Work-Related Project (CO599)

Week 4 – The Project

Contents/Overview [1]

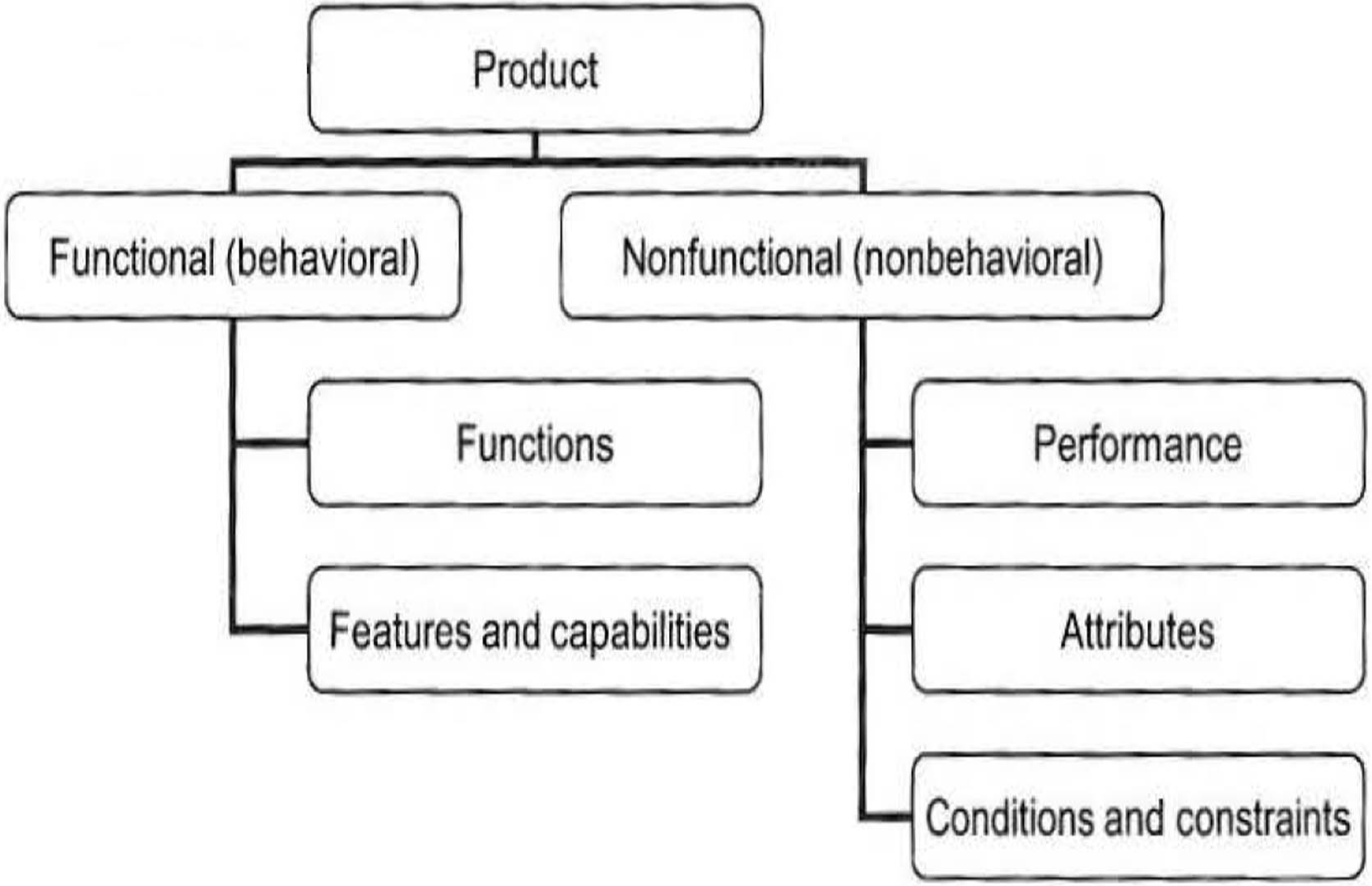
- **Last time:**
  - Completed up to Slide 46 of the Week 3 presentation
  - Examined a project life cycle using the **Whaler Project** as a simulated project
  - The importance of **requirements** and **stakeholder engagement** for project success
  - Information gathering sheet → **functionality, users, data** for the Whaler Project

Contents/Overview [2]

- **This time:**
  - Continue to **examine and refine information about requirements** for the Whaler Project
  - Additional **background research and information gathering**
  - To underpin, inspire and direct the **DESIGN process**

Returning to our work and discussions around REQUIREMENTS

Types Of Requirements



Classifying Requirements by Type

- **Functional requirements: behavioural**
  - Statements describing
    - What the software should and should *not* do
    - The software behaviour for any potential way it might be used
    - The way a person or system interacts with (stimulates) the software

- **Nonfunctional requirements: nonbehavioural**
  - Statements describing constraints and conditions on the system
    - Product requirements: usability, reliability, etc.
    - Process: standards, delivery, etc.
    - External: laws and regulations, etc.

