions in notifying individuals of transactions where their explicit or implicit approval is required. Such administrators today are often swamped by having to address and respond to large numbers of asynchronous and disjoint transactions.

Several campuses have offered staff to develop the graphical user interface and these resources will be deployed in a collaborative fashion to develop this capability.

## **Retirement/Benefits**

The Retirement/Benefits System needs to be replaced and enhanced to improve flexibility and reduce risk; to integrate the central system with the bushel of ancillary ad hoc systems; to provide improved controls; and to improve

workflow and document management. The existing core system is built on 1970's technology, and is increasingly difficult to maintain and enhance.

Details of proposed changes are arrayed in the Benefits System Re-Engineering Report attached as Appendix F.

Since the University operates its own retirement system and the concomitant record-keeping operations, the desired system replacement and enhancements must be obtained through internal development. This conclusion is based in part on the market -- most colleges and universities do not operate their own retirement systems so the number of commercial products is limited or non-existent. None exists that can cope with the complexity of UC's retirement system.

### **Re-Engineering Study and Future Directions**

Future directions would depend on the outcome of the proposed re-engineering study. This study should be a thorough examination of current University systems and business processes to determine where simplifications can occur; where opportunities exist to improve service and reduce costs, how best to apportion responsibilities between campuses and the Office of the President, and the extent to which systems replacement strategies could best support the streamlining of business processes. This study should also focus on the differences among campus business processes and determine the extent to which they are idiosyncratic or to which they are key to campus missions.

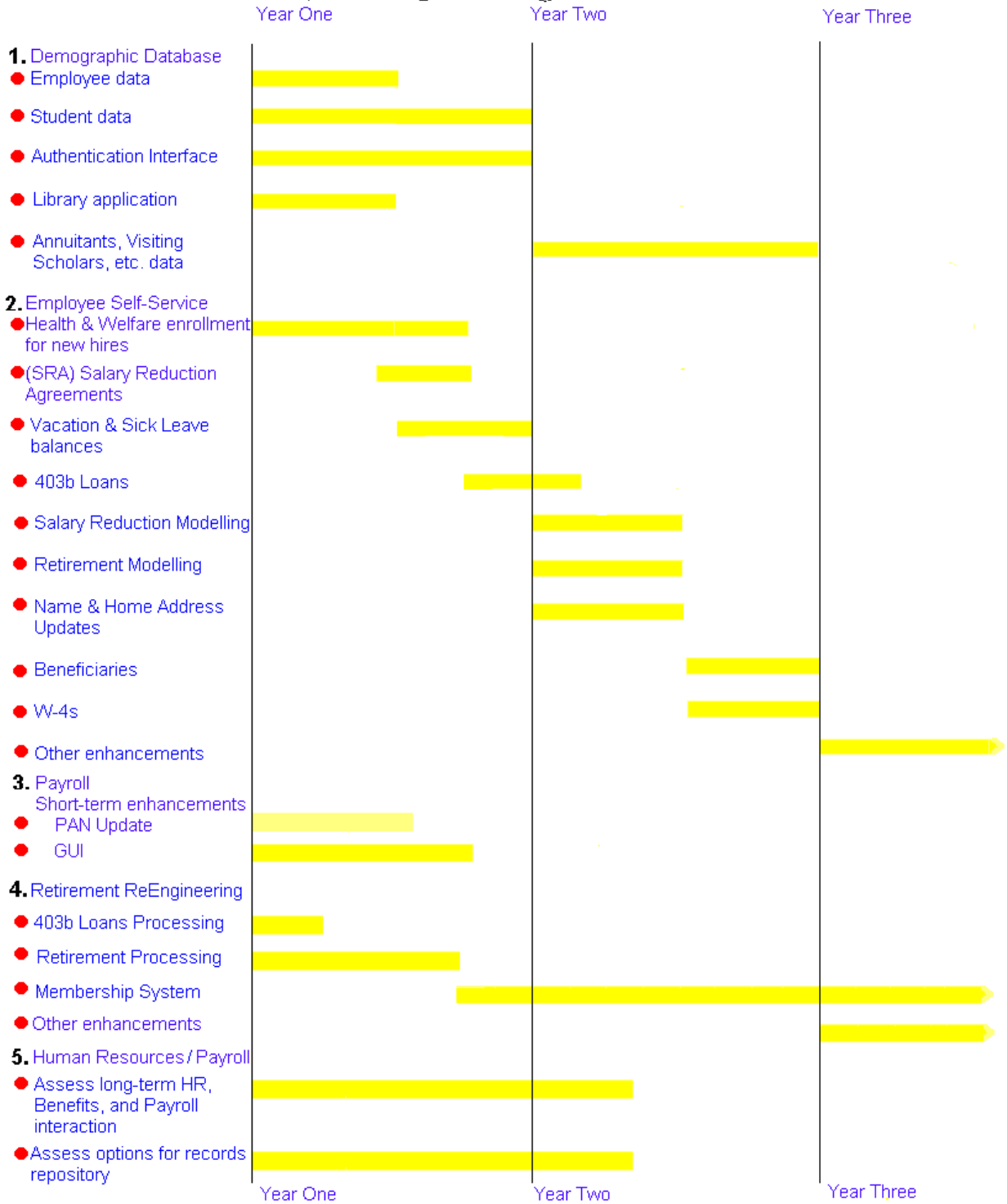
Such a study must have cross-University input and guidance, but not be overwhelmed by the complexity of University representation. This mitigates in favor of an external consulting team, not prejudiced by the University culture, but guided by a policy team of executive University management.

One of the possible outcomes of this study would be a determination of the value of incorporating the "third ring" of Figure 1 into the electronic data environment. Today, such data is mostly captured and stored in paper files. There are potential benefits to storing such data electronically, either by capturing the documents in electronic form as they are created, or by scanning the print documents. Over time, the former would preponderantly prevail. This, however, could be an expensive undertaking whose benefits would need to be carefully ascertained in advance of proceeding.

## **IX. PROJECT SCHEDULES**

The proposed project schedules are schematically illustrated in Figure 2.

## *Project Sequencing and Schedules*



Note: all starting dates begin after funding approval

**Figure 2**

## X. REGULATORY OBSTACLES TO MEETING NEEDS

The Task Force identified a number of instances where opportunities for improving employee service or reducing workload could not be realized because of external constraints. The four major restrictions identified are as follows:

- State of California (Franchise Tax Board) regulations require employee signatures on paper to authorize tax withholdings. While Federal IRS regulations have recently been changed to permit electronic authorization of withholdings, the failure of the State to adopt similar regulations restricts the University's ability to enable tax withholding changes via the proposed Employee Self Service system.
- Employee enrollments in salary reduction agreements currently require a signature. As a result, in order to use Employee Self Service facilities, employees must first sign an initial salary reduction agreement form, in addition to authorizing the University to accept their electronic elections.
- The State labor code currently requires that employees be given paper advices, indicating their gross pay, deductions and net pay. This, too, restricts the ability to distribute this information electronically to employees who elect to use this alternative.
- The State labor code also restricts employers from depositing net pay electronically, except in cases where an employee chooses. This also restricts the University's ability to streamline operations.

**PART C: APPENDICES:**

- A. CHARTERING MEMO
- B. PLANNING FRAMEWORK
- C. PHASE 1 PROJECT COST DETAIL
- D. ON-GOING COST DETAIL
- E. SUMMARY OF IDENTIFIED NEEDS
- F. BENEFITS/RETIREMENT IDENTIFIED NEEDS
- G. SITE VISIT REPORTS