INFORMATION AND DECISION MAKING

People need information to plan their work, meet their deadlines and achieve their goals. They need it to analyze problems and make decisions. Information is certainly not in short supply these days, but not all of it is useful or reliable.

- **FROM DATA TO INFORMATION TO KNOWLEDGE AND LEARNING**

  H D Clifton (1990) wrote that 'one man's information is another man's data', and certainly the definitions are blurred.

  However, it is now generally agreed that 'data' is pure and unprocessed – facts and figures without any added interpretation or analysis.

  Depending on the context, data can be highly significant.

  Think of a cricket or football score, your name and address. Since it provides the raw material to build information, it also must be accurate.

  Any inaccuracies within the initial raw data will magnify as they aggregate upwards and will seriously corrupt the validity of any conclusions you draw from it or decisions you base upon it.

- **DATA**

  In a business context, data is associated with the operational aspects of the business and its day–to–day running.

  As such, it is often entered into a system and stored in large quantities, for example payroll data and sales figures.

  Such input data goes to create a data 'set' – names and

addresses for a mail–merge file, an index to an online product database.

It has to be structured correctly — all systems have some kind of validation process to check for obvious technical errors and missing data.

To be reliable, the content needs to be accurate, not simply in terms of the correct number and type of characters per data field, but what the data represents in terms of meaning.

This needs human intervention.

Another aspect that affects accuracy is where the data comes from.

You may be able to check your own in–house sources — for example, for internally generated data such as the payroll — but must depend on trust (or the reputation of the supplier) for data received from outside, for example customer credit card details.

- **INFORMATION**

So how does 'data' (whether internal or external) become 'information'?

When it is applied to some purpose and is adding value which has meaning for the recipient, for example taking sets of sales figures (data) and producing a sales report on them (information).

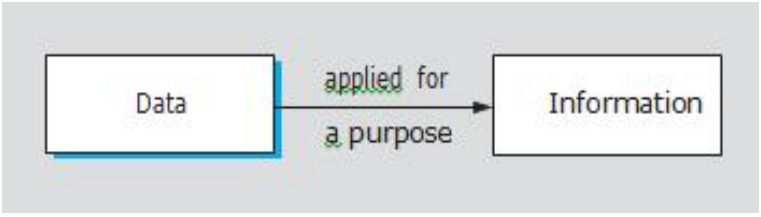

Figure 1. From data to information

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- Information produced inside the organization can be supplemented by a wealth of business information produced outside — market analyses, reports, and case studies, for example.

Put briefly, information by itself is only of use if it is:

- the right information (fit for the purpose)
- at the right time
- in the right format
- at the right price.

- **KNOWLEDGE**

  Just as the words 'data' and 'information' are used interchangeably, there is considerable blurring and confusion between the term's 'information' and 'knowledge'.

  It is helpful to think of knowledge as being of two types: the instinctive, subconscious, tacit or hidden knowledge, and the more formal, explicit, or publicly available knowledge.

  An everyday example of these might be the knowledge that you use when driving a car (tacit), compared with the knowledge available from a driving manual or the Highway Code (explicit).

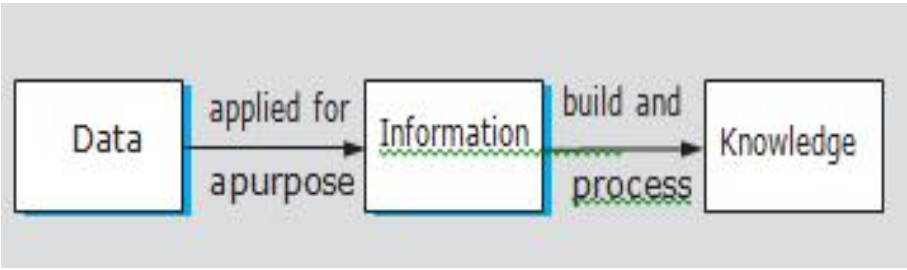

Figure 2. From data to information to knowledge

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In a business context, knowledge is often linked to strategic levels of management and long-term business planning.

However, knowledge vital to an organization's success_can come from any level within it and needs to be recognized as an important part of organizational assets.

It combines information, experience and insight into a mix that is unique to every employee.

Let's sum up data—information—knowledge with an everyday example. Assume that you're trying to decide on a specialist holiday for photography enthusiasts. Here, very broadly, are the stages you will go through:

Stage 1: collect lots of brochures on photography holidays. This is your basic data store.

Stage 2: work through the brochures, filtering out what you don't want by applying your own criteria to them. Some will be in places you don't want to go to, or at the wrong time of year, or the programmed may be at the wrong level of expertise (you may be looking for some advanced tuition, and many of the holidays are geared to beginners). You can now apply your information and decide on where to go on your holiday.

