LISBON
SCHOOL OF
ECONOMICS &
MANAGEMENT

UNIVERSIDADE DE LISBOA

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BUILD AND MANAGE SYSTEMS

# Learning Goals

Students will be able to:

- Describe and analyze IT in the context of society and organizations
- Propose, select, choose and build solutions of IT infrastructure and IT applications
- **Reflect and evaluate IT management and development**

13. Building Information Systems

1. How does building new systems produce organizational change?

- **IT-enabled organizational change**

- **Automation** (Increases efficiency, Replaces manual tasks)

- **Rationalization of procedures** (Streamlines standard operating procedures, Often found in programs for making continuous quality improvements)

- **Business process redesign** (Analyze, simplify, and redesign business processes, Reorganize workflow, combine steps, eliminate repetition)

- **Paradigm shifts** (Rethink nature of business, Define new business model, Change nature of organization)
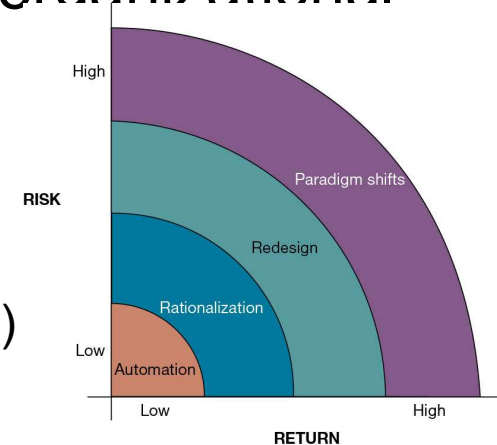
13. Building Information Systems

2. What are the core activities in the systems development process?

Activities that go into producing an information system solution to an organizational problem or opportunity
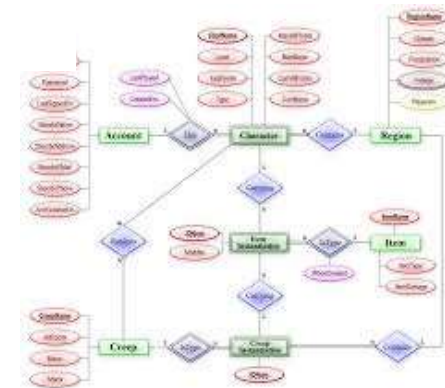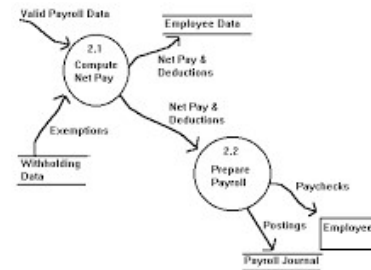
- Systems analysis
- Systems design
- Programming
- Testing
- Conversion
- Production and maintenance

13. Building Information Systems

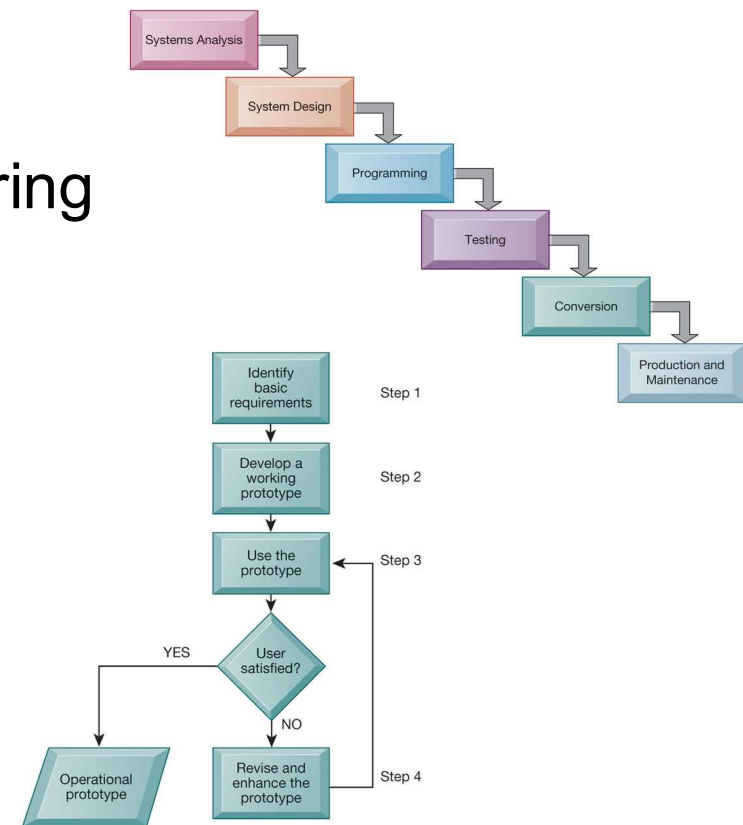3. What are the principal methodologies for modeling and designing systems?

