Building a Needs Assessment

Needs Assessment

Needs assessment is one of the most important phases of the systems development life cycle. It includes identification, definition, analysis and prioritization of the business requirements that should be included in the systems solution. The needs assessment defines what functions the system should perform, but not how it should perform them.

Introduction

Organizations of all types and sizes are investing in HR information systems. While many are initiating their first implementation, most are upgrading from older systems that have been in operation for years. Currently, most organizations are purchasing vendor packages rather than building systems, and the number of products on the market is overwhelming.

Before contacting vendors, though, it is critical to perform a thorough needs assessment. With this in hand, it is much easier to eliminate inappropriate vendors. It also assists in comparing the company's mandatory features with those offered by the vendors' packages, leading to a better selection decision.

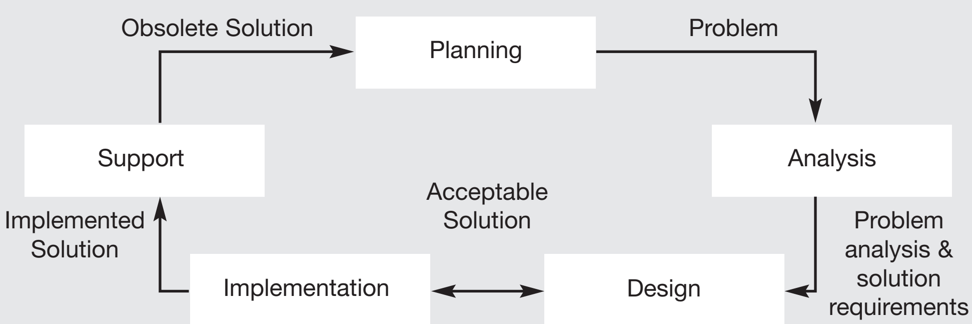
This guide seeks to furnish readers with fundamental information on HR systems needs assessment, as well as the methods used to complete one. While the current trend is towards purchasing a vendor package, the principles discussed herein apply to any systems development effort.

The **Systems Development Life Cycle** (SDLC) is the formal, logical process used to build or acquire information systems. The SDLC includes the following phases:

1. **Planning —** Identifying the scope and boundary of the problem and preparing the development strategy, goals and schedule,
2. **Analysis —** Studying and investigating problems, causes and effects, then identifying and evaluating the requirements that must be fulfilled by a successful solution,
3. **Design —** Conceiving and devising the solution,
4. **Implementation —** Constructing and executing the solution, and
5. **Support —** Maintaining and evaluating the operational system, refining the design and implementing improvements to the solution.

The SDLC is generally depicted as shown in Figure 1 below.

Figure 1. The Systems Development Life Cycle.



At project initiation, a statement of current problems and system objectives is commonly created. This is a fairly general description that does not encompass the complete requirements necessary to design or select a system. Once approved, this initial statement is expanded to include a detailed study of the requirements for a new system, that is, the needs assessment. This process, which is conducted during the SDLC's analysis phase, is also referred to as a requirements definition or needs analysis. Its purpose is to determine the problems and issues faced by the human resources function from a systems perspective, along with the scope of a proposed solution.

Why is this topic important?

Determining, documenting and prioritizing the requirements for a system is the most important aspect of its development. It provides a vision of the system desired by the organization, regardless of whether it is a complete ERP solution or just one application module. Without a comprehensive and accurate assessment of current and anticipated future needs, the resulting solution will fail to satisfy the organization's qualifications and will most likely be considered a failure.

This common complaint about new systems and applications — they do not satisfy users' needs — is often due to the inability of many analysts to separate the user needs from how the new system will work. They overlook essential requirements because they are concerned with the technical solution. Requirements are a statement of what the system must do regardless of how it is designed or implemented. They help define the scope, create a vision of what the system must do, therefore assisting in managing expectations.

Needs assessment is also important for several other reasons:

- During the process of collecting system requirements, users often receive an education in HR systems capabilities and become aware of what is available in the market. This knowledge, along with their involvement, helps previously unidentified needs and expectations for the new system emerge. It also assists in determining the priority of each requirement and its relationship to other items.
- The needs assessment may become the groundwork for the request for proposal (RFP). While the RFP is generally more detailed, its foundation is in the needs assessment. The vendor's response to the RFP may be tied to the contract, hopefully ensuring an honest reply, protecting against non-delivery of supposedly integrated features, and making certain that the items identified in the needs assessment are addressed.
- HR systems and applications are expensive. If inaccurate development cost estimates or a poor vendor choice is made, or if the new system is designed without emphasis on user requirements, huge amounts of money and time could be wasted.
- Preparing a professional document that defines system requirements and details user needs shows management that the team is organized, serious and capable of selecting and implementing the solution.
- Finally, the needs assessment provides the basis for the post-implementation audit, which compares the delivered system to the original requirements. The results of this audit should assist in recognizing any outstanding needs and help plan for the next phase of system development or enhancement.

