

# Human Resources

*Technology Council*

---



*Update:*

*Governmentwide Human Resources*

*Information Systems*

*December 1999*

Executive Summary .....	3
Introduction .....	4
Section 1–Profiles of Current Agency HRIS .....	5
Agency Systems .....	6
Profile of OPM’s HRIS Functions.....	18
Section 2–Trends, Developments and Issues .....	22
Technical .....	23
General Management .....	28
HR Management and Productivity .....	33
Lessons Learned .....	39
Private Sector HRIS Implementation .....	41
Section 3–Tools for the HR Professional .....	42
Using the Internet to Keep Up With HR Technology .....	43
Section 4–Next Steps .....	47
The Federal Human Resources Data Network .....	48
Strategic Directions for the HRTC .....	52
Appendix A–Glossary .....	54
Appendix B–HRIS Update Project .....	58
Appendix C–End Notes .....	66

In November 1997 the Human Resources Technology Council (HRTC) published the *Governmentwide Human Resources Information Systems Study*. That report specified requirements for HRIS, detailed the characteristics of the seventeen HRIS that were then operating, and profiled seven major HRIS development projects. (As the HRIS requirements have not changed, they are not covered.)

This present report provides updated information on the agencies' operating HRIS.

Additionally, we have broadened the scope of our review to include a brief summary of OPM's HRIS functions.

In keeping with the need to look ahead, we have included a substantial section on HRIS developments, trends, and issues. The commentary in this section is a combination of survey responses, interviews, and published material. Our intention is to present diverse viewpoints on some complex topics of general interest. Below are a several summary observations.

- There are fewer agency HR systems now operating as some small systems are no longer used.
- The four largest (DOD, VA, USDA/NFC, Interior) cover 89% of employees; if HHS and DOT are added, 95% of employees covered.
- Technological advances are having a positive impact on HRIS; which in turn are having a positive effect on HR service delivery.
- Self-service and intranets are proving valuable for HR. The private sector is leading the way, and showing very positive return on investment
- Executive Resource Planning (ERP) is still a ways off; the software is not yet able to meet government needs, and agencies may not be ready organizationally to change business processes. However, data warehousing offers some of the same benefits as ERP.
- Paperless HR record keeping poses technical and workload problems beyond the HR environment.
- There is increased awareness among HRIS staff of the value of cooperation and joint efforts, both within agencies and between agencies and/or vendors.
- Users' groups are proving very beneficial for agencies installing the same COTS products.

In November 1997 the Human Resources Technology Council (HRTC) published the *Governmentwide Human Resources Information Systems Study*. That report specified requirements for HRIS, detailed the characteristics of the seventeen HRIS that were then operating, and profiled seven major HRIS development projects.

The HRIS requirements have not changed and are in use in the Federal HR community. They have been incorporated in the Joint Financial Management Improvement Program's revised *Human Resources & Payroll Systems Requirements* (April 1999). Consequently, we are not referring to them in this report.

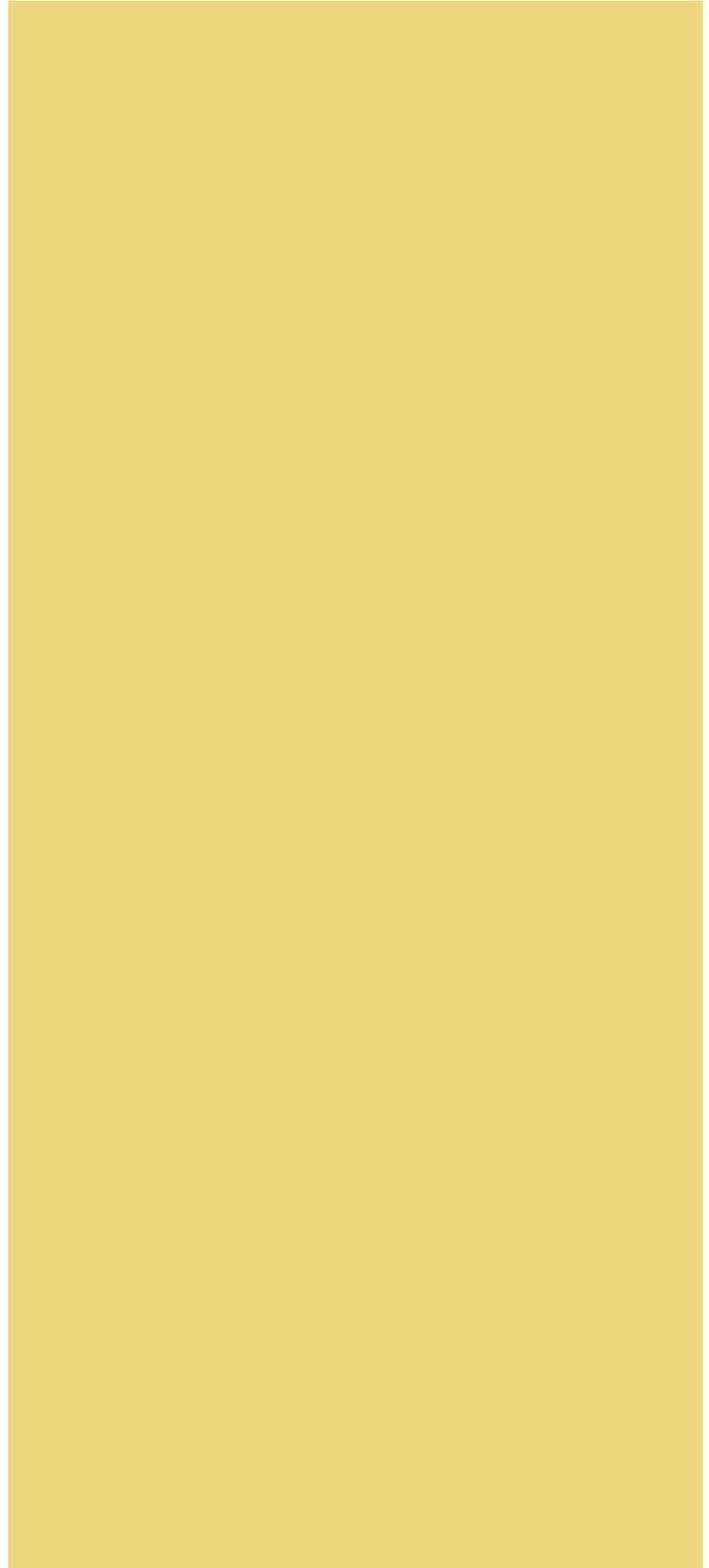
Our focus in 1997 was largely on determining the *status quo*. However, the increasing use of commercial software, and the need to develop a *governmentwide electronic human resources record keeping strategy*,<sup>1</sup> have prompted us to conduct a more expansive, forward-looking review.

**This approach is reflected in the following sections:**

- Section 1. Provides updated and expanded information on the agencies' current operating HRIS. We are also including an overview of the Office of Personnel Management's HR information responsibilities and the Central Personnel Data File..
- Section 2. Provides a wide range of observations on HRIS trends, developments, and issues in both Federal and private sector. For clarity we have grouped them in several categories – technical; general management; HR management and productivity; and lessons learned. In each section we highlight salient findings and include pertinent quotations from survey respondents. (To the extent possible we let people speak for themselves – that is, we present their comments with only the editing needed for clarity.)
- Section 3. Recognizes the need of HR specialists to keep up with the technology changing our work. It provides an introduction to tools on the internet that facilitate such learning.
- Section 4. Discusses the Federal HR Data Network and other strategic directions for the HRTC to leverage new technology for the benefit of the entire HR community and all of our customers.

- Agency Systems
- Office of Personnel Management

## Current Human Resources Agency Systems



# Current Human Resources Agency Systems

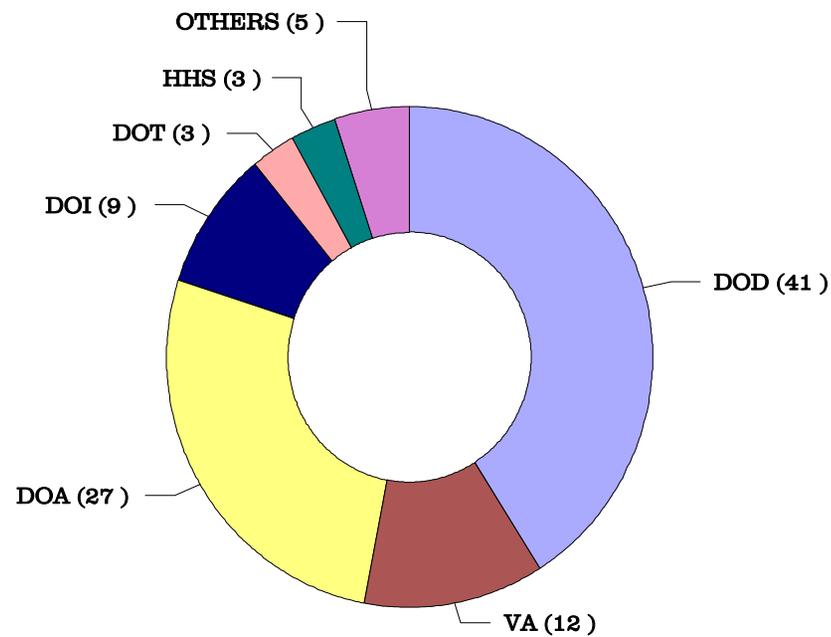
**Chart 1 – Systems Overview**

Agency	Number of Ageing Employees Serviced	Number of Employees Cross-Serviced	Source of Primary HR System	Notes on System Status
Department of Defense	800,000	11,700	Agency-Developed	Currently modernizing HR System using Oracle HR. Implementation at 3 operational test and evaluation in Oct.-Nov. 1999.
Department of Veterans Affairs	230,000	1,400	Agency-Developed	Legacy system dates to 1965. Implementation of full suite of PeopleSoft modules by FY 2002. HR/Benefits module to prototype fall 1999.
Department of Agriculture	100,000	450,000	Agency-Developed	New Windows-based front-end modules have been added for personnel office and managers' desktop transactions. A new T & A module scheduled for September.
Department of the Interior	90,000	84,500	Agency-Developed	Current system (Federal Personnel Payroll System) implemented Sept. 1997. Plan enhanced data warehousing capability.
Department of Transportation	62,000	300	Agency-Developed	DOT wishes to replace its legacy system and is reviewing service providers.
Department of Health and Human Services	60,000	0	Agency-Developed	Currently planning purchase and implementation of HR COTS product and improvement of Payroll System.

Agency	Number of Ageing Employees Serviced	Number of Employees Cross-Serviced	Source of Primary HR System	Notes on System Status
General Services Administration	14,250	8,300	COTS	Replacing DCPDS. Final testing of customized Oracle Federal HR functionality under way. Integration with payroll system nearing completion. Planned roll-out to GSA HR offices will begin in early 2000.
National Aeronautics and Space Administration	19,000	0	Agency-Developed	Team formed in 1998 to reengineer business processes and determine requirements for an integrated COTS-payroll system. Reengineering complete; requirements nearly complete.
Environmental Protection Agency	18,000	200	Agency-Developed	Implementing PeopleSoft HR. Full system testing underway. Phase 1 "live" in March 2000. Other modules to follow later in the year.
Department of Labor	16,000	0	COTS	Implemented PeopleSoft HR June 1999. Several further enhancement projects underway.
Department of Energy	13,000	0	COTS	PeopleSoft HR Implemented for processing personnel actions Sept. 1998.
Department of State	15,000	0	COTS	* Update not provided by agency; 1997 data used.
Nuclear Regulatory Commission	2,900	0	Agency-developed	Developed by FBI, used since Oct. 1998. Conversion underway to PeopleSoft; initial modules to be implemented Feb. 2000.