- **Distinction between functional and nonfunctional is sometimes not clear**

Activity: Digital Set Top Box

- List functional requirements
- List nonfunctional requirements

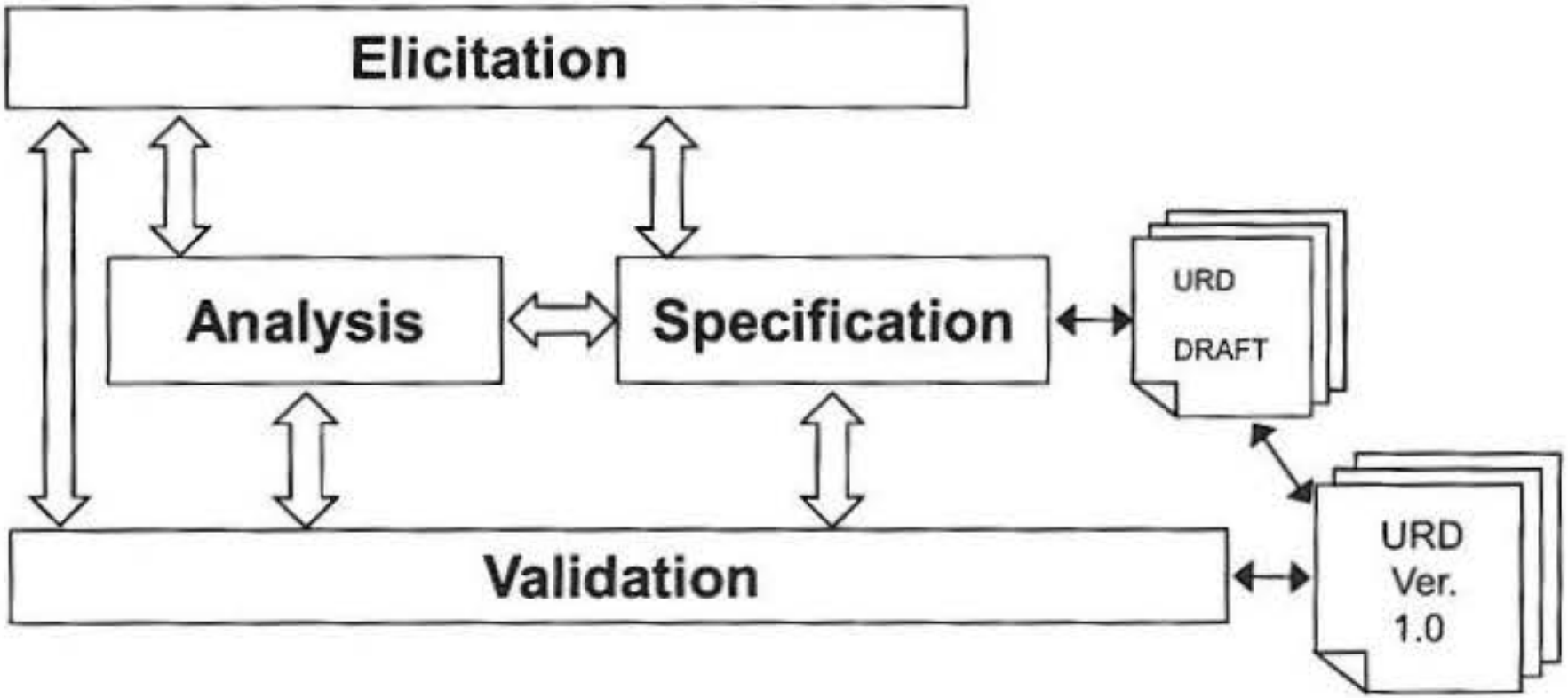
Activity: Digital Set Top Box

Suggested functional requirements

Activity: Digital Set Top Box

Suggested nonfunctional requirements

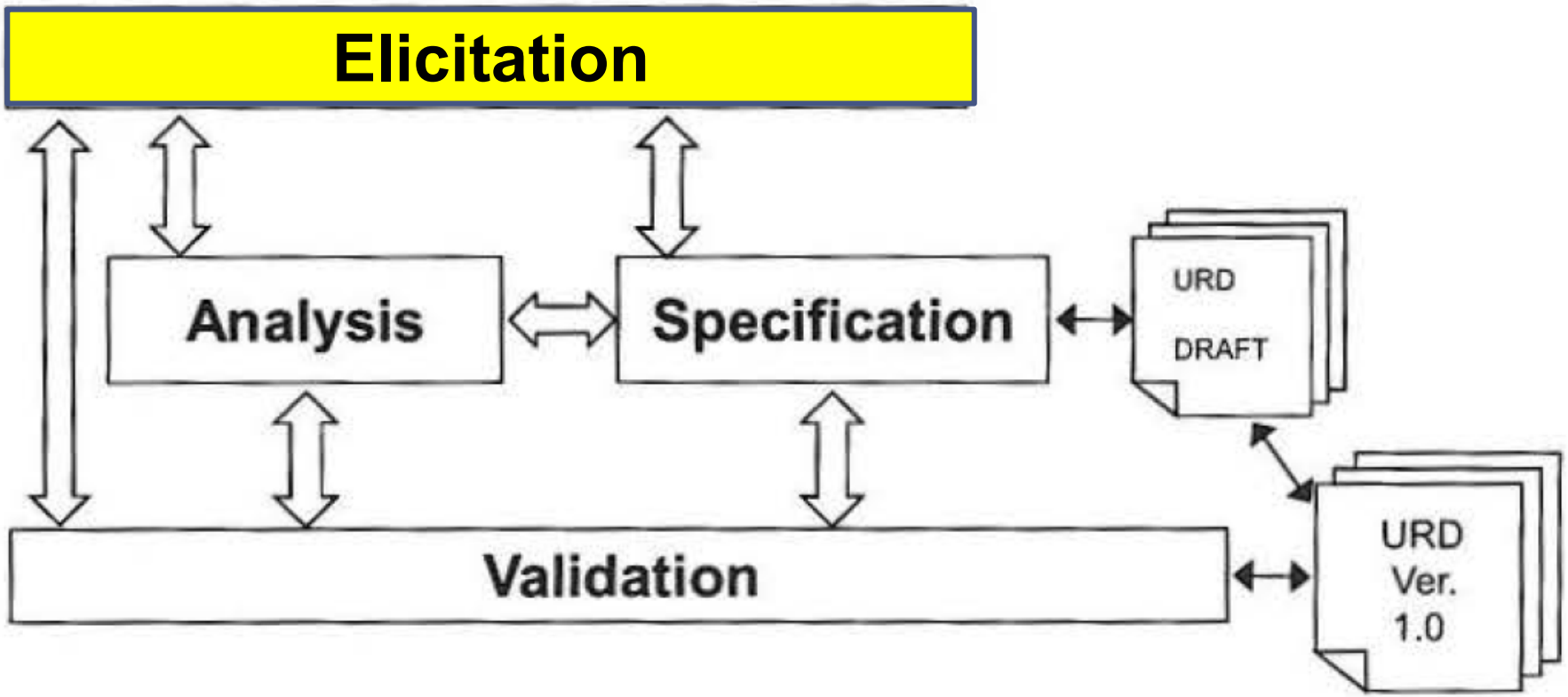
The Requirements Development Process



- **URD** = User Requirements Document

User Requirements Document (URD)

- **The purpose of the document is twofold:**
  - Demonstrates to interested parties that the project is well controlled and is destined for financial and technical success
  - Enables effective project control, successful implementation against well defined parameters and user requirements, to provide top level documentation of the system, facilitate future enhancement and maintenance
- **Contains the following sections (as a minimum):**
  - Assumptions and pre-requisites
  - Functional description and performance requirements
  - Resource and schedule requirements
  - Data requirements
  - Interface requirements
  - Testing requirements


Elicitation
Analysis
Specification
URD
DRAFT
Validation
URD
Ver.
1.0

Elicitation

- **Human activity, involving**
- Source identification
- Information gathering
- Understanding

- **Also called** *requirements…..*
- *…..gathering*
- *…..capture*
- *…..discovery*

Elicitation Techniques

Technique	Definition
1. Interviews	Asking prepared and spontaneous questions and recording responses
2. Focus group	Prequalified stakeholders and SMEs (subject-matter experts), guided by a moderator
3. Facilitated workshops	Cross-functional stakeholders, i.e.: JAD (Joint Application Development)
4. Group creativity techniques	Brainstorming; Nominal Group Technique; Delphi Technique; Affinity Diagram
5. Group decision-making techniques	Generate, classify, and prioritize requirements
6. Questionnaires and surveys	Quick accumulation of information from broad audience
7. Observations	Direct way of viewing people perform in their environments
8. Prototypes	Working model, provides early feedback

Activity: Requirements Elicitation

- **Your task is to prepare to gather more information for the Whaler project**
- **Activity procedure:**

Team work:

1. Review your information gathering sheet

What should the system do?	Who are the users?	What does the system have to know? (Data)

2. Brainstorm within your team and decide:

(a) What else do you need to know-information

(b) What is the best source to get the info

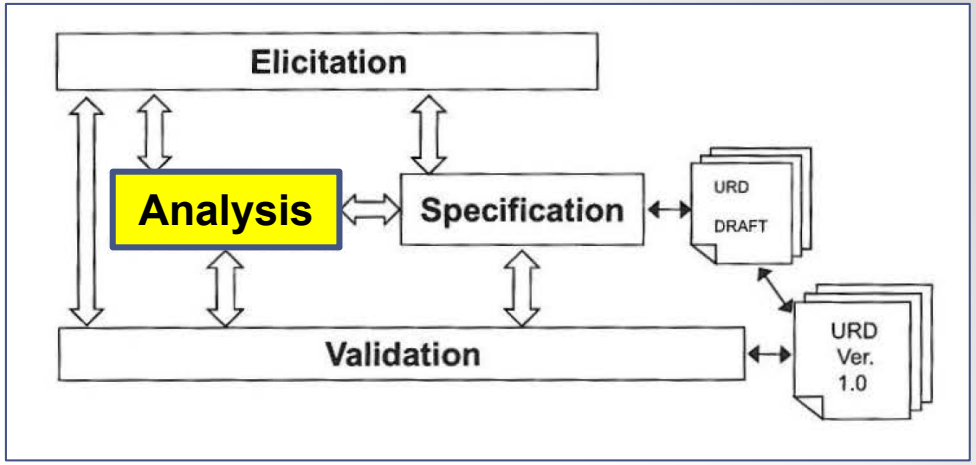
(c) What technique to use

3. Present your work

Information needed	Source(s)	Technique(s)