- Structured Methodologies

- Object-Oriented Development

13. Building Information Systems

4. What are alternative methods for building information systems?

Computer-Aided Software Engineering
Traditional Systems Life Cycle
Prototyping
End-User Development

13. Building Information Systems

5. What are new approaches for system building in the digital firm era?

- Application Software Packages and Cloud Software Services
- Outsourcing
- Rapid Application Development (RAD), Agile Development, and DevOps
- Component-Based Development and Web Services
- Mobile Application Development

14. Managing Projects
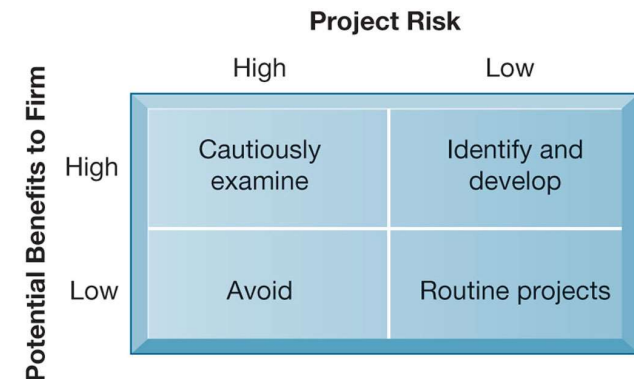
1. What are the objectives of project management, and why is it so essential in developing information systems?

- Project management Activities include planning work, assessing risk, estimating resources required, organizing the work, assigning tasks, controlling project execution, reporting progress, analyzing results

- Five major variables
  - Scope
  - Time
  - Cost
  - Quality
  - Risk

14. Managing Projects

2. What methods can be used for selecting and evaluating information systems projects and aligning them with the firm's business goals?

- Portfolio Analysis
- Scoring Models
- Information System Costs and Benefits
- Capital Budgeting for Information Systems
- Dimensions of Project Risk

Project Risk

	High	Low
High	Cautiously examine	Identify and develop
Low	Avoid	Routine projects

Potential Benefits to Firm

Criteria	Weight	E R P System A %	E R P System A Score	E R P System B %	E R P System B Score
1.1 Online order entry	4	67	268	73	292
1.2 Online pricing	4	81	324	87	348
1.3 Inventory check	4	72	288	81	324
1.4 Customer credit check	3	66	198	59	177
1.5 Invoicing	4	73	292	82	328
2.1 Production forecasting	3	72	216	76	228
2.2 Production planning	4	79	316	81	324
(etc.)	(etc.)	(etc.)	(etc.)	(etc.)	(etc.)
Grand Totals			3,128		3,300

14. Managing Projects

3. How can firms assess the business value of information systems?

Cost and Benefits of Information systems

Tangible benefits are quantifiable

Intangible benefits that cannot be immediately quantified

14. Managing Projects

4. What are the principal risk factors in information systems projects, and how can they be managed?

risk in a systems development project is determined by

- project size,
- project structure
- experience with technology

- Identification of nature and level of risk of project
- Each project can then be managed with tools and risk-management approaches geared to level of risk
- Managing technical complexity
  - Internal integration tools

  - Project leaders with technical and administrative experience
  - Highly experienced team members
  - Frequent team meetings
  - Securing of technical experience outside firm if necessary

15. Managing Global Systems

1. What major factors are driving the internationalization of business?

Global economic system and global world order driven by advanced networks and information systems

The growth of international trade has radically altered domestic economies around the globe

For example, production of many high-end electronic products parceled out to multiple countries

For example: Apple iPhone's global supply chain

15. Managing Global Systems

2. What are the alternative strategies for developing global businesses?

Business Function	Domestic Exporter	Multinational	Franchiser	Transnational
Production	Centralized	Dispersed	Coordinated	Coordinated
Finance/accounting	Centralized	Centralized	Centralized	Coordinated
Sales/marketing	Mixed	Dispersed	Coordinated	Coordinated
Human resources	Centralized	Centralized	Coordinated	Coordinated
Strategic management	Centralized	Centralized	Centralized	Coordinated

15. Managing Global Systems

3. What are the challenges posed by global information systems and management solutions for these challenges?

Agreeing on common user requirements
Introducing changes in business processes
Coordinating applications development
Coordinating software releases
Encouraging local users to support global systems

15. Managing Global Systems

4. What are the issues and technical alternatives to be considered when developing international information systems?

Computing platforms and systems integration
- How new core systems will fit in with existing suite of applications developed around globe by different divisions
- Standardization: Data standards, interfaces, software, and so on

Connectivity
- Internet does not guarantee any level of service
- Many firms use private networks and VPNs
- Low penetration of PCs, outdated infrastructures in developing countries

15. Managing Global Systems

4. What are the issues and technical alternatives to be considered when developing international information systems?

Software
  Integrating new systems with old
  Human interface design issues, languages
Software localization
  Converting software to operate in second language
Most important software applications:
  TPS and MIS
  SCM, EDI, and enterprise systems
  Collaboration tools, e-mail, videoconferencing

References

- Laudon, K. C., & Laudon, J. P. (2020). Management information systems: Managing the Digital Firm. 16th Ed. Upper Saddle River: Pearson.