Agency	Number of Ageing Employees Served	Number of Employees Cross-Served	Source of Primary HR System	Notes on System Status
Agency for International Development	2,100	0	Agency-Developed	Current system implemented 1969. AID exploring cross-service options.
Railroad Retirement Board	1,300	0	COTS	Implemented 1986. Reviewing software that would provide PC-based employee self service.

### Large Systems % Coverage of Employees



## Systems Overview (Chart 1)

In reviewing Chart 1— the overview of current systems — with the same information reported in 1997, there is little change at first glance.

The 1997 Review sparked considerable discussion about the number of systems in use. On the one hand, many were surprised that only 17 systems were in operation, given the much higher number of separate agencies. The extent of cross-servicing had not been recognized. On the other hand, some observers felt that efficiency and cost savings could be achieved with fewer or even just one system.

The number of separate systems is down from 17 to 15. This new total reflects the loss of three small-agency systems and the addition of the Department of Labor. Two of the small agencies migrated to a cross-servicer and another lost Federal status.

In discussing the number of systems, HR/IT developers cite several reasons that preclude further substantial consolidation at this time: (a) the lack of proven technology to support the size (about 2 million) of the Federal civilian population; (b) the complexity of the networking to support extensive geographical dispersion; (c) the lack so far of a proven state-of-the-art HR software model; (d) the needs of agencies to meet their own special requirements and accommodate their service delivery structures; and, (e) the overriding need to first establish a better governmentwide network to eliminate paper-based processing, facilitate staff transfers, and improve management information reporting.

Five of the current systems are now COTS-based (up from one in 1997) and several others are nearing deployment of COTS-based systems. Numerous other agencies are using a variety of COTS modules in support of HR service delivery.

Neither the overall number of employees serviced, nor the percent cross-serviced, has changed significantly. The only sizable changes in cross-servicing were (1) the expected migration of the Social Security Administration from the Department of Health and Human Services to the Department of the Interior, and the Department of Labor's leaving cross-servicing with the implementation of its new system.

Similar to the status in 1997, the six largest agency systems service 95% of all employees. Each of these six covers 60,000 or more employees.

**Chart 2 – HR Software and Functionality**

Agency	HR System Software	SF-52	Empl Rel	Information	Training	Modeling
Department of Defense	Oracle Federal HR v.10.7	YES	YES	YES	YES	YES
Department of Veterans Affairs	Agency-Developed	NO	NO	YES	NO	NO
Department of Agriculture	Agency-Developed	YES	NO	YES	YES	NO
Department of the Interior	Agency-Developed	YES	NO	YES	YES	NO
Department of Transportation	Agency-Developed	YES	NO	PARTIAL	YES	NO
Department of Health and Human Services	Agency-Developed	YES	NO	YES	YES	NO
General Services Administration	Agency-Developed	YES	PARTIAL	YES	NO	PARTIAL
National Aeronautics and Space Administration	Agency-Developed	NO	NO	PARTIAL	YES (COTS)	YES (COTS)
Environmental Protection Agency	Agency-Developed	NO	NO	YES	NO	NO
Department of Labor	PeopleSoft v. 7.0*	YES	NO	YES	YES	NO

<b>Agency</b>	<b>HR System Software</b>	<b>SF-52</b>	<b>Empl Rel</b>	<b>Information</b>	<b>Training</b>	<b>Modeling</b>
Department of Energy	PeopleSoft v. 7.0	YES	YES	YES	YES	NO
Department of State	PeopleSoft v. 7.0	YES	YES	YES	YES	NO
Nuclear Regulatory Commission	PayPers, developed by FBI	YES	NO	PARTIAL	PARTIAL	NO
Agency for International Development	Agency-Developed	Yes	No	Yes	No	No
Railroad Retirement Board	Tessaract HRMS v. 98 Maintenance	NO	PARTIAL	YES	PARTIAL	PARTIAL

*\*Some functionality not yet implemented.*

## Software and Functionality (Chart 2)

- The first automated HR systems did the back room personnel processing and produced SF-50s to document employee history in paper based OPFs. With the introduction of the Central Personnel Data File (CPDF) in the early 1970's agency automated HR systems extended to providing automated updates to a central database maintained by OPM.
- Second generation functionality extended limited workflow applications which allowed for the generation and routing of SF52s from program offices and line managers to the HR office where it was interfaced to the core HR system.
- As illustrated in the chart, while providing almost complete functionality in workflow, most systems under development extend automation functionality to most of the core HR functions - classification, staffing, and employee relations. In these systems the personnel processing function and the feed to the CPDF is completely automated.
- The next level of functionality is beginning to emerge in modern COTS based system - the ability to analyze and model workforce information. We expect to see this HR system capability extended to support agency data warehousing efforts to support strategic agency missions.
- On a governmentwide level, modern relational database systems and robust networks will support the development of an electronic Official Employee Record (OER) and the planned Human Resources Data Network (HRDN).
- The use of COTS products for primary HR systems has continued. For example, both the Department of Defense (Oracle HR) and the Department of Veterans Affairs (PeopleSoft) realized key implementation achievements this fall.
- The use of HR COTS is even greater when their use as "front ends" to cross-servicer platforms and as functional modules is included. At least a dozen different functional HR COTS products are being used.

**Chart 3 – Payroll Features; Access to Databases**

Agency	Payroll-HR System Relationship	Payroll System Software	User Interface Method (HR & Payroll)	Database Access (HR & Payroll)		
				Update Employee Data	Update Own (self-service items)	Read Only
Department of Defense	Interfaced	Multiple T&A systems feed an agency-developed payroll system	GUI Client	HR Staff	Yes	Managers and certain others; also can initiate SF-52's
Department of Veterans Affairs	Interfaced	Agency-Developed	TE for HR, Payroll and T&A. GUI Client for Travel and Reimbursements	HR, Payroll Staff	Yes	Selected managers and administrative staff
Department of Agriculture	Interfaced	Agency-Developed	HR and Payroll use TE, GUI and Web. TE for Training, Travel, Reimbursements	HR, Payroll and selected managers and administrative staff	HR, Payroll and selected managers only	All managers and employees
Department of the Interior	Integrated	Agency-Developed	TE for HR, Payroll, and T&A; GUI Client for Training and Travel	HR, Payroll Staff	HR, Payroll Staff, managers: initiate only	HR, Payroll, Managers; all employees may initiate own T&A.

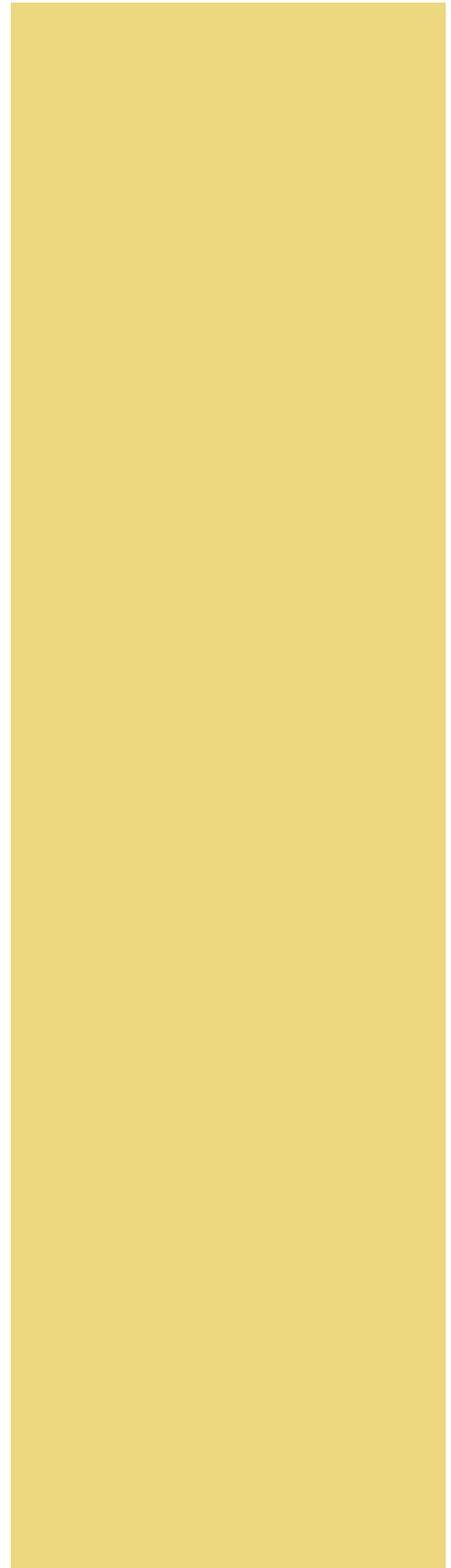
Agency	Payroll-HR System Relationship	Payroll System Software	User Interface Method (HR & Payroll)	Database Access (HR & Payroll)		
				Update Employee Data	Update Own (self-service items)	Read Only
Department of Transportation	Integrated	Agency-Developed	TE for most; GUI and Web for other management information	HR and Payroll Staff; selected admin. staff; managers and supervisors	Yes	n/a
Department of Health and Human Services	Interfaced	Agency-developed	TE, GUI and Web for HR; TE and GUI for T&A; TE for Training	HR/Payroll Staff	Yes	Managers and certain others; also can initiate SF-52's
General Services Administration	Interfaced	Agency-developed	GUI Client (for HR and Training)	HR and Payroll Staff	Yes	Yes (HR Only)
National Aeronautics and Space Administration	Integrated	Agency-developed	TE for HR and Payroll; GUI for Training	HR and Payroll Staff	Yes	n/a
Environmental Protection Agency	Integrated	Agency-Developed	Terminal emulation	HR and Payroll Staff	Yes	Selected administrative staff
Department of Labor	Interfaced	Agency-Developed	GUI	HR and Payroll Staff	Yes	n/a
Department of Energy	Interfaced	Agency-Developed	GUI Client for HR and Training	HR and Payroll Staff	No	All
Nuclear Regulatory Commission	Integrated	<i>PayPers</i>	Terminal Emulation	HR and Pay Staff	n/a	HR and Pay Staff

Agency	Payroll-HR System Relationship	Payroll System Software	User Interface Method (HR & Payroll)	Database Access (HR & Payroll)		
				Update Employee Data	Update Own (self-service items)	Read Only
Agency for International Development	Interfaced	Agency-Developed	Terminal Emulation	HR Staff	No	No
Railroad Retirement Board	Integrated	Tesseract (HR COTS includes Payroll)	Terminal Emulation	HR and Payroll Staff	HR and Payroll Staff; selected others	All supervisors and managers

## Payroll and Database Access (Chart 3)

- Most HR and payroll systems are interfaced rather than integrated. However, this is not seen as a problem as the technology in use permits efficient processing by both methods.
- Most payroll system software is agency-developed. This reflects parallel development with the legacy HR systems and also the fact that Federal customization of Payroll COTS is well behind HR.
- The method of user interface with HR and payroll systems varies considerably among agencies and usually by function within an agency. This stems from both the age and the separate development of many related modules.
- As we explore additional governmentwide HR processes to be automated we find that the distinction between *personnel* and *payroll* data becomes more obscured. For example, when an employee transfers to another agency, data that needs to go to the new agency include the leave balances that come from payroll. Providing that information quickly is an important reason for automating the transfer process, and to do it will require additional coordination between HR and payroll.

