



Joint Universities Computer Centre Limited (“JUCC”)
Information Security Awareness Training - Session Four

End User Security, IS Control Evaluation & Self- Assessment
End User Computing Security

Agenda

- **End User Computing Fundamental**
- **End User Computing Security**
 - **Access Control**
 - **Program Change and Development Maintenance**
 - **Backup and Restoration**
 - **Continuous Monitoring**
 - **Physical Security**
 - **Other Security Controls**

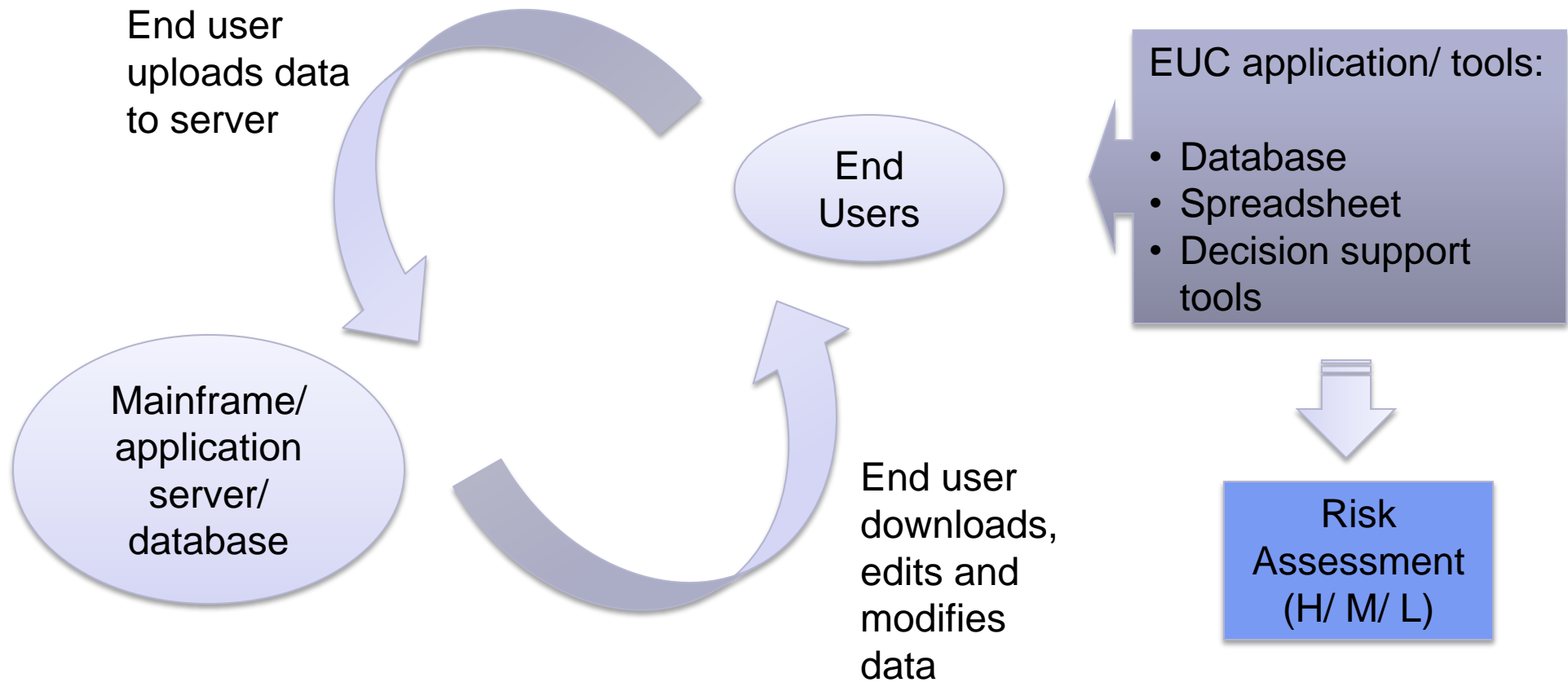
End User Computing (EUC)

Systems in which end users with non-programming knowledge can design, create and maintain working applications

