



## The customer- development Partnership

Table 2-2: Requirements Bill of Responsibilities for Software Customers

### You have the responsibility to

1. Educate analysts and developers about your business and define business jargon.
2. Spend the time that it takes to provide requirements, clarify them, and iteratively flesh them out.
3. Be specific and precise when providing input about the system's requirements.
4. Make timely decisions about requirements when requested to do so.
5. Respect a developer's assessment of the cost and feasibility of requirements.
6. In collaboration with the developers, set priorities for functional requirements, system features, or use cases.
7. Review requirements documents and evaluate prototypes.
8. Communicate changes to the requirements as soon as you know about them.
9. Follow the development organization's process for requesting requirements changes.
10. Respect the processes the analysts use for requirements engineering.

## Create culture that respect requirements

- Collaborative effort of customers, developers & analyst. Everyone doesn't realize that else they would all be analysts.
- Understand why they resist in participating to develop requirements.
- Educate them with the pain one can get because of absence if requirement development.
- Show developers how poor requirements slow down design & lead to excessive & expensive corrections.
- Get developers input in reviewing requirements, in specifying internal quality attributes.
- QA staff & testers can provide valuable input.

## Identifying Decision Makers

- Key to make decisions- can be a group /individual
- Decision making group needs to identify decision leader & to select a decision rule.
  - Decision leader makes the choice with or without discussing with others.
  - Group votes & majority rules.
  - Group votes but the result is unanimous to approve decision
  - Group discusses & negotiates to a consensus
  - Decision leader assigns authority to take decision to one person.
  - Group reaches a decision but one person has veto authority.

## Agreement on Requirements & sign-off

- **Customers** agree that the requirements address their needs
- **Developers** agree that they understand the requirements and are feasible.
- **Testers** agree that the requirements are verifiable.
- **Management** agrees that the requirements will achieve their business objective.
- Requirements should be **signed off** as the mark of stakeholder approval.

## The requirements baseline

- A requirement baseline is a set of requirements that has been reviewed and agreed upon and serves as the basis of further development.
- The subtext of the agreement is something like this:
  - "I agree that this set of requirements represents our best understanding of the requirements for the next portion of this project and the solution described will meet our needs as we understand them today. I agree to make future changes in this baseline through the project's defined change process. I realize that changes might require us to renegotiate cost, resource & schedule commitments"

## Issues – Not reached agreement

- Barriers include – Logistics, busy schedule, Reluctant to commit They will simply delay the process – Analysis paralysis
- **OPTION 1:** Send a message if they don't reply by certain date, it will be assumed that they agreed upon the requirements
  - Prob: Not equate reaching agreement,
  - Sol: Directly address
- **OPTION 2:** Move forward cautiously, assuming that you don't have approval from certain stakeholders.
  - Document it as risk along with the impact of some of reqs being missed or wrong.
  - Let them know if they want to change things, there's a process in place to do that.

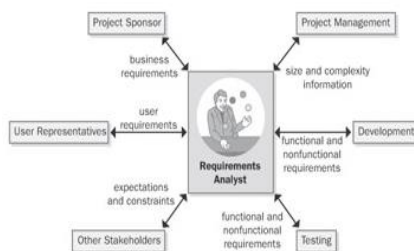
## Agile Projects & signoff

- Agile projects don't include formal sign off action.
- Requirements are usually maintained in form of user stories in a product backlog.
- Owner & team reaches an agreement on what stories are to be implemented on next iteration.
- The set of stories are chosen based on their priority and team's velocity.
- After that set has been established and agreed to, the stories contained in that iteration are frozen.

## The Requirements Analyst

- Synonyms for *requirements analyst* include *systems analyst*, *business analyst*, *requirements engineer*, *requirements manager*, and simply *analyst*.
- The analyst helps stakeholders find the difference between what they say they want and what they really need. He or she educates, questions, listens, organizes, and learns. The requirements analyst is the individual who has the primary responsibility to gather, analyze, document, and validate the needs of the project stakeholders.
- The analyst serves as the principal conduit through which requirements flow between the customer community and the software development team.
- The analyst plays a central role in collecting and disseminating product information, whereas the project manager takes the lead in communicating project information.

The requirements analyst bridges communication between customer and development stakeholders



## The Analyst's Tasks

- The analyst is a communication middleman, bridging the gap between vague customer notions and the clear specifications that guide the software team's work.
- The analyst must first understand the users' goals for the new system and then define functional and quality requirements that allow project managers to estimate, developers to design and build, and testers to verify the product.

## Analyst's tasks

- **Define business requirements.** Your work as an analyst begins when you help the business or funding sponsor, product manager, or marketing manager define the project's business requirements.
  - Business requirements include a statement of the organization's business objectives and the ultimate vision of what the system will be and do.
  - You might suggest a template for a vision and scope document.
- **Identify project stakeholders and user classes.** The vision and scope document will help you identify the important user classes and other stakeholders for the product.
  - Next, work with the business sponsors to select appropriate representatives for each user class, enlist their participation, and negotiate their responsibilities.

