ACCOUNTING INFORMATION SYSTEMS: THEORETICAL FOUNDATION AND OVERVIEW

THEORETICAL FOUNDATION OF AISs

- Information systems exist because they are an integral part of a modern organisation
- Theory of the Firm
    - Firms are established because it is profitable to do so; firms organise to reduce the transaction costs of repeated and complicated
    - As a firm gets larger, there may be decreasing returns to the entrepreneurial function
        - Costs of organising additional transactions within a firm may rise
    - As a firm grows, an entrepreneur fails to place resources in uses where their value is greatest
        - Fails to make the best use of resources available
    - The supply price of one or more of production resources may rise because 'other advantages' of a small firm are greater than those of a large firm
- Agency Theory
    - While an information system is paramount to the success and growth of a firm, it also has a role in managing managers of a firm.
    - The existence of a firm can lead to agency costs where ownership of a firm is separate from its management as postulated in Agency Theory.
    - The key point is that the nature of agency relationships will determine the nature of the information system
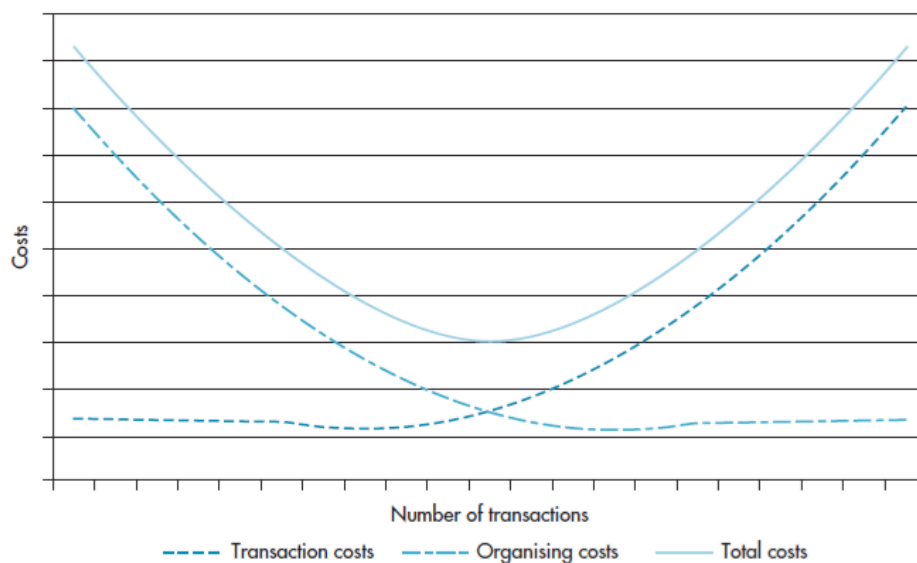

FIGURE 1.1
Transaction costs and costs of organising

DRIVERS OF BUSINESS AND INFORMATION SYSTEM CHANGE

- Globalisation
- Deregulation
- Advances in technology

- Outsourcing and downsizing

SYSTEMS, DATA, INFORMATION AND ITS VALUE

Good design is defines as the process of inventing objects or items that display a new physical order in response to function. It is the successful execution of the following three components of design:

1. Determine objectives (not always an easy task).
2. Determine what needs to be done to achieve those objectives.
3. Choose the 'best' components to execute the actions needed to achieve objectives.

System: a set of two or more interrelated components that interact to achieve a goal

- Most systems are composed of smaller subsystems that support the larger system.

Goal conflict: occurs when a subsystem is inconsistent with the goals of another subsystem or with the system as a whole

Goal congruence: occurs when a subsystem achieves its goals while contributing to the organisation's overall goal

- The larger the organisation and the more complicated the system, the more difficult it is to achieve goal congruence.

In designing a system we need to focus on a few system aspects.

- *Simplicity* is desirable, but is usually at variance with the range of components that can be used
- *Performance* is best if we choose the best components but this often makes interfacing components (jointing) more difficult.
- *Economy* is desirable, but is usually at variance with performance

Data: a set of facts that are collected, recorded, stored and processed by an information system

Information: data that has been organised and processed to provide meaning and improve decision-making processes

Value of information: the benefit produced by the information minus the cost of producing it

- Benefits of quality information are reduced uncertainty, improved decisions, and improved ability to plan and schedule activities, resulting in lower organising costs.

