**METHODOLOGIES**

**INCREMENTAL PROTOTYPING METHODOLOGY (IPM)**

Ciber’s unique Incremental Prototyping Methodology reflects our belief that it’s not enough simply to get the system up and running—your business needs also require that end users clearly understand how to operate, manage, and take ownership of the system. With IPM, users learn about PeopleSoft as they build and work with prototypes of the new system, ensuring system functionality and user knowledge develops together to meet organizational requirements and reduce long-term total cost of ownership.

IPM is a building block approach divided into phases we call “prototypes.” Each prototype builds on the one that came before, delivering new functionality to meet organizational needs without the uncertainty associated with a more traditional “waterfall” approach. Data conversion occurs repeatedly during the prototypes, as do any business process changes and testing. Users begin working with the prototypes during the early phases, so that when the system goes into production, there are no surprises—only a smooth-running system and a workforce that knows how to use it.

The methodology consists of five phases or prototypes.

- Prototype 1: Discovery
- Prototype 2: Configuration
- Prototype 3: Complex Extensions
- Prototype 4: Environmental Adaptations
- Prototype 5: Deployment

Our methodology focuses on optimizing the implementation of the standard applications, and executing only strategic customizations. This results in rapid implementations and reduced costs for our clients.

Prototyping is a critical development strategy in which we build the system in small, defined segments that capture the requirements incrementally for the organization. By modeling the software using a subset of the organization, we are able to build on small successes until we have addressed the entire system. Each prototype adds more records and more complex processes to the environment.

At the end of the prototyping stage, the PeopleSoft software is fully configured in a “vanilla” format using real data. There are many benefits to this approach.
Each prototype starts small and focuses on manageable pieces of the larger organization. Success with these prototypes is early and often, adding significantly to the positive momentum of the project.

Each prototype enables project team members to participate in the project, learning the system with a “hands-on” approach. This approach enables users to not only own the data, but to learn the software outside of the normal classroom setting, without the pressure of a pending deployment.

Each successive prototype generates a deliverable that can be reviewed by various levels of users at any stage in the project. This is a drastic change from normal development projects, where percentage completion is only measured by a project plan.

The first conversion of complex systems data begins with a sample pilot population, and occurs multiple times. Additional populations are added with each subsequent conversion. Conversion of all data occurs at least twice.

At the conclusion of each prototype, the evolving system is thoroughly tested and evaluated. Prototype testing requires the functional project team members and end-users to perform acceptance testing on the work completed. This ensures that the system meets all the requirements, and uncovers any business, configuration, or customization problems so that they can be resolved in a timely manner. PeopleSoft provided test data is used when initially exercising the system, testing early adaptations, customizations, interfaces, and reports. As real life data for users becomes available, results become more relevant.

At the end of each prototype, a working and increasingly complete PeopleSoft system emerges. What is learned in early prototypes is applied to subsequent prototypes. Because results are seen so early, the evaluation is timely, and any changes to previous adaptations or enhancement are minor.

**Prototype 1: Discovery**

Beginning with the Project Charter, we work with your team to establish the vision and the strategy for the project, setting goals and objectives, developing implementation strategies, and assigning roles and responsibilities. Next, we analyze and compare current requirements to PeopleSoft’s delivered functionality with a Fit/Gap Analysis. Our PeopleSoft business experts review current business processes with your team, then present recommendations for using the new system to improve efficiency. Then, we take what we learn to develop a comprehensive Project Plan.

**Develop Project Charter**

The Project Charter process is a crucial first step in every project. It establishes a foundation for the project by ensuring that all project participants share a clear understanding of the project goals and objectives, and agree on how these objectives will be achieved. In addition, the Project Charter process builds a shared understanding of the methodologies, strategies, and project management controls that will be utilized throughout the project.

