

Module
09
Controlling

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Introduction

This module discusses the last function of management, which is control. Sometimes there are situations where the company does not run as expected. For example, this year's profits dropped despite the fact that economic conditions were relatively good this year. Some salespeople failed to meet their sales quotas, while others met their quotas in quantity but did not contribute to the company's profits. In these situations, we will naturally be encouraged to look for the answer, "Why do these things happen?" If we manage to find the answer, we can then control the causes as much as possible for the benefit of the company.

Indirectly, the illustration above addresses the issue of control. This module addresses the function of control, which is the last function of management. There are three learning activities in this module. Learning Activity 1 discusses control in general. Specifically, this learning activity discusses control processes and control methods that can be used to make control more effective. There are three types of control: feedforward control, concurrent control, and feedback control. A good control system will concentrate on key performance indicators and strategic control points, allowing for effective and efficient control.

Learning Activity 2 discusses financial statements. Financial statements are a tool that is often used to evaluate company performance as well as a control tool. Financial information summarizes the activities of the organization. There are three main types of financial statements, namely balance sheets, income statements, and cash flow statements. Although these three reports summarize the company's information, analytical techniques are still needed to extract further information. Managers can use financial ratio analysis, namely liquidity ratios, solvency ratios, activity ratios, profitability ratios, and market ratios. Managers can use budgets, which are plans expressed in numbers. Some financial organisation models, such as financial accountability centers, are also discussed.

Learning Activity 3 discusses value chain management and operations management. The value chain is the set of activities performed by a company that lead to the value (benefits) offered to consumers. Value chain management activities include both supporting and primary activities. Support activities include company infrastructure, human resource management, technology development, and procurement. Main activities include inbound logistics, operations, outbound logistics, marketing and sales, services. The essence of value chain management and operations is effective and efficient value management.

9.4 Controlling

After studying this module, students are expected to be able to explain the following.

1. Definition of control.
2. Degree of control.
3. Types of control.
4. Designing a control system.
5. Methods of control or supervision.
6. Effective supervision.
7. Resistance to control.
8. Financial statements including balance sheet, income statement, cash flow statement.
8. Financial statement analysis including ratio analysis and comparison in financial statement analysis.
9. Budgeting including budgetary control and accountability centers, financial budgets, flexible and fixed budgets, zero-base budgeting, budgeting process, functional and dysfunctional behavior of budgets.
10. Audit includes external financial audit and internal financial audit.
11. Difference between financial accounting and management accounting.
12. Definition of value chain and value chain management.
13. Strategies to improve the effectiveness of value chain management.
14. Operations management system.
15. Operations management model.
16. Goods and services.
17. Quality concept.
18. Traditional quality control.
19. Total quality management.
20. Productivity management.
21. Using operating systems for control.
22. Using the operating system for purchasing management.
23. Using the operating system to manage inventory.

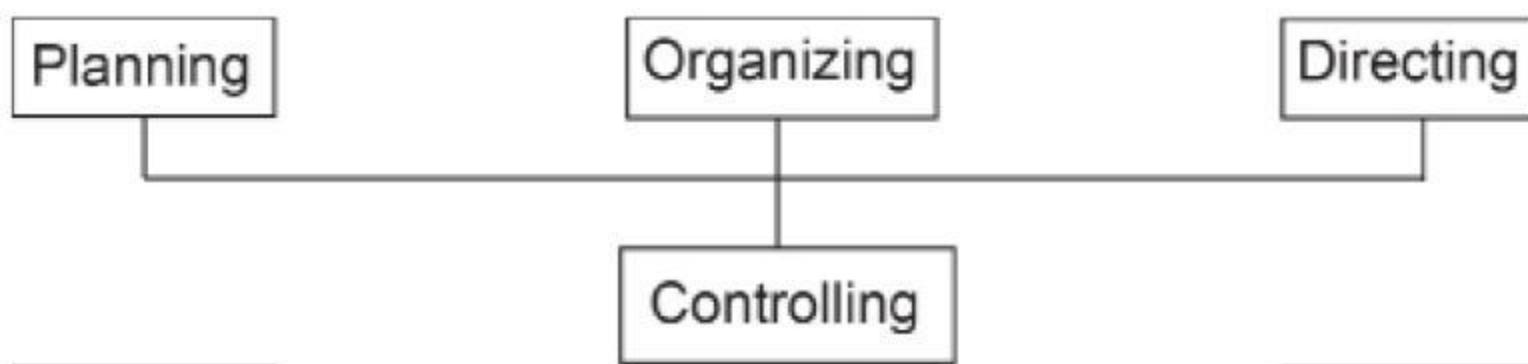
Learning Activity

1

Controlling

A. THE DEFINITION OF CONTROL

Good management requires effective control. Control is needed to ensure that activities go according to plan. Control and planning are two words that go hand in hand. Good control requires planning, and good planning requires control. The illustration in the first part shows the relationship between planning and control, for example, comparing the sales quota (planning) with the sales that occur. This comparison process is a control process. Therefore, there is a special relationship between planning and control, although control is also closely related to other management functions, as shown in Figure 9.1 below.



Sources: Arranged by the Author

Figure 9.1
Control Relationship with Management Functions

Oftentimes, deviations from a plan require special investigations to look into the causes of them. Several definitions of control can be proposed. Here is one definition of control:

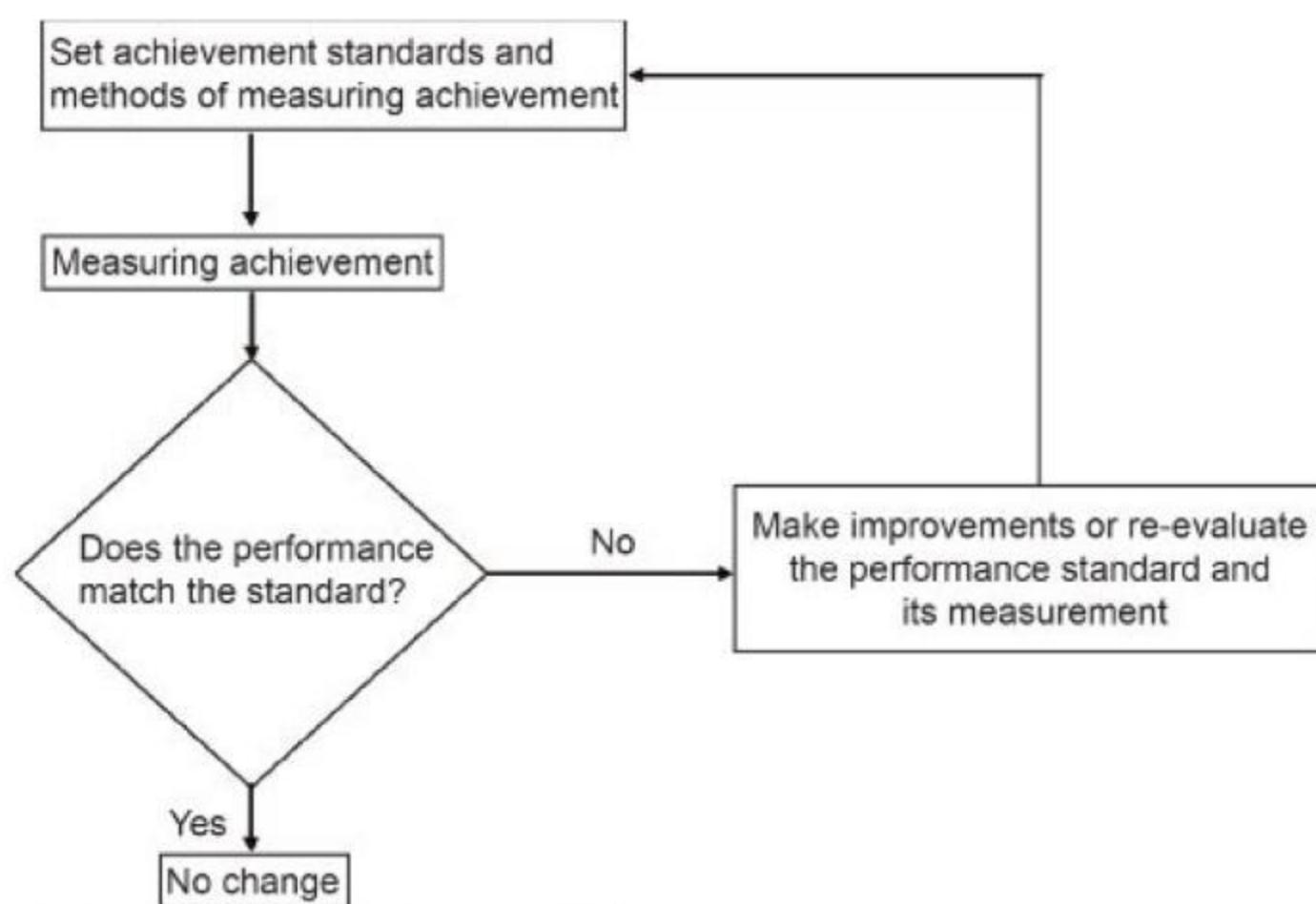
Management control is a systematic effort to set certain performance standards by planning to design an information feedback system, comparing actual performance with performance standards, determining whether deviations occur and measuring whether the deviations are significant, and making necessary corrections to ensure that all company resources are used in the most effective and efficient way to achieve company goals.

The definition above is quite broad and includes the following:

1. There is a standard of achievement.
2. There is an effort to compare the results obtained with the plan.
3. Determine whether there is a deviation or not.
4. Make improvements.

The four steps generally aim to bring the company closer to its goals in the most effective and efficient way.

The above definition can be summarized in Figure 9.2 of the control process as follows.



Sources: Arranged by the Author

Figure 9.2
Control Process

The process mentioned above includes the following four points:

1. Establishing standards and their measurement methods.

Before proceeding further, the standards and their measurement methods must first be established. As far as possible, the standards should be formulated in clear and measurable words. The use of quantitative numbers can help clarify the standard. For example, increasing sales is measured by increasing sales to 10,000 units this year with a sales value of Rp100 million. The goal of increasing sales this year is not very clear for control purposes. An unclear goal will not be much use. For example, let's say the goal of a restaurant is fast service. Fast service will not mean much for control unless it is set with clear numbers. For example, fast service is seen by how long a customer has to wait to get the food he wants—no more than 10 minutes.

2. Clear standards are easy to obtain in manufacturing companies. The ideal temperature for a machine, for example, is 20 to 40 degrees Celsius, which is easy to measure. The quality of a product may be seen through the size or specifications of the product, and the standards for product specifications are relatively easy to determine. The opposite is to determine the performance standard in a service company. Service quality is more difficult to measure. Certain standards must be set in order to determine the quality of the service. For example, the quality of service in banks is seen by how long customers wait to get service. Pizza Hut once set a standard for the length of pizza delivery at no more than 15 minutes. To see the quality of service, periodic surveys can be conducted by taking a sample of several customers using a certain questionnaire. The questionnaire is expected to measure customer satisfaction. More general targets for both manufacturing and services can include sales targets, quotas, or profit targets.

3. Conducting achievement measurement.

The next step is to measure performance. Performance measurement is an activity that is carried out repeatedly, depending on the situation. The frequency of performance measurements will depend on the situation at hand. Checking the capacity of a small production machine may be done every day. While checking on long-term goals may be done every two or three years. Performance evaluation should also be done at the appropriate time. For example, the manager's performance for each year is measured in the first months of the following year. If the performance measurement is done half a year later, it may be too late.

4. Comparing whether the achievement achieved is in accordance with the standard. After the standard of achievement is determined and measurements are taken, the next step is to compare the achievements that have been made with the standards that have been set. This step is practically the easiest. The more complex steps have already been taken in the first two steps above. If the achievement exceeds the predetermined standard, things are going well. Corrective action may not be necessary. Even if they are needed, they will only be minor.

5. Making necessary improvements.

If performance is below the set standard, corrective action is required. Corrective action can involve several activities at once, including changes to the way of working or changes to the standard of performance that has been set. For example, in the Pizza Hut example above, if the average time turns out to be 30 minutes, several improvements need to be made. These improvements include motorcycle repairs, education on the quickest routes to certain locations, or even lowering the time standard from 15 minutes to 25 minutes maximum.

Control is an iterative and dynamic process. The emphasis of control is not only to control, but rather to monitor the performance of the company or its parts. The emphasis on control alone tends to focus on identifying past mistakes. With continuous monitoring, improvements can be made continuously and the company becomes closer to its goals.

B. THE IMPORTANCE OF CONTROL

Control must be carried out throughout the organization, not just by upper management. Control is carried out not only for one section, for example, the financial department alone, but also includes operational control such as efficiency, employee turnover, market share, and product quality. All activities at various levels of the organization should be controlled.

Control will be important because of several situations. Of course, first and foremost is the possibility that activities will be carried out outside the plan. This can happen for many reasons, such as today's accelerating changes or an increasingly complex world. Here are some situations that make control feel more important.

