Chapter 21

PERFORMANCE MANAGEMENT SYSTEMS, MEASUREMENT AND CONTROL

1. Introduction

In order to manage performance the relevant managers need information. These days most of that information is held on computers. In this chapter we consider the type of information needed, the different programs available to help manage the information, and the types of controls needed.

2. Information requirements

Different information is required for different types of decisions. There are three levels of decision making and control:

- **Strategic:**

  These are long-term decisions – typically five to ten years - regarding the long-term direction of the company.

  For example: a decision as to whether or not to enter into a new market.

- **Tactical:**

  These are shorter-term decisions – typically for the coming year - planning to achieve the strategic objectives.

  For example: setting selling prices for the coming year.

- **Operational:**

  These are day-to-day decisions implementing the short-term plans.

  For example: which customers need chasing for payment.

The information required at each level differs.

At the strategic level, the information needed will tend to be more external, be more long term forecasts, and be less detailed.

For example, information about competitors and information regarding forecasts for the economy.

At the operational level, the information needed will be internal, be immediate, and will be detailed.

For example, an aged list of customers balances.

At the tactical level the information will be a combination of internal and external, and will be medium term.

For example, information about general wages in our industry and information about our workers productivity in order to make decisions about pay rises for the coming year.

3. Sources of information

Possible **external sources** of information include:

- government statistics
- industry publications
- competitors financial statements
- the internet

Possible **internal sources** of information include:

- receivables ledger
- payables ledger
- payroll system

4. Types of information systems (software)

You should be aware of the following types of software that are available to provide/assist with information.

- **Transaction processing systems** (TPS)

  This is software that processes the day-by-day transactions of the business.

  For example, the software that produces and records sales invoices.

- **Management information systems** (MIS)

  This is software that converts data (from the transaction processing systems) into information for the benefit of managers.

  This may include, for example, monthly summaries of the sales by product.

- **Executive information systems** (EIS)

  This is software that enables the user to obtain information on an ad hoc basis (as opposed to the standard reports that will be produced by the MIS).

  For example, the MIS may be programmed to produce a monthly report on the sales by region. However, a manager may require instant information analysing the sales in one particular region. An executive information system enables the manager to access the databases directly and access the information required immediately. The software is easy to use - questions may be entered using normal language as opposed to programming languages. The information generated is produced in an easy-to-use format - typically graphically.

- **Enterprise resource planning systems** (ERP)

  An enterprise resource planning system is software that integrates all the applications within the business and uses a common database. The same system is used for processing transactions and providing management information.

5. Direct data capture

Traditionally, data was input into the systems manually using a keyboard. However, it is here that errors are likely to be made and it is inevitably time consuming. More and more use is being made of direct ways of capturing data that remove the need for entering via a keyboard.

Examples of direct data capture methods include:

- Barcodes

  these can be read directly using a scanner (although they do require pre-printing which might not always be feasible)

- RFID (radio frequency identification)

  a chip embedded in a product that can be read electronically. Similar in use to a barcode, but can be read simply by being close to a reader (as opposed to having to be correctly positioned under a scanner)

- OMR (optical mark reader)

  'bubbles' that are filled in on a pre-printed form that can be read automatically by a machine (as used by the ACCA on the front sheet of their exams).

- OCR (optical character recognition)

  similar to OMR except that the scanning machine can read the characters as opposed to simply marks. Again, it needs pre-printed forms.

- ICR (intelligent character recognition)

  similar to OCR except that it does not need pre-printed forms. For example, it can be trained to find (and input) that VAT number on invoices received from suppliers.

6. Direct user input

Here the input is made using a keyboard, but instead of an operator copying in the data, the supplier of the data inputs it directly.

For example, if employees are required to complete timesheets, then instead of them filling in a form which is then entered by an operator, the employees enter the data directly into the system themselves.

A further extension of this is to allow customers direct access via the internet. For example, instead of sending an order on paper which then requires an operator to copy it into the system, the customer can access the system directly and enter it themselves.

Other examples include the booking or airline tickets online, and, of course, internet banking.

7. Controls

It is important that controls exist on:

- **input** – to prevent so far as possible input errors, and to prevent the wrong people inputting data.
- **processing and storage** – to prevent data being changed without authorisation, and to comply with legislation (in particular the data protection laws that exist in most countries)
- and, **output** – to ensure that only authorised people are allowed to access information

The types of controls that should be considered include:

- **input**

passwords	–	to only allow authorised users to input and also to keep a record of who has entered data
range tests	–	to help ensure input is accurate. For example, only allow hours worked per week to be within the range 0 to 50.
format checks	–	to help ensure input is accurate. For example, employees names should be all characters (not numbers).

- **processing and storage**

passwords	–	only authorised users are able to change data
audit trails	–	a record is kept within the software of all changes made to data (and by whom)
data protection officer	–	an employee with the responsibility of making sure that data protection laws are complied with

- **output**

passwords	–	only authorised users are allowed to access data