Some of the outcomes of this process are as follows:

- Aligning of organizational mission, goals, and objectives with the project to achieve maximum efficiencies as a result of the software implementation.
- Defining an agreed upon project scope including determining which modules/features of PeopleSoft will be utilized by the organization.
- Two-way knowledge transfer between Ciber (project implementation knowledge) and the client (current environment, business processes, organizational hierarchy, strategic goals, etc.).
- Identifying and building the project team, and well as defining team roles and responsibilities.
- Determining critical project strategies: deployment, training, documentation, testing, conversion, security, reporting, change management, and other major activities in a complex project.
- Defining a project management plan that addresses risk assessment, change control, issues management, quality planning and assessment, system issues tracking, status reporting, communication planning, project meetings, team ground rules, and more.
- Identifying source files for conversions and interfaces.
CONDUCT FIT/GAP ANALYSIS

Ciber works with its clients to establish the baseline needs by performing a Fit/Gap Analysis. The Fit/Gap Analysis is a process that rapidly addresses business requirements, technical requirements, and planning activities associated with the implementation of PeopleSoft.

Before any hands-on work begins, we believe it is crucial for Ciber and the client to take a look at the “big picture.” To do otherwise increases the chances of poor decision-making and of building unnecessary or ineffectual changes into a system.

Ciber and the client project team members achieve the following during the Fit/Gap analysis:

- Review current business processes.
- Present recommendations on how the new system can be utilized.
- Present strategies to improve departmental efficiencies.
- Compare current business processes to standard delivered system processes.
- Identify how the system will support business requirements, and also identify areas where the system does not match those requirements.
- For each area where the system does not fit, document the gaps and provide alternative solutions, along with estimates of effort and Ciber’s recommended solution.

DEVELOP PROJECT PLAN

The outcomes of the Project Charter and Fit/Gap Analysis processes are inputs to the Project Planning process.

- Ciber begins the planning process with a standard project plan template that has been modified to incorporate the project schedule.
- The plan is updated with development tasks that have been defined during the Fit/Gap Analysis.
- We work closely with the client’s project manager to ensure that the final project plan will provide the detail necessary to easily track and manage the project using the plan as a tool.

PROTOYPE 2: CONFIGURATION

Based on the information gathered during the Discovery prototype, the project team will build a “baseline model” of the new system, setting up tables, converting basic data, partially loading some tables, and setting defaults and security. With this baseline model, you will begin to see your new system come to life.

No modifications are incorporated into this first model. We feel it is important for our clients to use the system in its vanilla state to experience the system with their data and tables first. By doing this, often the client will determine that modifications defined during the Fit/Gap are not necessary.

Your users will then load test data into the baseline model, and begin to familiarize themselves with the applications they will use to do their jobs. Any problems will be identified before going into production. The model is thoroughly tested by the project team users to validate that your business processes can be managed with the new application. Once tested and approved, all future development will be built on the foundation this model provides.

Your staff will learn the system from the ground up as they build the model under the guidance and leadership of Ciber’s functional and technical experts. Because this is an iterative process, as users become more familiar with the testing processes, they will be able to take increasing responsibility for the processes. This is the first step to system ownership.

By the end of Prototype 2, the following is completed:

- The initial functional and technical designs are completed to support data conversion tasks.
- Conversion, data mapping, and related programming tasks are initiated.
- A test database is established.
- Minor system configurations are completed in relation to delivered functions, tables, and panels.
- The client gains a better understanding of how the delivered system functions in relation to “real life” usage through the Modeling process, so enhancements can be minimized or eliminated.
- Users fully understand the functionality of the purchased software package by thoroughly testing and exercising this prototype.
- The system design and project plan can be appropriately adjusted to reflect any changed requirements or new understanding of PeopleSoft discovered during “hands on” use by the project team.

**PERFORM INITIAL CONVERSION**

For the conversion component of the project, Ciber identifies basic conversion requirements, including data sources, types of data to be converted, the most efficient and cost effective manner of performing the task, the effort required to perform it, and the resources necessary. Sessions are conducted with key staff to gather requirements related to existing input sources. It is important that existing file/record layouts from the various sources are available, and that the appropriate staff are present to make timely decisions on conversion issues that may arise.

Ciber’s approach to Data Mapping/Data Conversion consists of the following steps:

- Identification of the various sources for data to be converted (i.e., which records/files, automated or manual, are kept by the client’s current systems).
- Mapping of the existing data to be converted into “vanilla” data tables.
- Determination and use of the various methods for converting the data, whether manual and/or automated. This may include identification of effective tools, the effort required to perform the task, and the optimal skill set of the individual(s) assigned.
- Extraction of the data from various sources.
- Translation of the extracted data into new system formats.
- Loading of the translated data into system delivered data tables.
- Verification and reconciliation by project team members of the loaded data in the system against the data from the client’s current systems.