What options are available?

The goal of the needs assessment is to define what the new system should do. There are a variety of methods that can be utilized to collect and compile requirements; most organizations use more than one technique.

Following are the commonly utilized methods:

- ■ **Business Process Redesign —** The practice of using analysis and design methods to simplify and improve business processes, independent of information technology.
- ■ **Current Systems Review —** Analysis of the systems presently in use in the organization, encompassing both the positive and negative aspects of these applications. This includes a review of policy manuals, systems operation documentation, forms, reports and pending enhancements to current systems.
- ■ **Fact-finding —** Information gathering and data collection methods used to determine system requirements in the areas of data, processes, reporting, utilization, etc. Fact-finding encompasses the following techniques:
- **Documentation Review** includes items such as organization charts, memos, studies, meeting minutes, project requests, policy manuals, system user and technical manuals, standard operating procedures, organizational goals and objectives, completed forms, flowcharts and any other related materials.

- **Sampling** is the process of collecting representative examples of completed documents and forms. The size of the sample depends on the acceptable level of error and certainty factor, which determines how well the sample represents all possible variations. Certainty factor tables can be found in statistics texts. Sample size (SS) is calculated as follows:

  $$\mathbf{SS = 0.25 \times (Certainty\ Factor/Acceptable\ Error)^2}$$

  Sample items may be chosen by randomization or stratification. Random selection follows no pre-set pattern or plan, while stratification attempts to reduce the variance by spreading out the sample using a formula for selection.
- **Interviewing** is the most often used technique, and in addition to finding facts and determining requirements, it can be used to clarify issues, solicit opinions and generate enthusiasm and involvement. The interviewer has the opportunity to probe for extra details, confirm information and observe body language, but interviewing is time-consuming and expensive, and its success depends, to a large extent, on the skills of the interviewer.

  Interviews may be structured, following a specific set of questions in a set order, or unstructured, simply based on a common goal and involving general conversation. Questions may be open-ended, allowing the interviewee to respond to the level of detail they feel is appropriate, or closed-ended, with limited answers such as "yes" or "no."

  Interviews may be done in person or over the telephone. They should be scheduled by appointment, private and not exceed an hour or so in time. The interviewer should not reveal any personal biases or opinions, and should listen as much and as carefully as possible, providing feedback to signify comprehension. Interviews should be followed-up with a summary memo for further clarification and to ensure complete understanding of the requirements.
- **Questionnaires** are instruments used to collect information and opinions for larger groups than those interviewed. Properly designed and distributed questionnaires are relatively inexpensive. They can be completed quickly, allow anonymity, and their results can be compiled and analyzed rapidly. However, the number and quality of responses is not guaranteed. By design, questionnaires are relatively inflexible and do not generally allow clarification or expansion of answers.

  Questionnaires are structured in two basic formats. *Free-format questionnaires* provide space for respondents to write in answers following each question, allowing more freedom to reply. *Fixed-format questionnaires* require choosing a specific response, such as in multiple-choice, rating scale and ranking items. In either case, the questions should be unambiguous, unbiased and not open to misinterpretation.
- **Observation** is a fact-finding technique where the analyst watches the activity being performed. In some cases, they may even participate in the task to learn more about the system or application. Observation is helpful when information collected via other methods is confusing or contradictory.

  There are advantages and disadvantages to observation. While the data is generally quite reliable and the process itself inexpensive, people often do not perform normally when being watched (Hawthorne Effect), or the work observed might not be representative of its usual volume or difficulty.
- **Additional Research** may be done in trade journals and magazines, reference books, professional associations and on the Internet.

■ **JAD —** *Joint Application Development* — This process is characterized by organized, structured workshops involving system users, owners and analysts, conducted to gather information on requirements. They are generally quite lengthy, lasting one or more days, depending on the subject matter. JAD sessions should decrease the amount of time required to obtain consensus and confirm requirements, since all interested parties participate in the group meetings. They also foster user involvement and ownership.

