

# Managing the development and purchase of information systems (Part 2)

(November 14, 2016)

BUS3500 - Abdou Illia, Fall 2016

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## LEARNING GOALS

- Describe alternative systems development methodologies
  - Prototyping
  - JAD
  - RAD
  - (OOAD)
- Explain when a company should use alternative SDM

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## Problems with Traditional SDLC

- SDLC is time consuming
- SDLC is not flexible (sequential process)
- SDLC gets users' inputs **ONLY** during Systems analysis.
- Design is frozen at end of System Design

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### Question 1

- ❑ Which of the following is true about SDLC?
  - a) It might take years to develop and implement a working information system
  - b) Multiple teams could work simultaneously on different phases
  - c) It is the best methodology for situations where the needs and requirements are likely to change during the development process
  - d) All of the above

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### Prototyping

- ❑ A SDM that addresses:
  - Time consuming issue associated with SDLC
  - SDLC's inability to take care of new requirements
- ❑ A SDM in which the Development team uses limited set of users requirements to quickly build a working model of the proposed system – a *prototype*.

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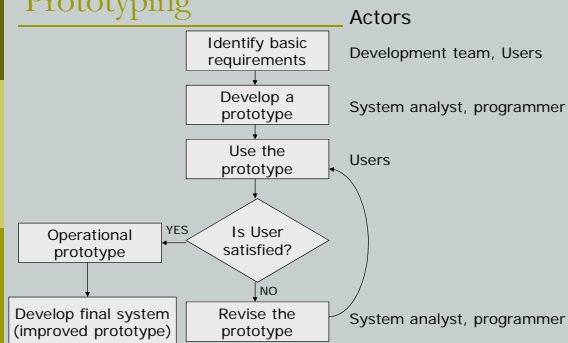
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### Prototyping



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## Prototyping

- Advantages
  - Working model ready quickly
  - Works in situation where requirements are changing
  - Works in situations where users cannot explicitly express their requirements
- Disadvantage
  - Only a limited number of users involved. So, subject to potential implementation problem.

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## Joint Application Development (JAD)

- A SDM that addresses:
  - The limited scale of users involvement problem of Prototyping
  - Potential implementation problem due to limited users involvement
- A SDM that brings together the Development team, a significant number of users, and a facilitator in order to define system requirements and develop a prototype.

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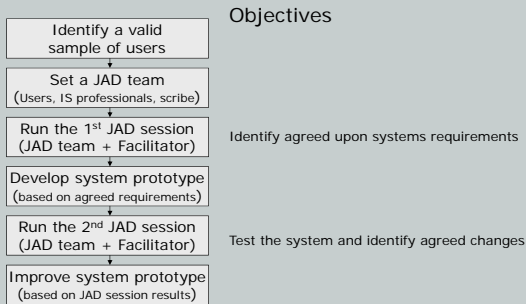
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## Joint Application Development (JAD)



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## Question 2

- Which of the following is true about a JAD facilitator? (Choose all that apply)
  - a) Could be an outside consultant
  - b) Is the scribe who takes notes
  - c) Is responsible for coordinating the JAD sessions
  - d) Is responsible for developing the system based on the agreed upon requirements
  - e) All of the above

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## Joint Application Development (JAD)

- Advantages:
  - Helps alleviate conflicting requirements
  - Its greater users involvement leads to greater user acceptance of final system
- Disadvantages
  - Could be expensive and time consuming

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## Rapid Application Development (RAD)

- Combines JAD, Prototyping, and use of Integrated CASE (ICASE) tools to decrease the time for systems development
- ICASE tools provide code generating capability
  - ICASE tools can produce a completed program based on the diagrams developed by systems analysts
  - ICASE tools can generate tables for a database based on detailed system specifications

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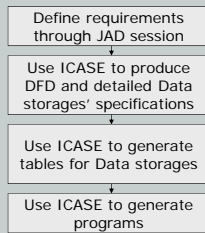
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## Rapid Application Development (RAD)

### Typical use of RAD



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## Object-Oriented Analysis and Design (OOAD)

- Uses same phases as SDLC
- System Analysis and System Design view system
  - In terms of objects (e.g. customers, employees, products)
  - NOT in terms of processes
- OOAD identifies each object in the system and
  - its properties (e.g. SSN, Name, address, etc. for Student)
  - Its procedures (e.g. A student registers for a class)
- Advantages
  - Reduces time to develop system (objects' reuse)
  - Can lead to high-quality systems (reuse of tested objects and procedures)

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## Summary Questions

	Malaga	Notes
1) What are the main problems associated with SDLC?		
2) What is Prototyping? What are the steps of Prototyping? In what kind of situations Prototyping might be the best SDM to use?		
3) What is JAD? Typically, who could be a member of a JAD team? Usually, what is the main objective of the 1 <sup>st</sup> JAD session? What is the main problem associated with JAD?		
4) What is RAD? What is an ICASE tool		
5) What is the difference between OOAD and SDLC? What is an object's property? What is a procedure? What are the main advantages of OOAD?		

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## SDLC: Recap

Steps	Key actors	Tools/Techniques
1. Planning	Project Manager	TCO, Project Management software
2. System Analysis	System Analyst, Users.	Interviews, observing users at work, DFD
3. System Design	System analyst (or system designer)	System Flowchart, Structure chart
4. Development	Programmers, database developers, network engineers	Program Flowchart, Pseudo code, programming languages
5. Testing	Development team, Users	Verification, Validation
6. Implementation	Development team, Users	Direct cutover, parallel conversion, pilot testing, staged conversion
7. Maintenance	internal IS staff, external consultant	programming languages

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