While the development of conversion processes should be completed during Prototype 2, data conversion is an iterative process that continues through to the final phase of the project. This continuous process ensures that all essential tables and data have been properly loaded and validated and an accurate conversion process has been established to support a successful implementation.

**TESTING STRATEGY**

Testing is a controlled procedure that requires careful planning and execution. Test cases, expected results, and evaluation criteria need to be defined in advance with clear objectives in mind.

As part of acceptance testing phase, formal procedures are developed that include Test Forms, Test Case Worksheets, and Problem Logs. When problems arise with a particular test case, a decision is made regarding whether the case can be re-tested the subsequent day, or if it is necessary to repeat a day of testing after corrections have been made.

Database backups are made after each update activity. This allows databases to be restored and regression testing to be performed at any point for any set of test conditions. In this manner, the project team can re-test any errors once they have been corrected, under the same conditions in which they were originally tested.

The general steps for testing the components of the system include creating test files, preparing test cases and expected results, running batch test jobs, reviewing test output, and if necessary, program corrections and re-testing. Online sessions are performed to test the online components of the system.

**CONDUCT USER ACCEPTANCE TESTING**

The final activity in this prototype is the execution and documentation of a User Acceptance Test (UAT). The UAT processes are ongoing throughout the prototype as users exercise the system and business processes. The prototype testing enables users to experience the system with their data in place. Users can validate the usability of the system more readily with their own data.
This exercise is valuable because typically a number of prior “gaps” become non-gaps. Based on the findings of these tests, some modifications agreed upon during the Fit/Gap Analysis may become unnecessary. Conversely, some new modifications may be identified. The ultimate result of this effort is a validation of the systems ability to meet the business requirements and the verification of the gaps that must be addressed.

**PROTOTYPE 3: COMPLEX EXTENSIONS**

Your organization is unique, and may have unique needs that PeopleSoft applications don’t fill. Yet, making customizations can impact future upgrades.

To address this delicate balance, our Complex Extensions prototype helps you build a system that meets your needs, while minimizing cost and making future upgrades less painful. When changing business processes won’t solve the problem, functional team members design a customization to meet business requirements. The technical team designs, codes, tests, and documents the customization. Functional team members then test the customization to ensure it meets the business requirement. Each testing phase strengthens the project team’s knowledge of PeopleSoft and expands their ownership of the system and understanding of the testing process.

**ENHANCEMENTS, AND MODIFICATIONS**

Ciber addresses the programming of enhancements, and modifications as part of Prototype 3, where critical business requirements not met by the delivered software are developed to reflect your business needs. It is important to understand the source of customizations, how they are programmed, and how they affect future releases.

*Identifying Customizations*

Whenever possible, a project should attempt to avoid customizations. During the Fit/Gap Analysis process, our role is not only to define the requirements, but to challenge the client to adopt today’s technology and “best practices” that have developed around it. ERP systems such as PeopleSoft not only evolve to, but drive today’s best practices. By default, implementing in a “vanilla” fashion will enable you to adopt these best practices.

While implementing “vanilla” sounds good, there is a dose of reality that must come with it. During the project, we are going to be presented with situations that appear to require customizations. We will challenge you to look closely at the origin of the requirement.

Understanding the source of customizations is an important step in determining how you can implement “vanilla.” We can enlighten you to the best practices for which the PeopleSoft software is developed, and share our experiences with you regarding how other organizations have handled similar situations, but you are in control of your destiny. The decisions you make will forever affect the system we help you build.

*Developing Customizations*

Understanding this, the reality is that about 10-15% of the work on large projects is for customizations. As we define requirements during this Fit/Gap Analysis process, our project management methodology requires us to present three options for each proposed customization:

- The preferred “best practice” that would allow you to avoid the customization entirely.
- The “work-around,” in which we define how the system can apply your policy/procedure without customization.
- The customization to adopt the software to your policy/procedure. Included with this is the estimated cost for development. These are presented as “out of scope” issues.

With this information, you can make an educated decision about which option is best.

At some point, you will decide to adopt customizations. To address these, we must be diligent in the design, development, and implementation so as not to affect the software for future releases. To do this, we adopt the policy of not changing the source software. To modify a panel, we “clone” that panel, re-name it, and make our modifications to that panel. To make a table change, we clone the table, and modify the new table.

