

Component 4: Introduction to Information and Computer Science

Unit 9/Part f: Components and Development of Large Scale Systems

System Security

- CIA triangle
 - Confidentiality
 - Integrity
 - Availability
- Risk Management
 - Risk identification
 - Risk assessment
 - Risk control



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Physical Security

- Operations center security
- Servers, desktop computers, notebook, laptop and tablet computers
- Network security
- Application security
- File security
- User security
- Procedural security

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Backup and Recovery

- Backup policies
 - Backup media
 - Types of backups
 - Retention periods
- Business continuity issues
 - Hot site
 - Data replication
 - Business insurance



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System Obsolescence

- No longer supports users needs
- Platform becomes out-dated
- Reaches the end of its economically useful life



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Topic III: Financial Support

- The process of financially supporting large scale systems over time.
- Positive and cost-avoidance benefits



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Costs and Benefits

- Economic Feasibility
- Total Cost of Ownership (TCO)
 - Acquisition costs
 - Ongoing support
 - Maintenance costs



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Cost-Benefit Analysis

- Payback Analysis
 - Time it takes to recover the system cost
- Return on Investment (ROI)
 - Project return vs project investment
- Present Value Analysis
 - Net present value (NPV)

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Cost Classifications

- Developmental
- Tangible
- Direct
- Fixed
- Operational
- Intangible
- Indirect
- Variable

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Allocating Costs

- No charge
- Fixed charge
- Variable charge based on resource usage
- Variable charge based on volume



SUMMARY

- Described the building blocks of a large scale system
- Explained the initial design process/options for a large scale system
- Described the evaluation process/criteria for including and selecting existing software applications
- Described the process for new software development
- Described the different types of testing and when testing should occur
- Described systems maintenance
- Explained the process of financially supporting large scale systems over time

Future Challenges & Opportunities

- Predictions
- Strategic Planning
- Credentials and Certification