1. Change. In today's business environment, it seems that change is inevitable. Even in the most stable industries, change is inevitable. Competition, new products, the emergence of new regulations, and new raw materials all make control necessary to cope with and take advantage of changes that occur. Companies that do not anticipate change will experience difficulties.
2. Complexity. Companies, organizations, and business situations are becoming increasingly complex. Companies are widely diverse and cover not just one but several industries at the same time. Large organizations will have even more levels of management. To compensate for this complexity, what can be done is to delegate authority or decentralize. Some business decisions are in the hands of certain units or certain levels of management. To compensate for the delegation of authority, control is needed to oversee the units or certain levels of management that make decisions. Control is needed for coordination throughout the organization so that company goals can be achieved.
3. Errors. If there are no errors in an organization, perhaps control is not needed. Managers only need to anticipate changes that occur outside the organization or in the environment. But mistakes happen: wrong orders, wrong machine placement, and wrong data recording. To diagnose these errors, control is needed so that errors can be detected as early as possible and production quality is improved.

Control in the above situation allows the organization to coordinate all activities within the organization so that the organization can produce greater added value and better quality.

C. DEGREE OF CONTROL

The word control sometimes has a negative connotation, that is, control limits the activities of the person being supervised. There is a conflict between manager autonomy and organizational control. At one extreme, control will kill organizational creativity and motivation and bring the organization to a complete standstill. At the other extreme,

without control, an organization will be too creative, managers will run independently according to their own desires and creativity, making coordination within the company difficult, and the organization will move away from its goals.

In this case, the right degree of control must be determined. The optimum degree is such that organizational creativity and motivation arise, but on the other hand, coordination within the organization can be carried out. The overall result is that the organization moves closer to its goal. The optimum degree of control will differ from one organization to another. For a manufacturing company, the degree of control will probably be higher than for a company engaged in services. For large companies, the degree of control will be higher than that of small companies because large companies are very complex. Control in certain areas may be different from control in other areas. Even changes in the environment will cause variations in the degree of control from time to time. When the company is still small, control may still be loose and informal. After the company grows bigger, control will become more formalized, and the degree of control will be higher.

D. TYPES OF CONTROL

There are basically three basic types of control, namely preliminary control, yes/no control, and feedback control.

1. Preliminary Control (*Feedforward Control or Steering Control*)

This control is designed to detect deviations from certain standards and allow corrections to be made before all stages of a particular activity are completed. For example, this year's sales are targeted at Rp100 million. Monitoring of the target is carried out from the early months on to ascertain whether the sales target will be achieved by the end of the year. For example, by mid-year, sales had only reached Rp30 million, and it was estimated that if this situation persisted until the end of the year, the sales target of Rp100 million would not be achieved. Thus, by the middle of the year, it can already be estimated that the sales target (plan) will not be realized. Improvements must be made at that time so that the sales target at the end of the year is achieved.

Such supervision is quite aggressive. Changes that may occur and prevent the realization of the plan will always be anticipated. This kind of control is often referred to as steering control because it can be compared to driving a car. The car is controlled while running so that it does not deviate into a ravine or hit a tree on the side of the road. Such control requires accurate and timely information about changes in the environment or progress toward achieving certain goals.

2. Concurrent Control (Yes/No)

This type of control is carried out while the activity is still in progress. This type is a control in which an activity will continue or not if there is approval or there are certain conditions that must be met. For example, if the salesman quota reaches a

certain amount (the minimum amount that must be met) then the sales operation in the salesman's area will continue. If the minimum sales are not met then sales operations for that area can be stopped altogether.

This type of control is less popular than feedforward control. However, this type of control can be used as a supplement and in conjunction with feedforward control. Such joint use will increase the security of the program or activity being carried out.

3. Feedback Control (Post-Action Control)

This control evaluates the results that have occurred after an activity has been completed. The causes of deviations are determined and can be used for future planning for similar activities. In the example of advance sales targets, after the end of the year, sales realization is compared with the sales target, which can be more, less, or the same. The causes are identified and can then be used for planning the next year's sales target.

Feedback control is sometimes required for other purposes, such as determining bonuses and motivating employees. For example, the bonus for a salesman is 10 percent of the excess sales over the set quota. If he wants to earn extra money, the salesman will try to increase sales as much as possible.

E. DESIGNING THE CONTROL SYSTEM

A good control system requires accuracy and speed of information so that deviations can be detected as early as possible. This requires an efficient and effective management information system. Control must also be carried out for all levels of the organization, not just the upper management. Control is also not only for one particular function, such as the financial function, but also for other functions such as operational, marketing, or human resources functions. Nonetheless, upper management does not have to pay attention to all layers of the organization to ensure that things are running as they should. It is enough for management to pay attention to some parts that are considered important or critical to see if the organization is running smoothly. The variables that are considered critical are referred to as key performance areas. In addition, managers do not need to keep an eye on all layers of the organization to ensure the smooth running of the organization. Managers simply determine certain points where information about the running of the company can be obtained. These points are called Strategic Control Points.

1. Key Performance Area

Key performance areas are parts of an organization or organizational unit that must function effectively if the organization or unit as a whole is to be successful.

If this part runs well, the whole organization can be expected to run smoothly, and vice versa. Thus, this part has an important role to play in the smooth running of the organization. Some examples of key performance indicators for some organizational functions can be seen below.

Table 9.1
Example of Key Achievements

Production	Marketing	HR Management	Finance and Accounting
Quality	Sales volume	Employee absenteeism	Liquidity
Production volume	Cost of sales	Employee turnover	Solvency
Production cost	Promotion cost	Labor relations	Profitability

In addition to the functional key performance as described above, an overall key performance can also be formulated, such as the level of customer satisfaction. If consumers are satisfied with the company's products and services, it is expected that the company will be successful in running its business. For companies engaged in high-tech industries, the quality of research and development can be a key achievement that determines the success of the company. For universities, an overarching key achievement might be formulated as the ability to attract quality students and the ability to develop a good alumni network.

2. Strategic Control Points

Through strategic control points, managers can obtain information on the course of the company without having to observe all layers of the company. This way, the amount of information and the effort to collect it can be saved quite significantly. To evaluate customer satisfaction, not all customers should be surveyed. Only the top 10 percent of customers need to be surveyed and observed for satisfaction. Usually, the proportion of customers is uneven. Suppose the proportion of customers is even enough that there is no largest 10 percent; sampling techniques can be used so that not all customers are surveyed. In production (manufacturing), quality observation does not need to be done by monitoring the entire production line; it is enough to pay attention to the points of change. Components, for example, can be checked for quality before entering the manufacturing process. Then the components enter the production process, and the finished goods come out. At that time, the quality inspection is carried out. This way, supervision becomes more effective and efficient.

F. SUPERVISION METHODS

Monitoring methods can be grouped into two sections: non-quantitative monitoring and quantitative monitoring.

1. Non-Quantitative Monitoring

Non-quantitative monitoring does not involve numbers and can be used to monitor overall organizational performance. Techniques that are often used are as follows:

- a. Observation (control by observation). Observation is aimed at controlling activities or products that can be observed.

- b. Regular and direct inspections. Regular inspections are carried out periodically by observing observable activities or products.
- c. Oral and written reports. Oral or written reports can provide the required information quickly with feedback from subordinates relatively quickly.
- d. Evaluation of implementation.
- e. Discussion between managers and subordinates about the implementation of an activity. This method can be a control tool because problems that may exist can be diagnosed and solved together.
- f. Management by Exception (MBE). Carried out by paying attention to significant differences between plans and realizations. The technique is based on the principle of exception. The principle says that subordinates do all routine activities, while managers only do non-routine activities. Although managers can use the principle directly, some managers establish procedures to help implement control by exception. For example, the following.
 - 1) If monthly sales are 15 percent lower than plan, the sales manager should report to the marketing manager.
 - 2) If labor costs are more than 10% of plan, the construction superintendent should report to the construction manager.

If management by exception can be done effectively, managers' time can be saved. The manager only focuses on issues that are important, while unimportant issues can be sidelined from the manager's attention. This technique is also beneficial because it filters the information that reaches the manager. Information overload can be avoided.

2. Quantitative Monitoring

Quantitative monitoring involves numbers to assess performance.

Some techniques that can be used in quantitative supervision are as follows.

- a. Budget.
- b. Audit.
- c. Break-even analysis.
- d. Ratio analysis.
- e. Several drawings and planning techniques such as Gant chart, PERT (Program Evaluation and Review Technique), and CPM (Critical Path Method).

These control techniques are discussed further in the next chapter or the previous chapter.

G. EFFECTIVE SUPERVISION

Effective supervision has several characteristics that will be explained below. In general, effective supervision must be situational. Good supervision must be tailored to the organization's plans and structure, the personality or individual characteristics of the manager, and the need for efficiency and effectiveness. In addition, supervision must also be able to provide accurate and timely information and lead to improvement efforts.

1. Tailored to the plan and structure of the organization. A good control system ensures that the results obtained are in line with what was planned. Thus, control must follow the plan to be monitored. Plans for certain activities will differ from plans for other activities. The plan for the production department will be different from the plan for the finance department or the marketing department. Thus, the information and methods required for monitoring the production department will be different from the information and methods required for monitoring the finance or marketing department. Control must also be adjusted to the position of the controlling party. The control carried out by the production manager will certainly be different from the control carried out by the machine supervisor. The information needed by the production manager will be more comprehensive and general. Meanwhile, information for machine supervisors will be more technical and more specific to the machine. A good control system must also identify the parties responsible for the deviations that occur. If the person in charge is not clear, the deviation that occurs is difficult to track and correct because no one feels responsible. Cost control by looking at responsibility accounting is one example of seeing accountability for deviations that occur.
2. Tailored to the manager. Good control must also match the characteristics of the manager who supervises or is supervised. Control is aimed at correcting existing deficiencies. Thus, control must produce information that can be understood. In most situations, managers will prefer to read information in the form of figures or graphs. Controls can be made to produce information in the form of pictures or graphs. Other managers, who have a strong mathematical or statistical background, may prefer information in the form of mathematical models with statistical symbols. A good control system provides information that is familiar and useful to the manager. A good control system is also acceptable to managers or other members of the organization because the purpose of the control system is basically the achievement of organizational goals and individual goals within the organization.
3. Economical. The control system must consider the costs incurred. In other words, the benefits obtained from the control system must be higher than the costs it incurs. Small companies do not need to implement the complex control systems commonly used for large companies.

4. Accurate. Accurate information is necessary for good control. Inaccurate information can undermine controls or cause new problems. Therefore, a good information system is needed to support good control.
5. Timely. Information must arrive at the right time. If the information arrives too late, it will not be of much use for future improvements.
6. Flexible. Today's business environment will not be stable forever. A good control system must also take possible changes into account. For example, changing sales levels (lower or higher) should be anticipated by a good control system. If sales fall short of the target, a backup plan (often referred to as "Plan B," while "Plan A" is the original plan) must be prepared. Thus, a flexible control system must depart from a flexible plan.
7. Objective and understandable. A good control system must be clear and objective. Clarity lets organization members know what to do. Individual accomplishments can be measured against specific criteria thanks to objectivity. Thus, the feeling of being treated fairly can be more easily obtained than if subjective criteria are used. But subjectivity is not totally absent from the control system. Subjectivity is mainly needed to accommodate changes such as those described in the element of flexibility above.
8. Lead to improvement. A good control system must be able to produce information that leads to improvement. The information must reach the responsible party who is expected to correct the existing deficiencies.
9. Focusing on strategic points. Good control should focus on strategic points where the possibility of deviations occurring is quite large or where deviations that occur will result in large losses. Good control should also focus on the parts that the organization can control. For example, controlling goods that have been shipped to consumers will not be effective because the organization has no control over the goods that have been shipped.

H. RESISTANCE TO CONTROL

1. Reasons for Resistance

The control system has the possibility of being rejected by members of the organization. Some of the reasons that cause the control system to be rejected are as follows.

- a. Overcontrol. Sometimes organizations have a tendency to exercise excessive control, especially over the daily behavior of organizational members. If the organization requires its members to dress a certain way, drive a certain type of vehicle, and so on, members of the organization will resist such control. For example, many potential candidates do not want to go to IBM and would rather go to Microsoft. IBM requires its employees to wear ties to work, while Microsoft is more relaxed in terms of dress.

