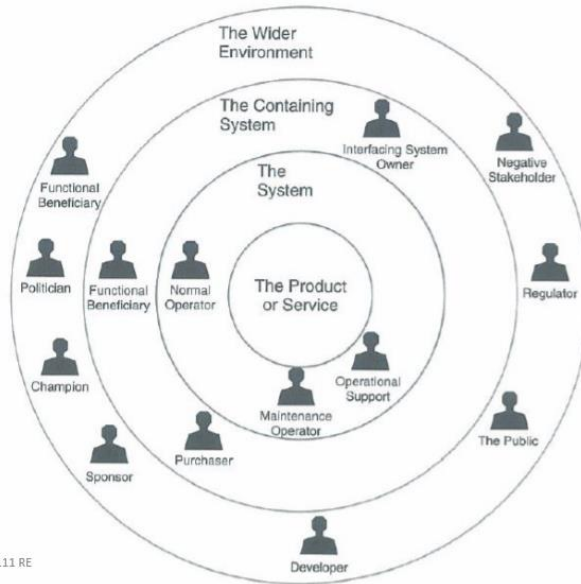


General problem-solving model (adapted from Hicks, 1991).

Data gathering and problem redefinition: what is the problem about
Finding ideas: identify ideas to understand more about the nature of the problem and possible solutions. **Finding solutions:** provide a solution to the problem. **Implementation:** put solution into practice.



irl 111 RE

Motivation At secondary schools in the Netherlands, pupils have to choose a profile and specific subjects. Recent research has shown that most pupils (and their parents) struggle with this. IT-company Gecko thinks that it is possible to build a system that can help pupils to make a good choice, based on recommender algorithms and the data of 3.000.000 pupils in their database.

Type of system The system will consist of a web interface and a recommendation engine that uses the (existing) Gecko database.

Goal of the system Giving meaningful recommendations for profiles and subjects

Exclusions The recommendations only give subjects that are commonly offered. Some schools offer 'exotic' subjects (e.g. Russian). The system cannot take such subjects into account.

Approach The recommendation engine is to be based on two principles:

- (1) future grades for a subject can be predicted from a pupil's past grades;
- (2) it is taken into account which factors the pupil considers important for choosing subjects.

Motivation: The existing system cannot keep up with the growing demand, therefore a new system is needed.

Goal of the system: The new system should support the current functionality in a more scalable way, allowing Hello.nl to expand.

Exclusions: No new functionality is to be added until the system has been successfully deployed.

- (a) In the text the following stakeholders are mentioned:
 (Directors of) Hello.nl – Purchaser
 Bugless Software Ltd. – Developer
 Visitor – Normal Operator
 Prepaid/Full member – Normal Operator, Functional Beneficiary
 (Additional roles (not mentioned in the text) are possible, e.g. Hello.nl – Operational Support)

- (b) The most important other roles are in the inner ring:
 Maintenance Operator – could be done by Bugless Software
 Operational Support – Hello.nl probably has a help desk which members can call in case of technical problems.
 (If you did mention Maintenance Operator and/or Operational Support under (a), then roles not yet mentioned there will be considered for appropriateness)

Here are 11 different user stories. One set of acceptance criteria is given, similar acceptance criteria for other user stories are possible

- As a prepaid member I want to do a smart search
- As a prepaid member I want to change my member profile / search profile
- As a prepaid member I want to buy credits
- As a prepaid member I want to send a message to another member
- test with credit count 0 (fail)
- test with credit count ≥ 1 (succeed)
- As a prepaid member I want to read a message
- As a prepaid member I want to delete a message
- As a prepaid member I want to start a chat
- As a prepaid member I want to accept/decline a chat invitation
- As a prepaid member I want to become a full member
- As a prepaid member I want to deactivate my membership
- As a prepaid member I want to have my data deleted

Starting phase. The project begins. In an organizational setting this means that a budget is allocated, a project leader is appointed, and staff is allocated to work on the project.

Preparation phase. Before the work will be carried out that the project was defined for, a number of things need to be organized and prepared. An important part of the preparation is making a project planning.

Execution phase. In this phase the real project work is done. In a large project, this will consist of a number of different sub-projects, with each sub-project having its own four phases of the project life cycle.

Closing phase. The work and the required documentation is finalized, and the result is presented to the person(s) who commissioned the project. Finally, the project is evaluated.