## Profile of OPM's HRIS Functions



Our November 1997 review only included requirements for and information on agency HRIS. However, the Office of Personnel Management also has critical operational and management information functions necessitating a separate “level” of HRIS. In order to aid understanding of the whole Federal civilian HRIS environment, especially in light of the Federal Human Resources Data Network initiative, we are including here a summary of OPM’s HR information responsibilities and the major system currently used to carry out those responsibilities.

The Office of Personnel Management has governmentwide responsibility for the collection and maintenance of accurate information on the Federal workforce. The Office defines data standards and give instructions to agencies on how to collect, code, and edit to assure accurate, accessible information. The primary tool to fulfill this responsibility is the CPDF.

The Central Personnel Data File (CPDF) is an automated information system containing individual records for most Federal civilian employees. The system’s primary objective is to provide a readily accessible data base for meeting the workforce information needs of the White House, the Congress, the Office of Personnel Management, other Federal agencies and the public. A second objective is to relieve participating agencies of providing separate input or reports to meet a variety of reporting requirements.

The CPDF is covered by the OPM Privacy Act system notice published in the Federal Register. Data in CPDF are carefully protected to safeguard the privacy of Federal civilian employees.

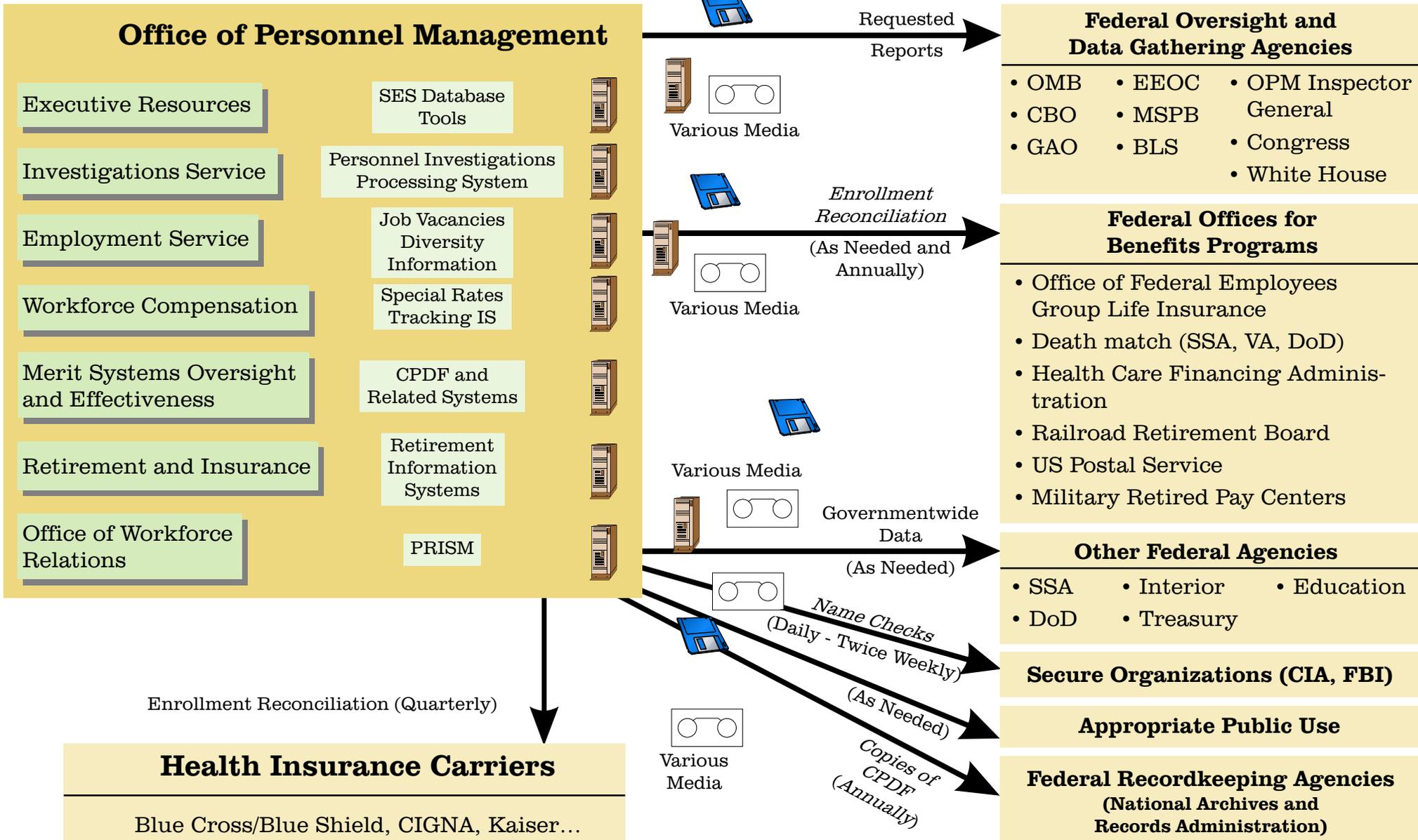
### **Agencies provide three types of data to the CPDF:**

- *Status.* A record of each employee’s personnel data as of the ending date of a fiscal quarter.
- *Dynamics.* The personnel actions that occurred for the employee during a reporting period.
- *Organizational Component Code Translation.* The codes, titles, and hierarchical relationships for organizations within an agency at the end of each March and September.

Data submissions from agencies participating in CPDF represent their official workforce statistics. Agencies may process the data through their own systems or arrange for their data to be processed by another Federal agency (i.e., cross-servicing). Regardless of the processing arrangement, each agency is responsible for collecting the data, editing it for validity, accuracy, and completeness, and furnishing the data to CPDF.

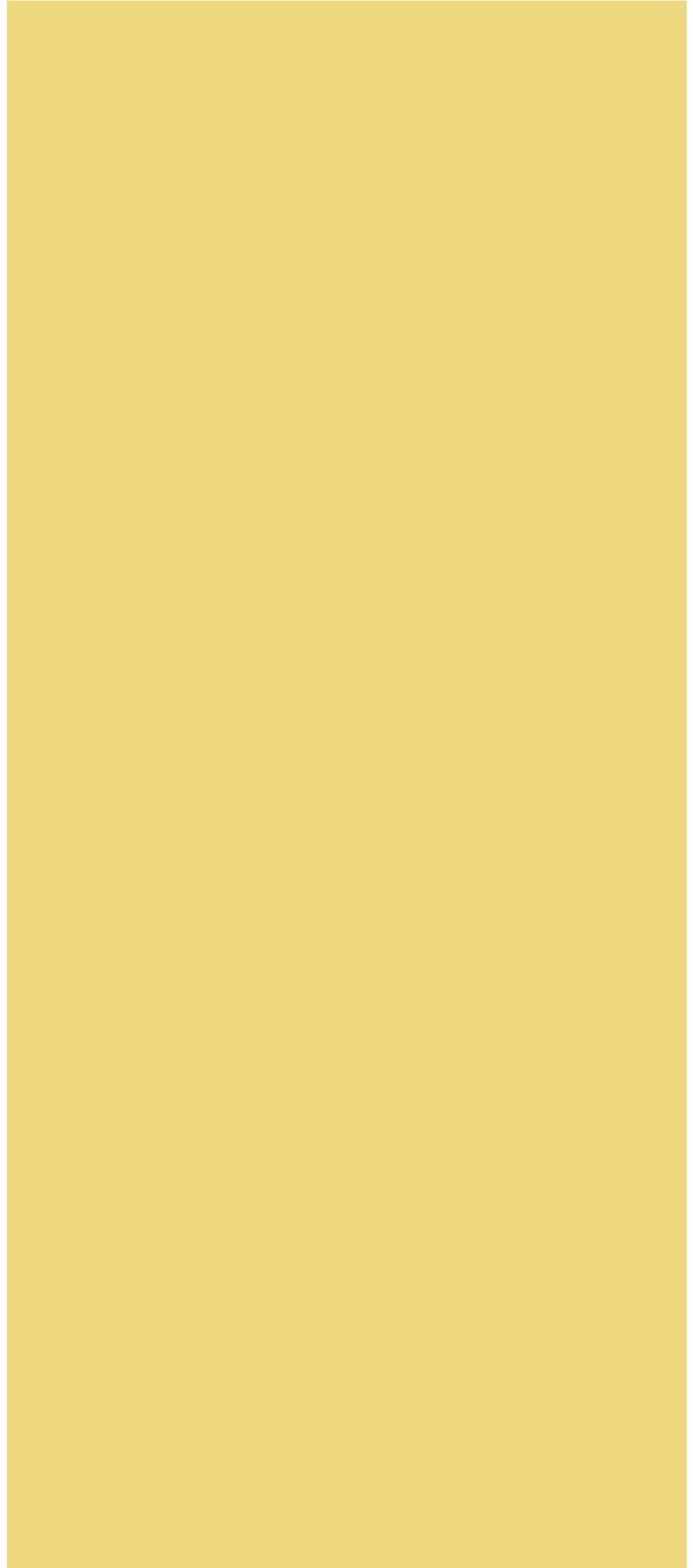
However, the CPDF does not meet all of the needs for information. OPM has numerous information customers, and over time new requirements have overstretched CPDF's capabilities. This has resulted in some small function-specific information collection systems, both manual and automated. The following chart depicts the numerous functions and customers that comprise OPM's information network.

# The HRTC Vision for the Federal Human Resources Data Network (HR-DN)



- *Technical*
- *General Management*
- *HR Management and Productivity*
- *Lessons Learned*
- *Private Sector HRIS Implementation*

## Trends and Developments: Technical



## Web-based Technology

The use of COTS was taking root two years ago when our first HRIS review was conducted. Commercial HR products are now widespread, both as core system solutions and as add-on applications. But Web-based technology in the HRIS environment is becoming so pervasive that its newness is may be overlooked.

*The most significant trend in the last two years is the use of Web-based technology to invoke HR applications, query/move information, and place HR functionality in the hands of managers, supervisors and employees. This thin-client approach allows user access without requiring quantities of application software to be installed on the client's personal computer and is particularly effective when implemented with a COTS HR/Payroll product.<sup>2</sup>*

## Enterprise Resource Plan

However, the technical approach that has garnered the most attention recently has been the enterprise resource plan (ERP). The logic of ERP is solid, but implementation in the federal sector is still problematic, as reflected by the observations below.

*The essence of an Enterprise software project is that all data within an organization be understood and shared correctly (which makes the claims that some HR software systems are really Enterprise solutions somewhat spurious). Adequate project performance (on the part of the Enterprise contractor) means that project completion involves getting all of the gizmos in a Rube Goldberg contraption to work together.<sup>3</sup>*

*Agencies need to understand what enterprise resource planning is. Many agencies contract with consulting firms to implement HR systems that are basically plug-ins for existing legacy programs. The Federal sector presumes they are doing enterprise resource planning when in fact they still have systems that do not add value to the agency. If they are interested in ensuring they have a total system, they need to allow the consultant/contractor to conduct studies and recommend the appropriate systems to bring all financial and human resource systems into alignment.*

*A true ERP solution should include all core functional components of an organization on a single integrated database. While this should be the objective, it is not realistic to expect every agency to implement a total ERP solution.*

*...after making a splashy entrance into the Federal market, the big ERP software vendors are finding the going a little slow. Seventy percent of the nation's largest corporations use ERP, it's widely reported, but it's hard to find a federal agency that has a complete ERP system today.*

*For agencies that need to weave a set of balkanized, old-fashioned systems together into a unified whole so that managers can see the big picture and act quickly based on the information, ERP may make sense.*

*There's a downside... though. As packaged or commercial off-the shelf (COTS) software, ERP systems can be inflexible. Adopters have the choice of modifying their processes to match the software or modifying the software to fit the agency's processes.... Changing the software can be costly, both in dollars and time. But ERP implementation is long and expensive process without customizing the software.<sup>4</sup>*

Federal HRIS staff who have struggled with expensive and time-consuming COTS implementations are not yet eager to pursue a full ERP. Private sector HRIS staff have similar experiences and concerns:

*...potential customers have become increasingly aware of the risks involved in moving forward. The creation of new systems with unforgiving input requirements and inherent workflow modifications is a monument to the longevity of old software models. Reengineering, delivered as an enterprise application, has turned out to be a compromise between the best business practice and the limitations of the software development team.*

*We're starting to see what we're calling Zen Standards.*

*A Zen Standard assumes that no additional work is required by the company or division who wishes to participate in a larger data structure. The reconciliation of information (job postings, applicant tracking and candidate management) is all handled by the software. The results are delivered to the end user in an already familiar format with no modification required.<sup>5</sup>*

Federal respondents frequently commented that their agencies are not ready for ERP because there is no agency strategic approach or because the various functional units are not used to cooperating for IT purposes. They also cite that there are no commercial products available that are ready to meet government requirements, implicitly acknowledging the lack of on-board staff to undertake the effort.