- b. Inappropriate focus. A control system that has the wrong focus can lead to resistance to the system in addition to unachieved organizational goals. The control system may be too narrow, lacking a long-term view. Salesmen or sales managers have their performance measured only by quarterly sales. Because of the pressure to make quarterly sales, he will ignore long-term goals, such as building long-term customers. A university evaluates its teaching staff based on the number of scientific articles or papers. Such evaluations may compromise the quality of the articles or research.
- c. Positive rewards for inefficiency. A control system may have the wrong incentive system, where inefficiency is rewarded. For example, two departments may have the same budget at the beginning of the year. Department 1 has Rp 10 million left over because it is efficient in managing its funds, while Department 2 has no funds left over (because it is inefficient). The manager then concludes that Department 1 should be given a raise in the future, while Department 2 is given the same funds as last year. Obviously, Department 1 is not satisfied with such a control system.
- d. Accountability. The control system will create accountability. Accountability clarifies who should be responsible for certain mistakes or achievements. If the control system is good enough, managers will know whether someone is responsible for a deviation and who should be responsible. For example, if production costs go up, managers can find out whether the production manager is responsible or not. If the increase in production costs occurs because input prices have risen (which is beyond the control of the production manager), the production manager cannot be held accountable for the increase in costs. But if the increase in production costs is due to inflated production costs, the production manager will be held accountable. Some members of the organization dislike accountability because it will lead to unpleasant consequences. Therefore, they will tend to reject the control system. Organizational members who do not have good performance will tend to reject the control system for fear of unpleasant consequences.

2. Overcoming Resistance to Control

Several ways can be done to overcome resistance to the control system, including creating an effective control system, encouraging participation, using MBO, and using a cross-check system.

- a. Creating an effective control system. If the control system is well designed and has effective control characteristics (see previous page), each member of the organization will be treated fairly according to his achievements. Members of the organization who do not perform well will work harder or will leave the organization if they cannot achieve the set goals. The organization benefits because only people who really have competence will stay in it.

- b. Encourage participation. Employees who are involved in the planning and control process will be less likely to reject the planning and control system. Their involvement will further encourage their commitment and thus encourage their participation. High participation minimizes the possibility of rejection.
- c. Using MBO. Employees are involved in the process of determining the goals or targets that they will achieve under Management by Objectives. These goals or targets will become their standards. Their performance will be compared to that standard. MBO thus helps integrate organizational planning and control. The behavioral element of MBO also plays an important role because in MBO, employees will be involved in the planning and control processes. Thus, the possibility of rejection of the control system will be reduced.
- d. Using a cross-check system. Maintaining an information system that allows cross-checking will also help reduce resistance to the control system. For example, a good production control system can provide information on raw material prices and production costs. If production costs increase because raw material prices increase, the production manager cannot be held accountable. The information system will thus protect the production manager. Conversely, if the information system shows that production cost inefficiencies occur (and these are under the control of the production manager), then the production manager can be held accountable. This way, every member of the organization can be treated fairly, and resistance to the control system will be reduced.



Exercise

To understand the material above, please complete the following exercise!

Control is the last function of management aimed at seeing whether activities are running in accordance with the original plan.

Key Ideas for Exercise Answer

Take a look at the picture of the control process in Learning Activity 1 and apply it to the company or try to apply it according to your own opinion.



Summary

Control is the last function of management. Control is aimed at seeing whether activities are running in accordance with the original plan. Steps in control include setting performance standards and measures, measuring performance, and taking corrective action if there are deviations. Control is increasingly important as the

environment changes and organizations become more complex. The word control often has a negative connotation because strict supervision can kill creativity. Too-lenient supervision is also not good because managers do not have enough control over the organization. For this reason, managers need to find the ideal level of control where control over the organization is sufficient and creativity is also quite healthy.

There are three types of control: feedforward control, concurrent control, and feedback control. A good control system focuses on key performance indicators and strategic control points. In this way, managers' time and energy can be saved. Effective control has several characteristics, namely being adapted to the organizational structure and being economical, accurate, timely, flexible, and objective. Managers need to understand the factors that oppose control and how to overcome resistance to control.

TERMS INDEX

Control	Key achievements
Achievement Standard	Strategic control points
Degree of control	<i>Management by Exception</i>
<i>Feedforward control</i>	Management by exception
Effective control	Cross-check system
<i>concurrent (yes/no) control</i>	<i>Management by Objectives</i>
Feedback control	
<i>post-action control</i>	



Formative Test 1

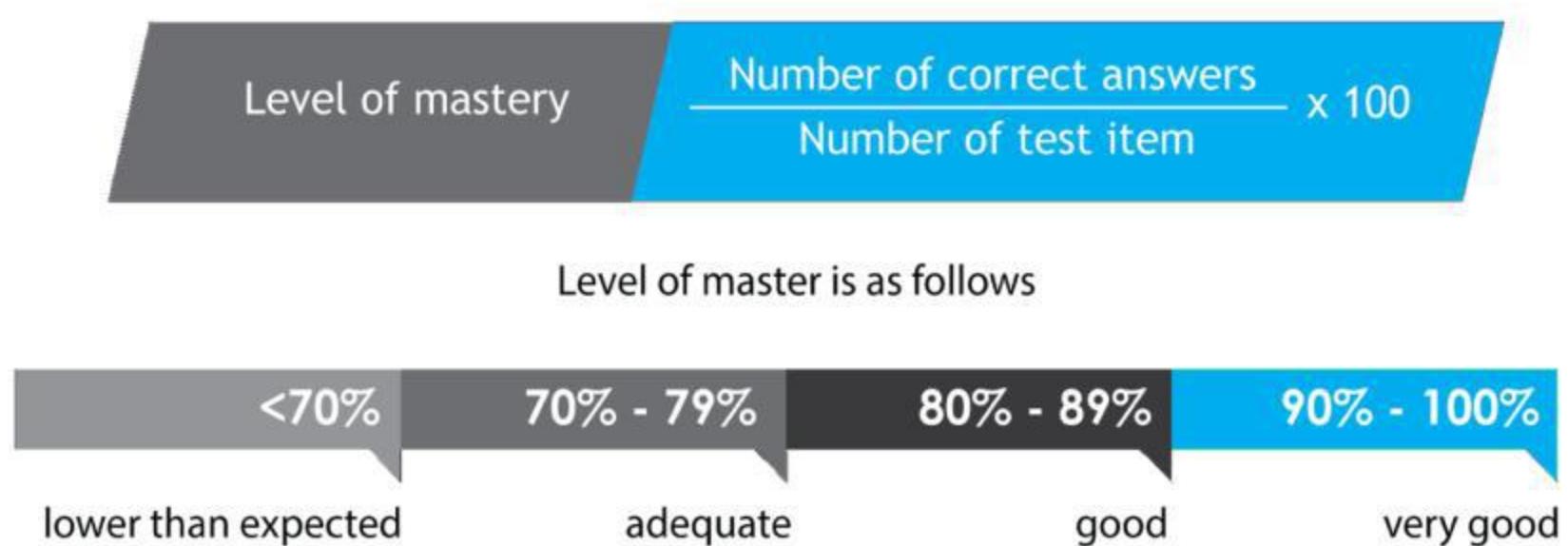
Choose the correct answer!

- 1) The company's sales target for this year is Rp100 million. Since January, this target was monitored. In March, the sales that had occurred for three months since January, only reached Rp10 million. The company then re-evaluates its strategy. This type of control is called
 - A. feedforward
 - B. yes or no
 - C. post-action
 - D. managemen by objectives

- 2) The following factors have made control more important, the factor is
 - A. stable industry conditions
 - B. no errors
 - C. complex conditions
 - D. no environmental changes

- 3) The following are examples of qualitative control, namely
- A. break-even analysis
 - B. ratio analysis
 - C. PERT (Program Evaluation and Review Technique)
 - D. written and verbal reports
- 4) To evaluate customer satisfaction, the company focuses on the top 10 percent customers who will be surveyed and observed for satisfaction. The following are examples of conditions that cause control to be rejected, namely
- A. feedforward control
 - B. quantitative control
 - C. non-quantitative control
 - D. strategic control points
- 5) Management done by involving employees in the process of determining the goals or targets that they will achieve is referred to as
- A. management by objectives
 - B. management by exception
 - C. management by feedback
 - D. management by participation
- 6) Managers conduct supervision using the following criteria. If monthly sales are 15 percent lower than the plan, an evaluation is necessary. The method is called
- A. management by objectives
 - B. management by exception
 - C. feedforward control
 - D. post-action control
- 7) A company's marketing success is determined by several key variables such as sales volume, cost of sales, and promotion costs. These variables are called
- A. confounding variables
 - B. cause-and-effect variables
 - C. key performance area
 - D. targeted performance area

Use key answers for Formative Test 1 which is located at the end of this module to determine the correctness of your answer. To make sure your mastery of the learning materials use the following formula.



When you attain level of mastery 80% or more, very good, you may continue to Learning Activity 2. Otherwise you have to review the material of Learning Activity 1. Pay attention to parts which you don't master yet.

Finance Control

Financial control is an important control for managers because financial statements present a summary of the organization's past activities. Managers, especially top ones, have an interest in this summary information because they do not need to know the organization's operations. This learning activity discusses financial controls, including financial statements that summarize past financial information and budgets that are both planning and control tools.

A. FINANCIAL STATEMENTS

In general, there are three types of financial statements: the balance sheet, the income statement, and the cash flow statement. The first two are the oldest forms of statements. The three reports have their own form and purpose, despite being interrelated. They are intended to provide readers with information that is relevant for decision-making.

1. Balance Sheet

The balance sheet is used to describe the financial condition of an organization. The balance sheet can be described as a snapshot of the organization's financial condition at a particular time, which includes the organization's assets (resources) and claims (liabilities) on those assets. Claims are the source of funds, while assets are evidence of how those funds are being used. Assets are the result of investment decisions, while claims are the result of funding decisions. Assets are located on the left side of the balance sheet, while claims are located on the right side of the balance sheet. Organizational funds are obtained through debt or equity participation (share capital).

Table 9.2 provides an example of a company's balance sheet. The balance sheet is organized by the liquidity of the balance sheet components. The top item has the highest level of liquidity. Liquidity is measured by the ease and speed with which it can be converted into cash. Cash is, of course, the most liquid asset because it is already in cash form. The next most liquid items are marketable securities and accounts receivable, followed by inventory. Inventory is the least liquid current asset because inventory will be sold first (if the sale is on credit) and then turn into accounts receivable. Then trade receivables turn into cash. The liability side is also organized by liquidity. The topmost

debt is the most current debt, which must be repaid within a year or less. The next component is long-term debt, which has a maturity of more than one year. The last component is share capital, which has no formal maturity.

Note that total assets equal total liabilities. The balance sheet equation is shown as follows:

$$\text{Assets} = \text{Debt} + \text{Share Capital}$$

As the equation above reads, the assets of a company are equal to its debts plus its capital (or claims on those assets by creditors and owners of the company). Assets show specifically the wealth of the company, while liabilities show specifically the funds provided by certain people or entities to fund the purchase of the company's wealth.

Table 9.2
Balance Sheet

ABC Company Balance Sheet, as of 31 Desember 1996			
Current Assets		Current Payables	
Cash	10.000	Payable	Dagang
	20.000		
Accounts receivable	40.000	Employee payable	30.000
Inventory	100.000	Tax payable	30.000
Total Current Assets	150.000	Total Current Payable	80.000
Buildings, Plant, and Equipment		Long-term Debt	
Building	500.000	Bank Payables	300.000
Plant and Equipment	750.000	Bonds Payable	300.000
Total Building and Equipment	1.250.000	Total Long-term Debt	600.000
Intangible Asset		Share Capital	
Trademark	50.000	Common stock	300.000
Patents	150.000	Retained Earnings	620.000
Total Intangible Assets	200.000	Total Share Capital	920.000
	1.600.000		1.600.000

Assets are commonly defined as economic benefits that will be received in the future or that will be controlled by the organization as a result of certain transactions or events. Assets are the organization's economic resources that the organization will use to carry out its activities. The main attribute of an asset is its ability to provide services or benefits to the organization that uses it.

Debt is defined as an economic sacrifice that may arise in the future from an organization's present obligation to transfer assets or provide services to another party in the future as a result of past transactions or events. Payables arise mainly due to delayed payments for goods or services the organization has received and from borrowed funds. Accounts payable are debts that result from late payment for goods or services received by the organization, whereas loans payable are debts that result from borrowed funds. Other debts, such as tax debts, arise due to government regulations. For example, every time a sale is made, the debt is immediately charged to the buyer. But the organization will pay the tax on a certain date, such as every January 31. Thus, during the time before it is paid, the tax that has been received by the organization but is still held by the organization becomes tax payable.

Share capital is residuals, i.e., assets minus debts. Share capital is a form of ownership in a business. Share capital ranks after debt in terms of claims on the company's assets. As such, it has a claim on the remainder of the company. From the company's point of view, share capital reflects the party that bears the company's risks and uncertainties resulting from the company's activities and earns its rewards as a consequence. The rewards are in the form of an increase in the share price and dividends paid. The organization's sources of funds can be summarized in Table 9.3 below.

Table 9.3
Sources of Organization

Type	Rewards	Risk
Debt	Interest	If the company goes bankrupt, debt holders are the first to get funds from the liquidation process (sale of assets).
Shares	Dividends and the difference between the share price at the time of sale and the share price at the time of purchase.	If the company goes bankrupt, shareholders come last in the liquidation process.