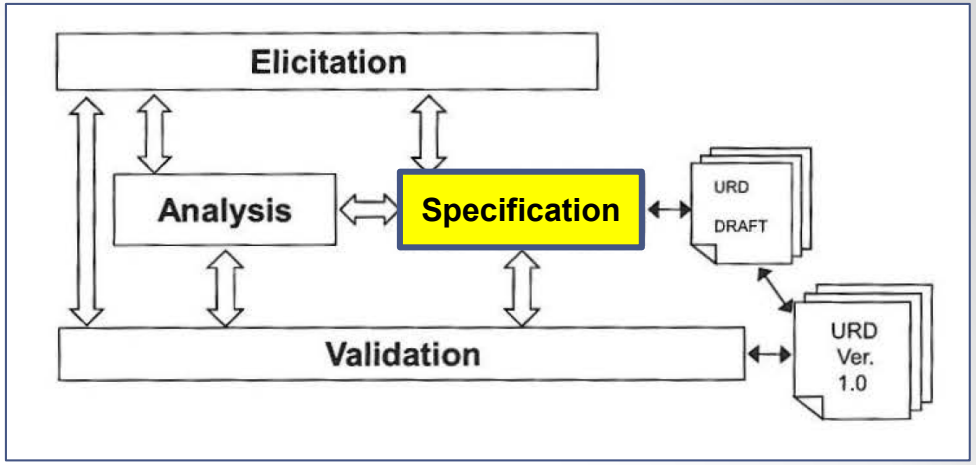
Some Ideas

Analysis



- **Understand and organize the information**
- **Assess the information's accuracy**
- **Identify gaps**
- **Find, negotiate, and resolve conflicts**
- **Assess the stability and volatility of the requirements**
- **Model**
  - At this point, more to understand the problem, not to design the solution
  - We will worry about that later
- **Prioritize**
  - According to the stakeholders

Specification

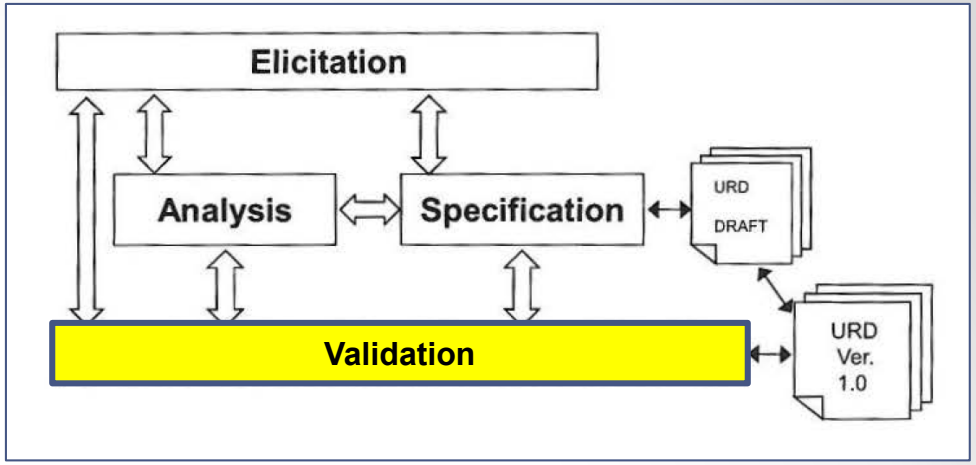


- **Requirements specification**

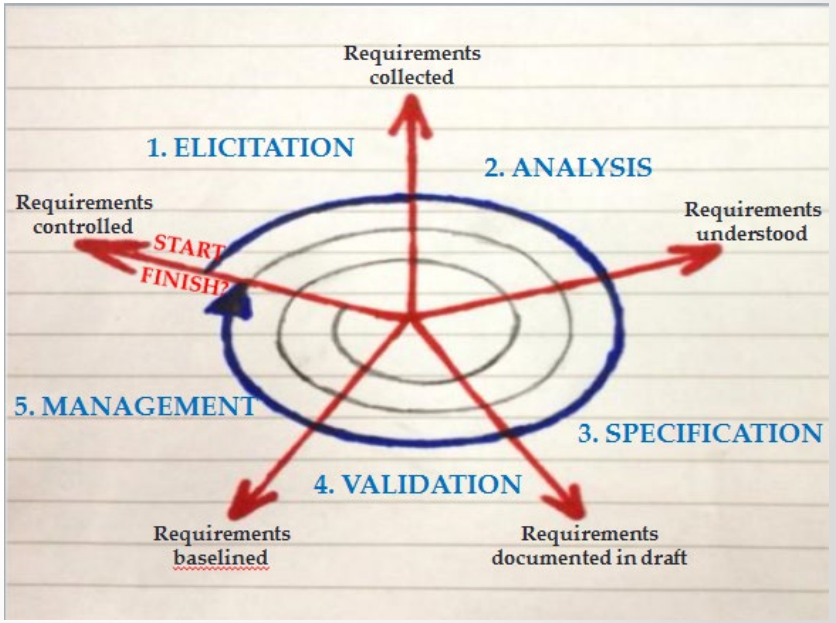
— Producing documented requirements

— Software requirements document
  - Use cases
  - Mockups
  - Data models

Validation



- **Requirements validation**
- Validating the requirements and getting customers' agreement
- Static techniques:
  - Reviews
  - Walk-throughs
  - Inspections