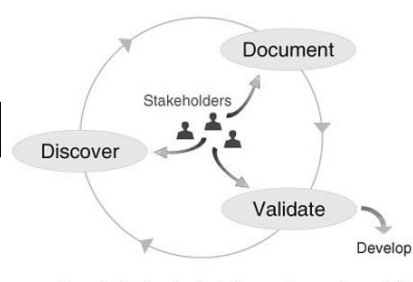
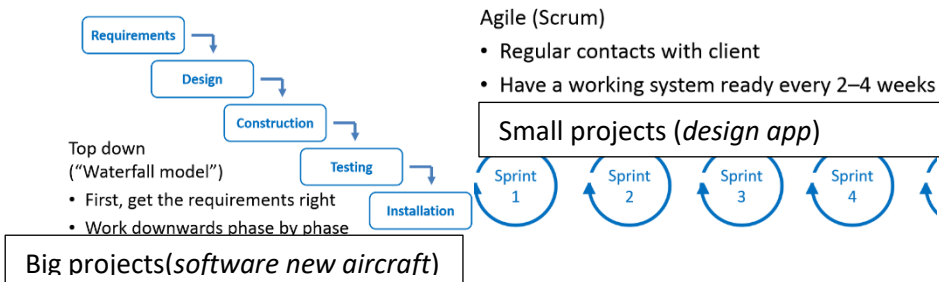
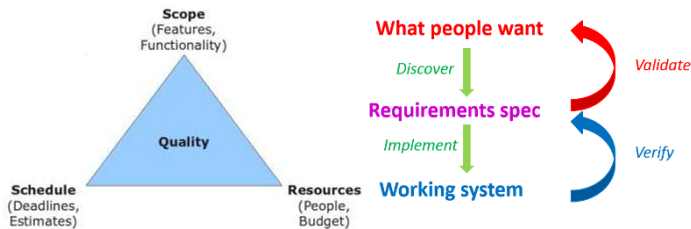


Figure 1: The Inquiry Cycle for creating requirements [AB09]

Requirements analysis: process of discovering, documenting, and validating requirements. **Requirements Engineering:** all activities related to requirements throughout a system's life cycle. **Domain:** part of life or business sector in which the system plays a role (*finance, education, social media*). **Stakeholders (stakeholder roles):** human or legal entities (*companies*) who have some direct or indirect relation to the system and thereby a valid interest in its development. **Surrogate stakeholders:** can or may want to act on behalf of another stakeholder. **Project goal:** what the project aims to deliver. **External goal (client's goal):** what the client hopes to achieve with the results of the project. **Mission statement:** a standardized way of describing the essential characteristics of a system that is to be delivered. **Acceptance criteria:** what needs to be verified before the system is delivered. **Feature creep:** little extra effort a function that is actually in the 'nice to have' category can be added as well.

A linear process

- 1. Exploring the situation Preliminary work
- 2. Scoping the project Preparation phase
- 3. Discovering requirements Inquiry cycle
- 4. Documenting requirements Execution phase
- 5. Validating requirements Inquiry cycle

Delivering a requirements specification Closing phase

- R1 The system shall allow the hotel to handle an increase of 15 % in bookings without adding reception staff.
- R2 The system will support the receptionist to prepare for the arrival of a tourist bus.
- R3 The system shall be able to record that a room is occupied for repair in a specified period.
- R4 The system shall have a screen lay-out as shown in Appendix C.

Project goal: realising a prototype for an NS feedback app
External goal: making it possible to test the feasibility of a feedback with real customers

Mission statement:

Motivation By using medication dispensers for clients who are capable to take their own medication the nursing staff can save time. Budget cuts make it necessary to increase efficiency.

Type of system The system is an extension to the central information system of the nursing home. The dispensers will be bought off the shelf; they communicate with the system but are not part of it.

Goal of the system The system allows to assign and execute medication plans for individual clients. A medication plan specifies, among other things, how the client is notified and how often notifications will be repeated before the system raises an exception.

Exclusions The system can show that the medication has been removed from the dispenser, but that does not guarantee the client has used it. The system is not linked to electronic medication records of clients' GPs.

Approach The system will be implemented as a separate module of the central information system. Usability for nursing staff and clients will be tested by means of a limited pilot with a selected group of clients. Only when these tests prove satisfactory it can be scaled up to other clients inside and outside the nursing home.

R1=Goal-level req. (external) R2 = Business-level req. (user req.); why R3 = System-level req.(product req.); what R4 = Design-level req.; how. Constraints: global req. that restrict the way you produce the product.
Functional req.: Describe functions of the system(on system or business level). **Quality req.(non-functional req.):**Describe quality properties of the system as a whole(*80% of users find the system easy to learn*).

Epic: complex user story: *As a <role>, I want <goal/desire> [, so that <benefit>]*

MoSCoW: Must, Should, Could, Won't. **100 euro:** You have 100 euro and split it over the req. that you think are important. **A complete ranking:** Rank req. by comparing them one by one. **Top 10:** top 10 most important req. with no internal ranking.