One respondent suggests that ERP will not move forward in government until the commercial vendors can provide functional modules that both meet government requirements and are inter-operable with modules of other vendors. In line with that observation, the respondent below argues for “standards-centric solutions” and joint public/private sector efforts:

*Federal agencies should avoid the investment of time and effort in federalizing a single vendor's product line for financial and HR functionality. Instead, federal agencies should be investing time and effort into defining a standard specification for federal financial and HR systems that are open and interoperable....Federal agencies should accept an invitation to become members of the Open Applications Group (OAG). The purpose of federal membership with the OAG would be to participate in the development of specifications to standardize integration between federal enterprise business applications. Current OAG members include the major private sector HR software providers (e.g., Oracle, PeopleSoft, and SAP). These software providers*

*are developing standards for financial and HR systems with no input from the federal sector...The vision is that federal agencies would be able to integrate, plug-and-play, and mix-and-match COTS financial and HR packages without being dependent on specific vendors. To achieve this, federal agencies should rally around a standards-centric solution to enterprise systems rather than a vendor-centric solution.*

## **Data Warehousing**

Another technical development attracting more attention in the Federal HRIS arena is data warehousing. In the private sector it is already a growth industry:

*Data warehouses combine server and storage hardware, database software and analysis tools to function as central collection points for information on a company's customers, products and all the transactions in between. Demand for data warehouses is being driven by marketers, salespeople, financial analysts and customer service managers across all industries as they prize the results of analysis, or 'mining,' performed on the data in the warehouse. These results offer what has come to be known as business intelligence, revealing hidden clues on what products and services to sell, to whom, how, and when.*

*A recently published technology industry report has revealed a surge in demand for data warehouses. According to a new study by META Group, "1999 Data Warehouse Marketing Trends/Opportunities," businesses of all sizes are proceeding at full speed to fund and deploy data warehouse applications.*

*Moreover, META Group predicts that, by the end of the year, customer growth rates will lead to 30 percent of data warehouse sites exceeding one terabyte of data, the equivalent of nearly 700,000 fully-loaded floppy disks.*

The most important use of data warehousing may be as technology that can provide the benefits of an ERP without some of the problems. One respondent put it this way:

*The evolution of data warehouse technology that supports the collection and storage of data from separate core systems may be an alternative [to ERP]. This alternative allows managers and functional users to "mine" the database for management information that cuts across traditional lines. This environment should create the need for more cross-functional dialogue but does not guarantee a more cooperative spirit. [However]...continuing to maintain separate core systems does not create the functional interdependence that an integrated (joint ownership) system would create.*

Another respondent agreed with this view of data warehousing and cited it as a major technological opportunity.

## Open Architecture

Respondents were positive about the potential for open architecture systems. Here are a couple of typical comments:

*There is some concern within this agency that the rapid change in the IT environment is making it difficult to both recruit and retain well-qualified staff. It is also generating a significant training need for current staff. It is a constant struggle to stay up to date with technology while maintaining older technology systems. Open Architecture systems are providing a foundation upon which to build and implement these complex systems and make them portable and maintainable into the future.*

*Yes, we can take advantage of open architecture systems as long as the IT organizations can effectively plan for the infrastructure and support.*

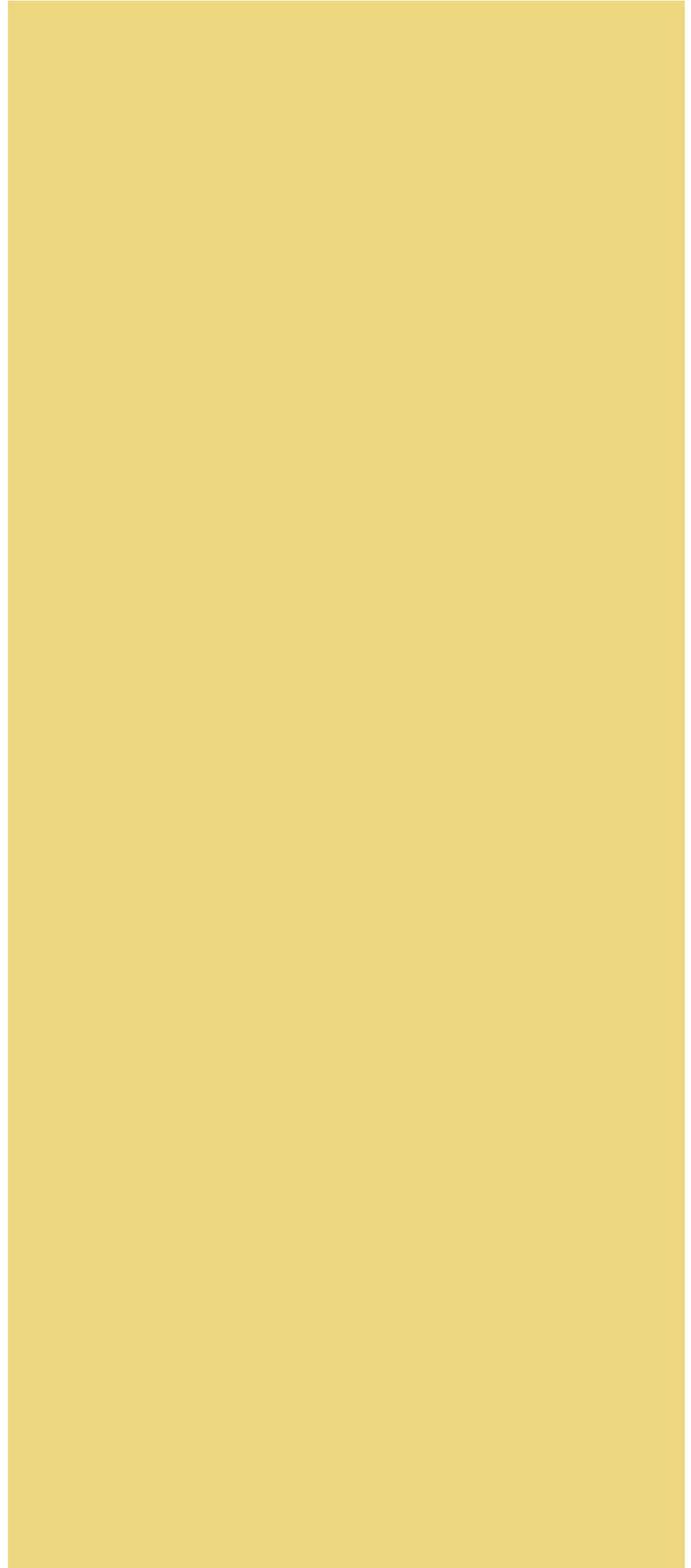
## Electronic Records

Our dreams of a *paperless personnel system* and an *electronic OPF* require more than assuming that electronic records are problem-free. Early discussions about the proposed Fed HR-DN surfaced a range of concerns, including the impact of transition from paper. In a similar vein, a recent General Accounting Office report noted:

*The National Archives and Records Administration "(NARA) and federal agencies are faced with the substantial challenge of preserving electronic records in an era of rapidly changing technology. In addition to handling the burgeoning volume of electronic records, NARA and the agencies must address several hardware and software issues to ensure that electronic records are properly created, permanently maintained, secured, and retrievable in the future.<sup>6</sup>*

The initial conversion of paper records, along with associated work for their long term maintenance, will involve considerable time and expense. The solutions for HR records will mostly need to be government-wide solutions, which are planned on an inter-agency basis with OPM and NARA.

## Trends and Developments: General Management



A continuing complication in HRIS development has been the combination of downsizing, staff skills, and outsourcing. The FAIR Act has added another complication to consider.

*...the push to outsource government IT functions is a trend not only in the United States, but worldwide.*

*...Keeping up with advances in technology can be expensive, and it requires employees with the latest technical skills. But the government workforce is aging and shrinking, making it harder to ensure that federal workers have up-to-date skills.<sup>7</sup>*

It is not just that downsizing has affected staff skills. The projects have such increased complexity that often a total in-house approach is simply not viable. Most of the HRIS efforts underway now involve considerable contractor support.

Agencies HRIS development projects have varied in the level and approach to business process reengineering (BPR). This is to be expected as each started with a different system to replace and at different points in time, many before the *Raines' Rules* were issued. Below are several suggestions and observations from respondents.

*Agencies need to review current practices and eliminate where necessary before purchasing COTS. Most software, with minor changes, can be implemented in the Federal sector. Currently local and state governments are purchasing the same COTS being purchased by the Federal sector, and implementing in a shorter time frame.*

*Reengineer, then automate.*

*Phase implementation; put new better modules out immediately so staff/customers see change.*

*We did reengineering of both HR and payroll in developing requirements for the COTS package we intend to acquire. We took an employee life-cycle approach. Our 5 main processes are: provide employees, compensate employees, enhance employee effectiveness, separate employees and enhance organizational effectiveness. We have defined sub-processes 2 levels below these top levels. We will do reengineering again after we have selected our core COTS in order to adapt to the capabilities and methodologies of the new system.*

As agencies develop HRIS that accomplish a wider range of tasks for a larger group of users, and as the interest in cross-functional integration becomes more attractive, the agencies' organizational structure takes on added importance. This is true of the HR office's

deployment for providing services and for the agency's overall organization of business functions and the relative "autonomy" of subordinate levels of the agency. A couple of survey questions touched on these issues.