JAD sessions usually commence with introductions and a statement of support by the project sponsor. A facilitator is required to lead the group. This person should have excellent communication, organization and negotiation skills, understand the business and be impartial to any issues and decisions. The facilitator plans the session, establishes the ground rules, leads the discussion and follows through on the results. A scribe is also necessary to document and distribute discussion points.

- **Modeling —** Creating graphic representations of the business requirements for a system. These models characterize the data, processes, files and/or interfaces required to support business functions.
- **Prototyping —** Building iterative small-scale working or representative models of systems for user review and comment, in order to verify their requirements. When carried through to systems design and development, a prototype may evolve into the final implemented system.
- **RAD —** *Rapid Application Development* — Combining structured development techniques, prototyping and joint application development to accelerate systems development and reduce expenses. It generally consists of just four phases: requirements planning, user design, construction and cutover.
- **CASE Tools —** *Computer-Aided Systems Engineering* — Enabling methods, generally software programs, which automate and, therefore, accelerate systems development. These include, but are not limited to, graphics, data sharing, security, version control, code generators, quality control, decision support, reporting and documentation tools.
- **Communications —** Communications are essential throughout the needs assessment, as the methods depend on oral and written messages, comprehension and feedback. It is also important that the eventual users of the system review and approve the needs assessment prior to moving forward in the process.

Before preparing any communications, consider the audience, why communications are necessary and what needs to be accomplished. In written work, avoid or define technical terms and be clear and concise. For oral presentations, organization, preparation and practice are crucial to success.

What are the available resources?

A needs assessment may be completed totally by in-house staff or consultants may be hired to assist with the process. In either case, however, it is critical that:

- All potential users groups are represented on the team in order to describe their functional needs; and
- If consultants are utilized, they are independent (i.e., not associated with any software vendor).

Consultants may assist in organizing the process and moving it along, as well as preparing information gathering methods, analyzing findings, assigning priorities and compiling results. Their knowledge of available software may also help to clarify requirements and suggest appropriate solutions to business issues.

How much can I expect to pay?

If internal staff is doing the work, the cost to complete the needs assessment will depend on the organization's accounting methods for these types of projects. Some organizations have standard rates (salary, benefits and overhead) used to charge back for staff time, particularly in Information Technology. Others do not account for costs at all at this stage, except for any necessary travel and related expenses.

In cases where consultants are involved, costs for their services vary within a fairly narrow range depending on the type of engagement. Generally, fees are set either as an hourly/daily rate or on a per-project basis. Travel and other related expenses are often an additional cost.

HOW DO I CREATE A SOLID BUSINESS CASE?

Conducting a thorough needs assessment is the first step in creating a solid business case. It conveys the plan of action for improving HR systems within an organization. It is important that senior management — who can make or break the project — is assured that a comprehensive analysis has been completed. Use a problem-solving approach to study and understand the issues, opportunities, directions and needs of the system. Define the requirements of a suitable solution in sufficient detail so they are clearly understood.

Make sure all critical areas are emphasized and focus on the following:

- **Data —** Inputs and outputs, volumes and frequencies,
- **Processes and Procedures —** Activities, flows and timing,
- **Interfaces —** To and from other systems, internal and external to the organization,
- **Reports and Reporting Tools —** Types of tools necessary based on user profiles,
- **Security and Controls —** Requirements to protect the data from inadvertent or malicious alteration or destruction,
- **Hardware and Operating Systems —** The technical infrastructure currently available or obtainable for the system solution, and
- **Internet/Intranet/Extranet —** Use of these media to access the system, specific functions or modules.

Also consider:

- **Costs —** The expense of implementing the solution and maintaining the system, including direct and indirect costs, plus overhead,
- **Benefits —** The tangible and intangible payback to be gained by the solution,
- **Cost Avoidance —** The costs and expenses that would be incurred if the solution is not installed, for example, a penalty due to the inability to create timely government-required reports,
- **Risks —** Potential consequences of not implementing the solution,
- **Organizational Units Affected —** Where, when and how users will access the system,
- **Future Expectations —** Known and anticipated events and changes that could impact the system in some manner,
- **Government Regulations —** Those currently in existence, as well as those expected to be introduced during the life of the system and their related reporting requirements,
- **Internal Policies —** Organizational guidelines that might impact the system's development and use,
- **User Preferences and Skills —** Staff's level of expertise and expected reaction to and use of computer systems,
- **System Growth and Expansion —** Flexibility needed for enhancements, additions and changes to the system,
- **Training and Documentation —** The types and amounts required to introduce the system to new users and for ongoing maintenance,
- **Support Requirements —** The number and type of people currently in place, as well as those required for the new system, along with their roles in maintaining the system,
- **Visibility —** The degree to which a solution would be visible to users, customers, management, etc., and
- **Urgency —** The time frame for solution delivery and the time available to produce the solution.

