Requirements Gathering

Lecture : 7
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Outline

Requirements Gathering Techniques
- Interview
- Joint Application Development
- Questionnaires
- Document Analysis
- Observation

- [Selecting the Appropriate Technique]

Requirements Gathering

Objective:

The goal of the analysis phase is to <u>truly understand the requirements of the new system.</u>

Challenges:

1) Find the right people to participate.
2) Collect and Integrate the information

analyst ~ detective (Sherlock Holmes)

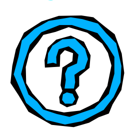
Requirements Gathering Techniques

There are 5 main requirements techniques (else called “Fact Finding Techniques”):

– Interviews

– Joint Application Development

– Questionnaires



– Document Analysis

– Observation

Interviews

Interviews

The five steps:

[1] Selecting interviewees

[2] Designing interview questions

[3] Preparing for the interview

[4] Conducting the interview

[5] Post-interview follow-up

[1] Selecting interviewees

- Based on information needed
- Often good to get different perspectives
  - *Managers*
  - *Users*
  - *Ideally, all key stakeholders*

- *one-one-one (one interviewer, one interviewee)*
  - *sometimes one-on-many (if there are time constraints)*

[1] Selecting interviewees (cont)

Create an interview schedule

Name	Position	PurposeOfInteview	Meeting
Manousos	Director	Strategic vision for the new system	Mon, Oct 17, 9-10 AM
Maria	Resp. Sales	Current Situation/Problems Ideas for improvements	Mon, Oct 17, 12-2 PM
Sofia	Production Mgr	How production is planned?	Mon, Oct 17, 3-4 PM

[2] Designing interview questions: Types of Questions

- ***Closed***
  - They require a specific answer (like multiple choice or arithmetic questions)
- ***Open***
  - they leave room to the interviewee to tell more
- ***Probing*** (διερευνητικές, πιο εστιασμένες)
  - used when some of interviewee's answers are unclear to you

[2] Designing interview questions: Types of Questions: Examples

- ***Closed***
  - *How many orders do you receive per day?*
  - *How many customers you have?*
  - *How customers place orders?*
  - *Do the customers have complaints?*
- ***Open***
  - *Which are the problems with the current system?*
  - *How do you think the situation could be improved?*
- ***Probing***
  - *Can you give me an example?*
  - *Why this is a problem according to your opinion?*
  - *Why the solution X did not work?*
  - *Why a solution like THIS will not not work?*

Designing interview questions

- ***Unstructured interview***
  - Broad, roughly defined information
  - Usually at the beginning of the project
- ***Structured interview***
  - More specific information
  - As the project proceeds

An important tip:

- ***Don’t ask about information that you can get from other sources (e.g. by studying documents)***

Designing interview questions: the sequence of Questions

- The questions should be logically organized
- Strategies
  - top-down
    - from general issues to specific issues
  - bottom-up
    - from specific issues to general issues

•Γενικό: *Πως μπορούμε να βελτιώσουμε την διεκπεραίωση των παραγγελιών*;
•Μεσαίο: *Πως μπορούμε να μειώσουμε τις επιστροφές προϊόντων από τους πελάτες;*
•Ειδικό: *Πως μπορούμε να μειώσουμε τα λάθη στην αποστολή προϊόντων;*

[3] Preparing for the interview

- Prepare general interview plan
  - List of question
  - Anticipated answers and follow-ups
- Confirm areas of knowledge
- Set priorities in case of time shortage
- Prepare the interviewee
  - Schedule
  - Inform of reason for interview
  - Inform of areas of discussion

[4] Conducting the interview

- Appear professional and unbiased
- Record all information
- Check on organizational policy regarding tape recording
- Be sure you understand all issues and terms
- Separate facts from opinions
- Give interviewee time to ask questions
- Be sure to thank the interviewee
- End on time

Taken from Dennis et al. 2005

[4] Conducting the interview: TIPS

- Don't worry, be happy
- Pay attention
- Summarize key points
- Be succinct
- Be honest
- Watch body language