Verification vs validation

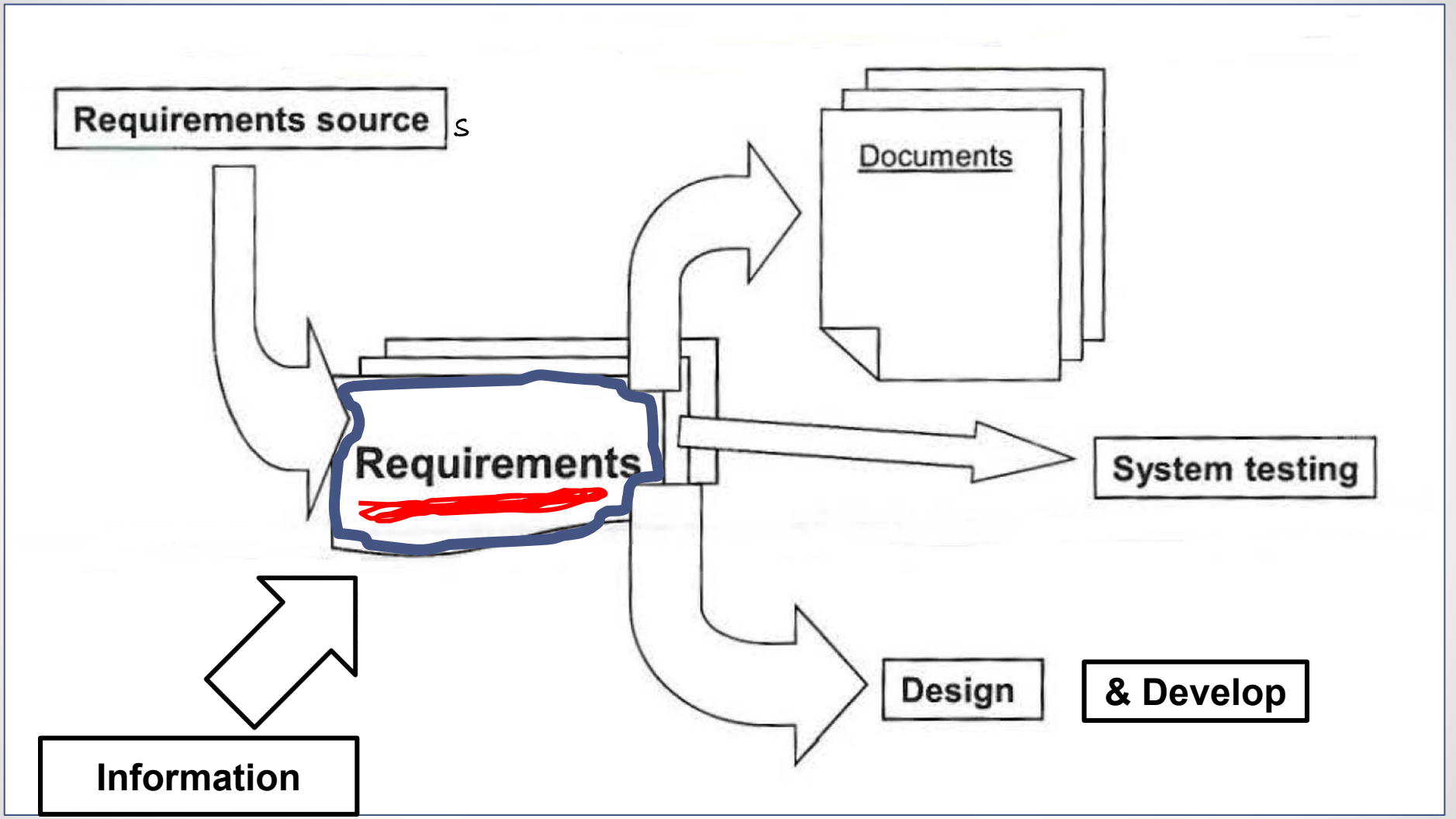
- **Verification**:
  "Are we building the product right"
- The software (system) should conform to its specification

- **Validation**:
  "Are we building the right product"
- The software (system) should do what the user really requires

Why Do We Need Requirements?

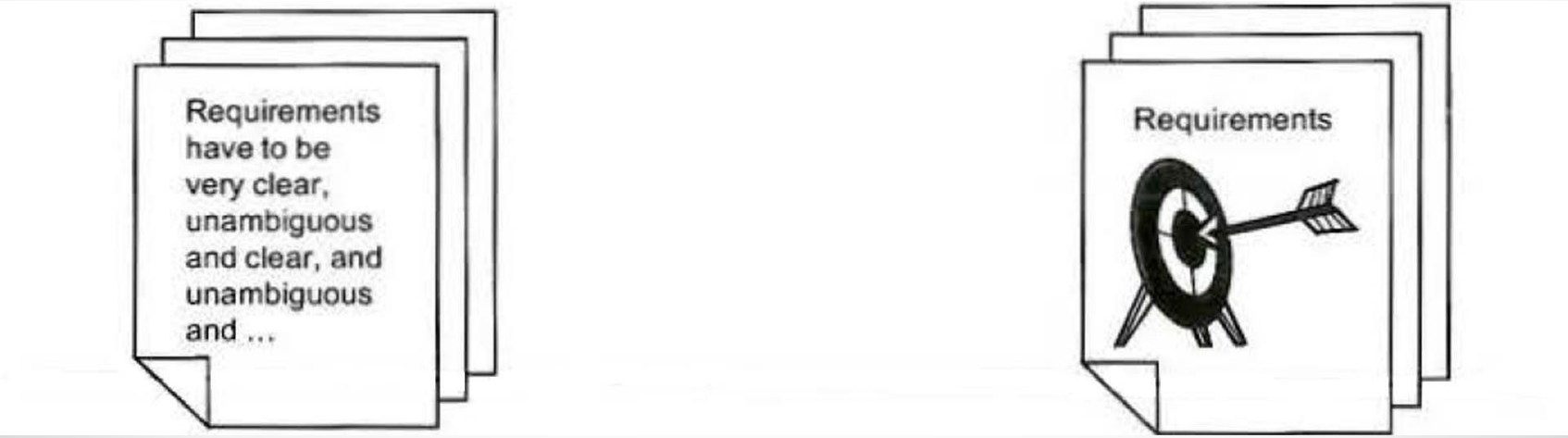
- **To make decisions about *what* to develop before we begin development**
  - Should address the what-to-build question
- **To get agreement from the customers and users on *what* to build**
  - How the product should work, what it should look like, etc.
- **Developers use requirements as a reference point to make decisions**
  - Should not be open to misinterpretation
  - Should address constraints to be imposed on the system
  - Should cover all the "user preferences"
- **To have enough information to be able to generate test cases**
- **To help us maintain the system**
  - They should help us assess the impact of any change on the entire system
  - Should be kept up to date
- **To produce user and system documentation**

Why Do We Need Requirements?



The Challenges

- **Requirements must be understood by the customers and users**
  - Must be written in a natural language
  - Multiple audiences for the same docs (stakeholders, developers, testers, etc)
- **They must be used by implementers**
  - Must be precise and not open to misinterpretation
- **Requirements also must be used for testing**
  - Must be testable - measurable



Write “SMART” Requirements

- **Requirements must**
- Be **SMART**
- Be written in natural languages
- Include diagrams
- Include models (at least for the complicated processes)
- Be quantifiable

Information Sources – Collation, Analysis, Confirmation, Triangulation, Understanding

Project ('Waterfall Approach')

- **Objective 1:** Background research on the published literature, current practices and the business needs
- **Objective 2:** Derivation and specification of requirements
- **Objective 3:** Design the product
- **Objective 4:** Develop the product
- **Objective 5:** Test the product
- **Objective 6:** Implement the product
- **Objective 7:** Evaluate the product