TABLE 1.1 Characteristics of useful information

Relevant	Reduces uncertainty, improves decision-making, or confirms or corrects prior expectations.
Reliable	Free from error or bias; accurately represents organisation events or activities.
Existence	The transactions, assets, obligations and equity generated in the system exist.
Valid	Only those transactions and reports that are authorised by the firm should be processed.
Complete	Does not omit important aspects of the events or activities it measures.
Timely	Provided in time for decision-makers to make decisions.
Measurable	Transactions, assets, liabilities, and equities processed in the system are measured accurately.
Understandable	Presented in a useful and intelligible format.
Verifiable	Two independent, knowledgeable people can produce the same information.
Accessible	Available to users when they need it and in a format they can use.

INFORMATION NEEDS AND BUSINESS PROCESSES

TABLE 1.2 Overview of S&S's business processes, key decisions and information needs

| Business process	Key decisions	Information needs
Acquire capital	How much Find investors or borrow funds If borrowing, obtaining best terms	Cash flow projections Pro forma financial statements Loan amortisation schedule
Acquire building and equipment	Size of building Amount of equipment Rent or buy Location How to depreciate	Capacity needs Building and equipment prices Market study Tax tables and depreciation regulations
Hire and train employees	Experience requirements How to assess integrity and competence of applicants How to train employees	Job descriptions Applicant job history and skills
Acquire inventory	What models to carry How much to purchase How to manage inventory (store, control, etc.) Which vendors	Market analyses Inventory status reports Vendor performance
Advertising and marketing	Which media Content	Cost analyses Market coverage
Sell merchandise	Mark-up percentage Offer in-house credit Which credit cards to accept	Pro forma income statement Credit card costs Customer credit status
Collect payments from customers	If offering credit, what terms How to handle cash receipts	Customer account status Accounts receivable ageing report Accounts receivable records
Pay employees	Amount to pay Deductions and withholdings Process payroll in-house or use outside service	Sales (for commissions) Time worked (hourly employees) Payroll summary Costs of external payroll service
Pay taxes	Payroll tax requirements Goods & services/ value added tax requirements	Government regulations Total wage expense Total sales
Pay vendors	Whom to pay When to pay How much to pay	Vendor invoices Accounts payable records Payment terms
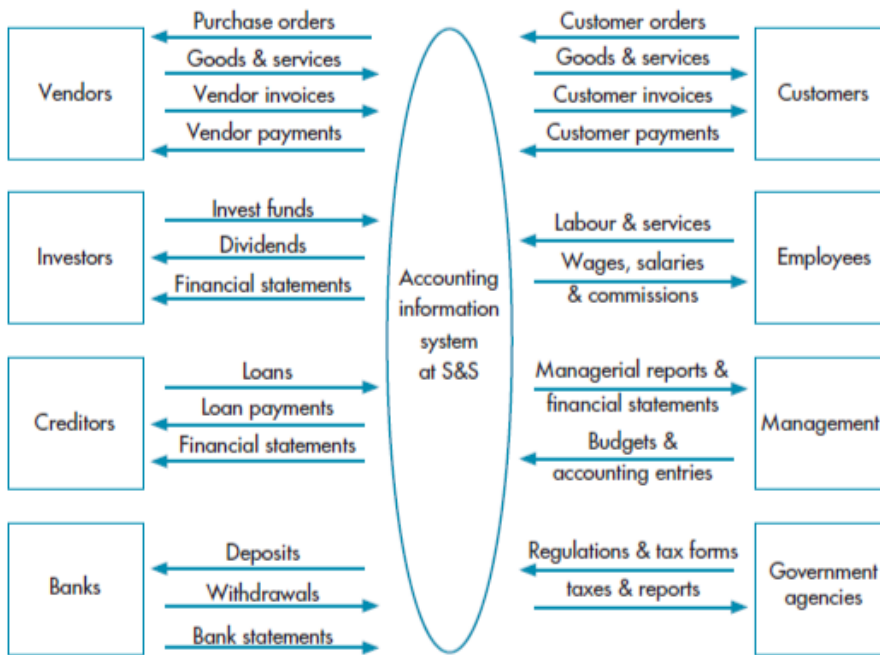
FIGURE 1.3
Interactions between
S&S and external and
internal parties

