

Chapter 9: End Users Development and Evaluation of Systems

End Users Development

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Rise of End-User Development (EUD)

- **End-User Development (EUD)** place responsibility of the development onto the hands of end users who are not IT professionals.
- The nature of the application will decide whether it can be done via end user development.
- End users develop programs or procedures to retrieve data or perform calculations and computer processing.
- End user development is on the rise due to the decreasing cost of technology and increasing simplicity in harnessing technological tools

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End-User Development

- The **Software Development Life Cycle (SDLC)** is not the only approach for systems development work, **End-user Development** is an alternative.
- It places responsibility for developing applications in the hands of the end-user.
- The nature of the application will often decide whether conventional IT-department development or end-user development is carried out.

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End-User Development (cont')

- Use powerful software tools.
- For certain applications, end-user development is both a productive and successful strategy.
- Does not eliminate the need for systems analysts or programmers, nor can it replace the information systems group.

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Institutional vs. End-User Application

- Deciding factor is the nature of the application
- Application are classified into the two categories:
 - ◆ Institutional systems (developed by IT department)
 - ◆ End-user systems (developed by end-users)
- **Project Selection Committees** must have a policy that determines which applications are suitable for end-user development

Types of End-User Development Projects

- End-user development projects can range from simple queries and reports to building complete application systems.
 - ◆ Enquiries and Reports
 - ◆ Presentation of Data in Alternate Forms
 - ◆ Development of Worksheets
 - ◆ Database Applications

Types of End-User Development Projects – Enquiries and Reports

- The application systems already exist and the users learn to use special enquiry software tools to make online enquiries, or to create or modify reports.
 - ◆ Example:
 - ◆ How many depositors have more than one type of savings account with our bank?

Types of End-User Development Projects – Presentation of Data in Alternate Forms

- The existing reports may present data in a tabular form.
- The end-user may use software tools to present the same data in the form of a graph instead.

Types of End-User Development Projects – Development of Worksheets

- The end-user may use a spreadsheet software to develop a business model for analysis and computation (such as market share, trend analysis etc).

Types of End-User Development Projects – Database Applications

- The end-user may use a database software to define the database and develop the input screens and output reports.

Advantages of End-User Development

- As **End-User Computing** (EUC) spreads, and more and more office workers are trained, the benefits of EUC software will be realized.
- The benefits of EUC are described below:
 - ◆ Increased Individual Performance
 - ◆ Easier Implementation
 - ◆ Technological Literacy

Advantages of End-User Development – Increased Individual Performance

- Perhaps the single most important benefit to be derived from EUC is increased individual performance from the viewpoint of both effectiveness and efficiency.

Advantages of End-User Development – Easier Implementation

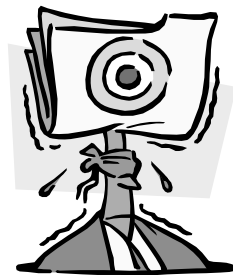
- One of the problems with traditional development approaches is that the end-user is not closely involved.
- The system might not be what the end-user expected, and worse yet, it might be unsatisfactory.
- With end-user development using EUC tools, it is more likely that the final system will be exactly what the end-user wants and expects.

Advantages of End-User Development – Technological Literacy

- If workers are already knowledgeable about technology, they will be able to assimilate new technologies into the organization quickly and thus enable the organization to take early advantage of any benefits that may accrue.

Disadvantages of End-User Development

- Cost Control
- Product Control



Disadvantages of End-User Development – Cost Control

- Because EUC is usually initiated through departments and supported by departmental budgets (not the MIS department), many organizations really do not know the total amount that they are spending on computer technology.
- The total organizational effort in end-user computing may not be optimized.
- The same software package may be purchased over and over again, each time by a different group within the firm.

Disadvantages of End-User Development – Product Control

- Since end-users often make their own final choices on products, it is not unusual to find many different products in a firm performing the same function.
- The fact that many of these products are incompatible makes it worse.
- Product proliferation is particularly problematic because data often cannot be transferred among applications, and an unusual burden is placed on training users.

Types of Users

- End-user development strategy places the responsibility for developing applications in the hands of the end-user
 - ◆ Executives, managers, supervisors, and other employees who are not IT professionals.
- Users actually develop programs or procedures to retrieve data or perform calculations and computer processing.