An example of debt is debt to a bank. If the debt is issued through the financial markets, it is called a bond or bond financial instrument. If shares are traded on financial markets, they are traded on the capital market. The secondary market then displays the market price of the traded stock, which changes over time. If the shares are not traded on a capital market, they are often referred to as investments. Venture capital is an example of a form of participation. There are currently several venture capital firms in Indonesia.

2. Income Statement

The income statement summarizes the results of the company's activities over a certain period. It is often seen as the most important report in an annual report. The company's activities during a given period include routine or operational activities, in addition to activities that are non-routine and infrequent in nature. These activities need to be reported so that readers of the financial statements can obtain relevant information.

Table 9.4 below is an example of an organization's financial statements. The income statement is expected to provide information relating to the company's profitability, risk, financial flexibility, and operational capability. Profit is a measure of a company's overall performance. Investors invest their money in the hopes that they will get a return on their investment in addition to keeping it from decreasing in value. Risk is related to the uncertainty of the results that the company will get in the future. The higher the uncertainty, the higher the risk. Financial flexibility is the ability to adjust to opportunities or needs that are not as expected. Companies that can sell their assets without experiencing a significant decrease in price. The company's activities have increased and it can fulfill the need for funds well. It is a company with good flexibility. Operational capability refers to the company's ability to maintain the company's activities based on a certain level of activity, for example, maintaining the sales generated or maintaining the capacity used.

Table 9.4
Income Statement

ABC Company Income Statement For the year's ending period December 31, 1996		
Sales Revenue	150.000.000	
Less: sales discounts and returns	(10.000.000)	
Net sales	140.000.000	
	180.000.000	
Total Revenue		
Operating Expenses	80.000.000	
Cost of Good Sold	5.000.000	
Cost of Sales	10.000.000	
Administrative and General Expenses	10.000.000	
Depreciation Expenses	5.000.000	
Interest Expenses	5.000.000	
Loss on Sale of Assets	115.000.000	
	65.000.000	
Total Operating Expenses	19.500.000	
	45.500.000	

In general, the contribution of the income statement in terms of conveying information can be improved by the following financial statements.

- a. Provide information on the operating performance of the company and separate it from other aspects related to the company. A company that produces textiles is expected to do well in the textile business rather than in the sale of textile machinery or other equipment.
- b. Present the results of certain meaningful activities or events to predict the amount, timing, and uncertainty of future cash and income flows.
- c. Provide useful information to assess the profitability of a company.
- d. Provide feedback to users of financial statements as a predictive evaluation of revenue and its components.
- e. Provide information to help assess the costs incurred to maintain the company's operational capabilities.
- f. Present information on how effectively management has carried out its obligations relating to the use of the company's economic resources.

3. Cash Flow Statement

Traditionally, companies only publish a balance sheet and a profit and loss statement. This raises the question, "How is the in and out flow of cash? How does the company fund its expansion? And what happens to the money that comes in from selling shares on the stock market?" Unfortunately, such questions cannot be answered through the balance sheet or income statement. The cash flow statement is meant to fill that gap. The purpose of the cash flow statement is to provide information about the company's cash receipts and payments during a certain period. Another objective of the cash flow statement is to provide information about the cash effects of the company's investing, financing, and operating activities during a certain period. The cash flow statement is expected to provide information about the company's liquidity, financial flexibility, and operational capabilities. The cash flow statement, when combined with other financial statements, will help analyze:

- a. the company's ability to generate positive future cash flows;
- b. the company's ability to meet its obligations and pay dividends;
- c. the company's need for external funds;
- d. the reasons for the difference between the company's net income and its cash receipts and disbursements;
- e. the cash and non-cash aspects of investment and financing transactions during the period.

Table 9.5 is an example of a cash flow statement. There are three blocks in the cash flow statement: cash flow from operating activities, cash flow from investing activities, and cash flow from financing activities. From the financial statement, it appears that

the cash inflow from operating activities is positive, as is the cash flow from financing activities. Then the cash is used for investment activities, namely to purchase buildings and make bond investments.

B. FINANCIAL STATEMENT ANALYSIS

How do you analyze the financial performance of an organization? Financial statements provide the necessary data; however, analytical techniques are needed to extract more in-depth information. There are many analytical techniques that can be used in financial analysis, as seen in the book Financial Management or Financial Analysis.

1. Ratio Analysis

Suppose Organization A earns a profit of Rp1 billion, is the profit considered good? Is Organization A better than Organization B, which made a profit of Rp500 million? To answer these questions, an analytical tool that can eliminate certain biases and a standard of comparison are needed. In the example above, in absolute terms, A's profit level is greater than B's profit level. But if the assets used by A are worth Rp10 billion and the assets used by B are worth Rp2.5 billion, the story will be different. A's productivity is $(1/10) = 0.10$, while B's productivity is $(0.5/2.5) = 2$. B's productivity is higher than A's productivity.

Financial ratio analysis has the goal of eliminating such size bias in the evaluation of an organization's financial performance. There are the following five groups of financial analysis.

- a. Liquidity ratios. This ratio seeks to measure the organization's ability to meet its short-term liabilities, i.e., liabilities that are due within one year or less. For example, if the organization's current assets are Rp 200 million and its current liabilities are Rp 100 million, the current ratio would be $(200/100) = 2$. The number 2 can be interpreted to mean that every Rp1 of current debt is guaranteed by Rp2 of current assets.
- b. Solvency ratio. This ratio wants to see the organization's ability to meet its long-term obligations, namely those that mature in more than one year. Long-term debt is used to calculate the organization's liabilities. Often, the calculation is done using total debt, which means long-term debt plus short-term debt. The interpretation can be done the same as the interpretation of the liquidity ratio.
- c. Activity ratios. These ratios measure the effectiveness of the organization's use of resources. Some of the resources measured for effectiveness are receivables, fixed assets, or total assets. The greater this ratio, the more efficiently an organisation uses its resources.

- d. Profitability ratios. This ratio measures the organization's ability to generate profits based on assets, share capital, and other factors. This ratio is a more comprehensive measure of the organization's performance.
- e. Market ratios. Market ratios are relevant for companies that have gone public (sold their shares to the public through the capital market). Some of the measures used involve market prices. If the organization performs well, its stock price will rise.

Table 9.5
Cash Flow Statement

ABC Company Cash Flow Statement For the year's ending period December 31, 1996		
Net cash flow from operations	62.5000.000	
Net income	13.600.000	
Adjustment for difference between income and cash flow from operation	2.000.000	
(+) Depreciation expense	1.100.000	
Amortization expense	400.000	
Amortization of bond discount	700.000	
Decrease in prepaid items	2.200.000	
Increase in personnel payable	900.000	
Increase in income tax payable	(1.800.000)	
Increase in taxes deferred	(7.300.000)	
(-) Increase in accounts receivable (net)	(3.900.000)	
Increase in inventory		70.400.000
Decrease in accounts payable	(73.900.000)	
Cash flow from operations	(10.000.000)	
Cash flow from investing activities Purchase of buildings	5.000.000	
Bond investment expenditure		(78.900.000)
Receipt from sale of land	(11.200.000)	
Cash flow from investing	23.000.000	
Cash flow from financing	11.800.000	
Dividend payments	3.300.000	
Proceeds from issuance of new shares	11.000.000	
Cash flow from financing	14.300.000	

Table 9.6
Financial Ratio Summary

Ratio	Calculations	Purpose
Liquidity Ratio		
Current Ratio	Current Assets Current Debts	Calculates the company's ability to meet short-term obligations.
Quick Ratio	Current Assets - Inventory Current Liabilities	Similar to above, but inventory is excluded as it is the least liquid current asset.
Activity Ratio		
Receivables Rotation	Sales Receivables	Calculate how fast accounts receivable turnover is.
Average life of receivables	Receivables Sales/365	Calculate how long the investment is embedded in receivables.
Average life of supplies	Supplies Price Cost of Sales/365	Measure the efficiency of inventory utilization or management.
Total Asset Turnover	Total Assets Sales	Measure the effectiveness and efficiency of Total Assets management.
Solvency Ratio		
Total Debt to total assets (Assets)	Total Debt Total Assets	Calculate the company's ability to meet long-term obligations.
Times Interest Earned	Earnings before interest and tax (EBIT)	Measures the ability of profit to cover interest.
Fixed charge Coverage	Interest EBIT + rent expense Interest + Rent	Same as above (except include total fixed costs (interest and rent). Rent is a liability that is just as binding as interest.
Profitability Ratio		
Profit Margin	Net profit Sales	Measuring efficiency or the ability to reduce costs.
Return on Assets	Net profit Total Assets	Same as above, efficiency and profitability of the company based on specific assets.
Return On Equity	Net income Share Capital	Measures the profitability of a company based on a specific share capital.

Ratio	Calculations	Purpose
Market Ratio		
Price Earning Ratio	Market price per share Net income per share	From a management perspective, the higher the better, but investors prefer this ratio to be low.
Dividend Yield	Dividend per share Market Price per Share	Looking at how much investors stand to gain from dividend payments.

2. Comparison in Financial Analysis

How do you determine whether an organization's performance is good? If an organization has a 10% increase in sales, can that be considered good? The answer is not necessarily. If the business sector or economy is growing at 20%, then the 10% figure is not good. A competitor may have a 30% increase. Although the organization has increased sales, its market share has decreased. Therefore, the organization's performance needs to be compared with certain standards. One of the standards used is the industry average, which is the average number achieved by companies in a particular industry. For example, if the organization is engaged in food production, the industry average is calculated by averaging the numbers in the industry for each ratio analyzed. In this case, industry has a more general sense, namely the business sector (not manufacturing). If the company has a current ratio of 2, while the industry current ratio is 3, then the 2 does not look good compared to the industry average. Some other standards are also relevant. For example, a competitor company of similar size would be more relevant as a standard if the company uses a benchmark strategy. Other companies, such as PJKA, that have no competitors would be more appropriate to use internal standards.

In developed countries, industry averages can be easily obtained through the publication of Standard & Poor's or Moody's. In Indonesia, with companies going public, industry figures are easier to obtain, although consideration needs to be made to determine the appropriate industry.

C. BUDGETING

Budgeting is the process of planning activities over a period of time, expressed in numbers. A budget is thus deemed to be planning expressed in numbers. Budgets can be set either for the organization as a whole, for departments, or for specific parts.

The budget period is usually one year, although it is sometimes broken down into shorter time units. Budgets are frequently expressed in monetary units, such as in financial budgets. Budgets are the basis of the control system. Because they are expressed in numbers, they can be used as a fairly clear standard against which comparisons can be made between departments, between organizational levels, and between different times. Budgets thus have several functions: as a coordination tool, as a standard, as a guide in carrying out activities, and as a tool for evaluating performance.

1. Budgetary Control and Accountability Centers

A good control system must be able to identify responsible parties. A part of the organization can be grouped into several responsibility centers: revenue center, cost center, profit center, and investment center. Managers are responsible for the activities of their department and they are evaluated based on the type of accountability.

A revenue center is an organizational unit whose performance is measured by its ability to generate revenue (produce output). The sales department is an example of a revenue center. The department's achievement is not measured by the excess of sales over its costs but by the excess of sales earned over the sales that have been set. A cost center is an organizational unit whose performance is measured by its ability to reduce costs incurred. Output is not an important consideration in this unit. Examples of cost centers are administrative departments and research and development departments. The achievement of these sections is seen based on the difference between actual costs and budgeted costs. A profit center is an organizational unit whose performance is evaluated based on its ability to generate profit, which is the excess of revenue over costs. Certain autonomous product divisions can be evaluated as profit centers. A department within an organization can be designated as a profit center if the output produced by the department is counted as "sales" through an internal pricing mechanism known as transfer pricing. For example, a computer repair (service) department can charge a certain price (transfer pricing) when repairing computers in the marketing department. Investment centers are evaluated based on their ability to generate revenue after deducting the investment made. For example, the creation of a hospital requires buildings and equipment. Suppose the revenue of the hospital is Rp 10 million per year, the cost incurred is Rp 2 million per year, and the investment incurred is Rp 50 million with a life of 10 years. The profit of the hospital is $10\text{ million} - 2\text{ million} - \frac{50\text{ million}}{10\text{ years}} = 3\text{ million}$. The 5 million figure is the depreciation of investment expenditure (50 million divided by 10 years). The investment center is similar to the revenue center.

The difference is that in an income center, investment activities are not as significant. A consulting company is an example of an income center.

2. Types of Budgets

An organization's budget can be classified into operational and financial budgets. An operational budget is a plan for the organization's operations, usually involving material units and cost figures. A financial budget is a detailed plan for the use of funds and their sources. The following figure illustrates the relationship between an operational budget and a financial budget.

a. *Operating budget*

The cost budget is a plan for the costs to be incurred. In the production department, the budget can be clearly measured. The use of raw materials and direct labor is a component of the cost budget. The cost budget can be used to measure the efficiency of cost utilization. Therefore, it is often referred to as an engineered cost budget. As for

other departments, such as research and development, legal, the costs used are not easily planned. The budget is not intended to measure the efficiency of the department. If the costs are only set at a certain amount, it is likely that the department will not complete its work effectively. These cost budgets are therefore often referred to as discretionary cost budgets.