Stage 3: you go on your holiday and build your knowledge from testing your actual experience of the holiday against the information you had when you booked it. This knowledge (which you can use next time you want a similar holiday) can be kept to yourself (tacit) or you can share it by reporting back to your local photography club (explicit).

- BUILDING KNOWLEDGE — LEARNING

So how do we collect, process, and build our knowledge? Kolb (1985)

believes that there are four stages we all go through as part of the learning cycle:

- learning from feeling (through specific experience and relations with other people)
- learning by watching and listening (looking at things from different perspectives, observing carefully and reflecting before making judgments)
- learning by thinking (reflecting on and analyzing ideas, drawing up mental maps and planning)
- learning by doing (getting things done, influencing other people, taking risks).

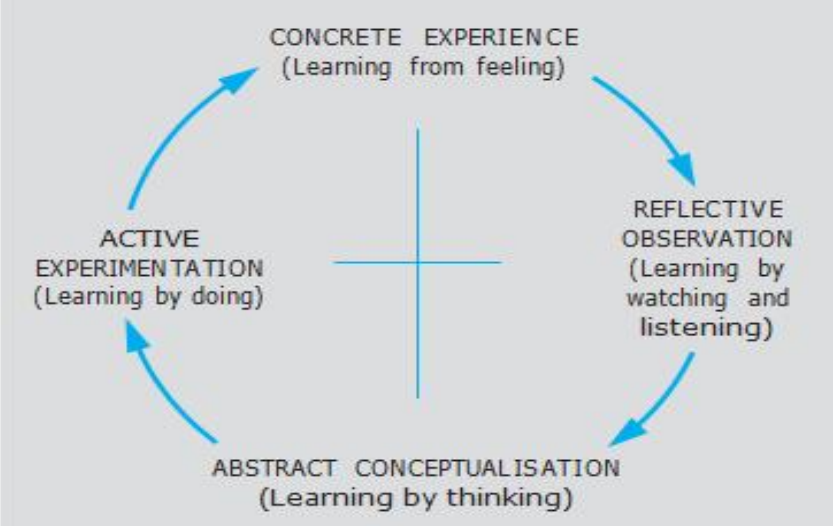

Figure 3. Kolb's learning cycle

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We all go through each of these processes to an extent, but different people feel more comfortable with some than with others.

For example, an action–oriented person who likes to learn by doing may get very frustrated in a learning–by–watching situation or in one that

requires reflection and analysis.

LEARNING – FROM THE INDIVIDUAL TO THE ORGANIZATION

- People learn by seeking out information when faced with a new situation and using this information to draw conclusions and form mental models which they use as the basis for their action.
- If these mental models are confirmed and reinforced by our experience in reality, then over time they become so familiar that they become routine, used automatically and with no conscious effort.
- Organizations use routines, rules, and procedures as a way of sharing knowledge and creating standardized processes throughout the organization.
- These are the systems we use to do our work. Such systems existed before the desktop computer, but computerization has led to sophisticated information technology (IT) systems for accessing, inputting, processing, and sharing information that can be used widely and quickly across the organization.
- The problem for organizations is that routines become old learning and so embedded into our systems that they stifle creativity and the flexibility to respond to changing circumstances.
- This flexibility – the ability to change and learn – is essential to organizations if they are to survive and grow.
- The way organizations seek to encourage learning and the sharing of information and knowledge are important aspects of information management.

INFORMATION COMES IN MANY FORMS

Here are just a few reasons why you, as a manager, need information:

You need to understand what the organization as a whole is doing, as

well as understand what is happening in your own unit or department

You need to be aware of wider industry developments that may impact on the business.

It helps day–to–day problem solving and longer–term planning.

It can avoid having to reinvent the wheel.

Being aware of different practices and other ways of doing things can spark off new ideas and facilitate change.

FORMS OF INFORMATION

Forms of information include the following:

Internal and external — information generated inside the organization and information generated outside. External intelligence and research may be incorporated into internal reports, and issues arising from internal reports may stimulate external market research.

Electronic and hard copy (paper–based) and spoken. At Sun Microsystems, employees receive, on average, 100 e–mails each day, but few people work in a paperless office. Most people also use conversation with others for information.

Hard and soft — or quantitative and qualitative. Hard information is often derived from large quantities of precise factual data, such as figures, that lends themselves to statistical analysis. Soft information, on the other hand, tends to come from few sources and depends on opinions, feelings, impressions, and judgements.

Formal and informal. This is worth exploring in more depth.

Some of the **formal** information sources you might use every day include:

- newspapers or electronic newsfeeds
- magazine articles
- management reports
- staff disciplinary procedures
- videos of product presentations
- layouts, maps, blueprints.