Taken from Dennis et al. 2005

[5] Post-interview follow-up

- Prepare interview notes
- Prepare interview report
- Look for gaps and new questions

[5] Post-interview follow-up: Interview Report

INTERVIEW REPORT

Person interviewed ______________
Interviewer _______________
Date _______________
Primary Purpose:

Summary of Interview:

Open Items:

Detailed Notes:

Adapted from Dennis et al. 2005

Joint Application Design (JAD)

JAD

It is a special type of group meeting

Key points

- Allows project managers, users, and developers (10-20 persons) to work together to identify requirements for the system
- May reduce scope creep by 50%
- Avoids requirements being too specific or too vague

JAD: Basic Roles

Facilitator

- Profile:
  - is an expert in both group processes techniques and systems analysis and design
- Role:
  - guides the discussion but does not joins it as a participant
  - sets the agenda, helps with technical terms and jargon, record group input, helps resolve issues

Scribes (1 or 2)

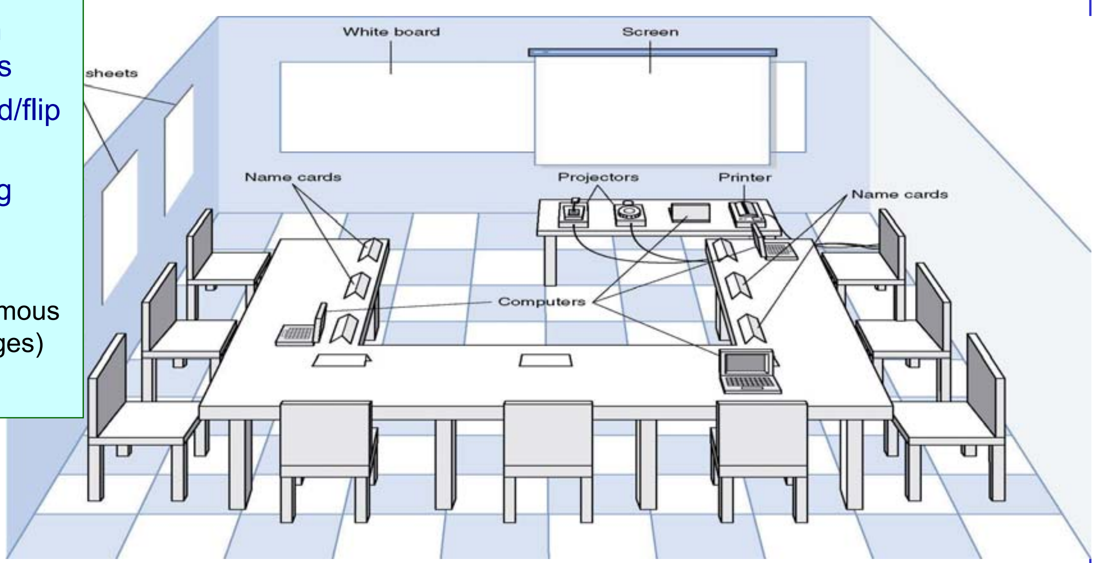
- assist the facilitator by recording notes, making copies, ...

The JAD Session

- Tend to last 5 to 10 days over a three week period
- Prepare questions and participants as with interviews
- Formal agenda and groundrules
- Facilitator activities
- Post-session follow-up
  - like the interview report

JAD Meeting Room

- U-Shaped seating
- Away from distractions
- Whiteboard/flip chart
- Prototyping tools
- e-JAD
  - (anonymous messages)

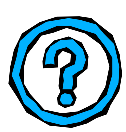


Taken from Dennis et al. 2005

How to manage problems in JAD Sessions (if you are the Facilitator)