System requirements may have different levels of urgency for the organization, so it helps to classify them to ensure that more important items are emphasized in vendor evaluation and/or systems development. Prioritization is usually addressed by assigning weights to each requirement. For example, requirements may be prioritized using this or a similar scale:

Priority	Requirement Description
1	Mandatory — must be included in the system upon implementation,
2	Important for current operations,
3	Will be essential within one year of implementation,
4	Nice to have, but not critical to current operations, and
5	Currently not needed, but may become necessary in the future.

In preparing the requirements for management review and approval, it may be helpful to prepare a checklist similar to the one shown in Figure 2.

Figure 2. User Requirements Checklist.

No.	Requirement	Approval	Priority	Comments
1.1	≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈	✓	1	≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈
1.2	≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈	✓	2	≈≈≈≈
1.3	≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈	✓	4	≈≈≈≈≈≈≈≈≈
1.4	≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈	✓	2	≈≈≈≈≈≈≈≈≈≈≈≈
1.5	≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈	✓	3	≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈≈

The final deliverable is a formal report documenting business requirements. In some cases, this report is completed in great detail, in others, it just emphasizes the "big picture." The decision is based on the complexity and schedule of the project, as well as internal documentation requirements.

The formal requirements definition report should be presented to management and the user community for their approval. A sample report outline follows:

I. **Executive Summary —** Synopsis of findings, problems, opportunities and recommendations.

II. **Project Overview —** Introduction, project history and justification, team composition and methodology used to conduct the needs assessment.

III. **Comparative Data** Information on what similar companies have done and a review of the current marketplace.

IV. **Current Systems Analysis —** Overview of the current systems (definitions, descriptions and models), along with their problems and opportunities in the areas of performance, information, costs, controls and service.

V. **User Requirements —** Functional, operational and legal necessities of the solution.

VI. **Technical Requirements —** Hardware, software and infrastructure needed for the solution.

VII. **Recommendations and Justification** Application improvement or replacement, suggested development methodology, priorities, constraints and benefits.

VIII. **Cost and Time Analysis —** Estimation of costs involved and the time it will take to implement a solution.

IX. **Next Steps —** Suggested high-level plan for the next phase of the project, including team recommendations.

X. **Supporting Documentation (Appendices) —** Listings of interviewees, documentation reviewed, sample instruments, etc.

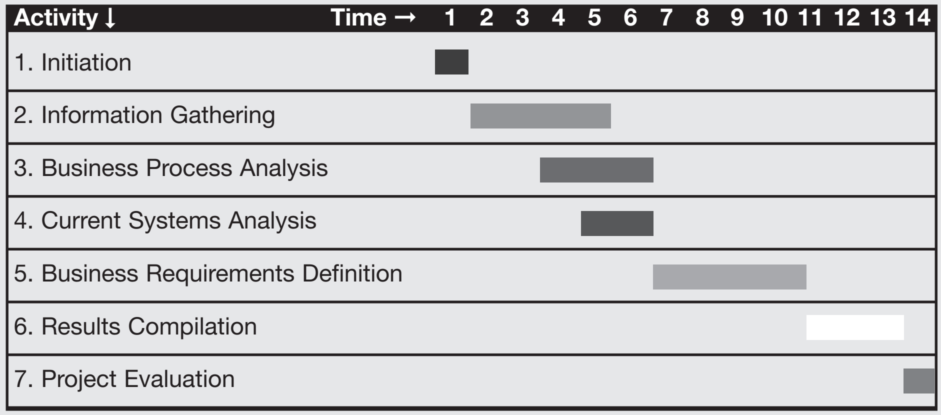
What have others done?