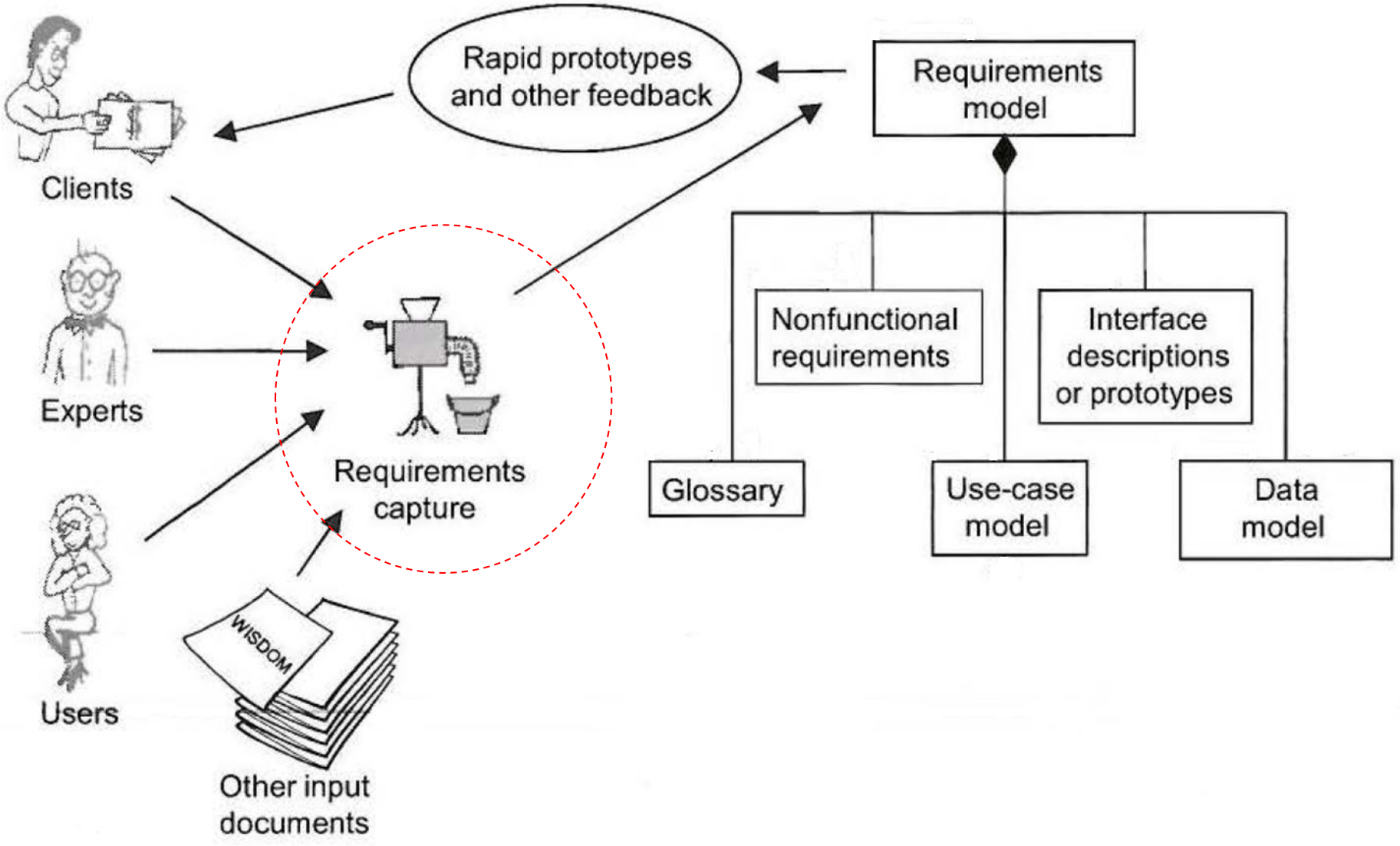
Project ('Waterfall Approach')

- **Objective 1:** Background research on the published literature, current practices and the business needs

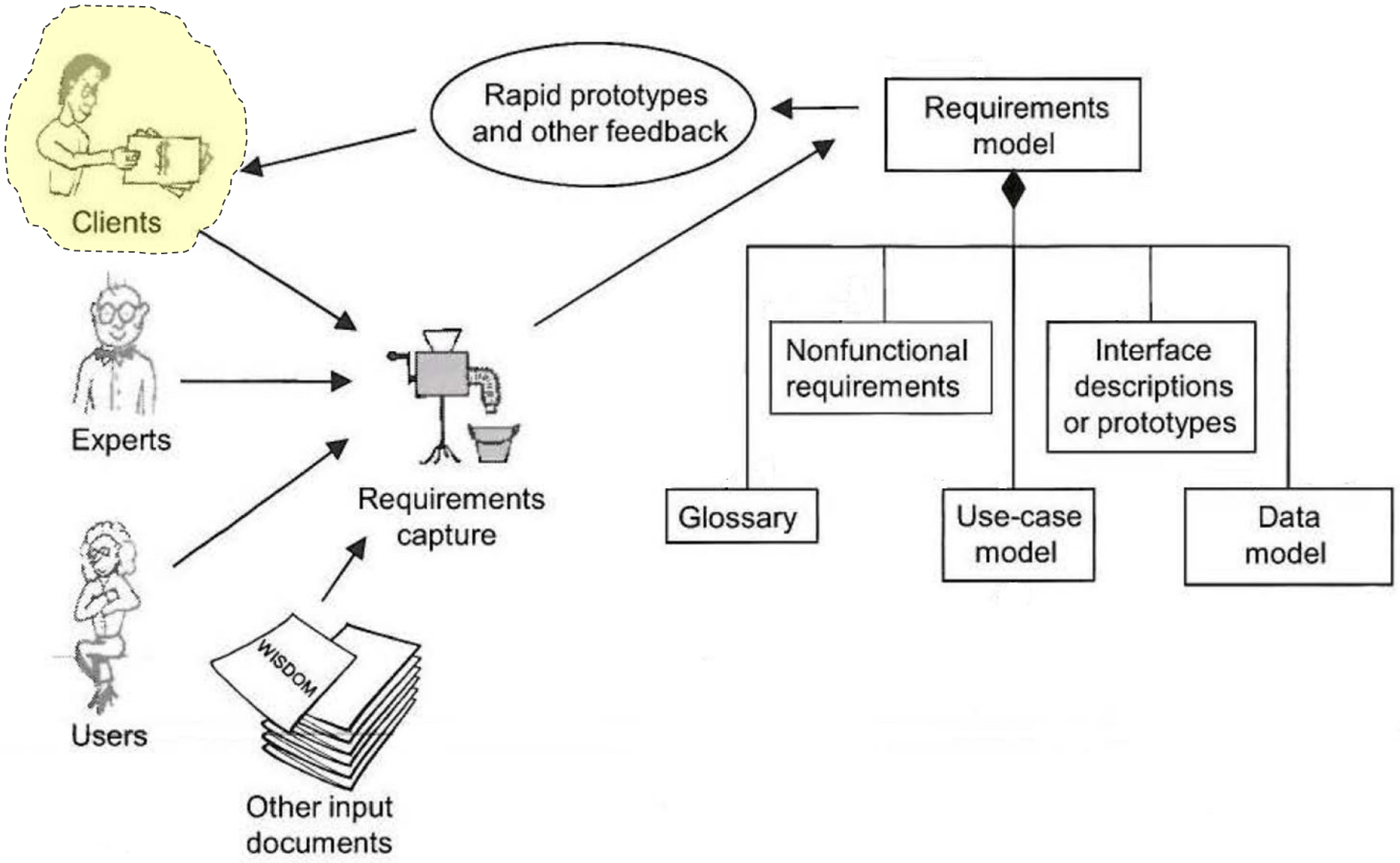
- **Secondary Research** – based on examination and review of information already published

- **Primary Research** – new information generated by you ("the researcher"), for example, via questionnaire, interview, testing, etc.