Revenue budgets are used to measure sales and marketing effectiveness. The budget consists of the budgeted sales amount multiplied by the sales price per unit. The uncertainty in this budget is high, especially if sales fluctuate considerably. If capacity is limited, this budgeting can be done easily because sales will not exceed current capacity. But managers have a certain degree of control over marketing costs, promotions, pricing, and so on. Managers can make fairly accurate estimates.

A profit budget is a combination of an income budget and an expense budget. It can be used by managers who have control over both. The profit budget consists of a set of financial statements projected for the coming year.

b. *Financial budget*

The financial budget integrates the financial plan with the operational plan. The budget is beneficial because it can detect plans that are too expensive (beyond the organization's capabilities), allow the organization to anticipate the actions required if an alternative is carried out, and see future financial conditions.

Capital expenditure budgets plan for future investment expenditures, such as investments in buildings, equipment, and so on. Investment decisions are important for an organization because they will determine its future. The decision to replace old machinery with new, more economical machinery will increase the competitiveness of the organization. The decision has a long-term effect, which cannot be changed just like that. The decision to buy a particular machine will keep the organization tied to that machine for the duration of the machine or as long as there is no alternative machine that is more efficient.

Cash budgets incorporate plans for income, expenses, and investment spending. The budget allows the organization to anticipate future cash surpluses and shortages. If the organization experiences a cash shortage in the future due to expenses exceeding income, it can borrow money to cover the shortfall. If the organization is expected to have excess cash in the future, it can start planning for investments such as buying securities.

A funding budget is created to ensure that the organization will always have enough cash to fund its activities. This budget is created along with the cash budget. The projected funding needs can be both short-term and long-term.

The balance sheet budget is created by combining all the budgets to project the balance sheet for the coming period, if the results achieved are in line with the plan. This budget is often referred to as a pro-forma balance sheet. The balance sheet can

then be used for analysis to determine if there are opportunities or problems that require anticipated action. For example, if the pro forma balance sheet shows too much debt, managers can reduce debt, which means reducing investment spending or, alternatively, issuing shares to finance the investment.

3. Flexible and Fixed Budgets

In budget planning, there are three types of costs that must be taken into account, as follows.

- a. Fixed costs, costs that are not affected by the company's activities or production volume. Monthly salaries and annual or monthly insurance are examples of fixed costs.
- b. Variable costs, costs that change proportionally according to the activities of the company. Raw material costs or direct labor costs are examples of variable costs.
- c. Semi-variable costs, costs that change according to the activities of the company, but the changes are not proportional. This type of cost is usually the largest part of an organization's costs. Salesman or marketing costs are an example of such costs because the number of salesmen will increase if sales increase, but the increase is not proportional to the increase in sales.

In a fixed budget, cost behavior is assumed to be fixed. If sales deviate from the plan, for example, by increasing, fixed costs will not change, but other costs will change, in this case, by increasing. The actual costs will therefore go up, which does not seem good because of the increase in costs. To avoid such a situation, a variable budget or flexible budget is developed. A flexible budget is a cost schedule that shows changes in costs according to changes in the company's activities. In a fixed budget, the company's activities are limited to a certain production range, while in a variable budget, the production activities can be varied.

4. Zero-Base Budgeting

In the normal budgeting process, the previous period's or year's budget is used as the basis for budgeting. Adjustments are then made to anticipate changes in future periods. Usually, such changes take the form of increases, while decreases are rare. This way, there is a tendency to always maintain past activities, even though they may no longer be relevant in the future.

Zero-base budgeting differs from the usual approach. Every year, it begins at zero, as if this is the first time budgeting. Then every activity included in the budget has to be justified. Zero-base budgeting was pioneered by Texas Instruments in the 1970s and later used by President Jimmy Carter for the central government. There are three steps in this budget method.

- a. Breaking down activities into decision packages, which are activities with benefits and costs if the activity is approved or not.

- b. Evaluating the activities and then ranking them based on their contribution to the organization, from most important to least important. The rankings for all organizations are evaluated and then selected by top management.
- c. Allocate resources based on the ranking of benefits. The highest ranking will get full funding, while the lowest ranking may be dropped or given less than full funding.

Zero-base budgeting is useful to force managers to evaluate the benefits of an activity and its priorities, and as a result, make the budget more efficient. But such budgeting makes administrative tasks large, and managers tend to inflate the importance of activities to ensure the acquisition of funds. These drawbacks make zero-base budgeting less widely used than in the past.

5. Budgeting Process

The budgeting process can be initiated from the top and then passed down or, vice versa, from the bottom and then passed up. The latter approach is gaining popularity and is increasingly used because it has several benefits. First, lower managers know the operational situation better. Second, motivation can be increased by this approach. Third, morale will be higher. However, both approaches have their own advantages. Table 9.7 below illustrates the advantages of each approach.

Table 9.7
Advantages of the Budgeting Approach

Advantages of the Top-Down Approach	Advantages of the Down-Top Approach
Industry (business sector) economic projections	Operational plan
Company planning parameters	Information on competition, products, and markets
Company objectives	Alternative actions/decisions
Overall resource availability	Specific resource demand

The budgeting process starts with lower-level managers preparing budgets with guidelines that have been prepared by top management. Top management also gives the general pattern of this period's budget, for example, by estimating a decrease in sales this period. Then the lower-level manager submits his budget to the division manager or higher manager. The division manager then consolidates the budgets in his division. Overlaps or inconsistencies are eliminated at this stage. For example, if two departments submit proposals for machines that can be shared, the manager may eliminate one of the machines. If the manager knows that buying in bulk can result in discounts, the manager will combine orders for the same items.

After these steps, the divisional budget is submitted to the budget committee, which usually consists of top management and line management. The budget is then re-evaluated. Overlaps, duplications, and inconsistencies between divisional budgets are

eliminated at this stage. Once completed, the organization's budget is evaluated by the company's financial manager or controller. The form and stage of the evaluation may vary. The controller may be a member of the committee, the budget from the committee may be submitted to the controller, or the budget will be evaluated first by the controller before it is submitted to the budget committee. At the final stage, the final budget is submitted to the Managing Director for approval. After being evaluated by him, the budget can be submitted to the Board of Commissioners or the like. Then the approved budget is returned or communicated back to the managers of the organization. In such an evaluation process, changes are bound to occur. Resources to be obtained may be lower or higher than budgeted.

The stages discussed above are typical. Organizations may vary, both in the stages and in the formats of the parties involved. For example, an organization may have a budgeting department whose job is to help prepare the budget. Other organizations may have a budget committee, as discussed above.

6. Some Functional and Dysfunctional Behavior of Budgets

As a control system, budgeting has both functional (if done effectively) and dysfunctional (if not done effectively) effects. Among these functional effects are the following.

- a. Increases motivation and morale. Their involvement in goal setting boosts motivation and morale.
- b. Improves organizational coordination. In the budgeting process, it is clear that coordination can be improved through the budget.
- c. Can be used as a signal of improvement. If results are lower than expected, managers know that improvements need to be made.
- d. Assists in learning from experience. After the budget period ends, managers or members of the organization can analyze what happened in the past, the causes, and the actions needed to avoid past mistakes.
- e. Resource allocation can be improved. The allocation of resources is clarified and accompanied by logical justification.
- f. Improves communication. Through discussion, budgeting can improve communication.
- g. Assists lower-level managers in understanding their position within the organization. Lower-level managers set goals, and then these goals are seen to contribute to achieving organizational goals.
- h. Helps new people see where the organization is going. This aspect will encourage the new person's enthusiasm for work because they will become more familiar with the organization.
- i. As an evaluation tool. The results achieved can be compared with the standards that have been set.

The dysfunctional effects of budgets are as follows:

- a. Different perceptions of the budget by organizational members. Managers may feel that they are being treated unfairly because the budget is being used as a evaluation tool without considering the background of deviations. In order for the budget to be used as a fair evaluation tool, the background of deviations must be taken into account to determine whether the deviations are the responsibility of the manager or due to other factors beyond his control.
- b. Communication and feedback can lead to manager dissatisfaction with the budget. Superiors are not quick to inform subordinates of deviations that occur. If they are informed early, they can take corrective action, and they may become more confident in the budget. Otherwise, they become distrustful or hostile toward the budget.
- c. Budgets can encourage the "wrong" motivation. If members of the organization are "forced" to achieve certain goals, work pressure and stress are heightened. To reduce high work stress and tension, organizational members may react in a negative way, for example, if deviations occur, blaming the budget or blaming others. Such behavior can be reduced if there is good communication and agreement between subordinates and superiors on the goals to be achieved.
- d. If the goals to be achieved are too high, members of the organization will feel frustrated. Perhaps the goal is actually quite reasonable, but organizational members feel that they are getting fewer resources, so the goal becomes too high. The reaction of organizational members will also be negative. Goal achievement should be realistic, but not too easy.

D. FINANCIAL AUDIT

Financial audits are useful for several purposes, from the validation of financial records to decision-making. There are two types of financial audits: external and internal.

1. External Financial Audit

External financial auditing is the process of verifying financial records (financial statements) to determine whether they have been prepared in accordance with generally accepted accounting principles. If it is appropriate, it is expected that the financial statements will not provide misleading information. External financial examinations are conducted by public accountants, who are licenced to conduct external financial examinations.

External financial examinations are thorough and, therefore, costly. The accountant may inspect inventory (sample inspection) in the warehouse to ensure that the inventory recorded in the financial statements matches the reality on the ground. External financial auditing plays an important role in promoting honest business practices and honest financial reporting practices. External auditing is therefore a must for companies that have gone public, conducted over a period of time (e.g., quarterly).

External financial examinations do not make an important contribution to the process of controlling the company's current (ongoing) operations. But such an examination will prevent fraud in the company's financial reporting.

2. Internal Financial Audit

Internal financial examinations are carried out by internal accountants with the aim of ensuring that organizational resources are used effectively. Internal financial examinations help management evaluate the efficiency and effectiveness of the organization and the company's financial reporting. The scope of such examinations varies from thorough to light, depending on the needs of management. Internal examinations focus on internal needs, i.e., the needs of management, while external examinations focus on external needs. Internal examinations can be carried out by the company's accountants or by outside accountants hired for the task.

3. Differences between Internal and External Accounting

The following table presents the differences between financial accounting, which is the basis of external financial audits, and management accounting, which is the basis of internal financial audits.

Table 9.8
Differences Between Financial Accounting and Management Accounting

Difference	Financial Accounting	Management Accounting
Source of Authority Standards	Financial Accounting	Internal needs
Time orientation	Most of the past	Present and Future
Scope	Mainly the total company	Departments, individual, divisions, and total company
Information Type	Mainly Quantitative	Qualitative and Quantitative
Report type	Determined by Financial Accounting	Standard Determined by the decision taken
Decision-making focus	External	Internal



Exercise

To understand of the material above, please complete the following exercise!

Find and collect the financial statements of a company that has gone public (companies that sell their shares to the capital market). Look at the financial statements. Calculate the financial ratios, which include the five groups of ratios. Evaluate its financial condition to determine whether it is healthy or not. The financial statements can be downloaded from <http://www.idx.co.id> (Indonesian Stock Exchange).

Key Ideas for Exercise Answer

Read parts 1 and 2 of this learning activity. Understand well the concept of financial statements in Part 1. Then you can continue to Part 2. Understand well the concept of financial ratios and their calculations. After that, apply the concepts and calculation formulas to the financial statements you have obtained.

**Summary**

Financial information summarizes the activities of the organization. Managers, especially top ones, have a strong interest in financial information. There are three main types of financial statements: the balance sheet, the income statement, and the cash flow statement. The balance sheet is a snapshot of the financial position, which includes assets (assets) and sources of funds (liabilities) at a specific date. The income statement reports the results of the organization's activities during a specific period. The cash flow statement reports the organization's cash flow during a specific period. Financial analysis can be done using ratio analysis, whose data can be taken from financial statements. There are five types of financial ratios: liquidity ratio, solvency ratio, activity ratio, profitability ratio, and market ratio.

A budget is a plan expressed in numbers. Financial budgets use monetary units (such as rupiah). There are four types of responsibility centers: revenue centers, cost centers, profit centers, and investment centers. There are several types of budgets, namely operational, financial, flexible, fixed, and zero-based budgets. Bottom-up budgeting is gaining popularity over top-down budgeting. Managers must understand the functional and dysfunctional behavior of a budget.

TERMS INDEX

Balance Sheet	Solvability Ration	Operational budget
Income Statement	Activity Ratio	Financial budget
Cash Flow Statement	Profitability Ratio	Fixed budget
Assets	Market Ratio	Flexible budget
Debt or Liability	Accountability center	Zero-based budget
Share Capital	Revenue center	Financial audit
Finance Ratio Analysis	Cost center	Financial accounting
Industry's Average	Profit center	Management accounting
Liquidity Ratio	Investment center	Public accountant



Formative Test 2

Choose the correct answer!