- How to reduce domination
  - **contact dominating persons in private during a break**
- How to encourage non-contributors
  - **ask them a standard question you are sure they can answer**
- How to stop side discussions
  - **approach them while you continue playing the role of facilitator (e.g. talking)**
- How to avoid repetitions
  - **if a person keeps returning to the same issue, write his points on the board and whenever he raises the same issue, ask him if there is anything new to add on the board**
- How to avoid fake disagreements
  - **Sometimes persons think they disagree because they just use different names and terms. Clarify the issues**.
- How to manage unresolved conflicts
  - **Ask for criteria that will allow to identify the best alternative.**
- How to manage true conflicts
  - **postpone the discussion and move on (name it “open issue”)**
- Use humor
  - **but in context**

Questionnaires



Questionnaires

- Mainly used when we need information for many persons (commonly these persons do not belong to the organization)

- Examples
  - from the customers of an organization
  - from users that spread across many geographic locations
  - for developing a generic software (e.g. a new wordprocessor, mailing tool, …)

- Forms of Questionnaires
  - printed on paper
  - electronic (by email, Web): fast, cheap, less laborious results analysis

Questionnaires

Steps:

1/ Selecting participants
  - Using samples of the population

2/ Designing the questionnaire
  - Careful question selection

3/ Administering the questionnaire
  - Working to get good response rate

4/ Questionnaire follow-up
  - Send results to participants

2/ Designing the questionnaire

- *Be sure that* ***<u>you know how you will analyze the results</u>*** *that you will get*
- *Design the questionnaire having this in mind.*

Good Questionnaire Design

Begin with <u>non-threatening</u> and interesting questions

<u>Group</u> items into logically coherent sections

Do not put important items at the very end of the questionnaire

Do not crowd a page with too many items

Avoid abbreviations

Avoid biased or suggestive items or terms

Number questions to avoid confusion

Pretest the questionnaire to identify confusing questions

Provide anonymity to respondents

Adapted from Dennis et al. 2005

3/ Administering the questionnaire

- ***How we can make the participants to complete and send back the questionnaire?***

Tips from the Marketing Research:

- Explain why this research takes place
- Explain why the respondent has been selected
- Specify a date by which the questionnaire is to be returned
- Offer an inducement to complete the questionnaire
  - a free pen,..

Document Analysis

Document Analysis

- Provides clues about existing “as-is” system
- Typical documents
  - forms
  - organization charts
  - company reports
  - policy manuals
  - job descriptions
  - documentation of existing systems
  - Web sites
- Look for user additions to forms
- Look for unused form elements

Παραδείγματα δελτίων και εγγράφων

- *Δελτία Παραγγελιών*
- *Τιμολόγια*
- *Αποδείξεις πληρωμών*
- *Λογαριασμοί*
- *Λογιστικά Βιβλία*
- *Ιατρικά παραπεμπτικά*
- *Εισιτήρια*
- *Προσωπικές κάρτες (Κάρτες Βιβλιοθήκης, Ταυτότητες, Διαβατήρια, Φοιτητικές Ταυτότητες, Κάρτες Προσωπικού, …)*
- *….*

Examples

Objective:

Build a system for the electronic submission of applications for the acknowledgement of abroad academic titles

UNIVERSITÀ DI PISA

IN SUPREMÆ DIGNITATIS 1343

RICONOSCIMENTO DI TITOLO ACCADEMICO ESTERO

I cittadini italiani o stranieri possono chiedere il riconoscimento di un proprio titolo accademico estero il cui corso di studi sia comparabile con quello di un titolo conferito dall'Università di Pisa. Su tale richiesta, corredata da tutti i documenti elencati di seguito, delibera il competente Consiglio di corso di studio che, valutando caso per caso gli studi compiuti e gli esami sostenuti , può :

- dichiarare il titolo accademico estero equipollente a quello conferito dall'Università di Pisa, con la conseguente validità a tutti gli effetti di legge ;
- *in caso contrario*, consentire all'interessato l'iscrizione presso l'Università di Pisa al corrispondente corso di studi, con dispensa totale o parziale dagli esami di profitto (sono fatte salve le disposizioni di specifici accordi bilaterali o convenzioni internazionali).