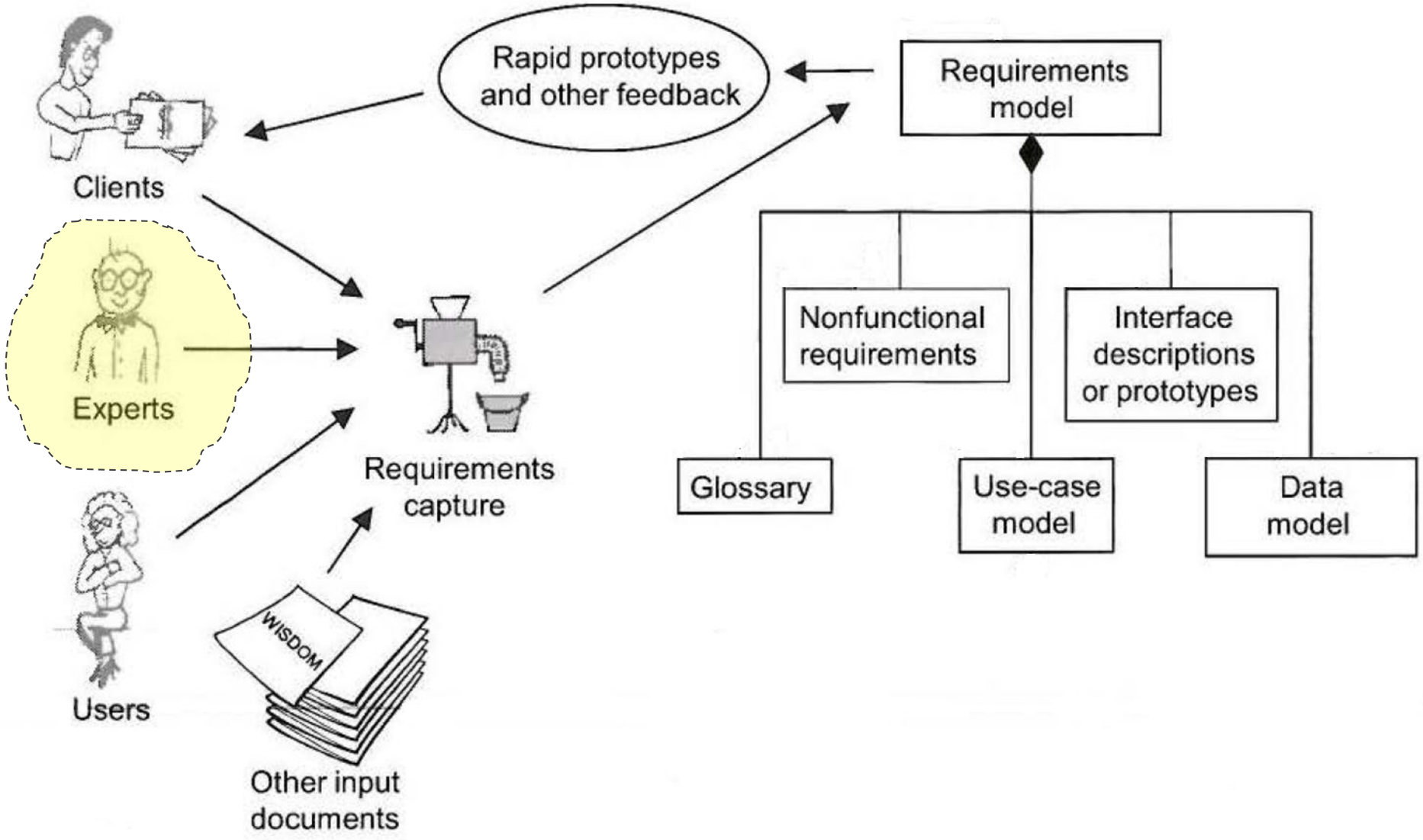
User Requirements, Interactions & Processes