Business processes

- a set of related, coordinated and structured activities and tasks that are performed by a person
- Transaction: an agreement between two entities to exchange goods or services or any other event that can be measured in economic terms by an organisation
- Transaction processing: the process that begins with capturing transaction data, then storing data and ends with informational output, such as financial statements
- Nexus of contracts business exchanges that can be groups into five major *business processes* or *transaction cycles* and form the subsystems of the toal accounting information system:
  - o **Revenue**: where goods and services are sold for cash or a future promise to receive cash
  - o **Expenditure**: where companies purchase inventory for resale or raw materials to use in producing products in exchange for cash or a future promise to pay cash
  - o **Production**: or conversion cycle, where raw materials are transformed into finished goods
  - o **Human resources/Payroll:** where employees are hired, trained, compensated, evaluated, promoted, and terminated
  - o **General ledger and reporting:** brings together the data processed through the other cycles
  - o **Financing cycle:** where shares of a company are sold to investors, where companies borrow money, and where investors are paid dividends and interest is paid on loans

FIGURE 1.4
Nexus of contracts

Market for goods/services

SUPPLIERS

Exchange transaction contracts

Exchange transaction contracts

Exchange transaction contracts

THE FIRM
(directs production)

Exchange transaction contracts

Exchange transaction contracts

Exchange transaction contracts

SUPPLIERS

Price mechanism

CUSTOMERS
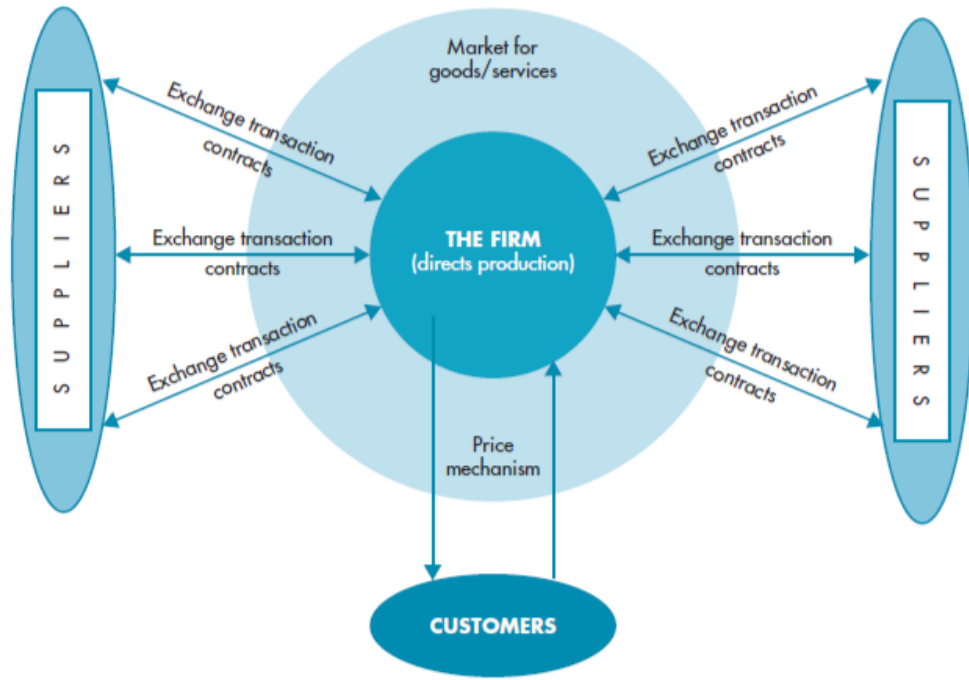
FIGURE 1.5
AIS and its
subsystems

Financing cycle

Give cash — Get cash

Funds

Funds

Funds

HRM cycle/ payroll subcycle

Give cash — Get labour

Expenditure cycle

Give cash — Get goods/ raw materials

Data

Data

Data

General ledger & reporting cycle

Information for both internal and external users

Data

Data

Labour

Raw materials

Production cycle

Give labour

Give raw materials

Get finished goods

Finished goods

Revenue cycle

Give goods — Get cash

Revenue cycle

- Receive and answer customer enquiries
- Take customer orders and enter into AIS
- Approved credit sales
- Check inventory availability
- Initiate back orders for goods out of stock
- Pick and pack customer orders
- Ship goods to customers or perform services
- Invoice customers for goods shipped or services performed
- Update (increase) sales and accounts receivable
- Receive customer payments and deposit in bank
- Update (reduce) accounts receivable
- Handle sales returns, discounts, allowances and bad debts
- Prepare management reports
- Send appropriate information to other cycles

Expenditure cycle

- Request purchase/order of goods and services
- Prepare, approve and send purchase orders to vendors
- Receive goods and services and complete receiving report
- Store goods
- Receive vendor invoices
- Update (increase) accounts payable
- Approve vendor invoices for payment
- Pay vendors for goods and services
- Update (reduce) accounts payable
- Handle purchase returns, discounts and allowances
- Prepare management reports
- Send appropriate information to other cycles