DOCUMENTAZIONE DA PRESENTARE

ON

1. **Domanda di riconoscimento del titolo accademico estero diretta al Magnifico Rettore,** da redigersi in italiano, nella quale devono essere specificati sia il titolo di studio straniero (in lingua originale) sia il corrispondente titolo accademico dell'Università di Pisa con il quale si intende avere il riconoscimento;
2. **Titolo finale degli studi secondari in ORIGINALE,** con relativa legalizzazione, traduzione ufficiale e dichiarazione di valore a cura della Rappresentanza Diplomatica o Consolare Italiana competente;
3. **Titolo accademico estero in ORIGINALE,** con relativa legalizzazione, traduzione ufficiale e dichiarazione di valore a cura della Rappresentanza Diplomatica o Consolare Italiana competente;
4. **Certificato in ORIGINALE** con il dettaglio dei corsi seguiti e degli esami sostenuti all'estero per conseguire il titolo accademico estero, tradotto ufficialmente in italiano e legalizzato come sopra;
5. **Programmi degli esami sostenuti in ORIGINALE** (su carta intestata dell'Università straniera o avvalorati con timbro dell'Università stessa), con relativa traduzione ufficiale in italiano;
6. **Copia di un documento di identità** (rilasciato da una Autorità italiana per i residenti in Italia);
7. **1 foto** formato tessera firmata dal candidato.

MODALITA' DI PRESENTAZIONE DELLA DOMANDA

I cittadini italiani, i cittadini appartenenti alla Comunità europea ovunque residenti e gli extracomunitari soggiornanti in Italia (ex art. n. 5 legge n. 40 del 06.03.1998) possono inoltrare l'intera documentazione a :

Dipartimento I "Didattica e ricerca"
Ufficio "studenti e laureati" – Ufficio Studenti Stranieri
Via Enrico Fermi n° 8 – 56100 PISA
Tel. 05022120009-010-011 Fax 0502212001
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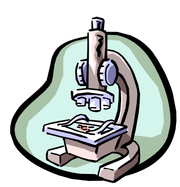
ORARI DI APERTURA: **lunedì – mercoledì - venerdì** **8.30 – 13.00**
martedì – giovedì **15.15 – 17.30**
(gli orari potranno subire alcune variazioni nel mese di agosto)

I cittadini extracomunitari residenti all'estero devono presentare la domanda e l'intera documentazione alla **Rappresentanza diplomatica o consolare italiana competente per territorio** nelle modalità ed entro le date stabilite annualmente dalla relativa circolare ministeriale, reperibile comunque presso le stesse Rappresentanze.

Observation



Observation

Watching processes being performed

Why observation is useful?

- You see the reality (you don’t listen how others describe it)
- Users/managers often don’t remember everything they do
  - (how many hours you spend last week for this course?)
- You can check the validity of information gathered other ways

Remarks

- Behaviors change when people are watched
- Careful not to ignore periodic activities
  - Weekly … Monthly … Annual

Synopsis

- ***There are five major information gathering techniques that all systems analysts must be able to use: Interviews, JAD, Questionnaires, Document Analysis, and Observation.***
- ***Systems analysts must also know how and when to use each as well as how to combine methods.***

Reading and References

- **Systems Analysis and Design with UML Version 2.0** (2nd edition) by A. Dennis, B. Haley Wixom, D. Tegarden, Wiley, 2005. CHAPTER 5
- **Systems Analysis and Design,** Kendall & Kendall, Prentice-Hall, 2005. CHAPTER 4 & 5
- **Object-Oriented Systems Analysis and Design Using UML** (2nd edition) by S. Bennett, S. McRobb, R. Farmer, McGraw Hil, 2002, CHAPTER 6
- Joint Application Development :
  - http://www.carolla.com/wp-jad.htm
  - http://www.utexas.edu/hr/is/pubs/jad.html