PRE-CONTRACT CHALLENGES

- The acquisition of software-intensive systems demands significant work on requirements prior to establishing the contract.
- Two significant challenges of the pre-contract phase are the identification of functional requirements and the determination of an approximate budget.
- During the acquisition of large innovative software systems, requirements elicitation entails more than obtaining and processing customer needs and involves major risks related to cost, quality, scope, and schedule.
- IEEE defines and relates one or more steps to each software acquisition phase (Table 1).
- Take note that these steps might overlap or occur in a different sequence, depending upon the organizational needs.

Phase	Phase Initiation Milestone	Phase Completion Milestone	Steps in Software-Acquisition Process
Planning	Develop the idea	Release the Request for Proposal (RFP)	1. Planning organizational strategy 2. Implementing organization's process 3. Determining the software requirements
Contracting	RFP is released	Sign the contract	4. Identifying potential suppliers 5. Preparing contract requirements 6. Evaluating proposals and selecting the supplier
Product Implementation	Contract is signed	Received the software product	7. Managing supplier performance
Product Acceptance	Software product is received	Accept the software product	8. Accepting the software
Follow-On	Software product is accepted	Software product is no longer in use	9. Using the software

Table 1. Software-acquisition phase milestone

ACQUISITION PLANNING PROCESS

- The process to implement for acquisition planning is shown in Figure 1.

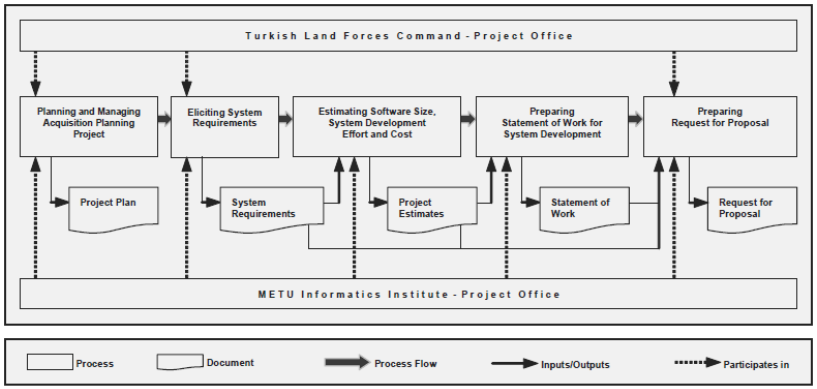


Figure 1. Acquisition planning phase

- **Planning and managing acquisition planning project**
  - A project management plan is prepared at the start of the project to describe the activities, responsibilities, schedule, and effort as related to acquisition planning. Throughout the projects, the performances of the projects are tracked accordingly and the plans were updated.
- **Eliciting system requirements**
  - A business-process-based requirements-elicitation approach is performed to define software-intensive system requirements. User-level functional requirements for software components of the systems, nonfunctional system requirements, commercial-off-the-shelf (COTS) product requirements, and hardware and telecommunication infrastructure requirements are determined for both systems.
- **Estimating software size, and system development effort and cost**
  - The sizes of the software components of the system are estimated based on the functional requirements elicited in the previous step. Effort and cost for the system development are also estimated by using software size estimates.

- **Preparing the statement of work for system development**
  - The system and software development life cycles are described, which are to be applied by the supplier organizations, together with the engineering process steps and their outputs.
- **Preparing the Request for Proposal (RFP)**
  - The system requirements, system development estimates, and statement of work are gathered. These are integrated with the acquisition regulations in the form of RFP. These include the acquisition schedule, management practices and deliverables, quality assurance requirements for deliverables, and qualifications of the system and software development and management staff in the RFP to be issued for the system development.

TWO CHALLENGING PROCESSES OF THE PRE-CONTRACT PHASE

1. System requirements-elicitation process
2. Software size estimation process

The Requirements Elicitation Process

- The requirements-elicitation process based on business process modeling is depicted in Figure 2.