## Analyst's tasks

- **Elicit requirements:** Requirements for a software product don't just lie around waiting for someone wearing a hat labeled "analyst" to collect them.
- A proactive analyst helps users articulate the system capabilities they need to meet their business objectives.
- **Information-gathering techniques selected from the following list:**
  - Interviews
  - Facilitated requirements workshops
  - Document analysis
  - Surveys
  - Customer site visits
  - Business process analysis
  - Competitive product analysis
  - Prototypes

## Analyst's tasks

- **Analyze requirements.** Look for derived requirements that are a logical consequence of what the customers requested and for unstated requirements that the customers seem to expect without saying so.
  - Spot the vague, weak words that cause ambiguity.
  - Point out conflicting requirements and areas that need more detail.
  - Specify the functional requirements at a level of detail suitable for use by the developers who will implement them.
- **Write requirements specifications.** Requirements development leads to a shared understanding of a system that will address the customer's problem.
  - The analyst is responsible for writing well-organized specifications that clearly express this shared understanding.

## Analyst's tasks

- **Model the requirements.** The analyst should determine when it is helpful to represent requirements using methods other than text. These alternative views include various types of graphical analysis models, tables, mathematical equations, storyboards, and prototypes.
- **Lead requirements validation.** The analyst must ensure that requirement statements possess all the desired characteristics and that a system based on the requirements will satisfy user needs. Analysts are the central participants in peer reviews of requirements documents.
- **Manage requirements.** A requirements analyst is involved throughout the entire software development life cycle, so he should help create, review, and execute the project's requirements management plan.
  - After establishing the requirements baseline, the analyst's focus shifts to managing those requirements and verifying their satisfaction in the product.

## Essential Analyst Skills

- It isn't reasonable to expect people to serve as analysts without sufficient training, guidance, and experience.
- They won't do a good job and they'll find the experience frustrating.
- Analysts need to know how to use a variety of elicitation techniques and how to represent information in forms other than natural-language text.
- An effective analyst combines strong communication, facilitation, and interpersonal skills with technical and business domain knowledge and the right personality for the job.
- **Listening Skills,**

## Essential Analyst Skills

- **Listening skills.**
- **Interviewing and questioning skills.**
- **Analytical skills**
- **Facilitation Skills**
- **Observational skills.**
- **Writing skills.**
- **Organizational skills.**

## Essential Analyst Skills

- **Modeling skills.**
  - Tools ranging from the venerable flowchart through structured analysis models (data flow diagram, entity-relationship diagram, and the like) to contemporary Unified Modeling Language (UML) notations should be part of every analyst's repertoire.
- **Interpersonal Skills**
- **System Thinking Skills**
- **Creativity**

## Analyst's knowledge

- **Knowledge**
  - The analysts need a breadth of knowledge, much of which is gained through experience.
  - The effective analyst has a rich tool kit of techniques available and knows when—and when not—to use each one.

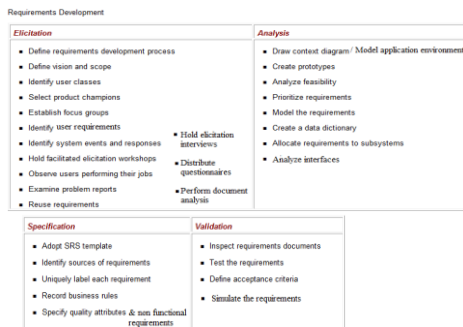
## Analyst role on agile projects

- Product owner perform some traditional business analysis activities, as well as provide the product vision, communicating constraints, prioritizing the product backlog of remaining work & making the ultimate decisions about the product.
- Additionally team members such as developers perform portions of the analyst role.

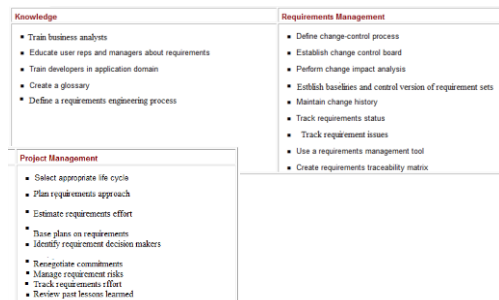
## Analyst on agile projects

- BA should
  - Define a lightweight, flexible requirements process and adapt it as the project permits.
  - Ensure that the requirements documentation is not too little not too much.
  - Help determine the best approach to document the backlog, whether story cards or more formal tools.
  - Apply facilitation & leadership skills to ensure that stakeholders are communicating with one another frequently about requirement needs, questions and concerns.
  - Help validate that customers need are accurately represented in product backlog & facilitate backlog prioritization.
  - Work with customers when they change their minds about requirements and priorities & help to record those changes.
  - Work with rest of the team to find the impact of change on iteration contents & release plans.

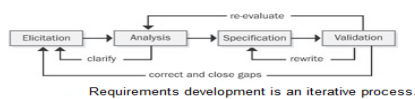
## Requirement Engineering Good Practices



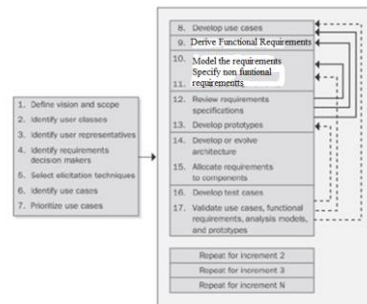
## Requirement Engineering Good Practices



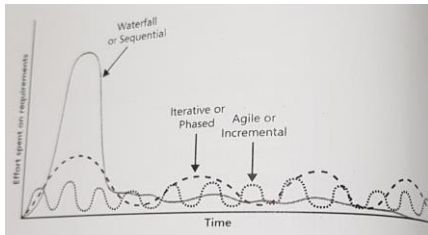
## A requirement Development Process



## A representative requirement development process



Distribution of requirement Development effort over time  
for different software methodologies



## END OF LECTURE # 3

-COMING UP!!!!!!

-Establishing Business Requirements

-User Requirements

32