On completion of this unit, you should be able to:

(i) Explain what “accounting information system” is.

(ii) Understand the importance of an accounting information system in management decision making.

(iii) Identify ICT applications commonly used in accounting.

(iv) Describe the advantages and disadvantages of using computerised accounting.
Organisation of Unit 5

ICT Applications in Accounting

- Accounting Information System
  - Components
  - General Functions
  - Subsystems
  - Importance

- Information Communication Technology
  - Traditional Computer-based Technology
  - Digital Communication Technology

Advantages and Disadvantages of Computerised Accounting

Accounting Information System (1)

Do you know what “accounting information system” is?
Accounting information system (AIS) is a system designed to transform transaction data into accounting information for decision-making.

While AIS was previously a paper-based system (or called manual system), most modern businesses now use accounting software to maintain their AIS. This is known as computerised accounting information system.
A computerised accounting information system generally comprises computer hardware, accounting software and accounting staff.

Generally speaking, the functions of the AIS, whatever the manual AIS system or the computerised AIS system, include data collection, data maintenance, data management, data control and security and information generation.
The AIS processes transaction data by means of transaction processing cycles, which are interrelated **subsystems** of the AIS.

Each cycle is designed to deal with a particular type of transaction. For example, the revenue cycle, which will be explain more later, is designed to deal with sales transactions.

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The transaction processing cycles\(^1\), which vary among companies, of a typical AIS are classified as: revenue cycle, expenditure cycle, production cycle, resource management cycle and financial reporting cycle.

\(^1\) Wilkinson, J. W., Accounting and Information Systems, Wiley
The **Revenue Cycle** is used to process sales transactions and related sales receipts. In particular, the cycle usually possesses the following functions:

- authorising sales transactions;
- recording sales orders;
- verifying customers' creditworthiness;
- arranging shipment of goods or performance of services;
- billing customers;
- verifying and safeguarding sales consideration;
- recording sales transactions and related receipts in the ledgers; and
- preparing sales analysis.
The Expenditure Cycle is used to process purchases/other expenses transactions and related payments. In particular, the cycle usually possesses the following functions:
- authorising purchases transactions;
- placing purchases orders;
- verifying and safeguarding the goods/services received;
- verifying the validity of purchase invoices;
- authorising payments for the purchases and other expenses;
- arranging the payments for the purchases and other expenses;
- recording purchases/other expenses transactions and related payments in the ledgers; and
- preparing purchases analysis and expenses analysis.
The *Production Cycle*, mainly found in manufacturing companies, is used to provide information related to the conversion of raw materials into finished goods. In particular, the cycle usually possesses the following functions:

- performing the production planning;
- managing the inventory level;
- maintaining and controlling the production operations;
- maintaining the cost records for work-in-process;
- recording the resources used in production and completion of finished goods in the ledgers; and
- preparing inventory analysis and production analysis.
The Resource Management Cycle concerns with the capital asset management. The cycle involves fund management, facilities management and personnel management. In particular, the cycle usually possesses the following functions:

Fund Management
- authorising acquisition and use of the funds;
- acquiring funds from various sources, like sales of goods, bank loans, shares issuance and debenture issuance;
- using funds to meet obligations due;
- safeguarding and controlling funds on hand; and
- recording the acquisition and use of funds in the ledger.
Facilities Management
- identifying the needs of acquiring fixed assets;
- preparing the capital investment proposals;
- authorising the acquisition, use or disposal of fixed assets;
- placing orders;
- verifying and safeguarding the fixed assets received;
- verifying the validity of suppliers’ invoices;

Facilities Management
- authorising payments for the acquisition;
- arranging the payments for the acquisition;
- safeguarding and controlling the fixed assets;
- maintaining the records concerning fixed assets; and
- recording the acquisition and disposal of the fixed assets in the ledger.
Personnel Management
- establishing pay status of staff;
- measuring the services rendered by the staff, for example: timekeeping;
- authorising the payments for the services rendered by the staff;
- arranging the payments for the services rendered by the staff; and
- recording the staff costs in the ledger.

The Financial Reporting Cycle is the process of transforming data generated by the aforesaid transaction cycles into accounting information like trial balance, income statements and balance sheets.
Management

After understanding the key components and features of the AIS, could you figure out why the AIS is important in management decision making?

The AIS provides relevant and timely accounting information to the management for strategic and tactical planning. In particular, the AIS processes the transaction data and generates reports to the management for further analysis and decision making.
Can you think of any examples that the management uses the output of AIS to make decision?

For example, the management of a retail store is required to make a decision on the amount of year-end bonus to be paid to Steven, a salesman.

The management:
- determines that the total amount (5% of profit) of bonus entitled by all salesmen basing on the profit ($10 million) for the year is $500,000 ($10 million x 5%); and
- evaluates the performance of Steven based on the sales analysis report and finds that Steven contributes 3% of total sales for the year; and
- determines that the amount of year-end bonus to be paid to him is $15,000 ($500,000 x 3%).
Do you know what Information Communications Technology (ICT) is and how it is applied in accounting?

ICT is the uses of digital technology to help individuals, businesses and organisations to use information.

ICT covers products which store, retrieve, manipulate, transmit or receive digital data, e.g. personal computers, digital camera, palm and email.
ICT is categorised into:
- the Traditional Computer-based Technologies; and
- the Digital Communication Technologies.