- 1) The company's wealth and its sources of funds are summarized in the
 - A. balance sheet
 - B. income statement
 - C. cash flow statement
 - D. cash budget

- 2) The following ratios are used to see the effectiveness of the use of assets, namely
 - A. times interest earned
 - B. return on equity
 - C. total asset turnover
 - D. current ratio

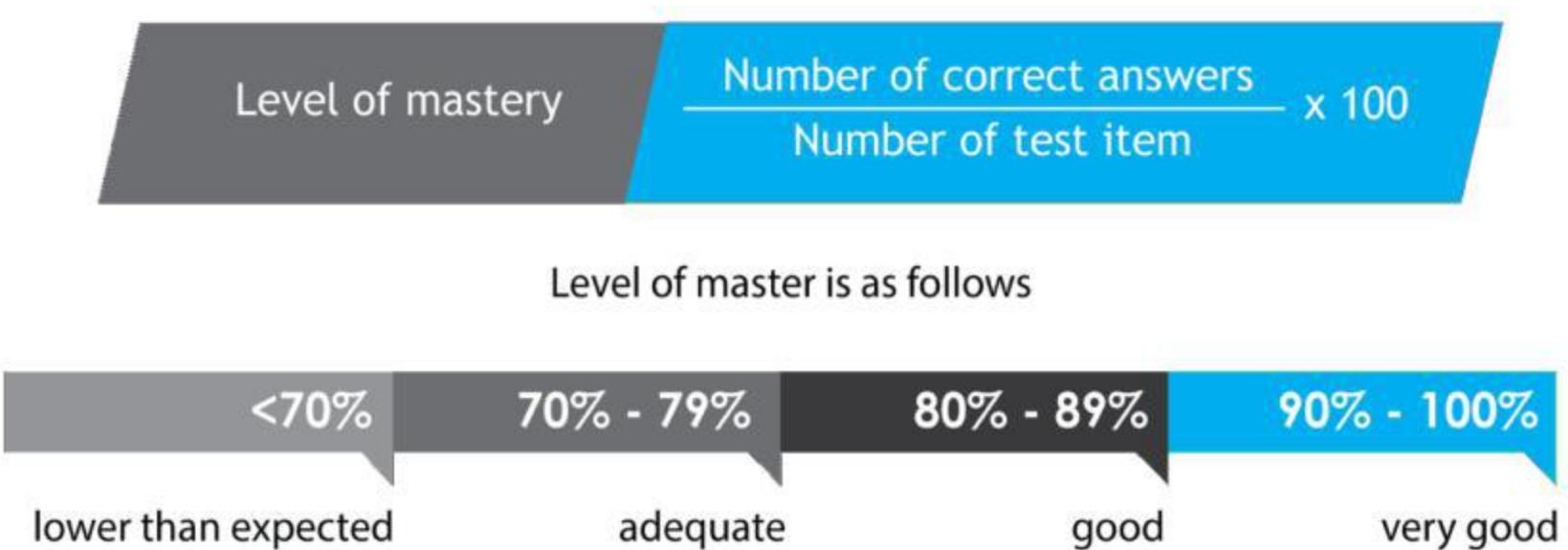
- 3) A company has sales of Rp100 million. Cost of goods sold is 80% of sales. Receivables amounted to Rp20 million. Inventories amounted to Rp40 million. The age of inventory is ... days.
 - A. 146
 - B. 182,5
 - C. 73
 - D. 81,25

- 4) The sales department is best suited to be a ... center.
 - A. revenue center
 - B. cost center
 - C. profit center
 - D. investment center

- 5) A budget that is prepared from scratch (zero) is called
 - A. discretionary budget
 - B. capital budget
 - C. zero-base budgeting
 - D. flexible budget

- 6) The following statements are true about financial accounting and management accounting, namely
- the source of authority for management accounting is financial accounting standards
 - the focus of management accounting decision-making is internal to the company
 - the time scope of management accounting is only the total company
 - the time orientation of management accounting is largely the past
- 7) Assets in the balance sheet are organized and sorted by
- liquidity
 - acquisition value
 - market value
 - risk
- 8) Profit margin is calculated as
- net profit divided by total assets
 - net profit divided by equity capital
 - net profit divided by sales
 - net profit minus dividends

Use key answers for Formative Test 2 which is located at the end of this module to determine the correctness of your answer. To make sure your mastery of the learning materials use the following formula.



When you attain level of mastery 80% or more, very good, you may continue to Learning Activity 3. Otherwise you have to review the material of Learning Activity 2. Pay attention to parts which you don't master yet.

Learning
Activity

3

Value Chain Management and Operations Management

This learning activity discusses value chain management. A value chain is a set of processes and activities aimed at creating value for consumers. Consumers are willing to "make an exchange" with a company (usually referred to as buying the company's product) because they demand the "value" offered by the company. In other words, if the company's product is useful (provides value), then consumers are willing to buy it (exchange their money to obtain the company's product). The value chain is a complex process, starting from the supplier and going all the way to the distribution channel. This learning activity discusses one important component of the value chain: operations management. The last part of this learning activity discusses quality and productivity management.

Operations management is concerned with transforming inputs into outputs. The term used to be known as production management, which means the activity of producing products. The term operations management has a broader meaning because other activities, such as purchasing, warehousing, transportation, and other activities required to transform inputs into products and bring products to the hands of consumers, are also included in operations management. Operations activities are thus the day-to-day (operational) activities through which an organization seeks to achieve its goals.

A. VALUE CHAIN MANAGEMENT

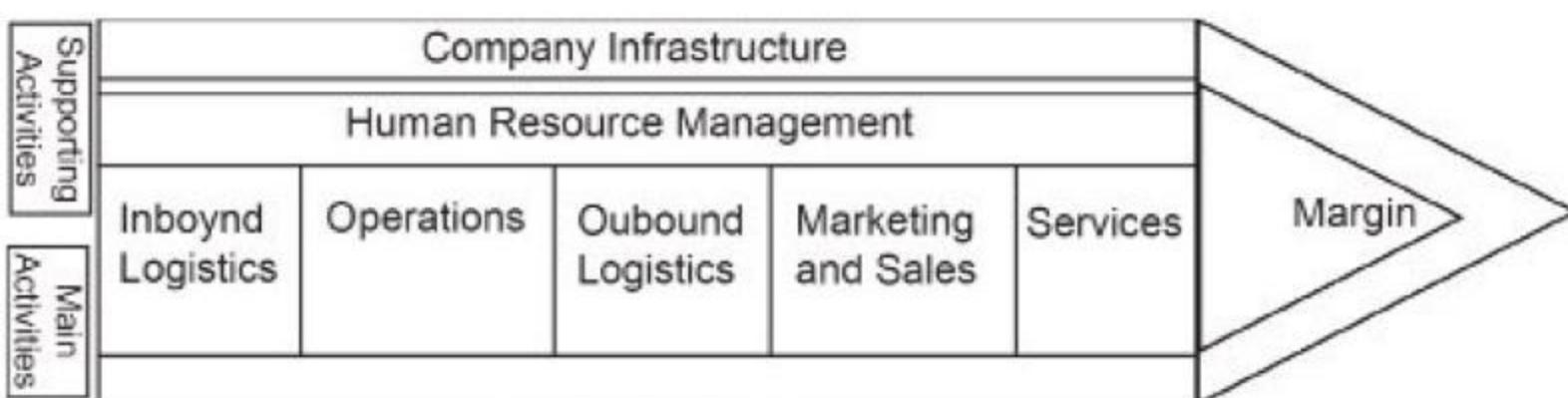
1. The Definition of Value Chain Management

Value chain management concerns managing the process of creating value for consumers. What is value? Value can be defined as a set of attributes, features, benefits, and other aspects of a product or service that consumers are willing to exchange resources to obtain. For example, a car or motorcycle provides value (benefits) as a means of transportation. Consumers perceive this value as necessary, so they are willing to buy (exchange their resources, i.e., money) the car. How does value get created? Value is created by transforming inputs, through a certain transformation process, into outputs such as products or services that provide certain benefits.

A value chain is a process or activity that aims to produce a product or service that provides a certain value. Thus, the value chain can be defined as all organizational activities required to produce the value desired by consumers. These activities have a very broad scope, starting with the activities of the company's suppliers, activities within the company, and activities of the distribution channels that deliver the company's products or services to end consumers. Each step or activity is expected to produce value, which ultimately leads to the value offered to consumers.

Value chain management can be defined as a process to manage activities along the value chain that will be offered to consumers. Note that the ultimate goal of the process is the consumer. Consumers will determine whether the benefits a company offers are valuable. For example, if a company produces a great car but it is very expensive, consumers may say that the product is not valuable enough. The benefits offered are still lower than the price that consumers have to pay. Consumers will determine the price and quality that they want and that the company should offer.

Value chain management is broader than supply chain management. Supply chain management is internally oriented, which is about streamlining the flow of raw materials to the company. Value chain management is externally oriented, which is how to streamline value creation, starting from the flow of raw materials to the company, the transformation process within the company, and the flow of products or services to consumers. Supply chain management aims at efficiency, while value chain management aims at effectiveness. As discussed in Module 1, efficiency means doing things right, while effectiveness means doing the right things. Porter (1998) describes the value chain as follows:



Source: Porter, 1998

Figure 9.3
Value Chain

The figure above illustrates the value chain for an enterprise. The value chain consists of supporting activities: corporate infrastructure, human resource management, technology development, and procurement. Furthermore, the value chain has its own main activities, which include inbound logistics, operations, outbound logistics, marketing and sales, and services. These activities are aimed at creating value or adding value, which generates margins (profits) for the company.

a. *Supporting activities*

- 1) Company infrastructure. Company infrastructure includes the infrastructure used by the company to carry out its activities. Examples of company infrastructure are buildings or buildings that are used as a base for activities, licenses, or deeds of company establishment.
- 2) Human resource management. The company's activities are carried out by its human resources. Human resource management includes activities related to company employees, such as recruitment, development, and compensation. See the module on Human Resource Management.
- 3) Technology development. Technology is an important component of the company's activities.
- 4) Technology can be used to support the company's main activities, such as operations, inbound and outbound logistics, and others.
- 5) Procurement. Procurement is the acquisition of goods or services needed by the company. For example, operations may purchase a new factory in order to increase the company's efficiency.

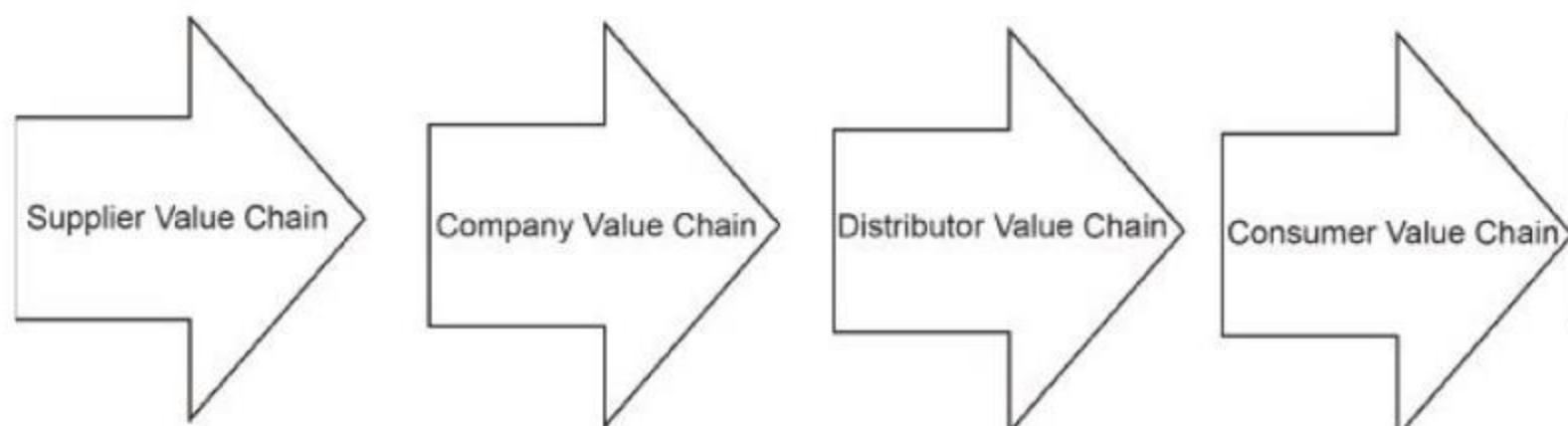
b. *Main activities*

- 1) Inbound logistics. Inbound logistics is a series of activities carried out to bring goods or services from outside parties (such as suppliers) to the company. Examples of such activities are ordering, receiving, and putting raw materials into the warehouse. The series can become more complex as the company's supplier network develops.
- 2) Operations. Operations activities aim to transform inputs, through a certain transformation process, into outputs.
- 3) Outbound logistics. Outbound logistics is the opposite of inbound logistics. Outbound logistics is a series of activities to move goods or services from the company to parties outside the company. For example, after a car factory has finished producing cars, the cars need to be sent to car dealers. Car dealers can deal directly with end consumers.
- 4) Marketing and sales. Marketing and sales are activities aimed at consumers so that they are willing to "exchange" (buy) the company's products or services.
- 5) Service. Services are activities that aim to increase and maintain product value, such as machine installation and installation services, consultation on machine operation and maintenance, and services after the machine is purchased (after-sales service).

