MANAGEMENT INFORMATION SYSTEM

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COURSE OUTLINES

- Course Title
  - Management Information Systems
- Grading Policy
  - Exam → 80%
  - Tutorial / Assignment → 20%
- Textbook and Reference Materials
  - Course Manual for Management Information Systems CIS302, University of Ibadan Distance Learning Centre
  - Management Information Systems (Managing The Digital Firm) by Kenneth C. Laudon(New York University), Jane P. Laudon(Azimuth Information Systems), Twelfth Edition
  - Management Information Systems, Sixth Edition, by Effy Oz
- Course Duration
  - 12 Weeks

End User Computing

LEARNING OUTCOMES

When you have studied this session, you should be able to:

- *define* user written components
- *state* who the end-users are
- *define* end-user computing tools
- *describe* the end-user system's tools
- *discuss* the information center

CONTENTS

- What is End User
- End User Computing
- End User Development
- Applications Suitable for End-User Development
- The Information Centre

WHAT IS END USER?

- A user of an application program
- Not a computer programmer
- A person who uses a computer as part of their daily life or daily work
- Not interested in computers
- No need to teach how to write code in conventional programming languages
- Examples - spreadsheet users

WHAT IS END USER COMPUTING (EUC)?

- EUC is an environment in which the user has relatively free control over the process.
- Responsible for the product and the effectiveness of the use of the equipment
- The only distinction between EUC and corporate computing is the reporting relationship within the Organisation.
- Computing which reports directly to the Information Systems function is corporate computing; the rest is EUC.

END-USER DEVELOPMENT (EUD)

- The practice of users developing their own information systems with the support of professional systems developers
- The practical involvement of end-users in application development necessitates the easy access to computing facilities

    1. Timesharing on a centralised mainframe
    2. The use of stand alone personal computers
    3. The use of personal computers which are connected to local area networks and mainframes.

END-USER DEVELOPMENT (CONT.)

- A necessary condition of successful End user applications development. In particular:
    1. Education and training on the use of software tools
    2. Assistance in the technical aspects of writing, testing, and debugging applications
    3. Availability of reference material
    4. Aid in accessing the corporate database

REASONS FOR END USER COMPUTING

- The major advantages attributed to EUC include:

1. Enhanced productivity of professional and white-collar workers.

2. Overcoming the shortage of DP professionals.

3. Provision of user-friendly and responsive systems.

4. Overcoming the implementation problems by transferring this process to the user.

WHO ARE THE END USERS?

This includes

- executives interfacing to EIS facilities,
- middle managers or technicians who use a PC or a terminal to an on-line system,
- clerks accessing a central database to download data for local processing, individuals using a PC in stand alone mode for their own work, individuals using a PC in stand alone mode for an activity which the corporate management has decided shall be done by computer (*e.g.* office automation),
- clerks interfacing to a computer system which has replaced their manual system (without their having any input) and clerks writing data preparation documents.

WHO ARE THE END USERS?(CONT.)

- Group them into the following categories:

    1. Non programming
    2. Command level
    3. End-user programmers (including senior management professionals)
    4. Functional support personnel
    5. End user computing support personnel
    6. DP Programmers

WHY ARE THEY END-USERS?

- These systems often take so long to develop that organisational and/or market requirements have completely changed.
- Even though significant care is taken by trained analysts to ensure that user requirements are well defined, it is often the case that misunderstandings occur.
- The traditional methodologies generally do not allow requirements to be changed during development.
- The very fact of the existence of a new system will change the
- environment

APPLICATIONS SUITABLE FOR END-USER DEVELOPMENT

- Applications suitable for end-user development

    1. One time enquiries
    2. Simple Reports
    3. Minor Changes to Reports or Enquiries
    4. Presentation of Data in Alternate Forms
    5. What if' Analyses

APPLICATIONS SUITABLE FOR END-USER DEVELOPMENT (CONT.)

- Applications not suitable for end-user development:

1. data entry involving organisation files and databases (where the data must be validated for accuracy and reliability)

2. high volumes of transactions, requiring processing efficiency and multiple processing steps

3. use of 'traditional' computer languages designed for use by professional programmers, requiring detailed statement of processing procedures and controls

APPLICATIONS SUITABLE FOR END-USER DEVELOPMENT (CONT.)

4. changing of data values in existing databases and files

5. applications spanning several departments or divisions in the organisation

6. applications requiring formal documentation

7. applications requiring a long development process

8. applications requiring detailed formal specifications.

RISKS IN END USER COMPUTING

1. **Errors in analysis.** Poorly trained End-users often are incapable of correctly analysing data or systems.