You will also use a number of **informal** information sources — so informal that you might not even recognize them as such! They can include:

- a chat with the managing director's personal assistant while queuing for lunch
- checking out a problem with a colleague
- meeting up with colleagues from the same trade or professional association at the annual conference
- informal contacts with suppliers and customers.

INFORMATION GATEKEEPERS

Some of the most useful of these sources will be ***information gatekeepers***.

People who routinely collect, evaluate, and disseminate information in an informal way which may have nothing to do with their job role.

These people are well aware of the way information flows around their local environment and can exercise an influence that goes well beyond their notional status within the organization.

FORMAL AND INFORMAL

There are some key differences in the characteristics of formal and informal information sources, as shown in Table 1.

Table 1. Characteristics of formal and informal information sources

Formal	*Informal*
Available to more than one person	May be an interchange between just two people
Information captured has been recorded in some way, so can be reused	The information is transient – not stored or retrievable
The information used is selected by the recipient – for example, you decide which newspaper reports you are going to read	The information is selected by the provider
Information tends to be static	Information is interactive
Information is likely to conform to the organisation's promoted self-image – it is likely to be 'espoused theory'	Information is more likely to be 'private' and although partial, is likely to be closer to theory-in-use than formal information sources

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FORMAL AND INFORMAL

There are several reasons why managers prefer informal to formal methods of information transfer:

The response and feedback is instant. The whole process is quicker and so is perceived as more efficient (even if the information is only patchy or actually inaccurate).

Being personal, it is targeted at the recipient, so some initial filtering will have been carried out (but is this the half of the picture you want and need...?).

They might not know what useful formal information is available, or how to access it.

Being personal, it is targeted at the recipient, so some initial filtering will have been carried out (but is this the half of the picture you want and

need...?).

They might not know what useful formal information is available, or how to access it.

Cultural reasons: decisions are often made on the basis of experience and judgment, not painstaking fact finding.

In practice, it makes sense to use a mix of formal and informal, hard and soft data to get a complete picture.

Table 1.2 shows some typical information needs and the information sources that might meet them.

Table 2. Examples of information needs and sources

Need/purpose	*Types of information*	
Produce a report on ice-cream sales for June	Who asked for the report and who will read it Projected and actual sales figures Previous year's figures Meteorological data Report of June launch of new ice-cream product by major competitor	
Your awareness of your own organisational Environment (keeping your finger on the pulse)	Company reports and budgets Products and services launched or axed Internal newsletters and memos Meetings	Discussions at the coffee machine Share price Competitor share price
Competitor intelligence	Press reports on company performance and activities Market research data/market analysis Company websites Company annual reports	Trade journals News reports Share price Trends analysis and forecasting Industry gossip

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- **INFORMATION AS AN AID TO DECISION MAKING**

Much decision making is based on our inbuilt mental models and knowledge base, but this tacit information source can be corroborated and enhanced by formal decision–support mechanisms.

- **THE DECISION – MAKING PROCESS**

How do *you* make decisions? Do you assemble all the facts relating to the problem? Rely on your experience and insight? Shut your eyes and hope for the best? Most people do some or all of these things at different times, depending on the nature of the decision. However, the decision–making process shown in Figure 1.4 describes the basic steps involved in consciously making a decision.

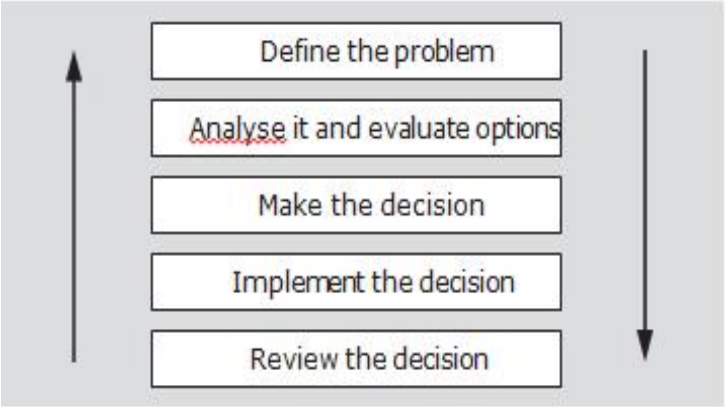

Figure 4. Decision Making Process

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The key step is the second one: **analyze and evaluate options.**

An increasing difficulty facing managers now is the speed at which these decisions In an age when managers are faced with more and more information, there is less and less time in which to evaluate its usefulness.

As a result, **decisions are made on the basis of partial information, wrong information — or whatever information is *available*, rather than *appropriate.***

The concept of cause and effect is commonly used in the way people argue and reason.

- **THE DECISION – MAKING PROCESS**

In making our choices, it is important to identify the right causes and effects — it is all too easy to focus on the symptoms rather than the root causes.