Both supporting and main activities are aimed at creating value, which is the benefit valued by consumers. From the consumer's point of view, if the value (or benefit) offered is worth the price, the consumer is willing to purchase the product. From the company's point of view, if the price paid by consumers is above the costs incurred

by the company to produce the benefit (or product), the company can generate added value. The difference between the selling price and the costs incurred is referred to as the margin.

The broken lines show that human resource management, technology development, and procurement activities can intersect with each of the main activities. For example, human resource management activities perform operations-related employee recruitment activities. Technology development activities develop information systems for operations. Procurement orders the production machinery that will be used for operations. The broken line stops at the company's infrastructure activities because the company's infrastructure serves all the main activities of the company. The company's infrastructure activities do not serve the main activities separately. The firm's value chain, when viewed from a broader perspective, is part of the value chain of the industry or business sector that surrounds the company. The industry value chain can be described as follows:



Source: Porter, 1998

Figure 9.4
Industry Value Chain

The figure shows that a company's value chain is a part of other value chains, which then form an industry value chain. The activities of a company in the value chain can be divided into several sub-activities. For example, marketing and sales activities can be broken down into activities within them, as shown in Chart 9.5 below.

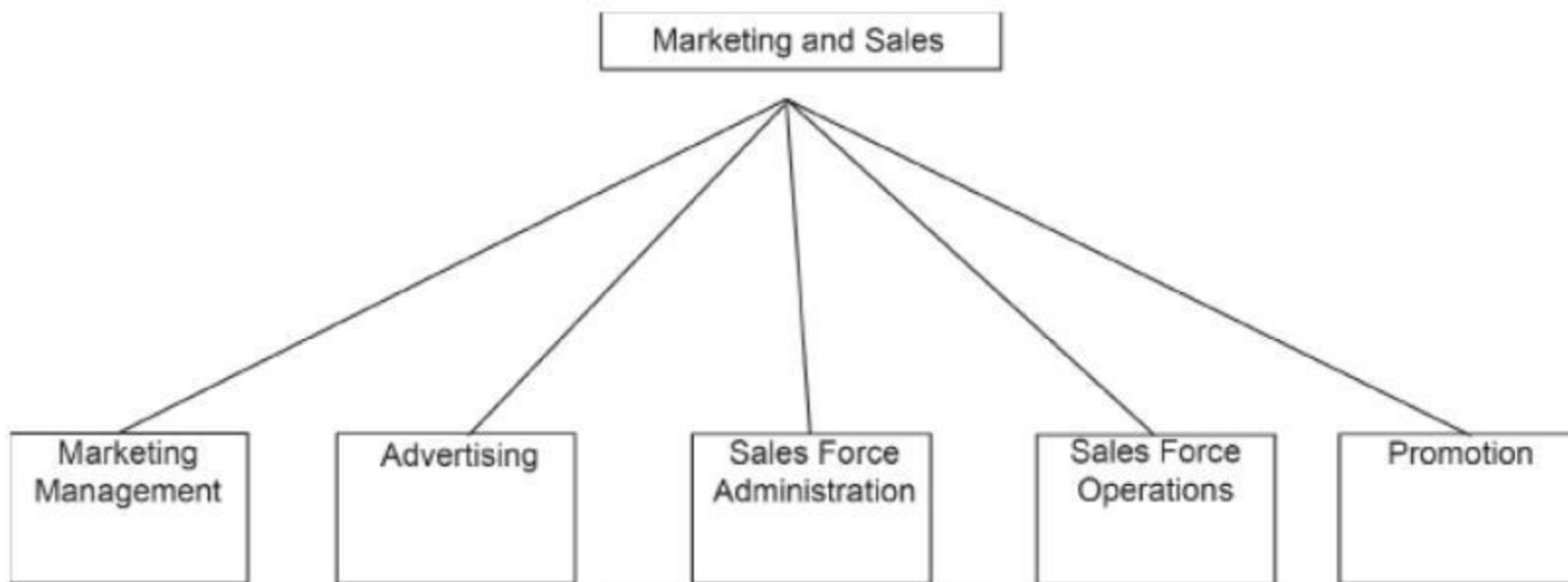


Figure 9.5
Breakdown of Marketing and Sales Activities

Although the generic form of the value chain will be similar across companies, the value chain for each company will be different from each other. A company's value chain will depend on the history of the company, the company's strategy, and the economic aspects of the company's activities. As an illustration, the value chain of a company that produces luxury cars and economy cars will be different. A company that produces luxury cars orders raw materials with special specifications, uses more direct marketing to potential buyers, and uses more customized production processes. While companies producing economic cars use more mass production processes, the raw materials ordered tend to be standard, and promotions use a lot of advertisements in newspapers.

The main activities in the value chain will exist for all value chains, but at different levels. The different levels give rise to different characteristics between one company's value chain and another company's value chain. For example, a distributor business has a value chain where inbound and outbound logistics activities play a greater role. For restaurants and supermarkets, inbound logistics may be more important. For banking businesses, marketing and sales activities may play a bigger role. For companies that produce specialized equipment, such as medical devices, service activities may have a greater role.

2. Strategies for Improving Value Chain Management Effectiveness

Value chain management can be improved in a variety of ways, both individually and organizationally. Basically, value chain management can be improved with work patterns that encourage coordination and collaboration. The encouragement of coordination and collaboration requires an open attitude and behavior, as well as a willingness to share information and other resources. To encourage this behavior, organizational support, such as support from top management, a supportive compensation system, and technology that can encourage sharing culture and behavior, are needed.

a. Individual perspective

To encourage a culture of coordination and collaboration, individuals who are willing to coordinate, collaborate, and share information and resources are needed. Individuals or employees in the organization need to be encouraged to have such attitudes and behaviors. Employees also need to be encouraged to always seek new knowledge and share that knowledge with other employees in the organization. Employees who always learn are expected to increase the productivity, efficiency, and effectiveness of the company. Employees are also expected to have high adaptability and flexibility so that they can do other jobs. This adaptability and flexibility are expected to further improve coordination and collaboration.

b. Organizational perspective

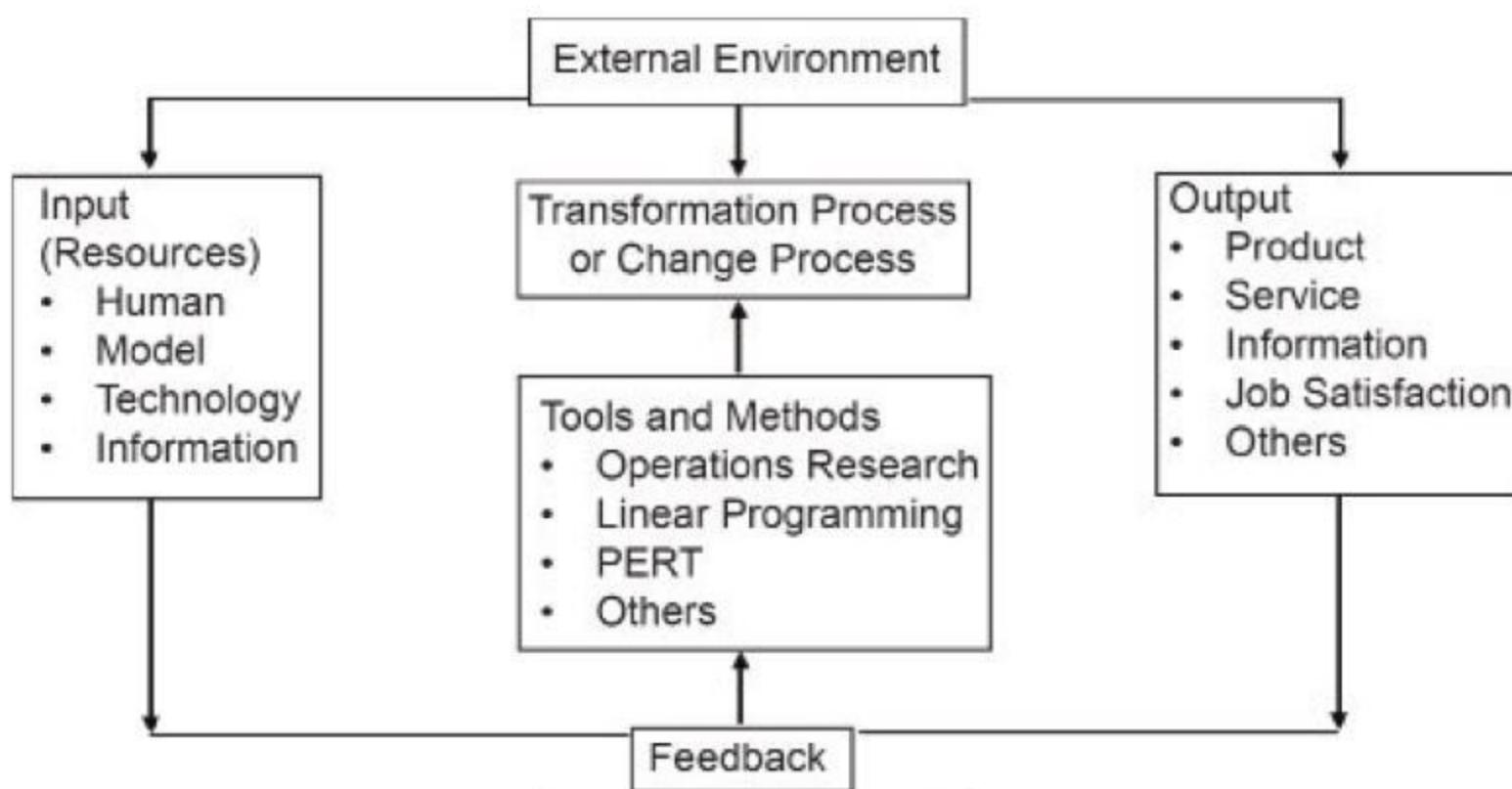
Organizations must shape the behavior of coordination, collaboration, and sharing and always encourage a culture of productivity, which increases the efficiency and effectiveness of work in the organization. Various ways can be done to do this. First, top management needs to show commitment to these behaviors. Top management can conduct a series of meetings with relevant parties to demonstrate this commitment. Next, a supportive compensation system needs to be developed. For example, a compensation system that provides a balance between individual achievement and group achievement may be able to break down individual boundaries. Technology needs to be further developed. Investment in technology is an important investment to boost the efficiency and effectiveness of organizational work. Organizational methods, ways of working, and processes that can increase productivity should always be developed.

c. Barriers

There are several barriers that can hinder the achievement of effective value chain management. Some individuals may have a reluctance to coordinate and share for several reasons, such as cultural differences or language differences. Organizations should always encourage employees to stay motivated to coordinate and share.

B. OPERATION MANAGEMENT SYSTEM**1. Operations Management Model**

The following figure illustrates the operations management model with a systems approach. Operations management activities start with inputs, which, after going through a transformation process, are transformed into outputs.



Source: Buffa and Sarin, 1987

Figure 9.6
Operations Management Model

The external environment affects all three subsystems of operations management. For example, the external environment provides labor and raw materials that become inputs. Changes in technology can change the transformation process. The products produced by the organization are thrown into the external environment, but the external environment also affects the output produced. For example, changes in consumer preferences will change the products produced by the organization to products that are more in line with the preferences of these consumers. Tools and methods can influence and assist the transformation process. Feedback is then generated and can be used as input to improve the transformation process or change inputs.

The inputs required by organizations range from manpower and capital to information and technology. In addition, both intended (intentional) and unintended (by-product) outputs are produced. For example, products or services that promote worker satisfaction are intended products. Whereas pollution and job stress may be unintended products. Here is an example of input-output transformation.

Table 9.9
Input-Output Transformation Example

Transformation System	Input	Transformation	Output
Hospital	Patient	Healthcare	Treated patients
Car factory	Raw materials	Factory process and assembly line	Cars
Oil refinery	Crude oil	Chemical process	Gasoline, plastic, etc.
Airline company	Airplane, pilot, supplies, etc	Air flight	Passengers in flight

2. Operations on Production of Goods and Services

Operations and production systems can be applied to both products and services. Product and manufacturing organizations produce goods that have a physical form, such as cars, computers, and so on. These goods can be stored as inventory and consumed over a period of time. Although there are some products that can be tailored to the specifications desired by consumers, most goods are produced in bulk. In such a way, the contact between the consumer and the producer is reduced. Organizations can use several techniques to get closer to consumers.