The main goal of the needs assessment is to determine what is essential to support business requirements. Assuming that a request has already been made to study the problem or issue, the following steps are suggested to complete the analysis:

1. **Initiation**
    1.1. Identify the needs assessment project team.
    1.2. Define and come to agreement on the project objectives and scope, that is, what will and will not be included in the project.
    1.3. Develop a plan including project objectives, approach, phases, tasks, time frame, budget, assignments, work rules, meeting schedules, etc.
    1.4. Obtain approval on the plan from the steering committee and executive sponsor.
    1.5. Announce the project by communicating its justification, scope, sponsorship, team members and anticipated timetable to the community at large.
2. **Information Gathering**
    2.1. Decide which individuals, groups and systems to include.
    2.2. Establish objectives for each analysis.
    2.3. Choose appropriate methods (interviews, questionnaires, surveys, observation, documentation review, JAD, etc.) for each participating group.
    2.4. Prepare media (interview forms, questionnaires, etc.).
    2.5. Schedule information-gathering sessions.
    2.6. Conduct information-gathering sessions.
    2.7. Gather sample reports, forms, documentation, etc.
    2.8. Prepare appropriate summaries for participants' approval.
    2.9. Clarify inconsistencies and ambiguous material.
3. **Business Process Analysis**
    3.1. Create process models that include all workflows and data flows.
    3.2. Analyze input, output, response time, inefficiencies, redundancies and possible delays.
    3.3. Analyze cost and value added, identifying candidates for elimination, consolidation or optimization.
    3.4. If appropriate, re-engineer processes to support business functions.
4. **Current Systems Analysis**
    4.1. Review data and functions of each system.
    4.2. Collect facts about perceived problems and opportunities in the current systems, including duplicate data and pending enhancements, using methods determined in Step 2.
    4.3. If appropriate, create system models.
    4.4. Analyze and document each problem and opportunity in terms of its causes and effects.
5. **Business Requirements Definition**
    5.1. Establish system objectives.
    5.2. Define each business event the system must support and problems it must solve.
    5.3. Determine requirements for each event (data, processes, interfaces, etc.).
    5.4. Prioritize business requirements using a scale (as discussed in previous section).
    5.5. Calculate costs and benefits.
    5.6. Identify any time, cost, technology or policy constraints that may hinder complete achievement of objectives.
6. **Results Compilation**
    6.1. Review questionnaire results, interview observations, JAD session notes, etc.
    6.2. Document and prioritize current and future needs.
    6.3. Prepare and present final report.
7. **Project Evaluation**
    7.1. Review the project plan against actual performance.
    7.2. Consider problems encountered and determine how they could be avoided in future efforts.

While just a sample, a high-level Gantt chart of the major activities is shown in Figure 3, a more detailed project plan with all tasks and actual dates is more appropriate for a working schedule. Using project management software, such as Microsoft® Project, will assist in assigning staff, aligning dependencies and resolving resource conflicts.

Figure 3. Gantt Chart.



When is this the appropriate solution?

Needs assessments should be conducted in all cases, as requirements are used not only to specify what the system must do, but also to define priorities and outline how the system will be implemented and used. It is the basis for the next phase in the project — vendor evaluation or systems design, depending on the approach taken.

Who should be involved?

Developing a needs assessment should be a group venture, best conducted by a project team. Involvement enhances buy-in and commitment to the project. When selecting the team, remember that while the group's primary function is to define system requirements, there are advantages to having some members continue on through the selection and implementation phases.

The following are the individuals and groups who should be involved in the needs assessment:

- **Executive Sponsor —** This is generally the highest-level functional executive (usually the vice president of HR) who the sets objectives, provides the funding and gives the project visibility. The executive sponsor will probably not be directly involved in the requirements definition, but their support lends credibility to the project.
- **Project Manager —** The project manager should be an expert responsible for leading and coordinating the needs assessment team. The project manager may be from either the user or technical community, or even a consultant, but it is critical that this individual has the following traits:
  - Complete knowledge of the HR function, to comprehend and critically analyze the operations performed,
  - Respect of the HR staff and senior management and must be able to recognize and relate to their perspectives and needs,
  - Understanding of the latest information technology and awareness of HR systems development options, trends and vendors, and
  - Qualification as a project manager, with skills in planning, budgeting, organizing and motivating.
- **Users —** Representatives from each of the functional areas to be supported by the system. They are responsible for specifying and clarifying the scope and requirements for each business unit. Note that, due to the obvious relationship between the functions, a Payroll delegate should be included even if payroll operations will not be part of the solution.
- **Systems and/or Business Analyst(s) —** The technical and/or functional specialists responsible for facilitation, prioritization and documentation of the business requirements. They should be experienced in the process of determining, defining and documenting system needs.