Using this procedure, the upgrade routines for future releases match the base panels and tables that PeopleSoft has developed. Outside of that scope are the new panels and tables we have developed. They will be easily identified during the upgrade process by the PeopleSoft upgrade routines. By clearly
documenting these changes, not only will upgrades go smoothly, you will quickly identify and decide on customizations.

**Effect on Future Upgrades**

Using the methodology described, modifications have a reduced impact on the direct upgrade process. The impact comes when you analyze those customizations and compare them to the new release. Obviously, the new release has new functionality. Some new functionality “replaces” your existing customizations. In that case, the project team must address how to adopt the prior customizations to the new release. In some cases, conversion programs are written to move data from a “customized” table to the new “vanilla” table so that later releases will not encounter customizations.

On the other hand, certain customizations will need to be brought over to the new release. Work has to be done to incorporate these with the upgrade.

The most drastic effect of customizations on future upgrades is the amount of analysis involved, and the amount of testing involved. It is time consuming to implement and test a customization on the current release. It gets far more expensive when you consider that each customization has to go through the same implementation and testing for every future upgrade.

**Prototype 4: Environmental Adaptations**

To work for your organization, PeopleSoft must work in tandem with other existing systems, and provide reports that are useful and accurate. In the Environmental Adaptations prototype, Ciber consultants provide valuable expertise to help your team design and build interfaces and custom reports to adapt the system to your environment, making it an even better fit.

Your technical developers will do much of the actual building, with Ciber providing expert guidance and support. Learning by doing ensures your technical team has the knowledge they need to provide long-term support to your organization. Using finalized conversion programs, Ciber facilitates final User Acceptance Testing by providing technical and functional direction to the project team as they specify, create and test the required interfaces and custom reports.

**Reporting and Interfaces**

Reports and Interfaces are an important part of Prototype 4 and the overall implementation. Reporting activities occur throughout the project. These activities include:

- Listing desired reports based on user input.
- Determining frequency and priority from users.
- Determining whether a report requirement can be met with a delivered report.
- Determining report language (e.g. nVision, SQR, Crystal) to be used for all other reports.
- Developing functional design, including report layout.
- Coding and testing each report.

We conduct specific analysis to define the client’s reporting requirements. All reporting tools provided with the system applications are analyzed and utilized to meet your organization’s needs, and an appropriate reporting solution is created. Ciber and the client’s project teams work together on reporting. Ciber conducts the analysis and provides guidance. the client’s project team develops, codes, and tests each report. User acceptance testing at this stage validates that customizations are applied correctly and that the standard applications continue to function properly. The users knowledge continues to expand and ownership grows.

**Prototype 5: Deployment**

In the Deployment prototype, the project team will make the final preparations to “go live” with your new PeopleSoft system, including end user training and preparations for the final parallel tests. Help desk processes are established and supported to ensure that your users get the help they need to address any problems that arise.

With all the pieces in place, the final parallel tests will begin—these are the “dress rehearsal” for going live. Users test and compare legacy production processes to the test system processes to ensure the parallel test delivers valid results. When tests confirm that the processes are working properly, the decision to “Go Live” is made and your organization becomes one of the thousands of satisfied PeopleSoft customers!
In the deployment prototype, the project team concentrates on transferring the system to a production environment. The system developed in prior prototypes is refined and processed through a series of acceptance tests, including parallel processing. Users begin controlling the system, with CIBER providing overall guidance. The prototype consists of:

- Developing user and technical documentation.
- Conducting final user training.
- Setting up production schedules for operations and personnel departments.
- Placing the system in the production environment.
- Converting and verifying final data.
- Completing final acceptance testing
- “Go Live!”

**Production Readiness and Migration to Production**

Deployment readiness and final cut over involve completing activities necessary for going live on the new system. Such activities include, conducting training, completing documentation, setting up the production database and, completing any remaining conversions.

**System Acceptance or Parallel Testing**

*System Acceptance Test*

For Financials implementations, a system acceptance testing process occurs. The functional test is a “mock” production test rather than a true parallel test. Test cycles (e.g. daily, monthly, quarterly, year-end) are executed for the functional test.