*I see more cooperation and interface between finance, procurement and HR within my agency. I don't see more between agencies.*

*Utilizing a modular approach to build core systems is an opportunity for greater interface and cooperation between agencies. However, the more systems look alike, the less unique the users appear to be. This is contrary to the way agencies*

*tend to see themselves and even functional areas within an agency. With the implementation of these [integrated] systems, it will eventually foster cooperation and information exchange, but I believe it will come slower than we would like.*

*This agency is structured ... with sub-agency organizations with a great deal of autonomy. This has not fostered the most advantageous environment for HRIS. With this autonomy also comes the wish to make all decisions regarding the way in which the sub-agency does business. Although this may benefit the sub-agency, it does not always do the same for the parent agency. These individual efforts, without agency-level direction, can easily result in a number of varied solutions and the agency-level HRIS must cope with providing corporate level information services.*

*The lack of a cohesive strategy in this agency has had a detrimental effect on progress in the past. Now, with cuts in budgets and staff, there is increased acceptance of standardization and cooperation.*

*There are some positive and some negative aspects to allowing certain elements within the organization to determine their own HRIS direction.*

#### Advantages:

- *More of a commitment to the decision by those involved when it is determined locally,*
- *Local managers know their business requirements and therefore believe they are in the best position to determine system solutions,*
- *And, since local initiatives are on a smaller scale they can usually be implemented quicker.*

#### Disadvantages:

*Sub-agencies within the organization usually do not have the trained technical development staff to thoroughly evaluate the problem/requirement before determining a system solution/alternative.*

*Many times, the quickest way is not the best way. For example, a sub-agency may not be aware that their problem or requirement has some commonality throughout the organization and should be addressed in the larger context.*

*Besides addressing the entire problem, the system solution is usually more cost effective when it involves a larger customer base regardless of whether a third party vendor is used or it is handled internally.*

*In final analysis, there should be some opportunity to review all HRIS initiatives at the agency level before a sub-agency is allowed to financially commit their organization to a solution.*

**Cross-servicing has received considerable attention in the past few years. It is generally viewed positively, but it raises some issues, too.**

*Cross-servicing is especially good for smaller agencies. HRIS are technically complex and skills are scarce. There should be more competition from the private sector.*

*There is value in cross-servicing to both parties. The provider has a larger population base over which to spread costs. The receiver should have both cost advantages of being in a larger serviced population and access to more options than they could provide on their own. I don't currently see any better option.*

*There is value for both. We want a modern system if we're to be cross serviced but there is no provider yet with enough track record yet to be comfortable. There are still too many different HR and payroll systems in use. The government should standardize on two, no more than three.*

*There is some value in developing a cross-servicing capability, as long as it does not distract from or interfere with the true mission of the organization. Typically, a government service provider is in direct competition with private sector niche companies that have a COTS solution and a development staff to customize their product. It is becoming more and more difficult for government agencies to compete in that market place because fine-tuning and selling the product (profit motive) is the private sector's only mission.*

*We believe there is value in cross servicing for both provider and for some receivers of services. I believe that the early indications of the COTS packages suggest that a significant resource is necessary for implementation, which suggests to me that the "pool" of potential receivers should be expanding. Cross servicing is not the answer for all organizations; the more dynamic*

*agencies may need to have internal or at least unique installations with contractor/consultant support.*

*Some organizations currently in the cross servicing business have not emerged from the mind set prevalent decades ago, i.e., they are seeking to update interfacing solutions instead of developing integrated solutions on the commercial model. The government cannot afford the luxury of the duplicative efforts inherent in interfaced solutions.*

We inquired in the survey about different methods for assessing cross-service fees. Only minor variations on per capita charges were mentioned.

## **Human Capital – A Challenging Task for HRIS <sup>8</sup>**

The Federal government employs a diverse and knowledge-based workforce, comprised of individuals a broad spectrum of technical and program skills and institutional memory. They are the government's human capital, its greatest asset....

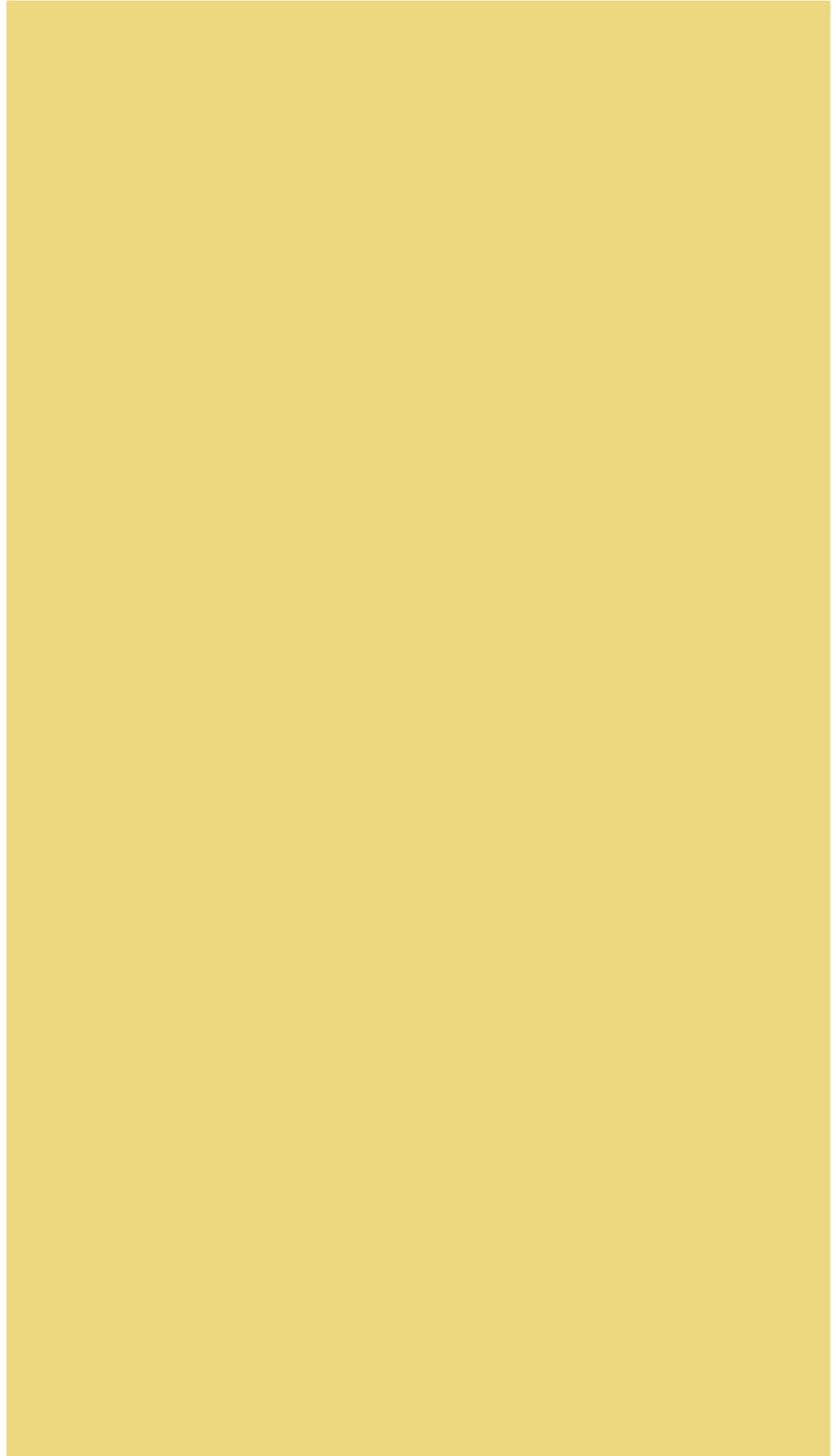
Two principles are central to the human capital idea. First, people are assets whose value can be enhanced through investment. As with any investment, the goal is to maximize value while managing risk....Second, an organization's human capital policies must be aligned to support the organization's "shared vision" – the mission, vision for the future, core values, goals and strategies by which the organization has defined its direction and expectations for itself and its people....

Self-assessment is the starting point for creating "human capital organizations"....Any self-assessment should be based – to the extent possible – on valid and reliable data regarding such matters as hiring, diversity, retention, promotions, succession cycles, and performance incentives....

Federal agencies typically do not have the data required to effectively assess how well their human resources approaches have supported results. A more fact-based approach to human capital will entail the development and use of data that demonstrates the effectiveness of human capital policies and practices.



## Trends and Developments: HR Management and Productivity



To begin, a recent report outlines the overall impact of technology on HR offices::

*... [I]nformation technology (IT) is having a profound effect on both the physical configuration of HR organizations and the manner in which they perform business....HR leaders see the following benefits and shortcomings growing out of increased technology —*

### Benefits

- *improved quality and consistency of information*
- *greater efficiency in HR organization*
- *faster service to clients*
- *reduced costs and overhead*

### Shortcomings

- *lengthy and disruptive implementation process*
- *no strategy for integrated approach*
- *no expertise among HR staff to manage technical developments*
- *training too slow*
- *more (not less) emphasis on administrative tasks*
- *inappropriate software selection* <sup>9</sup>

## Self-Service

Self-service is one of those rare win-win features. Customers (employees and managers) have more control over their own personnel actions while at the same time the transaction workload of the personnel office is lessened. In recent years, a frequent goal of both private and Federal sector HRIS development has been to shift more of that transactional workload.

The results of a 1998-99 survey of 328 private sector respondents indicates that self-service continues to be a frequent focus of enhancement projects.

*We see a strong trend towards manager self service and workflow to complement the already robust set of applications for employees. Today,*

*self service includes a range of administrative services (employee communications, benefit services, and personal data updates for employees), management productivity services (employee change actions, salary actions, and approvals) and recruitment oriented applications (job postings and online applications for employees, and job requisitions for managers),...*

*Summarizing from overall results from the survey, it is clear that organizations plan to move to web solutions and to extend services to employees and to managers.<sup>10</sup>*

One of the benefits spurring such rapid private-sector growth in self-service has been very positive return on investment.

Although Federal sector progress towards self-service has been slower, it is not being overlooked. All of the major, and many of the smaller, HRIS development projects include significant increases in self-service.

One Federal respondent questioned our self-service strategies to date: “Have we shifted costs from HR to managers? Managers are not sufficiently trained and there need to be better expert systems in HRIS.”

## **Intranets**

One of the technologies being used to support increased self-service is the intranet.

*Corporations' use of intranet-based tools to facilitate communications and service delivery continues to gain momentum.. Rather than simply a gradual evolution from previous technologies, this trend represents a discontinuous shift in the way companies conduct internal business.*

*Corporate intranet use increased dramatically across the late 1990's; in the past*

*five years at a 49% compound annual growth rate.*

*Intranets' tremendous return on investment (ROI) potential is supported by even the most conservative estimates. Four companies report documented ROI from 1,000 to 1,766 %*

*HR intranet applications include: self-service employee interface with the company's HRIS database; online open enrollment tool; and, salary decision support tool..*

*While the preponderance of HR intranet and web activity is focused on improving efficiency and service quality, potentially greater opportunity exists to build and leverage intellectual capital..<sup>11</sup>*

As with self-service, intranet use is further ahead in the private sector, but is becoming part of most Federal development efforts.

## Cost of HR

Benchmarking studies conducted by The Hackett Group in the private sector have consistently shown that the key to lowering HR costs while maintaining good service delivery is automation and restructuring how HR services are delivered. The consolidation of action processing and call centers are typical parts of restructuring. In the last couple of years the same benchmarking process, when applied in the Federal sector, has had similar results.

HRIS's are a significant cost component of HR service delivery, yet there is no common framework for assessing HRIS expenses in the overall context of HR service delivery. Some of the reasons for this have been different organizational arrangements for providing HR and payroll services; wide differences in the services performed by the HRIS; and, the varying cost effectiveness of the HRIS's themselves.

Another facet of HRIS cost is the rigidity and/or complexity of some HR "rules." The extent to which such rules require more COTS customization has not been adequately analyzed.

As HRIS's continue to expand, they will become a proportionally larger part of HR service delivery cost. Consequently, there will likely be even more need for management attention to their cost. Without more cost information, it is not possible to make informed plans and decisions. However, the emphasis should be on defining a *total cost of HR service* rather than just distinguishing between HRIS and other costs

## Users' Groups

One of the more frequently issues mentioned by HRIS staff implementing a COTS solution is customization. The predicament is either to accept delays and increased costs for customization, or to accept less functionality and/or changed business processes. One way to help mitigate this problem is through users' groups. Below are a few comments from our respondents.