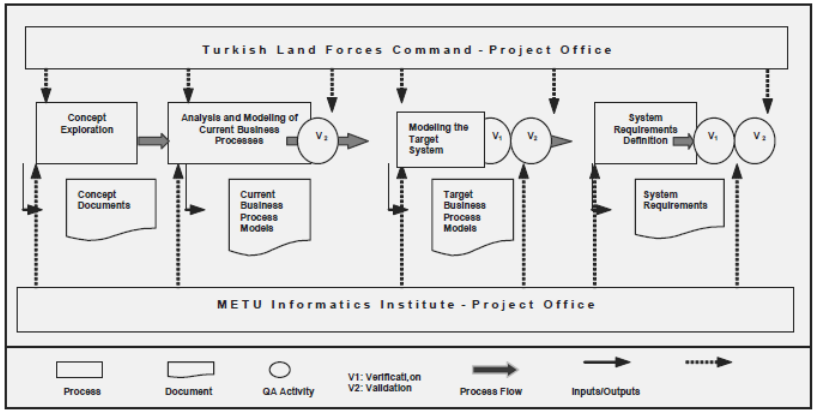


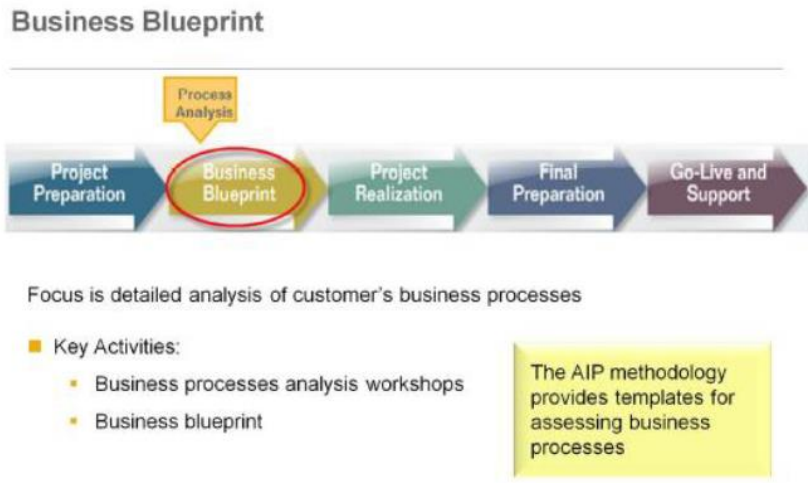
Figure 2. Requirements-elicitation process

- **Concept Exploration**
  - This process is performed to acquire knowledge about the domain and review previous documents.
  - All the materials, including military procedures, forms and guidelines, and related class notes are gathered.
- **Analysis and Modeling of Current Business Processes**
  - This process is performed to understand the current business processes with their business flows, inputs, outputs, and responsible bodies.
  - The activities performed to execute this process are as follows:
    - Identifying organizational units of business domain
    - Identifying key business processes of organizational units
    - Decomposing key business processes into business subprocesses
    - Modeling lowest business subprocesses
    - Creating data dictionary for business domain
- **Modeling of the target system**
  - This process is performed to describe the IT-oriented target system.
  - The activities performed to execute this process are as follows:
    - Reviewing and enhancing current business processes
    - Updating the data dictionary
    - Identifying software components to provide IT support
    - Assigning software components to business processes that need IT support
    - Identifying hardware components
    - Assigning software components to hardware components
    - Identifying data transmission requirements
    - Identifying telecommunication infrastructure
    - Identifying system architecture
- **System Requirements Definition**
  - This process is performed to generate the target system's software, hardware, and telecommunication requirements.

Software Size Estimation

- The size of the projects to be acquired is estimated using different methods.
- The size estimates the software components of the systems to be contracted for the development projects, the number of staff, and the effort utilized to make software size estimations.

AIP – BUSINESS BLUEPRINTING



- Business blueprint is the second phase in the project and the project team focuses on the detailed analysis of the customer's business processes and requirements.
- The requirements are now mapped to a solution in SAP Business One. The documentation of the solution is known as the business blueprint.
- The AIP recommends four (4) milestones for this phase:
  - First, the requirements gathering workshops for each customer's processes must be completed.
  - Second, perform a 'fit/gap analysis' to map the processes to an SAP Business One solution. The documented solution must be reviewed and accepted by the customer. The blueprint then becomes the focal document for the next phase of the project.
  - The third milestone serves as a checkpoint to ensure that the impact to the project of any gaps or change requests identified during the fit/gap analysis has been assessed. It is possible that these changes will affect the scope (work effort, timeline and/or cost) of the project.
  - The final milestone for this phase is the checkpoint. To keep the project on track, the customer should agree that all the phase deliverables and milestones have been met.

AIP-PROJECT REALIZATION

- Project realization is the heart of the project, and in this phase, the consultant implements all the business processes and technical requirements defined during the previous phase.
- The legacy master data is migrated.
- The newly built system and master data are validated and tested by the customer using a test copy of the customer database. All issues arising during testing should be logged and resolved before moving onto the next phase.

- At the same time, the project manager draws up plans for training end-users, and for the cutover period. The cutover periods happen just before the system's go-live, when many activities must take place in the correct sequence and in a very short timeframe so that the new system can fully run the production workload.

- The AIP has **five milestones** for this phase:
  1. Milestone one is the Production system installed and configured based on the documented business blueprint. This includes the import of legacy master data.
  2. The second milestone is the validation of the configured system by the customer. Validation involves an iterative process whereby the customer tests each configuration change made by the consultant. This activity is sometimes known as "unit testing".
  3. The third milestone is provided to cover the broader testing that is required once the individual processes have been validated. System and integration testing involve the testing of entire business processes end-to-end, including the integration with other processes and external systems. This testing is performed exclusively by the customer team, with support from the implementation team.
  4. The next milestone is a project planning milestone. While the production system is being built and tested, the project manager focuses on planning for go-live. A plan for training end users and a cutover plan must be completed and are crucial to the success of the project.
  5. The final milestone is the checkpoint for completion of the phase. Sign off for this phase indicates that the customer has accepted the new system functionality.

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