For example, consider the daily cycle. Throughout the morning, users enter sample transactions, such as purchase requisitions, from a typical day. Throughout the afternoon, the processes that typically run overnight once in production are executed. Results from “overnight” processing are reviewed the next morning. Each test cycle is comprised of test case scenarios, test data, and expected results. The non-functional test involves examining system behavior against non-functional requirements such as performance, security, backup, and recovery.

*Parallel Testing*

For HRMS implementations, typically a slice of the organization payroll is parallel tested. Data that was previously used to run a payroll in the current production environment will be entered into the new PeopleSoft system to validate that the same results, or similar results are achieved. Typically, different systems can have small differences in the results. This parallel test confirms the systems’ and users’ ability to operate in the client’s business environment.

**Training Strategy**

For any ERP project, training is one of the most vital issues leading to a successful implementation. Successful training corresponds to a happy user, a timely implementation, a smooth transition, a successful return on investment, and the overall success of the new applications. For PeopleSoft applications, there are numerous training options, such as classes through PeopleSoft’s educational services department, UPK content, “train the trainer” classes, or formal end-user training.

**Post-Implementation Support**

Once your organization goes live, the system is monitored for a specified period before being turned over to Production Support. We can help you plan and execute the transition from project team to your internal production support group. During the monitoring period, typical activities include resolving system issues as they arise, and checking performance.

**Benefits of Our Methodology**

- Knowledge transfer occurs throughout the project lifecycle, not just prior to going live.
- End users develop strong sense of ownership early in the project and start developing their own test cases to ensure the system performs correctly.
Heavy involvement of the users provides opportunity for consideration of impacts to business functions as they develop the system, allowing them to address organizational skills, process changes, etc.

Ultimately—the system developed and heavily tested by the end users provides a better product that better meets the needs of the organization.

**PROJECT GUIDING PRINCIPLES**

To ensure a smooth implementation, Ciber believes both project teams should commit to the following principles. When followed, these principles serve as project “accelerators,” by preventing situations that lead to unnecessary delays.

- **Strong visible management commitment** is essential to building the guideposts for the project. It is critical that management confirms and reconfirms their commitment to a “vanilla” implementation. A steering committee must be responsible for the approval of any changes to the PeopleSoft applications. Modifications to the applications should be cost justified to ensure that changes are not implemented unless a valid business requirement is driving that change. By creating this process, the client can establish a mechanism to protect the organization from making too many changes to the product.

- **To achieve success, this project must have the highest priority** within the client’s environment. Because of the number of applications being implemented and the critical nature of achieving the goals of the organization, executive management, department managers, and end-users must view this as a priority and commit to achieving any assigned task.

- **Our methodology focuses on using the “vanilla” PeopleSoft applications**, and at every opportunity we use the configuration of the system to facilitate our client’s business requirements. We continually try to ask the question “Why do you need the system to perform that function?”

- Part of our Project Charter process is focused on **conducting a Risk Assessment** to define the project risks and define risk mitigation strategies. By using our Project Management Methodology, we will periodically conduct Risk Reviews to verify the status of the mitigation actions, and determine how effectively we as a team are managing activities to prevent the risks from becoming project issues.

- **Knowledge transfer** is critical to the success of a project and must be planned and executed in an effective manner. In addition, the client must **address the transformation of existing processes to new PeopleSoft processes**. Companies that have failed to address change management have had unsuccessful results. The implementation of a system is more about the transformation of business processes and the education of staff than it is about the technical activities to develop and configure the system. That transformation is the key to ensuring that end-users can confidently manage their world for years to come.

- **Strong project management with a proven project methodology** is the key to ensuring that the project activities, scope, and issues are managed with clear, understandable, and effective processes. Our Project Management Methodology addresses each component of project management in a concise, yet effective and structured manner. Experienced project management requires a project manager that can effectively coach, mentor and drive team members to achieve tasks and ultimately meet the implementation goal. Our project managers and account managers have experience with a variety of implementations in a variety of industries. They bring with them a wealth of professional experience in project management as well as PeopleSoft implementations.

- The project team will often seek input from extended stakeholders, such as supervisors, clerks, etc. For this reason, it **is advantageous for the project team to reside in one physical location that is as close as possible to extended users**. “Co-locating” the project team also simplifies the process of conducting impromptu meetings, and of locating team members quickly when their input is required.