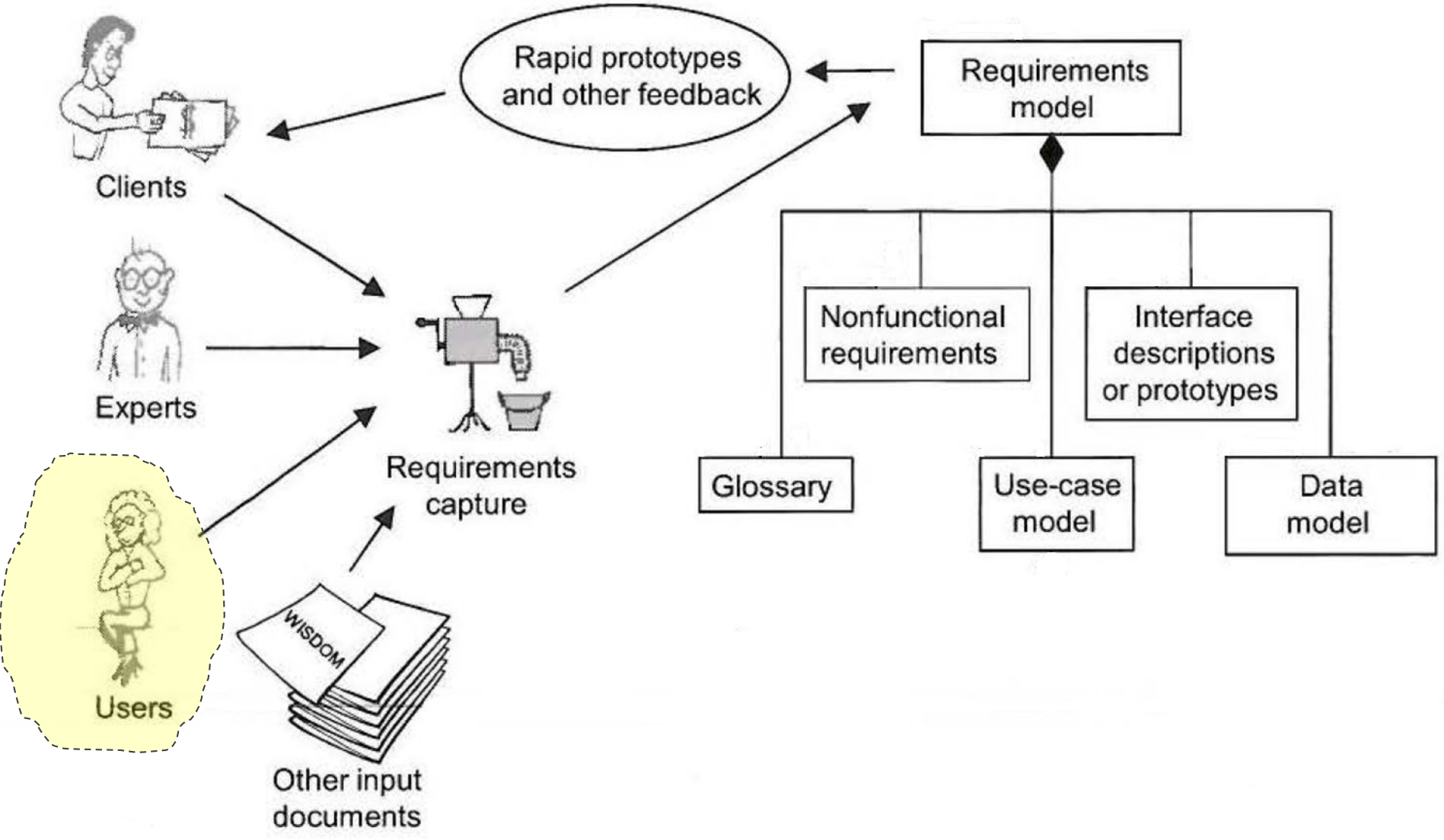
Finding Information



Finding Information



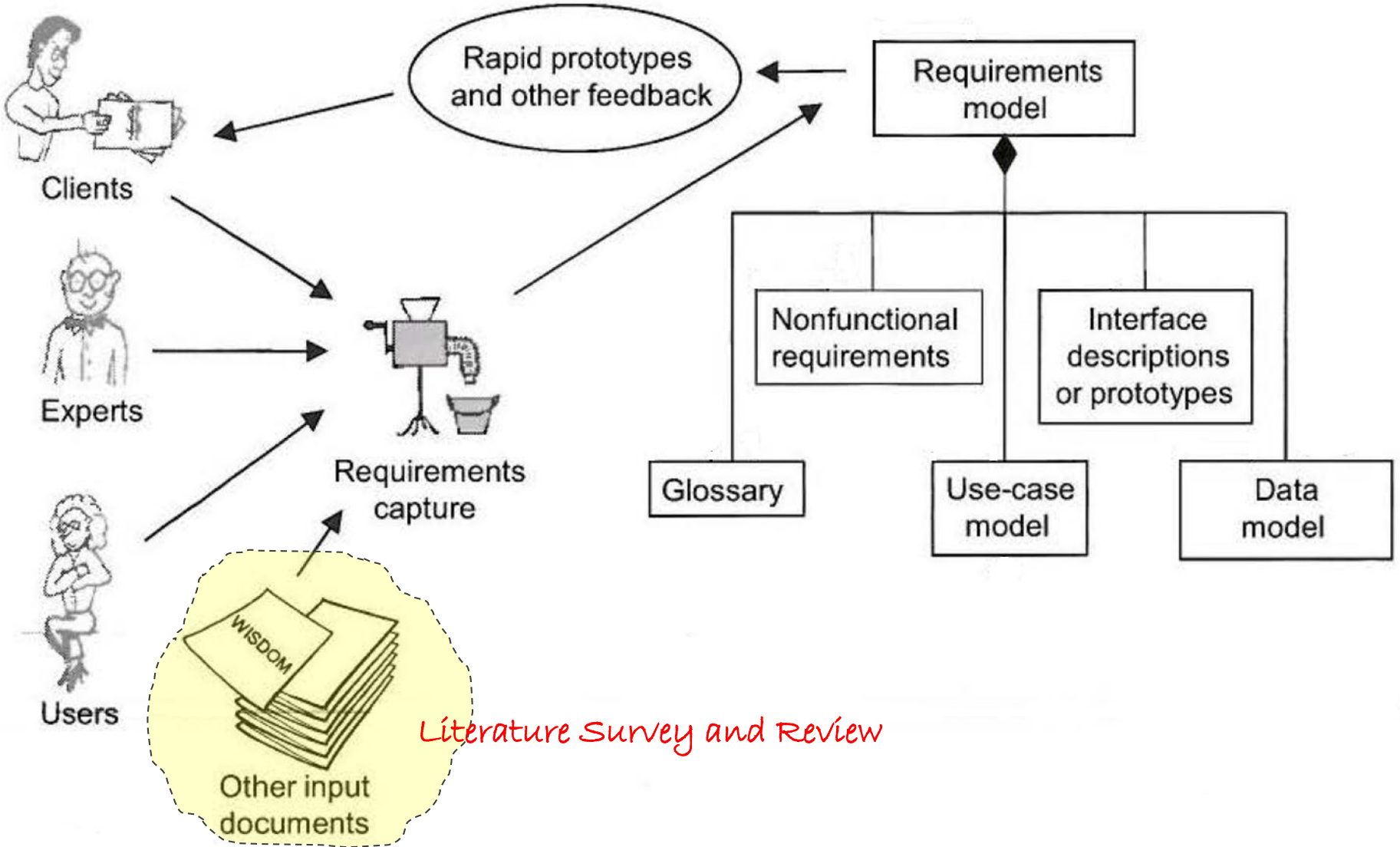
Finding Information



Project Meeting

- Company – including their own in-house design expert
- External firm – hired to carry out project: project manager, expert
- Discussions are not always straightforward with shared clarity about requirements!

Finding Information



Documents and other Sources of Information??

- Where can you find information?

Review of Literature: Sources

- Books
- Manuals
- Journals
- Conference and workshop proceedings
- Reports

Review of Literature: Sources

- Newspapers, magazines
- Radio, television
- Exhibition catalogues (e.g. art)
- Multimedia (e.g. videos) & the Internet

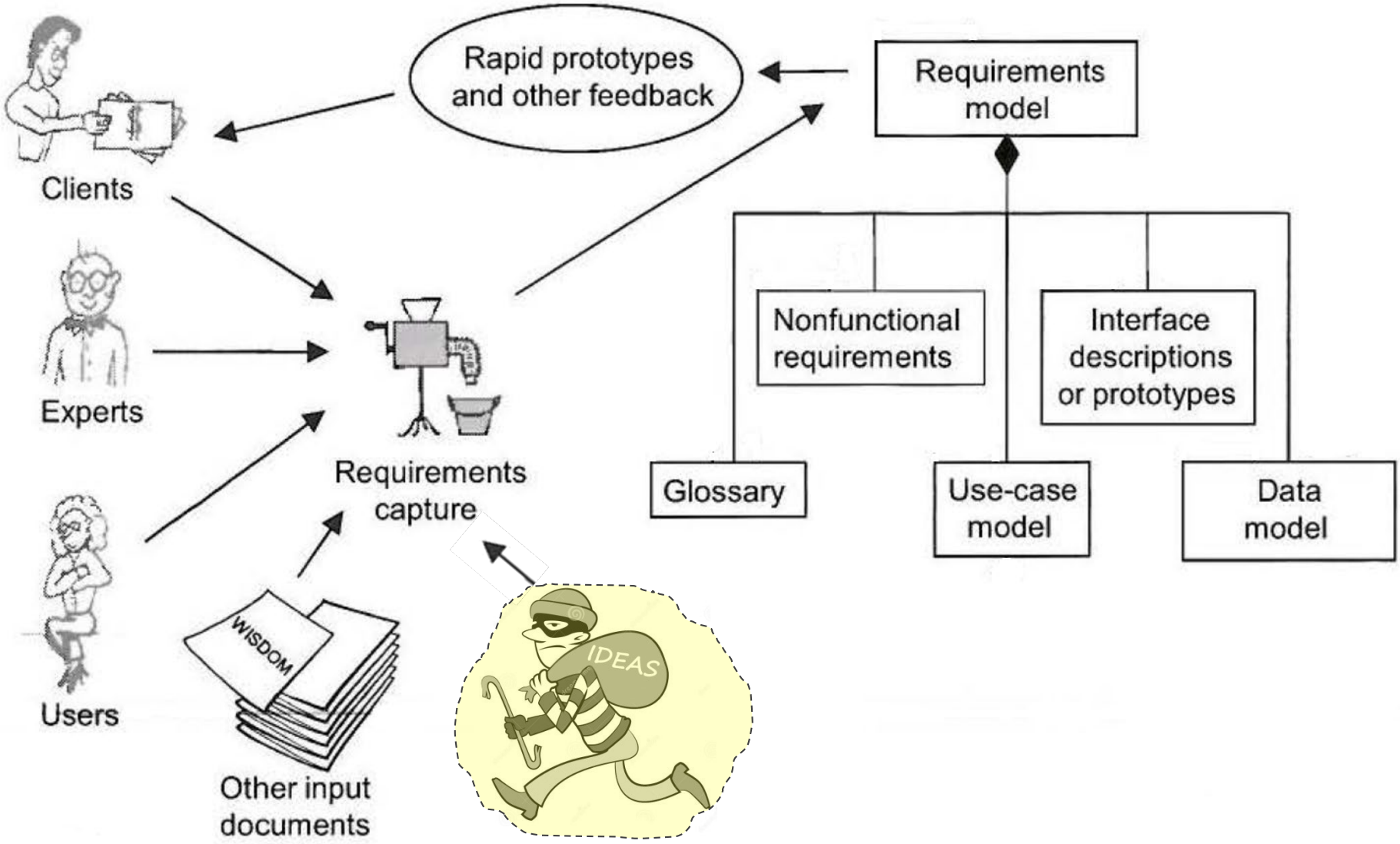
- Catalogues and online databases

- Hard copy and Internet/digital releases

Review of Literature: Purpose

- Provides a context and justification for your work
- Shows your awareness of existing knowledge, information and research
- Analysis of strengths and weaknesses of other work
- Pinpoints the importance and relevance of your own work
- Identifies and signals methodology