*They are very valuable. We are involved with several, to which we send multiple people.*

*It seems that those groups, which are sponsored by the vendor but directed by the customers usually, have the most value. One of these groups was directly responsible for the COTS becoming a major market player due to the features proposed by the user group.*

*Discussion with our peers who are members and who have experience indicates there is considerable value in belonging to these groups. They indicate that group meetings provide an opportunity to discuss common problems and solutions, short-cuts and work-arounds for interim "fixes," and ideas for future enhancements.*



### HR Software choices . . .

A private sector firm, at its Web site, informs us that it "specializes in providing timely, accurate, objective information on all types of HR software. [It is] currently monitoring 2,500 HR software products from 1500 vendors — plus consultants and developers."

### The HR and IT Partnership

In our HRIS study two years ago we noted the increased level of cooperation between HR, IT, and Finance in the planning and implementation of new HRIS. This year, several respondents acknowledged that ITMRA and the "Rainey's Rules" have caused HR "to take a broader view of implementation strategies" and give "more deliberate thought and attention to the process."

But another respondent asserted that a "more rigorous process is still needed." A similar view is expressed by the General Accounting Office:

*Broad IT management reforms are still in their early stages in most federal agencies. As our reviews demonstrate, agencies continue to be challenged by (1) weaknesses in IT investment selection and control processes; (2) slow progress in designing and implementing IT architectures, (3) inadequate software development, cost estimation, and acquisition practices; and (4) the demand for effective CIO leadership and organizations." Improvements in these areas will be difficult to achieve without effective agency leadership support, highly qualified and experienced CIOs, and effective OMB leadership and oversight. With the Deputy Director for Management serving as its co-chair, OMB must continue to work effectively with the federal CIO Council to focus management attention on putting in place disciplined information technology management processes that can lead to improvements in the delivery of high quality, cost-effective results.<sup>12</sup>*

### Learning Technology

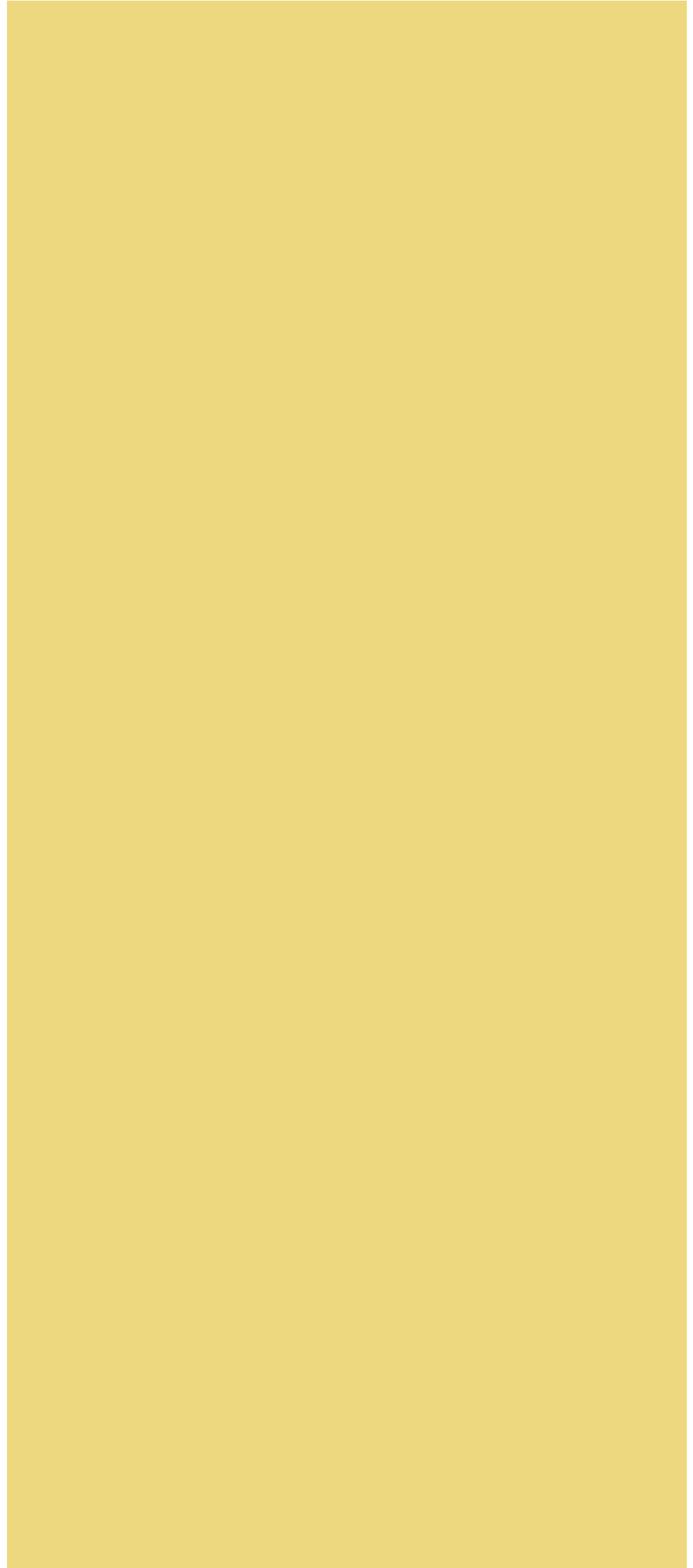
This past January President Clinton issued Executive Order 13111, "Enhancing Learning and Education Through Technology."

*The Federal Government continually invests in training its employees. Federal agencies have an obligation to provide the best training for their employees at the lowest possible cost. Federal agency training programs should be model users of new technologies to enhance learning. Many agencies are already improving training by using new technology effectively, but*

*more can be done. New instructional technologies can also make education, at work and at home, easier and more convenient for all American workers. Federal programs that provide financial support for lifelong learning should adapt to the new opportunities technology provides. A Federal Government-wide effort is needed to explore how Federal programs and initiatives can better support the use of technologies for lifelong learning.*

Many applications that result from this initiative will likely link to, or be integrated with, the agency HRIS . This initiative will also provide a substantial opportunity for HR and IT staff to cooperate in planning and implementing such applications.

## Trends and Developments: Lessons Learned



*If managers are to do more personnel work, the process must be fully routinized; classification especially needs simplifying.*

*Things to know about:*

- *Raines Rules*
- *OPM's Capital Asset Plan*
- *Define clearly where you want to be in this process and define the measurements that will be used to get there.*
- *What do you want to accomplish and how do you identify it when you get there*
- *How does the new system help accomplish the mission of the agency?*

*Plan, review, double check, believe nothing. It will cost more and take longer than even your worst estimates. But with broader use and emerging standards these systems will provide a good cost-effective service in the not too distant future.*

*It's too soon for us to offer up lessons, but we have always taken the position that we don't have enough staff to be the first Federal agency to implement a new system. We want to follow behind and benefit from the pain others have had to endure.*

*As an agency just beginning the modernization journey we are not in a position to provide "lessons learned" based on the entire experience. We were, however, part of a modernization effort about two years ago that did not succeed and was discontinued in favor of additional research and consideration of another vendor. We have analyzed the cause of this failed effort and determined that the predominate factors were:*

- *Failure to build a strong business case for change and secure buy-in from agency stakeholders.*
- *Lack of commitment from the vendor to produce a satisfactory federalized HR product.*

*Obviously, our current modernization effort will pay particular attention to these factors.*

*Pick good consultants, bring them in early, manage expectations, and follow a structured acquisition process*

*Things to have:*

- *Top level support.*
- *Infrastructure support/ compatibility*
- *Dedicated team*
- *Agency resource commitment*

## Private Sector HRIS Implementation<sup>13</sup>

In July 1999 the Corporate Leadership Council profiled the HRIS implementation characteristics of four companies completing HRIS projects in 1999-2000. Except for a couple of the items below, these could be government agencies.

Factors driving HRIS replacement:

- Y2K compliance
- Need for consistent data across business units and geographical locations
- Database consolidation
- Desktop reporting capability for managers
- Universal definition of data and processes

Project Scope:

- Phased rollout over time
- Global rollout as to organizational units and geography
- Includes both personnel and payroll

Key Implementation Issues:

- Vendor and consultant support – usage varies
- Product customization – avoid!
- Changing management and organizational culture – a serious obstacle for one company.

Functional and Technical Issues for the Next Five Years:

- Data privacy and restrictions
- Employee development and succession planning
- Global assignments and management of expatriates
- Web based and self-service technology
- Reduction of platforms



- *Using the Internet to Keep Up With HR Technology*

## Using the Internet to Keep Up With HR Technology



In today's world, employee value has escalated because the economy as well as government is heavily driven by service and information-based businesses and organizations, which means core operations depend upon worker knowledge and expertise. Further, Government and business both recognize that the workforce is shrinking. "In 15 years, there will be 15 percent fewer Americans in the 35 to 45-year-old range than there is now," states Ed Michael, a McKinley & Co. director. At the same time, the US economy is expected to grow at a rate of 3 to 4 percent a year. This scenario sets up a demand for talent with a reduced supply.

The demand for talent will continue to escalate well into the first quarter of the 21<sup>st</sup> Century. This continuing escalation will place increasing demands on HR to provide and retain the right person for the right job at the right time. To meet this demand, among other strategies, Government and business will continue to leverage technology whenever possible. Therefore, it is important that HR professionals stay current regarding technology developments. It is particularly important that HR professionals stay current regarding HR technology developments, as HR too will be impacted by the shrinking workforce.

The proliferation of specialized software for different areas of human resources makes it difficult if not impossible to keep up with new, modified and/or enhanced product development. The July 1999 issue of HR Magazine provides a "1999 Recruitment & Hiring Buyer's Guide" that displays a matrix of automated recruitment and hiring tools. This matrix lists 48 separate products just for recruitment and hiring. There are additional automated products to perform, support and enhance employee relations, training and development, compensation, etc. Therefore, staying on top of HR technology development is becoming more and more difficult. However, by using various tools available on the Internet HR professionals can quickly and easily keep their thumb on the pulse of HR technology development.

One way in which to get information is to have it delivered directly to you. There are various Internet services which will forward articles and information from various news sources directly to your e-mail address. Many of these services are free, some charge a small fee for specific information, others charge a flat monthly rate. Most of these services can tailor the information provided based upon your specific requirements.

For example, <http://www.newspage.com>, provides you the opportunity to create your own NewsPage free or charge. You select topics of interest from a predefined list. This service allows specific tailoring of topics as well as providing a range of delivery options.

Another approach is to use your Internet provider e-mail services. For example, America On-line (AOL) allows subscribers to set News profile preferences. In AOL, go to "My AOL", click, select "News Pro-

files” from the menu and follow the instructions. The Internet provider forwards current news articles regarding subjects you have selected to your e-mail on a daily basis. Most Internet providers offer this service as a part of service package.

Yet another approach is to find specific On-line HR information providers, which write about, describe and compare HR products and services. One such on-line service is Interbiznet, which chronicles, analyzes and reports on the evolution of Electronic recruiting. This site subscribes to Netmind, which forwards an e-mail when new information has been posted on this site.

NetMind is a very handy tool. It allows you to track any Web page at any level of detail and to be notified via e-mail, pager, cell phone, etc., when information changes. This tool allows you to highlight sections of a page to track, watch for the appearance of any keywords of interest, track links to a page, or track anything you want and be notified when there are changes. For example, you can track changes in HRMagazine’s website, down to changes in their monthly column “What’s New”, which features new products and services, as well as changes to “Wired”, “FastCompany”, “Fortune”, “Harvard Business Review”, “The Futurist”, etc.

