CMS Descriptions for Lifecycle Phases

Initiation (Intake) – During the Initiation (Intake) Phase, a business need is identified, the business process is modeled, and a preliminary enterprise architecture review is conducted to determine if there is sufficient justification to proceed into the Concept Phase. The Initiation (Intake) Phase may be triggered by a new investment idea or a proposed major enhancement to an existing investment already in operation. Basic information is collected from the business owner and ostensibly assessed to determine if the proposed investment/project potentially duplicates, interferes, contradicts or can leverage off of another investment/project that already exists, is proposed, is under development, or is planned for near-term disposition. (Maps to Phase 1 of the ESD Services Model)

Concept – During the Concept Phase, high-level analysis and preliminary risk assessment are performed on the proposed investment/project to establish the business case for proceeding forward in the life cycle. Possible business and technical alternatives are identified. High-level system requirements, high-level technical design concept/alternatives and cost estimates are prepared. The Concept Phase ends with a decision by the Information Technology Investment Review Board (ITIRB) of whether or not to commit the necessary resources to solve the business need. (Maps to Phase 2 of the ESD Services Model)

Planning – During the Planning Phase, funds and resources are allocated to the project and the project is officially chartered. Acquisition activities are performed, if necessary, to obtain contractor support. The project work is broken down into specific tasks and sub-tasks, including the identification of project deliverables and assignment of allocated resources to each task. The degree of project management rigor that is to be applied to the project is determined and milestones are established. Specific plans for management and governance of the project are established and documented to guide ongoing project execution and control. The Planning Phase ends with a formal review during which the scope, cost, and schedule baselines for the project are established and approved. (Maps to Phase 1 of the ESD Services Model)

Requirements Analysis – During the Requirements Analysis Phase, the business (project in-scope) requirements that were previously documented in an earlier phase are revalidated and further analyzed and decomposed into high-level system (functional and nonfunctional) requirements that define the automated system/application in more detail with regard to inputs, processes, outputs, and interfaces. If appropriate, a logical depiction of the data entities, relationships and attributes of the system/application is also created. During the Requirements Analysis Phase, the initial strategy for testing and implementation is also begun. In addition, the work planned for future phases is redefined, if necessary, based on information acquired during the Requirements Analysis Phase. The Requirements Analysis Phase ends with a review to determine readiness to proceed to the Design Phase. (Maps to Phase 3 of the ESD Services Model)

Design – The Design Phase seeks to develop detailed specifications that emphasize the physical solution to the user's information technology needs. The system requirements and logical description of the entities, relationships, and attributes of the data that were documented during the Requirements Analysis Phase are further refined and allocated into system and database design specifications that are organized in a way suitable for implementation within the constraints of a physical environment (e.g., computer, database, facilities). A formal review of the high-level architectural design is conducted prior to detailed design of the automated system/application to achieve confidence that the design satisfies the system requirements, is in conformance with the enterprise architecture and prescribed design standards, to raise and resolve any critical technical and/or project-related issues, and to identify and mitigate project, technical, security, and/or business risks affecting continued detailed design and subsequent lifecycle activities. During the Design Phase, the initial strategy for any necessary training is also begun. Estimates of project expenses are updated to reflect actual costs and estimates for future phases. In addition, the work planned for future phases is redefined, if necessary, based on information acquired during the Design Phase. (Maps to Phase 3 of the ESD Services Model)

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Development – During the Development Phase, the system developer takes the detailed logical information documented in the previous phase and transforms it into machine-executable form, and ensures that all of the individual components of the automated system/application function correctly and interface properly with other components within the system/application. As necessary and appropriate, system hardware, networking and telecommunications equipment, and COTS/GOTS software is acquired and configured. New custom-software programs are developed, database(s) are built, and software components (COTS, GOTS, and custom-developed software and databases) are integrated. Test data and test case specifications are finalized. Unit and integration testing is performed by the developer with test results appropriately documented. Data conversion and training plans are finalized and user procedures are baselined, while operations, office and maintenance procedures are also initially developed. The Development Phase ends with a review to determine readiness to proceed to the Test Phase. (Maps to Phase 4 of the ESD Services Model)

Test – The primary purpose of the Test Phase is to determine whether the automated system/application software or other IT solution developed or acquired and preliminarily tested during the Development Phase is ready for implementation. During the Test Phase, formally controlled and focused testing is performed to uncover errors and bugs in the IT solution that need to be resolved. There are a number of specific validation tests that are performed during the Test Phase (e.g., requirements validation, system integration, interface, regression, security, performance, stress, usability, and user acceptance). Additional tests may be conducted to validate documentation, training, contingency plans, disaster recovery, and installation depending upon the specific circumstances of the project. The Test Phase ends with a review to determine readiness to proceed to the Implementation Phase. (Maps to Phase 5 of the ESD Services Model)

Implementation – During the Implementation Phase, the automated system/application or other IT solution is moved from development status to production status. The process of implementation is dependent on the characteristics of the project and the IT solution, and thus may be synonymous with installation, deployment, rollout, or go-live. If necessary, data conversion, pilot testing, and training for using, operating, and maintaining the system are accomplished during the Implementation Phase. From a system security perspective, the final system must be certified and accredited for use in the production environment during the Implementation Phase. The Implementation Phase ends with a formal decision to release the final IT solution into the Operations and Maintenance Phase. (Maps to Phase 4 of the ESD Services Model)

Operations & Maintenance – During the Operations & Maintenance Phase, the certified and accredited system is released into the full-scale production environment for sustained use and operations/ maintenance support. Changes and problems with the automated system/application or other IT solution may continually be identified and resolved to ensure that the system/application or other technological solution meets ongoing functional and non-functional needs. Periodically the automated system/ application will also need to be re-certified and re-accredited for continued operation in the production environment. When the time comes that the automated system/application or other technological solution will no longer be needed or will be replaced, then a plan for final disposition of the system/application or IT solution must be prepared and approved prior to moving into the Disposition Phase. (Maps to Phase 6 of the ESD Services Model)

Disposition – During the Disposition Phase, the operation of an automated system/application or other IT solution is formally ended in accordance with organization needs and pertinent laws and regulations. The automated system/application or other IT solution is retired or disposed of based on the formal disposition plan approved during the Operations & Maintenance Phase. The disposition activities ensure the orderly termination of the automated system/application and preserve vital information about the system so that some or all of the information may be reactivated in the future if necessary. Particular emphasis is given to proper preservation of the data processed by the system/application, so that the data is effectively migrated to another system/application or archived in accordance with applicable records management regulations and policies for potential future access.

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