Common End User System Tools

Text and multimedia handling tools	Word processing, web-publishing, presentation software
Data handling tools	Spreadsheet, database
Communication tools	E-mail, messenger
Knowledge management	Data mining, information retrieval

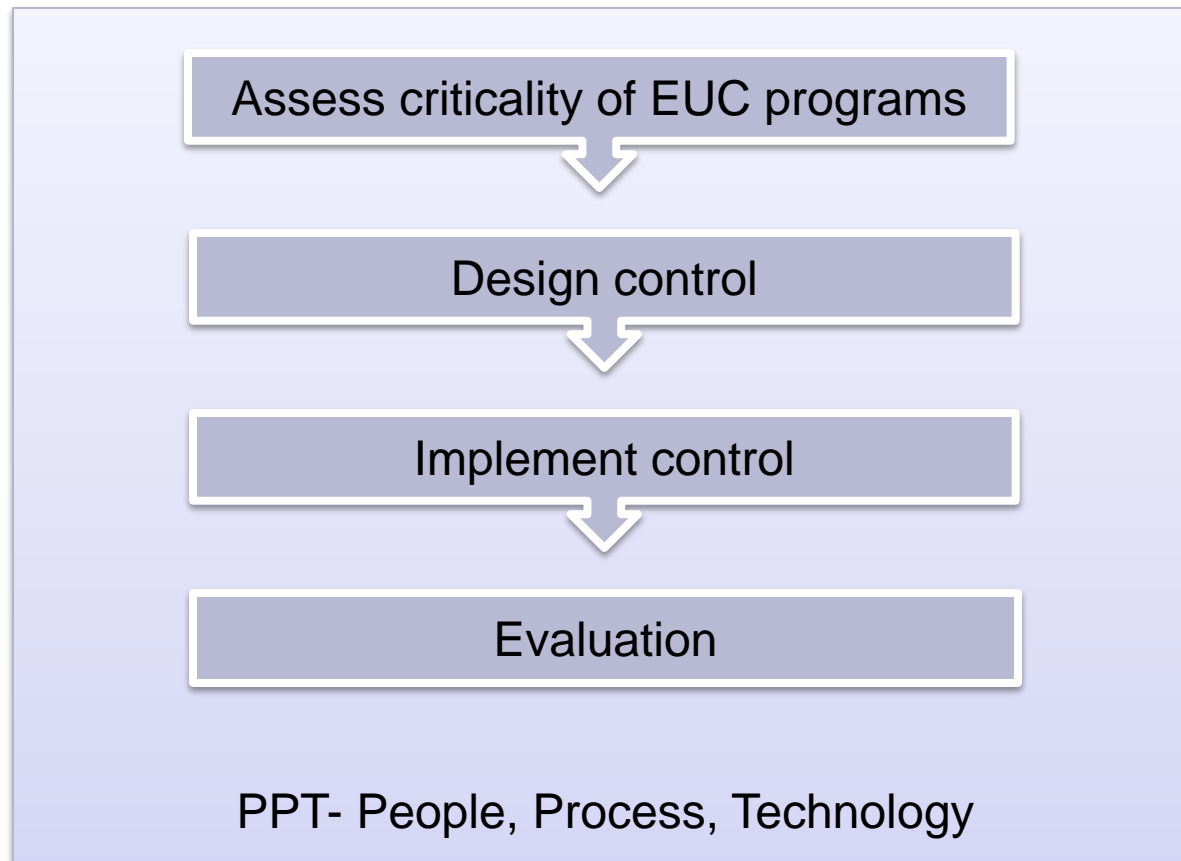
End User Computing (EUC)



Problems with End User Computing

- Development errors
- Data entry errors
- Lack of backup
- Lack of standardisation
- Lower level of security
- Insufficient training for end user
- Blurred line between business and personal use