Finally, the result of your work may be too much information. In fact, based on the Gallup Organization survey, all categories of workers studied felt “overwhelmed” by the flood of communication. You may find that your Internet sources bring you duplicate information, time delayed information or information which does not meet your parameters. Following are some ways in which to manage the deluge of information:

- Tailor your requirements; if the tool you selected does not provide tailoring options, discard it.
- Use e-mail tools to forward mail from your sources to a special folder which you open at set times of the day or week. For example, Groupwise provides a “rules” feature which allows the user to forward mail from specific sources to a pre-set location. Thus, mail that is received from Netmind can be placed directly into a HR Technology folder and opened at a later date and/or time.
- If you choose to receive information from a variety of sources, look for duplicate information and ease of use as you determine which tools to use and which to discard.
- Finally, the Internet should work for you, you don’t work for it! Evaluate whether or not you are getting a return on your invested time. Ask yourself, is the information you are receiving valuable enough to invest the time.

In conclusion, new automated HR products and services are emerging daily. HR professionals must be aware of these products and services, and also, be able to use these products and services to further the goals and objectives of their organization.

- *The Federal Human Resources Data Network*
- *Strategic Directions for the HRTC*

## The Federal Human Resources Data Network (Fed HR-DN)



The HRTC's 1997 Systems Study concluded by indicating four areas warranting further action. The first of these was: "*Develop a Governmentwide electronic human resources record keeping strategy.*"

Over the past year, the HRTC has largely completed this critical assignment. The automated method for Governmentwide HR information exchange will address the critical need to improve inefficiencies and omissions of the current paper-based operating model. The project's significant magnitude and scope will require a sustained long-term effort.

Throughout the life cycle of a Federal employee, paper records are moved among many places – within an agency, among agencies, and between agencies and archives. Even though different agencies have automated personnel and payroll processes, the heterogeneous nature of the human resources information systems (HRIS) limits the electronic transfer of information among agencies.

Technology and HR processes have evolved to a point where the paper-based method of HR information exchange can be greatly streamlined and automated. The reengineered and automated information exchange will provide the HR community stakeholders with timely access to accurate information without undue burden on agency HR organizations.

In February 1999, the HRTC established a vision and agreed upon a set of high-level goals for migration to an electronic record keeping system – the Federal Human Resources Data Network (HR-DN). The envisioned HR-DN is based on electronic sharing of HR information within the Federal human resources community.

In March 1999, the HRTC Planning Committee formed a Concept of Operations Development Group to identify alternative ways of realizing their vision. The interagency group assumed that the current content of the official employee record would be reengineered, so they explored alternative business operational models based on this assumption. Even though business operations were the focus of the alternatives identification, several technological aspects of the HR-DN were considered.

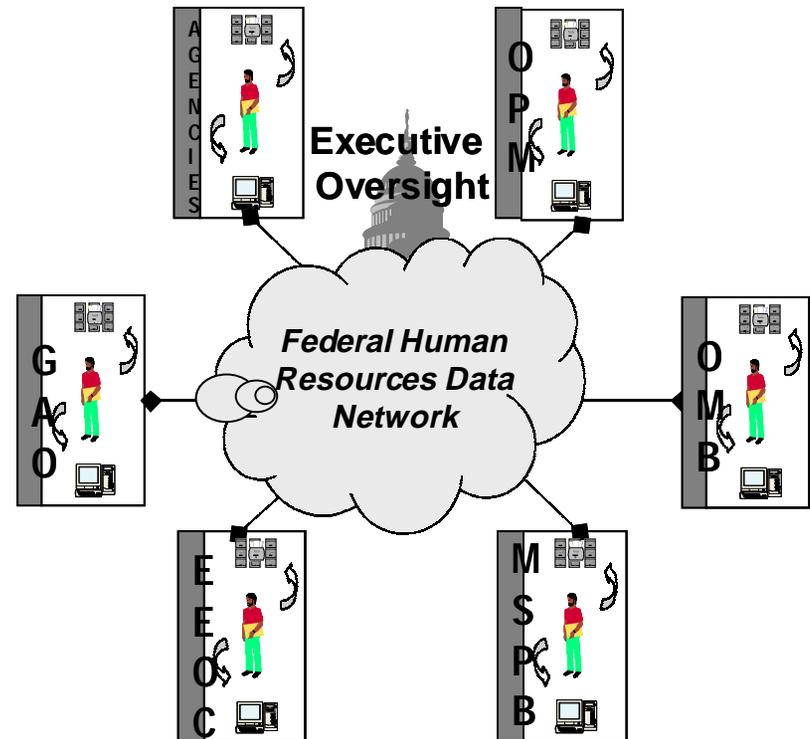
The group identified two management and business-rule critical success factors. The first key to the success of the HR-DN will be the reengineering of the core HR data set that would replace the Official Personnel Folder. The second key to the success of the HR-DN will be improving the planning and coordination among agencies, OPM, the HRTC, and other stakeholders.

**The Federal Human Resources Data Network would provide the following benefits:**

- Eliminate the need for a paper employee record
- Enable the electronic transfer of HR data
- Streamline and improve Governmentwide reporting
- Complement and incorporate agency Human Resources Information System (HRIS) capabilities
- Provide technology flexibility

## The HRTC Vision for The Federal Human Resources Data Network\* (HR-DN)

- Eliminate the need for a paper employee record\*\*
- Enable the electronic transfer of HR data
- Streamline and improve Governmentwide reporting
- Complement and incorporate agency Human Resources Information System (HRIS) capabilities
- Provide technology flexibility



\* The words *data network* are used to convey the concept of shared information and do not imply any specific technology or product associated with data warehousing, data mining, or Web-based information access. The implementation strategy has not yet been developed.

\*\* The words *employee record* refer to information that documents an individual's Federal career and is used to determine benefits and entitlements. Such information is generally found in the Official Personnel Folder, Employee Performance Folder, and Individual Retirement Record.

## Strategic Directions for the HRTC



The Federal HR-DN is clearly the paramount project for the HRTC at present. However, we do not intend that it be the sole project. During the data collection phase of this review, we asked for and received numerous constructive suggestions as to additional roles, responsibilities, and services appropriate for the HRTC. These were especially timely as the HRTC Planning Committee is preparing its strategic plan and establishing an internal structure to facilitate task planning and accountability.

**Some of the ideas raised for HRTC consideration included the following:**

- The HRTC needs to provide information about its role in HR systems and be more active in sharing best practices.
- One of the many issues that challenge HRIS professionals is staying current on new technology, products, and services. Also, they need to know what really works and what does not work in the public sector. The HRTC should facilitate dialogue among the agencies by hosting technical forums with industry or in-house experts to talk about what is happening in the HR business world.
- Find ways to influence HR COTS product development in ways beneficial to Federal customers. Partner with agencies and vendors to facilitate policy changes in HRIS.
- Encourage and support Federal users' groups; assist in disseminating news of their lessons-learned and successes.
- Encourage and support agencies' joint efforts.
- The HRTC needs to prepare an analytic framework to compare systems from a customer perspective to aid in cross-servicing decisions.
- In finance, the auditing of general ledgers has focused attention on the financial health of organizations. The HRTC should develop something similar for HRIS that indicates the "health" of the agency HR program. Also, agencies need help in capturing time/cost of HR functions (including managers' time) – and this data is integral to determining what needs to be changed or upgraded.

**Activity-Based Costing:** A set of accounting methods used to compute and compare costs, resources and other performance metrics to determine the best possible practice within a distinct unit of work.

**Agency:** The term used throughout this document to refer generically to any department, bureau, agency, or major independent organization in the executive branch of the Federal Government.

**Benefit-Cost Analysis:** A technique used to compare the various costs associated with an investment with the benefits that it proposes to return. Both tangible and intangible factors should be addressed and accounted for.

**Business Case:** A documentable and defensible action-oriented plan to achieve process or system improvements. It functions as a decision package for organization decision-makers, and includes an analysis of business process or system performance and associated needs or problems, proposed alternative solutions, assumptions, constraints, and risk-adjusted cost-benefit analysis.

**Business Process Reengineering:** A systematic, disciplined improvement methodology that critically examines, rethinks, and redesigns mission-delivery processes in order to achieve dramatic improvements in performance in areas important to the organization.

**Change Management:** Activities involved in (1) defining and installing new values, attitudes, norms and behaviors within an organization that supports new ways of doing work and overtime resistance to change; (2) building consensus among customers and stakeholders on specific changes designed to better meet their needs; and (3) planning, testing, and implementing all aspects of the transition from one organization structure or business process to another.

**Client-Server Architecture:** A network-based computer platform that distributes processing logic and execution, and data presentation and data management functions in software processes called clients and servers. The client is the user's workstation or personal computer part of the process, and the server is the central processor that supports the client.

**Continuous Process Improvement:** A continuous effort to incrementally improve how products and services are provided and internal operations are conducted.

**Core/Priority Mission Functions:** Those functions that are vital to the organization's success and survival.

**Corporate Information System:** A shared information system within a functional area such as human resources management. Agencies should strive to have only one information system as their corporate

system. The single system may include any number of subsystems, applications or modules of other systems that are interoperable and are linked together electronically in an efficient and effective manner.

**Customization:** To build, fit or alter an original product to individual specifications. This document uses the term customization to describe the process of modifying commercial-off-the-shelf (COTS) software to meet unique agency requirements.

**Data Warehouse Technology:** Gives individuals within your organization ready access to accurate, consistent information that can be queried and analyzed to assist in decision making; supports legacy system re-engineering; provides an enterprise-wide view of data; reduces the number of decision support data bases you maintain; and provides global access to data by multiple users.

**Decision Support and Expert Systems:** Decision support systems are computer-based information systems, which supply interactive and informative support for managers during the decision making process. Expert systems are computer programs that capture the knowledge of human experts. The program emulates the interaction a user might have with a human expert to solve a problem.

**Enterprise Resource Planning:** An integrated, on-line management system with modules for specific functions such as human resources, financial records, property management and budgeting. ERP systems were designed to reduce the complexity of using multiple data sources and systems and the problems associated with legacy systems that inhibit reengineering.

**Functional Area:** A description of the functions to be performed, data required and the performance expectations for an information system. The functional requirements are described in non-computer-oriented language and are used by software engineers for translation into program specifications for the software development effort.

**Human Resources Information System:** Any combination of computer hardware, software, telecommunications, and information technology which collect, record, process, store, communicate, retrieve and display information relating to human resources management programs of Federal agencies.

**Information Technology:** The hardware and software used to automate activities or processes to reduce paperwork, increase efficiency of operations and provide enhanced information services.

**Life-Cycle Management Activities:** A disciplines approach to the management of information systems from inception through discontinuance which includes installing software and hardware, establishing implementation procedures, training users, preparing documentation, converting data from existing systems, and continuing maintenance.

**Manager and Employee Empowerment and self-service:** A cultural change in human resources management practices that shifts the traditional responsibility for accomplishing human resources tasks or activities from the human resources professionals to the managers and employees.

**Modeling:** The application of a standard, rigorous, structured methodology to graphically define and document functional activities and subprocesses within a process and determine their interrelationships. Modeling is generally used to understand, analyze, improve, and/or replace a process, and define related information requirements.

**Open Architecture Systems:** A collection of specified information technology standards and profiles providing for computer interfaces, services and supporting formats that permit interoperability or portability of applications and data.

**Open-Systems Environment:** A collection of specified information technology standards and profiles providing for computer interfaces, services and supporting formats that permit interoperability or portability of applications and data.

**Performance Measurements:** The process of developing measurable indicators that can be systematically tracked to assess progress made in achieving predetermined goals.

**Process:** A high-level grouping of logically related actions (tasks, steps) that are taken to accomplish a major activity of a functional area. For example, “Describe the work of a position and apply standards, policies and guidelines to determine the type and level of work”.

**Replacement System:** An existing information system that has undergone functional enhancement or a newly developed system that have completed the transition to a corporate system. A replacement system may be a hybrid system composed of applications, modules and subsystems of other systems.

