NEGOTIATING REQUIREMENTS

- In an ideal requirements engineering context, the inception, elicitation, and elaboration tasks determine customer requirements in sufficient detail to proceed to subsequent software engineering activities.
- Unfortunately, this rarely happens.
- In reality, you may have to enter into a negotiation with one or more stakeholders.
- In most cases, stakeholders are asked to balance functionality, performance, and other product or system characteristics against cost and time-to-market.
- The intent of this negotiation is to develop a project plan that meets stakeholder needs while at the same time reflecting the real-world constraints (e.g., time, people, budget) that have been placed on the software team.

- The best negotiations strive for a "win-win" result.
- That is, stakeholders win by getting the system or product that satisfies the majority of their needs and you (as a member of the software team) win by working to realistic and achievable budgets and deadlines.

- Boehm defines a set of negotiation activities at the beginning of each software process iteration.
- Rather than a single customer communication activity, the following activities are defined:

1) Identification of the system or subsystem's key stakeholders.
2) Determination of the stakeholders' "win conditions."
3) Negotiation of the stakeholders' win conditions to reconcile them into a set of win-win conditions for all concerned (including the software team).

- Successful completion of these initial steps achieves a win-win result, which becomes the key criterion for proceeding to subsequent software engineering activities.

- Fricker and his colleagues suggest replacing the traditional handoff of requirements specifications to software teams with a bidirectional communication process called handshaking.
- In handshaking, the software team proposes solutions to requirements, describes their impact, and communicates their intentions to customer representatives.
- The customer representatives review the proposed solutions, focusing on missing features and seeking clarification of novel requirements.
- Requirements are determined to be good enough if the customers accept the proposed solution.

- Handshaking allows detailed requirements to be delegated to software teams.
- The teams need to elicit requirements from customers (e.g., product users and domain experts), thereby improving product acceptance.
- Handshaking tends to improve identification, analysis, and selection of variants and promotes win-win negotiation.

VALIDATING REQUIREMENTS

- As each element of the requirements model is created, it is examined for inconsistency, omissions, and ambiguity.
- The requirements represented by the model are prioritized by stakeholders and grouped within requirements packages that will be implemented as software increments.
- A review of the requirements model addresses the following questions:

- Is each requirement consistent with the overall objectives for the system or product?
- Have all requirements been specified at the proper level of abstraction? That is, do some requirements provide a level of technical detail that is inappropriate at this stage?
- Is the requirement really necessary or does it represent an add-on feature that may not be essential to the objective of the system?
- Is each requirement bounded and unambiguous?
- Does each requirement have attribution? That is, is a source (generally, a specific individual) noted for each requirement?
- Do any requirements conflict with other requirements?

- Is each requirement achievable in the technical environment that will house the system or product?
- Is each requirement testable, once implemented?
- Does the requirements model properly reflect the information, function, and behavior of the system to be built?
- Has the requirements model been "partitioned" in a way that exposes progressively more detailed information about the system?
- Have requirements patterns been used to simplify the requirements model? Have all patterns been properly validated? Are all patterns consistent with customer requirements?

- These and other questions should be asked and answered to ensure that the requirements model is an accurate reflection of stakeholder needs and that it provides a solid foundation for design.