EUC Controls Framework



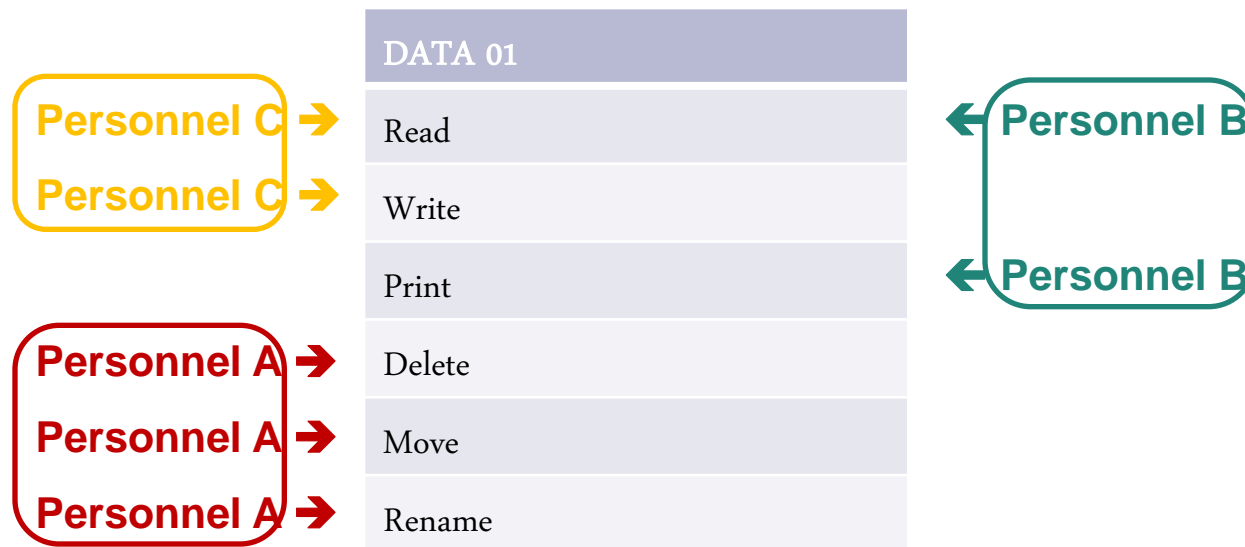
Suggested Controls

- Enable login passwords
- Enable screen saver and screen lock
- Apply zip encryption to double protect compressed files
- Log all significant administrative activities
- Verify the identity of user who request remote access from your computer

Access Control

Suggested Controls

- Least privilege and role-based access control



Program Change and Development Maintenance

Objectives

An effective system of change control can minimize the company's risk of using programs that:

- Originates from an unauthorised source
- Includes extraneous code
- May cause changes to output data and result in system errors

Program Change and Development Maintenance

Suggested Controls

- Compare program test result against implemented changes to ensure no unauthorised changes were made
- Document significant changes
- Test changes to EUC programs

Two approaches to handling data backup and restoration

- **Centralised**

Perform backup, restoration and problem management for EUC programs centrally by IT department

- **Decentralised**

Execute the operations controls in a distributed way

Suggested controls

- Elicit automatic restoration processes
- Implement regular backup
- Off-site backup of critical files in a secured location

Continuous Monitoring

Continuous Monitoring involves **periodic review** or **internal audit** on the relevant controls over EUC programs:

- To **assess the effectiveness** of EUC management
- To **detect any deficiencies** (e.g. deviation from established control requirement, missing control area, etc.)

Monitoring Activities

- Perform annual policies and procedures reviews and updates
- Perform quarterly system configuration and software reviews and updates
- Perform monthly vulnerability scanning of relevant systems

Physical Security

- Log off or shut down computer when leaving desks
- Secure portable devices with cable lock in the office and while traveling
- Secure the casing of the workstations
- Configure computer BIOS to prevent intruders from booting the computer with USB flash drive or FireWire hard disk
- Use of bios password and the password should be only kept by authorised IT administrator
- Remove floppy and CD/DVD drivers and disable USB and FireWire ports if not in use

Other Security Controls

- Maintain an updated EUC process register
- Perform manual reconciliation/verification on EUC program output
- Perform regular system health check and virus scan
- Ensure only work-related activities are performed on university's computer

Summary

- End-user computing security should be effectively supported and planned
- A solid set of management metrics and standards should form an essential part in end-user computing



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