Information Technology Applications: Efficiency & Effectiveness Definitions

From the Study Design

Efficiency

A measure of how little time, cost and/or effort is applied in order to achieve intended results.

Measures of an efficient solution include the speed of processing, the functionality of the solution, the ease of use of the solution and the cost of information file manipulation.

Measures of an efficient network include its productivity, processing time, operational costs and level of automation.

Effectiveness

A measure of how well something works, such as a solution, a file and information management strategy and a network, that is, the extent to which it achieves its intended results.

Measures of an effective solution include completeness, readability, attractiveness, clarity, accuracy, accessibility, timeliness, communication of message, relevance and usability.

Measures of an effective file and information management strategy include integrity of data, security, ease of retrieval and currency of files.

Measures of effective networks include reliability and maintainability.

From the Year 11 Information Technology T

15 **Efficiency** is measured in terms of time, cost and effort. Spreadsheets include functions that enable a user to work quickly and with less effort in order to produce graphic representations, thereby minimising cost.

16 **Effectiveness** relates to how well a solution meets the specified need and fulfils the specified purpose. It is measured in terms of completeness, readability, attractiveness, clarity, accuracy, accessibility, timeliness, communication of message, relevance and reliability.

Efficiency

Efficiency is defined in terms of time, cost and effort. Spreadsheets include functions that enable a user to work quickly and with less effort, thereby minimising cost. Tips to enhance efficient use of spreadsheet software are:

- Use the appropriate functions for the task to be completed. For example, in Microsoft Excel, conditional formatting allows you to highlight data that meets specified criteria, emphasise atypical values and visualise data in different ways. A conditional format changes the appearance of a cell range based on a condition (or criterion). If the condition is true, the cell range is formatted based on that condition; if it is false, the cell range is not formatted based on that condition.
- Use **macros** to automate calculations or formatting.

- Use templates. In templates, all of the formatting is complete; the user simply adds the required information. Some of the commonly used templates when using spreadsheets include budgets, expense reports, inventories, invoices, purchase orders, receipts and time sheets. Microsoft Excel also allows the user to create chart templates that can be reused and re-edited. See Figures 1-20, 1-21 and 1-22 for some examples of templates provided with Microsoft Excel.

One of a spreadsheet's most powerful features is its ability to create graphs and charts. Spreadsheets:

- can accommodate small to massive data sets
- include a large variety of charting tools and charting types
- include chart style galleries that allow the user to format each component of their graphic representation
- allow the user to visually enhance graphic representations
- provide tools that enable the user to highlight data trends and present appealing and persuasive graphical summaries.

Effectiveness

Effectiveness is the measure of how well a solution works and the extent to which it fulfils its purpose. Measures of an effective solution include completeness, readability, attractiveness, clarity, accuracy, accessibility, timeliness, communication of message, relevance and reliability.