ALTERNATIVE SYSTEMS BUILDING APPROACHES

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92-1
Alternative Systems Building Approaches

• Alternative Systems-Building Methods
  – Traditional systems life-cycle
  – Prototyping
  – End-user development
  – Application software packages
  – Outsourcing
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• **Traditional systems lifecycle:**
  – Oldest method for building information systems
  – Phased approach divides development into formal stages
    • Follows “waterfall” approach: Tasks in one stage finish before another stage begins
  – Emphasizes formal specifications and paperwork
  – Still used for building large complex systems
  – Can be costly, time-consuming, and inflexible
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- **Prototyping**
  - Building experimental system rapidly and inexpensively for end users to evaluate
  - **Prototype: Working but preliminary version of information system**
    - Approved prototype serves as template for final system
  - **Steps in prototyping**
    1. Identify user requirements
    2. Develop initial prototype
    3. Use prototype
    4. Revise and enhance prototype
THE PROTOTYPING PROCESS

The process of developing a prototype can be broken down into four steps. Because a prototype can be developed quickly and inexpensively, systems builders can go through several iterations, repeating steps 3 and 4, to refine and enhance the prototype before arriving at the final operational one.

FIGURE 13-9
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• Advantages of prototyping
  – Useful if some uncertainty in requirements or design solutions
  – Often used for end-user interface design
  – More likely to fulfill end-user requirements

• Disadvantages
  – May not accommodate large quantities of data or large number of users
    • May not undergo full testing or documentation
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• End-user development:
  – Uses fourth-generation languages to allow end-users to develop systems with little or no help from technical specialists
  – Fourth generation languages: Less procedural than conventional programming languages
    • PC software tools
    • Query languages
    • Report generators
    • Graphics languages
    • Application generators
    • Application software packages
    • Very high-level programming languages
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• End-user development (cont.):
  – **Advantages:**
    • More rapid completion of projects
    • High-level of user involvement and satisfaction
  – **Disadvantages:**
    • Not designed for processing-intensive applications
    • Inadequate management and control, testing, documentation
    • Loss of control over data
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- **Application software packages**
  - Save time and money
  - Many offer customization features:
    - Software can be modified to meet unique requirements without destroying integrity of package software
  - **Evaluation criteria for systems analysis include:**
    - Functions provided by the package, flexibility, user friendliness, hardware and software resources, database requirements, installation and maintenance efforts, documentation, vendor quality, and cost
  - **Request for Proposal (RFP)**
    - Detailed list of questions submitted to packaged-software vendors
    - Used to evaluate alternative software packages
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- **Outsourcing**
  
  - Several types
    
    - Subscribing companies use software and computer hardware provided by vendors
    
    - Hired to design, create software
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• **Outsourcing (cont.)**
  
  – **Advantages**
    
    • Allows organization flexibility in IT needs
  
  – **Disadvantages**
    
    • Hidden costs, e.g.
      
      – Identifying and selecting vendor
      
      – Transitioning to vendor
    
    • Opening up proprietary business processes to third party
الامام هادی عليه السلام:

التواضح، أن تعطي الناس ما تحب أن تحتسب به أن تعتدي.

فرطني در آن است که بهم جنان کنیم گر سمت داری با توجهان داشند.

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