It is also necessary **to consider your decision-making criteria — what you want to achieve, within what time frame, with what resources.**

- **LEVELS OF MANAGEMENT DECISIONS**

Management decisions are made at three broad levels within the organization, and each type of decision has its own characteristics.

1. **Operational decisions:** these are the day-to-day decisions affecting the running of the organization.

The decisions tend to be short term (days or weeks) and need to be made quite frequently.

For example, a supermarket deciding on whether it needs to order more strawberries to cope with current demand.

2. **Tactical decisions:** these have a longer time frame (months or years) and tend to be made by middle managers who are directly involved in implementing the policies of the organization.

   For example, a toy shop timing the start of its Christmas promotion.

3. **Strategic decisions:** these are made by top management, and since they affect the organizational plans of the whole business, possibly for a number of years, they are not made very frequently.

For example, whether to sell off a subsidiary company in response to falling profits.

All these decisions will require information, but the type of information that is needed will be different for each level of decision making. See Figure 5.

- **LEVELS OF MANAGEMENT DECISIONS**

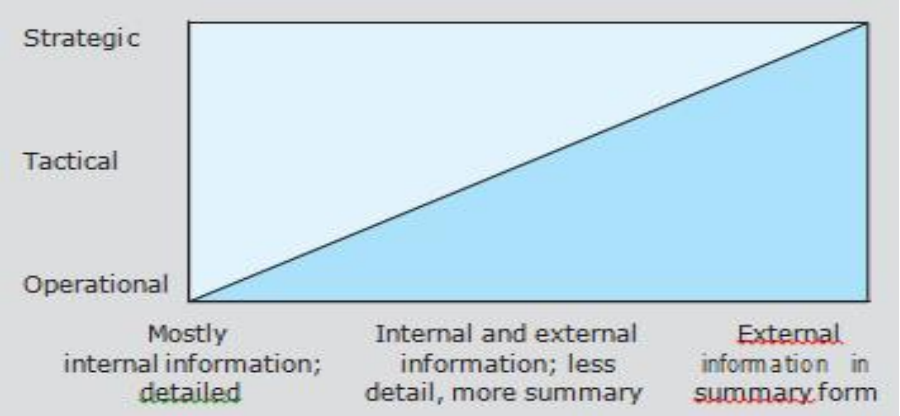

Figure 5. Characteristics of information for management decisions

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GETTING THE RIGHT INFORMATION TO MAKE DECISIONS

In an ideal world, getting the right information to make decisions would be very easy. We would just type a question into our PC, or know exactly the right person we need to telephone in order to get an instant, accurate and authoritative answer.

If you think of a decision you have made recently and about where the information came from, you will probably realize that it is a mix of your own knowledge, whatever information was available and maybe a chat to a couple of colleagues who always seem to have an answer or know where to find one.

Think a little more broadly: how does your team get the information it needs in order to operate? The model would probably look something like the one shown in Figure 6.

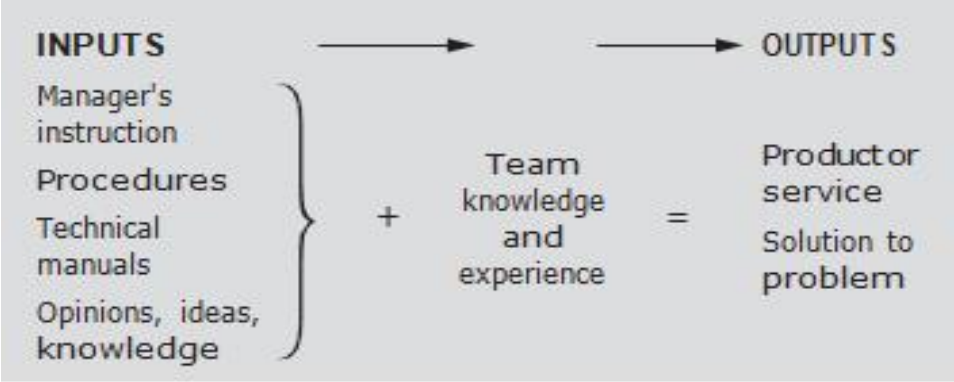

Figure 6. Information for team operations

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In this model, the inputs (your basic raw materials) come from a diverse mix of sources. Some of these will be formal, some very informal — but no less valuable for that.

These inputs will be processed by individuals or the team to produce the desired outputs (a specific product or service, or the solution to a problem).

Getting it right assumes that the flow of information, both formal and informal, is:

- unimpeded — there are no bottlenecks and blockages (human or technical)
- able to move upwards, downwards and sideways with equal ease
- equally accessible to all who need it.

An organizational approach to take some of the luck out of getting the right information for decision making — for making individual knowledge explicit and sharing it across the organization — **is to develop formal information systems to support managers.**