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Information Systems ISM 3011

Fall 2004
Unit 13A (Chapter 12)

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Systems Investigation and Analysis

Chapter 12

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Participants in Systems Development

FIGURE 12.1
The systems analyst plays an important role in the development team and is often the only person who sees the system in its totality. The one-way arrows in this figure do not mean that there is no direct communication between other team members. Instead, these arrows just indicate the pivotal role of the systems analyst—an individual who is often called on to be a facilitator, moderator, negotiator, and interpreter for development activities.

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Initiating Systems Development

FIGURE 12.2
Typical Reasons to Initiate a Systems Development Project

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Trends in Systems Development and ERP

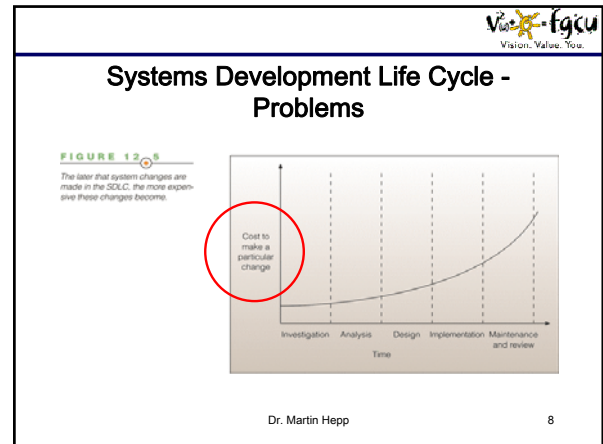
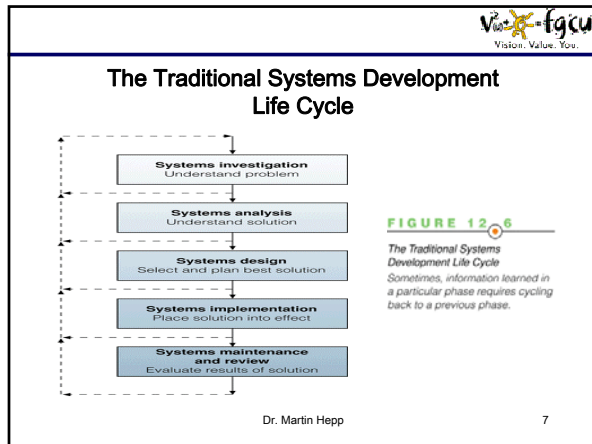
- ERP vendor as one-stop provider
- Applications to integrate with ERP systems
- External consulting

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Systems Development Life Cycle (SDLC)

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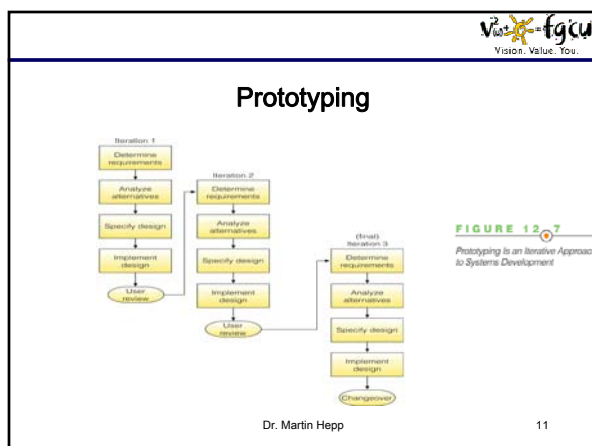
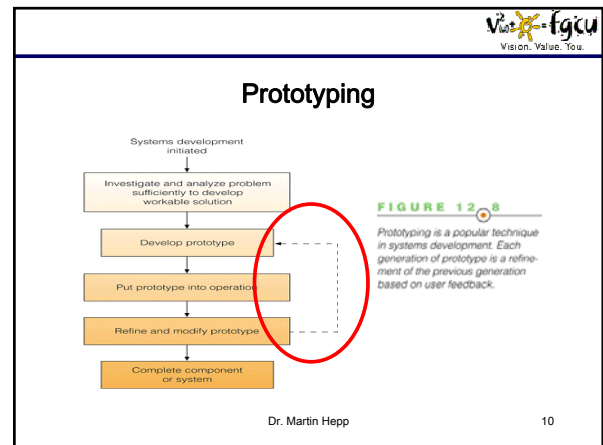
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Advantages and Disadvantages of Traditional SDLC

TABLE 12.1
Advantages and Disadvantages of Traditional SDLC

Advantages	Disadvantages
Formal review at the end of each phase allows maximum management control.	Users get a system that meets the needs as understood by the developers; this may not be what was really needed.
This approach creates considerable system documentation.	Documentation is expensive and time-consuming to create. It is also difficult to keep current.
Formal documentation ensures that system requirements can be traced back to stated business needs.	Often, user needs go unstated or are misunderstood.
It produces many intermediate products that can be reviewed to see whether they meet the users' needs and conform to standards.	Users cannot easily review intermediate products and evaluate whether a particular product (e.g., data flow diagram) meets their business requirements.

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Advantages and Disadvantages of Prototyping

TABLE 12.2
Advantages and Disadvantages of Prototyping

Advantages	Disadvantages
Users can try the system and provide constructive feedback during development.	Each iteration builds on the previous one. The final solution may be only incrementally better than the initial solution.
An operational prototype can be produced in weeks.	Formal end-of-phase reviews may not occur. Thus, it is very difficult to contain the scope of the prototype, and the project never seems to end.
As solutions emerge, users become more positive about the process and the results.	System documentation is often absent or incomplete, since the primary focus is on development of the prototype.
Prototyping enables early detection of errors and omissions.	System backup and recovery, performance, and security issues can be overlooked in the haste to develop a prototype.