In office, the application of the **Traditional Computer-based Technologies** allows us to do what we are typically using to do with a personal computer, like:
- word processing (eg Microsoft Word);
- performing calculation with spreadsheet (eg Microsoft Excel);
- conducting a presentation (eg Microsoft Powerpoint); and
- managing data (eg Microsoft Access).
In accounting, the application of Traditional Computer-based Technologies allows us to manage a business’s accounting records with accounting application software.

A wide range of accounting application software is available for businesses of various nature and sizes, like:
- ACCPAC;
A wide range of **accounting application software** is available for businesses of various nature and sizes, like:
- ACCPAC;
- MYOB;
- DacEasy.
The **Digital Communication Technologies** refers to the technologies of data communication by electronic means. This is often achieved via networks of sending and receiving equipment, wires and satellite links.

Typical examples of the application are **Internet and Intranet**.

Via an **internal** network, generally referred to as a **Local Area Network (LAN)**, a user can share accounting application software and accounting data with other users at the same location.
Via an **external** network, generally referred to as a **Wide Area Network (WAN)**, a user can communicate with other users outside their internal network.

For example, a user in Country A can access accounting data input by another users located in Country B via WAN. Another example is that the public places orders and makes payments to supermarkets via Internet.

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Can you state the advantages and disadvantages of computerised accounting (ie using the ICT in accounting)?
In the early stage of computerisation, the main benefits of computerised accounting came from the reduction in the number of accounting personnel needed to process routine transactions as repetitive accounting work could be processed by computers in batches.

Besides, the efficiency and reliability of computerised accounting considerably improve the efficiency of financial reports preparation and the accuracy of accounting data.
Advantages and Disadvantages of Computerised Accounting

Furthermore, the innovation and popularisation of Digital Communication Technologies allows different users, in the same or different locations, to input and access accounting data simultaneously.

Advantages
- Reduce repetitive routine manual accounting work
- Reduce cost and human resource for maintaining the accounting information system
- Enhance the efficiency in the preparation of financial statements and the decision making of management
- Enhance the consistency and reliability of the accounting system and its output
- Allow users to access the accounting information system simultaneously

Disadvantages
- High initial cost
- The application software may not totally fit the needs of a business
- High risk of attacks by hackers and fraudsters

However, computerised accounting has also thrown up a number of recurring problems to users. First of all, the initial setup cost and staff training cost for a computerised accounting information system are expensive.
Advantages and Disadvantages of Computerised Accounting (6)

Disadvantages

- High initial cost
- The application software may not totally fit the needs of a business
- High risk of attacks by hackers and fraudsters

Businesses usually acquire ready-made accounting application software to computerise their accounting information systems. However, the features of the software may not totally fit the operation needs of the businesses.

The businesses have to adapt their operations to fit in with the software, or to seek for special modifications to the software, which is an expensive option.

Advantages and Disadvantages of Computerised Accounting (7)

Disadvantages

- High initial cost
- The application software may not totally fit the needs of a business
- High risk of attacks by hackers and fraudsters

To enable the public to transmit orders and make payments directly to suppliers system electronically, some businesses have opened up their systems and allow the public to access them. However, this makes the systems vulnerable to attacks by hackers and fraudsters.
Now, you have come to the end of the unit.

Let us recapitulate the essential points of the following in the next five slides:

- What “accounting information system (AIS)” is
- Components of a computerised AIS
- Functions of the AIS
- Transaction processing cycles of AIS
- Information Communications Technology (ICT), its category and applications in accounting
- ICT applications in accounting – advantages and disadvantages

Accounting information system (AIS) is a system designed to transform transaction data into accounting information for financial decision-making.

Components of a computerised AIS:
- computer hardware,
- accounting software and
- accounting staff.

Functions of the AIS:
- data collection,
- data maintenance,
- data management,
- data control and security and
- information generation.
Recapitulation - AIS (2)

- Transaction processing cycles of AIS:
  - revenue cycle,
  - expenditure cycle,
  - production cycle,
  - resource management cycle, and
  - financial reporting cycle.

Recapitulation - ICT (1)

- Information Communications Technology (ICT) is the uses of digital technology to help individuals, businesses and organisations to use information.

- ICT is categorised into:
  - the Traditional Computer-based Technologies, which allows us to do what typically we are using to do with a personal computer at home or at work; and
  - the Digital Communication Technologies, which allows us to communicate by electronic means.

- ICT applications in accounting:
  - manage a business’s accounting records with accounting application software; and
  - share of accounting application software and accounting data by different users.
Recapitulation - ICT

ICT applications in accounting:

Advantages:

- Reduce repetitive routine manual accounting work.
- Reduce cost and human resource for maintaining the accounting information system.
- Enhance the efficiency in the preparation of financial statements and decision making of management.
- Enhance the consistency and reliability of the accounting system and its output.
- Enhance the accessibility of the accounting information system.

Disadvantages:

- High initial cost.
- The application software may not totally fit the needs of a business.
- High risk of attacks by hackers and fraudsters.
References


Further Readings

Further Readings

- ERP 會計資訊系統與實務 / 林育青著, 碁峰資訊股份有限公司, 2003
- 會計資訊系統 / 林志軍, 許連贊著, 五南圖書出版有限公司, 1999

End of the Unit

This is the end of Unit 5. Please go to the Unit Assessment before attempting the next unit.
Additional Learning Resources

If you would like to experience a computerised accounting system, you may download the free trial version of DacEasy and MYOB from the following links:

**MYOB:**

**DacEasy:**
http://www.daceasy.com.hk/v14/demo/download.htm