2. **Lack of documentation.** Most End-users are not trained in formal techniques of analysis and design. Documentation is often inadequate or even non-existent, making maintenance difficult and expensive.

3. **Faulty Model.** Many Decision Support Systems (DSS) rely on corporate models developed by End-users for use with spreadsheets. As these systems are used by senior executives as aids in strategic decision-making, the consequences are not difficult to asses.

END USER COMPUTING TOOLS

1. Application packages
   - pre-written software packages
   - support common business functions such as payroll, purchase ledger, sales ledger, production scheduling, inventory control etc.
2. Fourth generation languages
   - allow users to develop their own computer programs
   - There are many classes of fourth generation languages:
     1. query language/report writers
     2. graphics languages
     3. statistical analysis packages
     4. decision support/financial modelling tools.

END-USER SYSTEMS TOOLS

1. **Text and multimedia handling tools** – word processing, desktop publishing, web-publishing, presentation software, document management systems, work-flow management systems;
2. **Data handling tools** – spreadsheets, statistical packages, decision support systems, databases;
3. **Communication tools** – electronic mail, voice over IP, fax, WAP, pagers;

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END-USER SYSTEMS TOOLS (CONT.)

4. **Office automation tools** – diary management, electronic notebooks, directories, project management tools, personal digital assistants, bluetooth;

5. **Group systems / computer supported collaborative work** – teleconferencing;

6. **Graphic design** – graphic software, computer aided design;

7. **Knowledge management** – expert systems, data mining, information retrieval, intelligent agents.

SUPPORTING THE END-USER

1. General purpose office automation
2. Prototyping methodologies
3. The Information Centre concept
4. A third party
5. Users of external information sources
6. Decision support software
7. Training for end-users
8. New technologies (*eg* Web Services)

THE INFORMATION CENTRE

- Support for that class of end-user that is working alone but on a task which is strategic to the organisation.
- In the form of an Information Centre
- Both a place (often known as the “help-desk”) and a group of people.
- The Information Centre owes its existence to the problems which end users created
- With the emergence of the Web and the Intranet much of the work of the Information Centre can be replaced by a suitably designed Intranet Site.
- Access by customers and access by employees of other organisations demands a much higher level of involvement in the support provided.

PROBLEMS

1. Lack of standardisation
2. Lack of control over the requirements of legislation
3. Demands for assistance with:
    - i. systems analysis and design;
    - ii. programming;
    - iii. software procurement;
    - iv. sizing - machines
    - v. maintenance;
    - vi. fall-back;
    - vii. lack of documentation;
    - viii. data security;
    - ix. environmental control;
    - x. file conversion and data acquisition;
    - xi. data organisation.

THE PHYSICAL CENTRE

- a physical entity
- a location to which people could go for advice and demonstrations.

1. A physical centre, which would have:

i. a reception area with a desk or window at which to receive enquiries;

ii. a demonstration room equipped with a variety of up to date PC equipment and software;

iii. a library with software and documentation;

iv. offices for a manger and systems analysts;

v. a workshop for technicians.

THE PHYSICAL CENTRE (CONT.)

2. A group of staff comprising:

i. an Information Centre manager;

ii. receptionist(s)/secretary;

iii. librarian/demonstrator;

iv. a small group (say 3) of analysts/programmers

v. a small, group (say 2) of technicians.

MANAGEMENT STRUCTURE

- The Information Centre is normally **part of the Computer Centre**: the Computer Centre already reports directly to the Board (*i.e.* there is a Chief Information Officer)
- The Information Centre is usually **independent** and reports directly to the Board : the Computer Centre reports to some other function (*e.g.* finance)
- The Chief Information Officer
  - a strategy group;
  - the Information Centre, and
  - the Computer Centre.

SKILL REQUIREMENTS

- Different from those working in the conventional data processing department
- A deep knowledge of software packages, communications, contract matters and trouble shooting

SYSTEM DEVELOPMENT

1. Environment 1 - conventional DP systems.

2. Environment 2 - one-off PC applications.

3. Environment 3 - large end-user projects in which several people

are going to use a system, some of whom might be outside the sponsoring department - the development would still be done by the end users themselves.

4. Environment 4 - large end-user projects which have to be delegated to computer specialists to develop.

5. Environment 5 - departmental systems.

ASSESSMENT

1. Who is an end user?

2. Define the term end-user development.

3. What are the important roles of EUC.

4. Enumerate some of the end user development tools that you know.

5. Can you highlight some models of end user tools?

6. What do you understand by information centre?

Next Week Lecture: **Securing Information Systems**

THANK YOU.