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Rapid Application Development (RAD)

TABLE 12-3
Advantages and Disadvantages of RAD

Advantages	Disadvantages
For appropriate projects, this approach puts an application into production sooner than any other approach.	This intense SDLC can burn out systems developers and other project participants.
Documentation is produced as a by-product of completing project tasks.	This approach requires systems analysts and users to be skilled in RAD system development tools and RAD techniques.
RAD forces teamwork and lots of interaction between users and stakeholders.	RAD requires a larger percentage of stakeholders' and users' time than other approaches.

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Extreme Programming

- An integrated set of techniques based on simplicity and feedback.
 - Pair Programming
 - Testing
 - 40-Hour Week
 - Code is integrated once per day

<http://www.xprogramming.org>

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Factors Affecting Systems Development Success

FIGURE 12-9
Degree of change can greatly affect the probability of a project's success.

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Project Management

- Project schedule
- Project milestone
- Project deadline
- Critical path

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Use of Project Management Tools

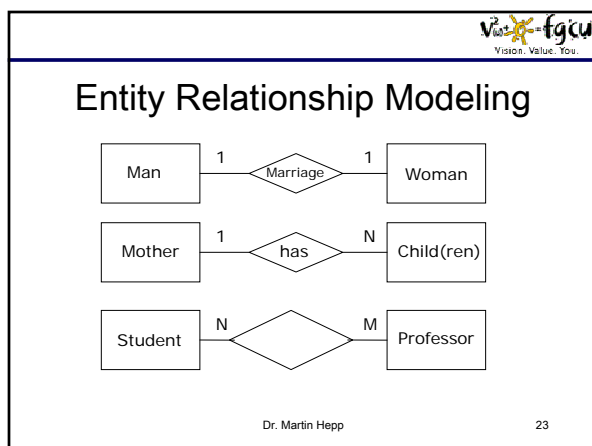
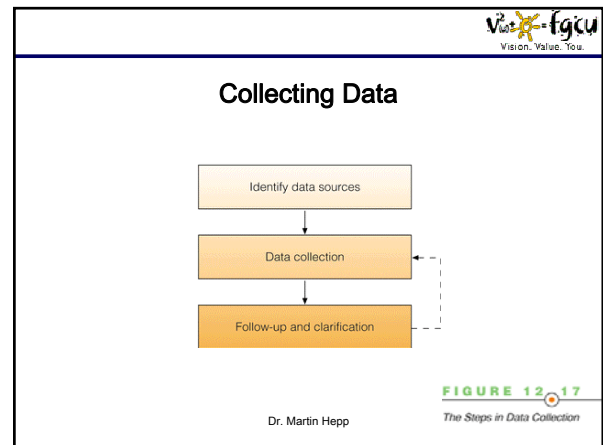
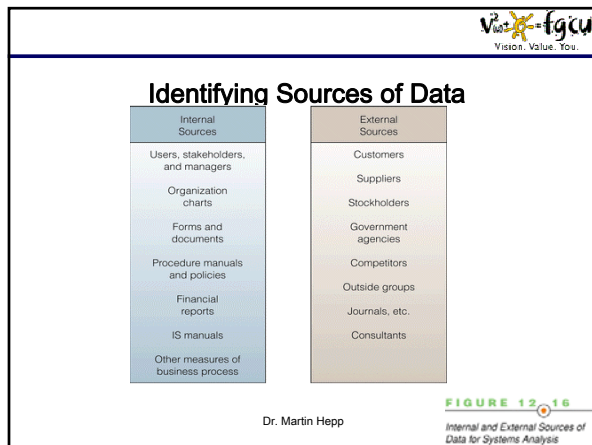
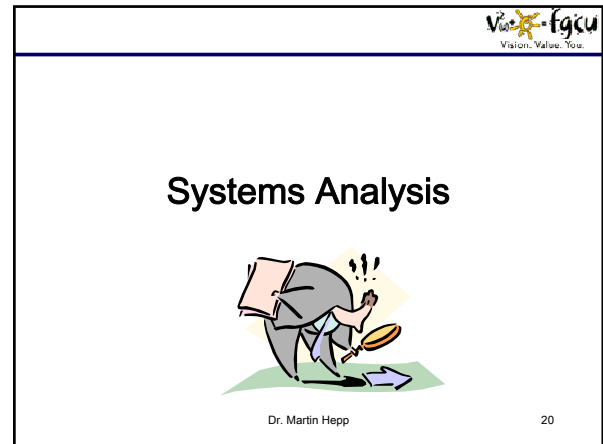
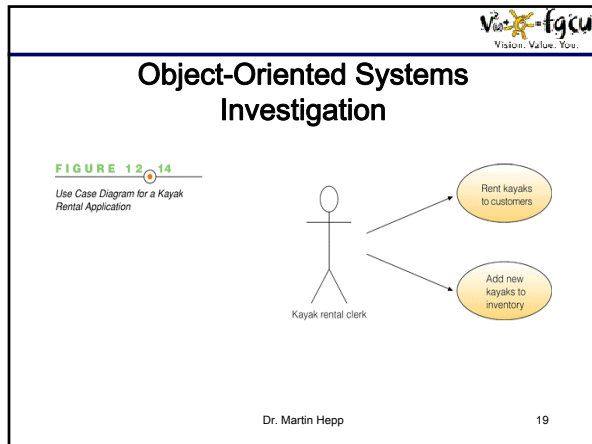
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FIGURE 12-11
Sample Gantt Chart
A Gantt chart shows progress through systems development activities by putting a bar through appropriate cells.

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Critical Path Method (CPM)

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Thank you!

The slides will be available on the internet at
<http://ruby.fgu.edu/courses/mhepp/>
 (-> CRN80097)

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