

## **System Development Methodology For Commercial-Off-the-Shelf (COTS) Applications**

### **Business Issues Phase**

The initiation of a project begins when a business need or opportunity is identified. The business need is documented in a high-level requirements document that provides a mechanism for users to describe their expectations of the solution. Approaches for accomplishing the project concept are reviewed for feasibility and appropriateness. The objective of this phase is to capture the scope and characteristics of the proposed system, from the user's perspective, and the operational environment in which the system needs to function. It also defines sponsorship, funding sources, and the project team members.

The project plan that is developed, documents the project scope, timeline, budget, projected benefits, risks, resources, and key assumption(s) regarding the project delivery.

### **Business Requirements Phase**

The purpose of the COTS Business Requirements Phase is to define those things that must happen in order for the new solution to resolve the business issue(s) and to subsequently evaluate alternative COTS products and select the COTS product that best meets that needs of the business.

### **Design Phase**

The physical characteristics of the overall system are designed during this phase, which include the design of all legacy application/data interfaces. The inputs and outputs of the major subsystems are defined, and functions are allocated to resources. Each subsystem is then partitioned into one or more design units or modules. Detailed logic specifications are prepared for each software module. A detailed design of the system will be completed at the end of this phase. Design documentation for the COTS product should be provided by the Vendor.

### **Construction Phase**

In the Construction Phase, the business requirements, technical requirements, and detailed design components are translated into functioning software modules, and supporting test and training artifacts. During the Construction Phase, the Development Team constructs the software code and recovery plans, the Test Team constructs test scenarios/cases, the Infrastructure Team procures and installs the required hardware/software and network components to create the Development and Test environments, and the Business Team constructs the end-user documentation and training materials.

### **Testing Phase**

The various components of the system are integrated and tested. The technical team tests the solution to ensure that it satisfies the documented business, technical, and performance requirements as all components are integrated together. The Business Team tests the system to ensure that the solution satisfies the defined functional requirements from a business process perspective. Training and user documentation is updated as needed. The Production Support Team is engaged and prepared for solution turnover.

### **Implementation Phase**

The Implementation Phase deploys the solution to the business users in the selected deployment site(s). The Implementation Phase allows for pilot deployments (if appropriate) which provide project teams with the opportunity to assess the solution deployment in a controlled, operational business environment before making the solution generally available. The project team should have evaluated and documented which deployment options best achieve the benefits and objectives of the new system, while introducing the least amount of risk to the business (in the Deployment Strategy and Plan). Typical deployment strategies are either a "big-bang" deployment or a "phase-based" deployment (e.g., by location, by feature, by role, etc).

### **Post-Implementation Phase**

Post-implementation reviews are conducted. System documentation and user manuals are reviewed and updated for the application, operations, and training. User satisfaction is assessed. The final cost-benefit analysis is completed.