Types of Users (cont')

- Within the group of users, there are different sub-groups with different responsibilities and involvement with EUC and computing in general.
- Some users are directly involved in using computer hardware and software.
- Others are more removed from the computer and for example, may make decisions on computer usage and policies.

Changes in Roles

- As both technology and business increase in complexity, it is necessary for both IT personnel and users to learn something about the other's work.
- IT personnel can no longer be only technical specialists.
- They must understand the business and be training in business functions before they can effectively assist in improving the business through the user of information technology.
- Users have become more knowledgeable in computers and systems development.
- With the increased availability of personal computers and access to training courses, users now have greater understanding of the choices available to them.

Chapter 9: End Users Development and Evaluation of Systems

Evaluation of Systems

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Evaluation of Systems

- The evaluation process is extremely important as the organization will have to live with the eventual choice.
- Evaluation should highlight the degree to which the proposed product satisfies the needs as specified.
- The vendor who is supplying the product should also be evaluated as vendor competence and support matter too.
- Evaluation is usually a joint effort and should not be solely the responsibility of the technical staff.
- An Evaluation Committee is formed comprising representatives from the various user groups, as well as technical staff.

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Evaluation Criteria

- General Evaluation Criteria
- Hardware-Specific Evaluation Criteria
- Software-Specific Evaluation Criteria
- Vendor-Specific Evaluation Criteria

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General Evaluation Criteria

- Functionality
- Ease of learning / Ease to Use
- Costs
- Warranty

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General Evaluation Criteria – Functionality

- The EUC product must meet the basic functional needs of the user.
 - ◆ Example
 - ◆ A spreadsheet must be able to perform computations and modeling.
 - ◆ A printer must be able to print with various fonts and sizes, and on different types of paper.

General Evaluation Criteria – Ease of Learning / Ease to Use

- The product must be relatively easy to learn and to use.
- Software must contain simple instructions and preferably a mouse-driven graphical user interface.
- The help feature must contain concise and clear instructions on handling or errors, etc.

General Evaluation Criteria – Costs

- This is obviously an important consideration.
- If two similar products are comparable in features and performance, price would definitely be the deciding factor.
- Even if a particular product is obviously superior, a user may choose a cheaper product simply because it is within budget.

General Evaluation Criteria – Warranty

- The period and coverage of the warranty is also of importance.
- A three year parts and service warranty can be translated to concrete cost savings.

Hardware-Specific Evaluation Criteria

- Ergonomic Design (人類工程學設計)
- Capacity

Hardware-Specific Evaluation Criteria – Ergonomic Design

- Ergonomics covers a wide variety of design features which ensures that the product suits the user and not the other way around.
- Ergonomics is also related to health and safety concerns. Some ergonomics design features in a PC setup are:
 - ◆ Monitors should have minimal glare to prevent eye-strain.
 - ◆ Monitor should be able to swivel for the comfort of the user.
 - ◆ Printers should not be too noisy as it irritates the users nearby
 - ◆ PC should emit minimal or no radiation.

Hardware-Specific Evaluation Criteria – Capacity

- When comparing hardware products from different vendors, one important consideration besides its performance is its capacity.
- This translate into two specific areas:
 - ◆ **Storage** – the larger the disk storage, the more data and programs can be stored online.
 - ◆ **Memory** – the larger the RAM, the faster the processing will be.

Software-Specific Evaluation Criteria

- Software Reliability
 - ◆ This is a difficult criteria to evaluate as there is always a possibility of software detects or bugs.
 - ◆ The only way to evaluate reliability yourself is through extensive testing.

Vendor-Specific Evaluation Criteria

- Experience & Track Record
- Financial Stability

Vendor-Specific Evaluation Criteria

- Experience & Track Record
 - ◆ The vendor should have sufficient experience in the particular hardware and software in order to be able to anticipate problems and perform a smooth implementation.

Vendor-Specific Evaluation Criteria

- Financial Stability
 - ◆ The financial stability of a vendor is important as companies from medium, and long-term alliances with their vendors.
 - ◆ If a company suffers from financial mismanagement, it is less likely to be able to provide good service.