**Risk-Analysis:** A technique used to identify and assess factors that may jeopardize the success of a project or achievement of a goal. It defines preventive measures to reduce the probability of these factors from occurring and identifies countermeasures to successfully deal with these constraints when they develop.

**Standard Core Requirements or Core Functional Requirements:** The terms used in this document which identifies the basic products, services and information required of a human resources information system. The core functional requirements are integrated with agency unique requirements to establish the total requirements for a human resources system.

**System Integration:** An information system architecture that seamlessly integrates applications and data into a single system format that eliminates the need to reenter or reconcile data.

**System Interface:** An information system architecture that electronically connects disparate systems and databases and allows the passing of data without manual intervention.

**System Performance Standards:** Measurable indicators that establish a minimum acceptable level of performance for an information system. Factors that are considered include response time, accuracy, correctness, usability and speed of performance.

### **Project Team**

<i>Jan Becker</i>	<i>Social Security Administration</i>
<i>Ron Bowman</i>	<i>Department of the Interior</i>
<i>Tom Cowley</i>	<i>General Services Administration</i>
<i>Jacques Jolie</i>	<i>Department of Health and Human Services</i>
<i>Joanna Lange</i>	<i>Office of Personnel Management</i>
<i>Cliff Lee</i>	<i>Department of Agriculture</i>
<i>Keith Lowe</i>	<i>National Aeronautics and Space Administration</i>
<i>Frances Steburg</i>	<i>Social Security Administration</i>

The project began with the HRTC Planning Committee accepting a proposed outline.

Volunteer team members met on three occasions to plan the project and draft two survey instruments. The fact that several team members had participated in the 1997 study facilitated the design process. The resulting products were approved by the Planning Committee.

The first survey instrument was designed to collect information from agencies about their current operating HRIS'. Considerable follow-up by teams members was necessary owing to an initial poor response rate.

The second survey was designed to elicit opinions and observations about trends and developments in HRIS. It was distributed widely; anyone in the field could respond. The response rate was low.

The second survey instrument was also provided in advance to the six persons interviewed. However, the interviews tended to treat two or three topics in depth rather than covering all the items.

In addition, the team collected numerous articles on Federal and private-sector HRIS from the print and online media. Additional private-sector research was provided by the Corporate Leadership Council.

The two surveys follow.

# Survey # 1: Survey of Current Federal Human Resources Information Systems (HRIS), June 1999

---

## I. INTRODUCTION

The Human Resources Technology Council (HRTC) is conducting this survey to collect summary-level information on all Federal civilian HRIS currently in use. The requested information updates that collected and published by the HRTC in 1997.

Information from this survey will be used by the HRTC to review the ongoing development and modernization of human resource systems across the Government. The HRTC intends to publish its findings, containing this and other related material, in the near future.

## II. GENERAL INSTRUCTIONS

Please complete this survey for your Department or Agency. If you have more than one primary HR system, or one which has been implemented since 1997, submit a complete and separate survey for each system.

Explanatory notes to clarify your responses are encouraged.

Fax completed survey forms by June 15 to: Tom Cowley at 202-501-0685

If you reported on your agency's system in 1997, you may indicate "no change" below where appropriate.

For the purpose of this survey, a Human Resources (HR) system means the primary HR information system (*i.e., the system of record which at a minimum incorporates all CPDF edits, produces the Department's/Agency's SF 113 reports and produces SF-50's to document personnel actions*) that is used to process personnel transactions and is the main repository for the agency's HR information data base. Systems that enhance the operation of the primary system or provide additional HR related functionality, but that are not integral to the primary system, are referred to as system modules.

In associating a payroll system and HR system, the payroll system is either integrated or interfaced. An integrated system is one in which payroll is an integral part of the primary HR system (or conversely the HR system is an integral part of the payroll system). An interfaced system is one in which the HR system exchanges data with the Payroll module/system, normally in a fully automated manner.

### III. IDENTIFYING INFORMATION

Identify the organization(s) covered by the HRIS. If it does not cover the entire Department/Agency, indicate the Bureau or other subordinate organizational component that is covered.

The *number of employees* is the approximate number of employees serviced by the primary HR system covered by this survey for this Department/Agency/Bureau.

#### III-1. Department/Agency:

Bureau/Component: \_\_\_\_\_

Number of Employees: \_\_\_\_\_

Agencies and number of employees cross-serviced (or if previously reported provide changes since 1997):

\_\_\_\_\_

The *Point of Contact* is the individual who can provide additional information or answer questions on the responses to this survey

#### III-2. Point of Contact:

\_\_\_\_\_

Title:

\_\_\_\_\_

Phone Number:

\_\_\_\_\_

Fax Number:

\_\_\_\_\_

Email Address:

\_\_\_\_\_

### IV. HRIS CHARACTERISTICS

This section is designed to collect general information about your primary HR and Payroll systems.

#### IV-1. What is the source of your primary HR system ?

\_\_\_ Department/Agency developed system

System Name:

\_\_\_\_\_

Date Started: \_\_\_\_\_

Date Implemented: \_\_\_\_\_

\_\_\_ Commercial Off The Shelf (COTS):

Vendor: \_\_\_\_\_

System Name: \_\_\_\_\_

Version/Release: \_\_\_\_\_

Date Procured: \_\_\_\_\_

Date Implemented: \_\_\_\_\_

\_\_\_ Developed by another Federal Department/Agency

Developing Department/Agency: \_\_\_\_\_

System Name: \_\_\_\_\_

Date Procured: \_\_\_\_\_ Date Implemented: \_\_\_\_\_

\_\_\_ Other: [Describe in an attachment.]

## **V. Additional SYSTEM FUNCTIONALITY**

This section is designed to update information on the HR and Payroll automation support functions provided by your primary HR and Payroll systems.

The 1997 HRTC survey indicated that all basic HR functionality such as personnel processing, position information, employee information, basic reporting requirements, etc. are or have been included in primary HR and/or payroll systems planned or under development.

V-1. The table below focuses on front-end processes and expert systems which supplement or extend the basic functions. For example, Resumix and Restracc provide staffing functionality to automate the collection, processing, evaluation and hiring of applicants.

Please indicate whether the primary HR or Payroll system provides the particular function, a system module, not provided, or partially provided.

FUNCTION	YES	NO	PARTIAL	VENDOR (if applicable)
SF-52 initiation and processing				
Training request initiation and processing				
Employee relations				
Information reporting				
Modeling / strategic planning				

Please list here any other expert systems / modules being used:

---



---



---



---

**V-2. For each of the functions below, please indicate the primary interface method:**

Function	Interface Method			
	Terminal Emulation	GUI Client	Web Interface	Other
HR System				
Payroll System				
Time & Attendance				
Training				
Travel				
Miscellaneous Reimbursement				
Other _____				

**V-3. Indicate the type of access different groups have to system data:**

	<b>Update Employee Data</b>	<b>Update Own Data (select fields)</b>	<b>Read Only</b>
HR/Payroll staff			
Selected administrative staff, managers			
All supervisors, managers			
All employees			
Other: _____			

**VI. Vendor/Supplier Information**

The following questions are intended to update the HRTC on the experiences your Department or Agency is or had during any system modernization and development efforts.

VI-1. Has the use of private vendors, consultants and/or contractors increased, decreased or remained the same since the first HRTC survey in October, 1997 for each of the following:

Primary Non-COTS HR system \_\_\_\_\_

Primary COTS system \_\_\_\_\_

Non-COTS modules \_\_\_\_\_

COTS modules \_\_\_\_\_

VI-2. Please indicate the names of the contractors/vendors to administer/support hardware and/or software for your primary HR system of record and/or your payroll system:

VI-3. a) If your Department/agency has implemented or is implementing a COTS product for your primary HR and/or payroll system, has the level of contractor support been less, more or about was originally planned or budgeted? If more or less, please estimate the magnitude (e.g. 2 times more):

VI-3. b) Please describe the amount of customization required to make your COTS product useable as your *system of record*.

*Little customization required* - approximately 90% or more of product was readily usable without modifications or additions.

*Minor customization required* - approximately 80% or more of product was readily usable without modifications or additions.

*Considerable customization required* - approximately 70% or more of product was readily usable without modifications or additions.

*Substantial customization required* - approximately 60% or more of product was readily usable without modification or additions.

*Extensive customization required* - product needed major modifications or additions to make it usable by a Federal agency. Less than 50% of the product was readily usable without modifications or additions.

Please comment on the approach you took, challenges or obstacles your agency/Department encountered, re-engineering efforts or any other pertinent information that would be useful in understanding the process you went through

---

VI-4. a) If your Department/agency has implemented or is implementing COTS modules to your primary HR and/or payroll system, has the level of contractor support been less, more or about as originally planned or budgeted? If more or less, please estimate the magnitude (e.g. 2 times more):

VI-4 b) Please describe the amount of customization required to make your COTS product useable as a *working module*.

*Little customization required* - approximately 90% or more of product was readily usable without modifications or additions.

*Minor customization required* - approximately 80% or more of product was readily usable without modifications or additions.

*Considerable customization required* - approximately 70% or more of product was readily usable without modifications or additions.

*Substantial customization required* - approximately 60% or more of product was readily usable without modification or additions.

*Extensive customization required* - product needed major modifications or additions to make it usable by a Federal agency. Less than 50% of the product was readily usable without modifications or additions.

Please comment on the approach you took, challenges or obstacles your agency/Department encountered, re-engineering efforts or any other pertinent information that would be useful in understanding the process you went through

---

## **VII. MODERNIZATION AND/OR EXPANSION PLANS**

Please describe *briefly* any plans or implementation efforts underway to significantly upgrade your HRIS.

<sup>1</sup>“Governmentwide Human Resources Information Systems Study,” HRTC, 1997, p. 106

<sup>2\*</sup> Indented and italicized sections are comments and observations collected during the survey period. Sections from published material are followed by a superscript number; the citation will be found in the Endnotes.

<sup>3</sup> John Sumser, “Zen Standards,” Workforce Online e-letter, June 14, 1999.

<sup>4</sup> “ERP: Sizzling or Stumbling?,” Nancy Ferris, *Government Executive*,

July 1999, pps. 99-102

<sup>5</sup> John Sumser, “Zen Standards,” Workforce Online e-letter, June 14, 1999.

<sup>6</sup> “Preserving Electronic Records in an Era of Rapidly Changing Technology,” General Accounting Office (GAO/GGD-99-94), July 1999, pps. 1-2.

<sup>7</sup> Nancy Ferris, “Outsourcing: Handwriting’s on the Wall,” *Government Executive*, August 1999, pps. 66-69.

<sup>8</sup> “Human Capital: A Self-Assessment Checklist for Agency Leaders,” General Accounting Office discussion draft (GAO/GGD-99-179), September 1999.

<sup>9</sup> “Strengthening the Human Resources Department Through Strategic Alignment, Restructuring, and Benchmarking,” a focus paper by the National Academy of Public Administration’s Center for Human Resources Management, undated, pps. 9-10

<sup>10</sup> “1998-1999 Human Resources Self Service Survey,” The Hunter Group, Baltimore, 1999, pps. 3 and 17.

<sup>11</sup> “HR Intranets: A Report from the Front,” Corporate Leadership Council, June 1999

<sup>12</sup> “Government Management: Observations on OMB’s Management Leadership Efforts,” General Accounting Office (GAO/T-GGD/AIMD-99-65), Feb 4, 1999, page 8.

<sup>13</sup> Research conducted for the Department of Health and Human Services: “Fact Brief: Trends in HRIS,” Corporate Leadership Council, July 1999