- **Steering Committee —** This group is composed of key stakeholders, usually managers and directors of the functional and technical areas, along with the project manager. This committee reviews, prioritizes and makes decisions on policy issues, offers advice and removes barriers to project advancement. The executive sponsor generally leads this group.
- **Technician(s) —** These experienced information technology professionals participate on a limited basis in this phase and are more heavily involved in vendor evaluation, systems design and implementation.
- **Consultant(s) —** External consultants may be included on the team to lead the effort, provide expertise and/or assist with data collection, analysis and presentation.
- **Other Constituents —** Since HR interacts with virtually every function in an organization, it is imperative that they be informed of the project and its goals. This also applies to external constituents, such as benefits carriers and other service providers. They will not be full-time representatives, but their needs should certainly be addressed.

What are the most critical questions to ask?

1. What are the business objectives?
2. For each business function:
   a. What is done, why is it done, what should be done?
   b. How is it done, why is it done that way, how should it be done?
   c. Where is it done, why is it done there, where should it be done?
   d. When is it done, why is it done then, when should it be done?
   e. Who does it, why does that person do it, who should do it?
3. Automating which business functions will provide the highest value?
4. What data or strategic value-added information is desired?
5. What are the frustrations, challenges, issues and concerns with the current systems environment?
6. What types of reports and analyses are requested, and is the necessary data available, current, accurate and easy to access?
7. For which functions has automation been desired, but not accomplished and why?
8. What is the vision of how the new environment should operate?
9. What are management's expectations?
10. What are the users' expectations?
11. What are the critical success factors?
12. What is the technical infrastructure?
13. What technology is desired and why?
14. Are there any regulatory requirements or constraints that impact the function now or expected in the future?
15. What are the known or anticipated future requirements?
16. Who will be using the system and what is their computer skill level?
17. What types of documentation and training are needed?
18. What are the security requirements?
19. What level of support is necessary?
20. What is the culture of the organization and the function with respect to systems?
21. Are there any political issues that need to be addressed or avoided?

Glossary of terms

ASP — *Application Service Provider* — Company that manages software applications for other companies at a central facility.

BPR — *Business Process Redesign* — Analysis of fundamental business processes to eliminate redundancy and bureaucracy and to improve efficiency and add value, often resulting in systems development projects.

Constraint — Something that limits flexibility in defining a solution to objectives.

Cost/Benefit Analysis — Comparison of the tangible and intangible costs and benefits of developing and maintaining various systems alternatives.

Critical Success Factors — Items that must be included for the system to be considered acceptable.

ERP Systems — *Enterprise Resource Planning Systems* — Large computer systems that process multiple applications, such as human resources, payroll, general ledger, accounts payable, accounts receivable, etc.

Feasibility Analysis — Measuring how beneficial the development of an information system would be to an organization. Feasibility is often evaluated by technical, operational, schedule and economic criteria.

IBSP — *Internet Business Service Provider* — Similar to an ASP, but no software is installed on users' computers, as the connection is made simply through a Web browser.

Legacy Systems — These inherited systems must continue to be supported while the new system is in development.

Module — A portion of an application that performs a specific function, such as benefits, position management, recruitment or training.

Prototyping — The iterative process of building a system through working models and user reaction.

RFP — *Request for Proposal* — A document stating requirements for a system that is created by the potential buyer and provided to vendors for formal response.

Systems Analysis — The study of a business problem to recommend improvements and specify the requirements of a solution.

Systems Development Life Cycle — A systematic and orderly approach used by systems analysts, software engineers, programmers and end-users to build information systems and computer applications that solve business problems.

Additional resources

http://www.workforce.com
http://www.workforce.com/feature/00/06/57/
http://www.hr.com/HRcom/index.cfm/125
http://www.hrpress-software.com
http://www.hr-software.net
http://www.hruniverse.com/hrs.htm
http://www.hrworld.com
http://www.ihrim.org/market/onlineguide/index.cfm
http://www.mediabrains.com/client/shrm/bg1/shortlist.asp
http://www.myhrny.com/HR_Products/software.cfm
http://www.notjustsurveys.com/HR
http://www.propath.com

The HRMS Decision Guide
The HRMS Scavenger Hunt

http://www.softwaresource.co.uk
http://www.trak-it-down.com/HRM_SW.html
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