Finding Information



www.hireboat.com

hireboat

Contact Us ➡ Follow us ➡

Booking Helpline
01252 796401

Home | Canal Boat Holidays | Norfolk Broads Boat Hire | Contact Details & About Us | Where Can I buy Canal Maps | Boat Hire Special Offers

Find your Holiday

Where would you like to go?
Search All UK Canals

Starting between which dates?
5th Feb - 11th Feb 2016

How long do you want to go for?
Full Week

Preferred start day? (optional)
I don't mind

How many people in your party?
2

Search Holidays

More Options

Pet friendly	☐	No pets boat	☐
Motor Cruisers	☐	Sailing Yachts	☐
Multi showers	☐	Multi toilets	☐
Accessible	☐	240V	☐
Stove heater	☐	Prestige boats	☐
All inclusive	☐	Special Offers	☐

Narrowboat Hire

Norfolk Broads Holidays

Special Offers

www.waterwaysholidays.com

waterways holidays

About Us | Contact Us | Press | Frequent Questions

Booking Helpline
01252 796400
Calling from outside UK +44 (0)1252 796400

Home | Broads Sailing Holidays | Canal Boat Holidays | Norfolk Broads Boat Hire | Choose your Location | Maps & Guides | Special Offers

Boating Holiday Search

Where would you like to go?
Search All UK Canals

Starting between which dates?
5th Feb - 11th Feb 2016

Preferred start day (optional)
I don't mind

Please choose length of holiday
Full Week

How many in your party?
2

Search Holidays

Advanced options

Pet friendly	☐	No pets boat	☐
Motor only	☐	Sailing only	☐
Multi showers	☐	Multi toilets	☐
Accessible	☐	240V	☐
Stove heater	☐	New boats	☐
All inclusive	☐	Offers only	☐
Onboard WiFi	☐	Fuel inclusive	☐

Find your perfect Canal boating holiday or Norfolk Broads boat hire at the best direct booking prices. Check price & availability on over 1,800 hire boats from 80 bases then reserve online or call our boating team on 01252 796400.

The Norfolk Broads

Explore the beautiful Norfolk Broads National Park....
The Norfolk Broads offers a unique lock

Waterways of England

Discover over 3,000 miles of England's Canals & Rivers...
Hire a narrowboat or widebeam barge

Latest Special Offers!

Fantastic savings off selected discounted boating holidays...
Check out our latest Boating Holiday

https://www.hertz.co.uk/rentacar/reservation/?targetPage=reservationOnHomepage.jsp&refererUrl=&searchString=&id=27661&LinkType=HZLK

FAQ - Ask us a question

Hertz Car Hire

United Kingdom (English) Change

Gold Plus Rewards LOGIN Not Yet a Member? Join Now

Car / Van Reservations | Special Offers | Locations | Vehicle Guide / Car Sales | Products & Services | Hertz Loyalty Programme

Book a Car | View/Modify/Cancel a Reservation

1 Pick-up Location (City, State or Airport Code)

Help me find a rental location

Return car to a different Hertz location

2 Pick-up Date and Time:

02:00

Return Date and Time:

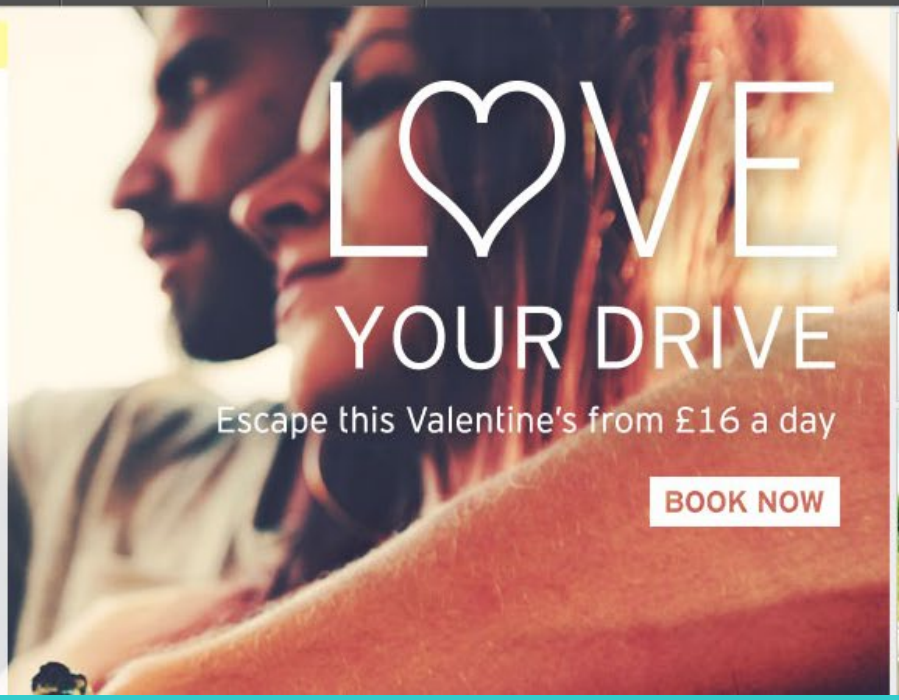
02:00

3 Your age at time of pick-up *

Your age at time of pick-up *

Hire Car Type:

Show Me All



Love your drive
Escape this Valentine's from £16 >>

Principles of Good Web Design

- To justify your design
- To benchmark your design against best practices
- To show that you have a good understanding of these principles and you have applied them to your work

Principles of Good Web Design

- Precedence (guiding the eye)
- Spacing
- Navigation
- Typography
- Usability
- Alignment
- Clarity
- Etc…

(envato tuts+)

Principles of Good Web Design

- Don’t make users think
- Don’t squander users’ patience
- Manage to focus users’ attention
- Strive for feature exposure
- Make use of effective writing
- Strive for simplicity
- Etc….

(Smashing Magazine)

Background Research to Support Reqs and Inform Design

- Analyse examples of existing (appropriate) Website to learn lessons and get ideas

- Read about principles of Website design – again to underpin and justify your design concept and to provide a frame of reference for evaluation

The Project Report will contain the following parts:

1. Introduction (3 marks)
2. Aim and objectives (2 marks)
3. Background research and gathering information (20 marks)
4. Elicitation and specification of requirements (10 marks)
5. Design (10 marks)
6. Development (10 marks)
7. Testing (5 marks)
8. Evaluation (5 marks)
9. Conclusion and further work (6 marks)
10. References and use of information (4 marks)

CW2

The Product/Prototype will be valued at:

25 marks

TOTAL MARKS AVAILABLE = 100

Final Comments

Conclusion

- Continued work on the Whaler Project

- Relating our elicitation of requirements, information gathering and background research to the design and modelling of our Website (system) for the Whaler Project (i.e. CW2)

References

- Inspired by various courses, for example, Learning Tree.

- Other Resources (on Blackboard)
  - Free mini course on Web Design (Udemy)
  - Artistic Web Design Using Adobe Dreamweaver and Photoshop (Wolper)
    Web Design in Easy Steps Chapter 4 (McManus)
  - Refer back to materials from CO455 User Experience