Service organizations produce products that have no physical form, better known as services. Services cannot be stored. The consumption process takes place simultaneously with the production process. When attending a music concert, the listener consumes (listens to) the music at the same time as the musician produces (sings) the song (product). Doctors, lawyers, accountants, and barbers are examples of service producers. Consumer contact and participation in services is quite high; consumers can directly comment on or request changes to services at the time of production. Measurement of service performance is relatively simple. For example, fast food services (such as McDonald's) may have a standard that customers must be served in a maximum of 5 minutes. The following summarizes the differences between service products and goods.

Table 9.10
Differences Between Goods and Services

Goods	Services
Real goods	Services
Can be produced into inventory, which can guarantee the availability of goods	Availability obtained by opening/running a production system
Minimal contact with buyers	High contact with buyers
Interconnected and complex processing	Relatively simple processing
Demand for products generally varies weekly, monthly, or seasonally	Demand usually varies hourly, daily, and weekly
Markets served are usually regional, national, or international	Market served is usually local
Units are large enough to take advantage of economies of scale	Small units to serve local markets
Location of production systems in relation to regional, national and international markets	Location depends on local customers
Minimal customer participation	Customer participation is part of the organization's activities
Measurement of performance is complex	Measurement of performance is relatively simple

C. QUALITY MANAGEMENT

1. Concept of Quality

Quality is becoming an increasingly important issue in organizational management today. The issue began to emerge when foreign products, especially Japanese and especially automobiles, entered the US market. During the energy crisis in the 1970s, Americans bought Japanese cars because they were small and therefore energy-efficient. But after the crisis ended, Americans continued to buy Japanese cars for another reason, namely quality. Then quality entered other sectors, not only the manufacturing sector but also the service sector. Quality has several dimensions, as shown in table 9.11 below.

Table 9.11
Eight Dimensions of Quality

1. Performance. The essential operational characteristics of the product. Example: television picture clarity.
2. Features. Supports the basic functional characteristics of the product. Example: power windows for cars.
3. Reliability. The likelihood of the product not functioning as it should (malfunction) during a certain period.
4. Conformity. The degree to which product design and operational characteristics meet established standards.
5. Durability. A measure of the life of a product.
6. Serviceability. Ease and speed of repair.
7. Aesthetics. Attractive shape, taste, or smell.
8. Perceived quality by consumers.

A product with a higher value for that attribute in comparison to other products is said to be of higher quality than the latter. Thus, quality has an absolute and relative sense. Quality applies not only to goods but also to services. Some service sectors have started using the concept of quality in their "production" processes.

Older views tend to see a trade-off between quality and productivity or profitability. High quality comes at a high price. If one wants to gain productivity, quality must be sacrificed. The new view does not contradict the two. Good quality will encourage consumer satisfaction, which in turn will encourage consumers to buy more products from the company. Good quality will minimize defective goods or components, and the resources used to repair these products will be reduced, so the company can save resources. By encouraging employee responsibility to reduce product defects, the company can produce more units with fewer resources. In addition to such benefits, good quality will promote higher competitiveness and save costs as described above. The changing view of quality can also be seen through the changing evolution of quality management.

2. Traditional Quality Control

Traditional control focuses more on identifying errors than preventing them. The two main techniques are acceptance sampling and process control. They were developed during the 1930s at Bell Telephone Labs by Dr. Walter Shewhart, one of the pioneers in quality control. The two techniques are combined into statistical quality control, as they involve sampling a significant amount of production output, rather than testing every item.

a. *Process-control procedure*

This procedure determines whether a process is under control by measuring the output and comparing it to a predetermined standard. For example, in the production of canned soup, the temperature must be within a certain range. If the temperature is too high, the soup will taste scorched, and if it is too low, the bacteria will not die. If quality control detects that the temperature deviates from what it should be, corrections must be made.

b. *Acceptance-sampling procedures*

This procedure involves testing a sample of the final product to determine whether or not the product as a whole is acceptable. A statistical figure will determine the number of samples and the number of bad products to conclude whether the overall product is good or not.

3. Total Quality Management

Two American management experts, W. Edwards Deming and J.M. Juran, introduced the concept of quality to the Japanese people who were rebuilding from the ruins of war. According to Juran, quality is fitness for use, where quality refers to the ability to satisfy the actual needs of consumers. This allows managers and employees to focus on the real thing. Meanwhile, Deming felt that consistency in purpose or mission, combined with statistical quality control, would result in better quality at a lower cost. Thus, quality products can be produced at a low price. Managers should look for and correct the causes of failures rather than identify them after they occur.

Commitment to quality is part of the factory culture. This commitment was reinforced by quality circles, working groups that met and discussed ways to improve and solve problems in the production process. This strategic commitment to quality became known as total quality management. Total quality management consists of several components, as shown below.

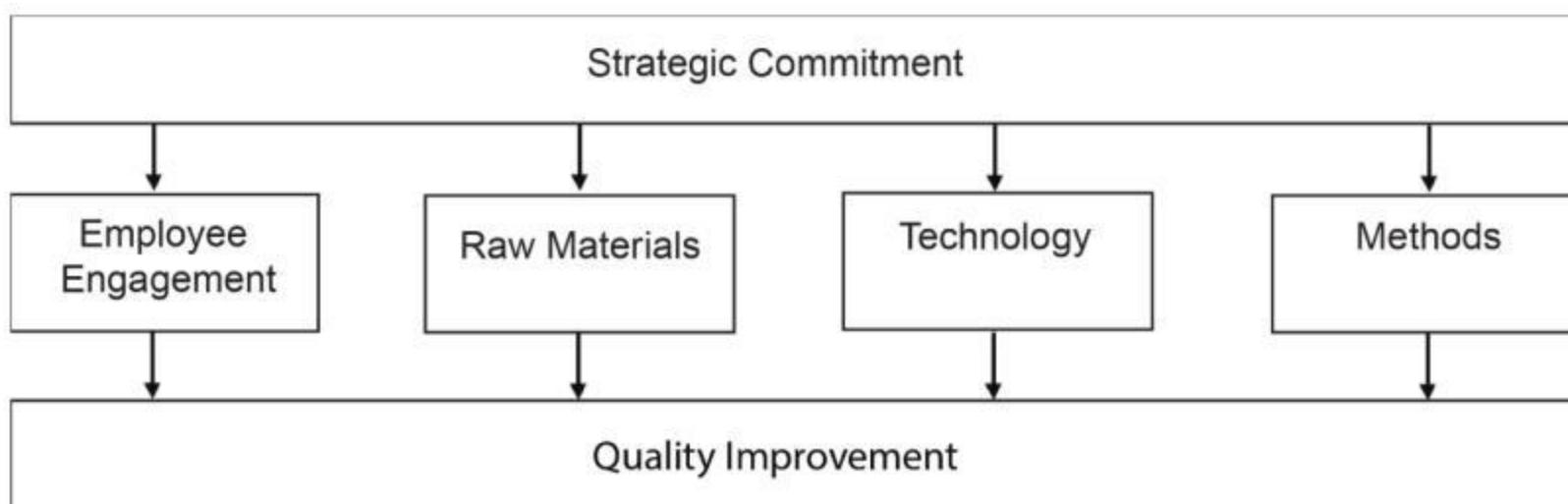


Figure 9.7
Components of Quality Management

a. *Strategic commitment*

Strategic commitment, especially from top management, is the starting point of quality management control. The culture of the organization must be changed to accept quality as a desirable goal to achieve. Quality improvement will involve costs for equipment and facilities. Without commitment from the top, quality improvement becomes just a slogan with no meaningful improvement.

b. *Employee involvement*

Employee involvement is also an important factor in quality improvement. Work groups (also called quality control groups or quality circles) are the most commonly used means of quality improvement.

c. *Technology*

New technology can help improve quality. Automation—the use of robots, the use of computers—can improve quality with better precision than human precision.

d. *Materials*

By using quality materials or components, the overall quality of the final product will improve. If the product is defective, the name or brand attached to it will lose its reputation, and returning the product will increase costs for the company, not the supplier. Therefore, setting high standards for suppliers will help improve quality. Some organizations are "tough" on suppliers. For example, General Motors sets tough standards for its suppliers so that it can improve the quality of its products.

e. *Methods*

Improvements in methods can also improve quality. For example, quality control statistics can help improve quality.

D. PRODUCTIVITY MANAGEMENT

1. Definition and Importance

Productivity is a measure of the economic efficiency of an organization's activities in using its resources to produce goods or services. Productivity can be calculated at different levels: the organization as a whole, a department, or a division. Productivity is defined by the following formula:

$$\frac{\text{Output (self)}}{\text{Input (self)}} \Leftrightarrow \frac{\text{Output (others)}}{\text{Input (others)}}$$

Since the inputs used are aggregate inputs, the formula is referred to as total factor productivity. The formula is an indicator of the extent to which an organization uses all its resources, including labor, capital, and raw materials, to create goods or services. One of the difficulties in calculating the model is the uniformity of the units of measurement of the inputs and outputs. Everything must be measured in monetary units, but some inputs have different units; for example, labor is measured in hours worked and materials are measured in kilograms. All of them must be converted into monetary units to homogenize the measurement.

To get a sharper view, managers can calculate partial factor productivity, where inputs comprise a specific category of inputs. For example, labor productivity can be calculated as follows:

$$\text{Productivity} = \frac{\text{Output}}{\text{Labor Cast}}$$

To improve productivity, managers can either increase output while keeping inputs constant, reduce inputs while keeping output constant, or combine the two, i.e., increase output while reducing inputs.

Productivity is an important determinant of profitability, which is an organization's ability to survive. If an organization is more productive than others, it can sell goods or services at a lower price and have higher profits, which can be reinvested in further business. This organization will be highly competitive. The higher the productivity of a society, the more goods and services it produces, and the higher the prosperity of that society. Even if the goods or services are exported abroad, the society will earn income from the exports, which will then encourage further production and consumption of goods and services. The state or government, through various policies, will try to encourage community productivity because it will increase the prosperity of a society.

Productivity can be boosted by automating the production process. The use of robots and machines to perform certain tasks (such as repetitive tasks) will increase productivity. Machines can perform the task faster and with better accuracy than

humans. But this approach has a drawback, as managers may forget about human capital investment. Human capital investment is still an important investment. US companies can improve productivity by closing inefficient plants, laying off employees, automating, and selling off unwanted businesses. But these are temporary cures for improving productivity. Some experts argue that investing in people will increase society's productivity in the long run. After the Second World War, the productivity of the United States experienced rapid growth. One of the reasons was that a large number of people entered universities. After that, the growth in the number of people going to university tended to decline (become flat), and productivity growth slowed down in the 1960s and 1970s.

2. Improving Productivity

There are several ways to increase productivity.

a. *Improving operations*

Improving operations can be done by increasing research and development. Through research and development, organizations can come up with new product ideas and better methods of operation. Organizations that allocate more funds to research and development have a higher probability of increasing their productivity. Another way is to change the transformation process or production process. Modernization, along with changes in work methods and layout, can increase productivity, although, as discussed earlier, this may only be a temporary (short-term) measure. Transformation process changes can also be made for service organizations. Companies like McDonald's or banks are always thinking about the best way to serve customers. McDonald's or banks try to minimize the time customers wait for service.

b. *Improving employee engagement*

Another way to increase productivity is to increase employee engagement. Engagement increases commitment and morale. It is also the basis for total quality control. High engagement can be achieved by giving employees greater autonomy in the execution of their work, by fostering good formal cooperation between management and labor unions, or by other means. Another model that seeks to encourage employees further is work flexibility. Employees are trained to be able to do several types of work. The organization benefits from this, as a wide variety of work can be done with a small number of employees. From the employee's perspective, it is also beneficial as it reduces boredom and increases motivation. A proper reward system needs to be designed to encourage employee engagement. The system will basically increase salaries and wages if employees can use their newly learned skills.

E. USING THE OPERATING SYSTEM

1. Control

Once the operating system has been designed, the manager's task is to make it operational. Production planning, more detailed scheduling, and optimal inventory levels can be determined. Software related to such tasks is now widely available on the market. Project management software can perform, track, and update hundreds—even thousands—of related tasks. Then the operating system planning can be used for operation control, ensuring that organizational goals can be achieved. Objectives in the operating system include product reliability, low per-unit production costs, and on-time delivery. A good control system should also focus on strategic points that are critical to achieving organizational goals.

2. Purchasing Management

Purchasing deals with the purchase of materials and resources needed to produce an item. Large companies usually have their own purchasing department, which is in charge of coordinating and making purchases. Purchasing has a trade-off: buying too much will increase investment costs, while the risk of losing sales will be smaller. Conversely, buying too little increases the risk of losing sales but can save on investment costs. Purchasing management also deals with relationships with suppliers. The company must be able to identify suppliers who produce quality goods or components. Some companies have a policy of buying from only one supplier, while others buy from several.

3. Inventory

Good inventory management can improve production efficiency. There are generally three types of inventory: raw material inventory, work-in-process inventory, and ending inventory. The following table describes the types, purposes, and sources of control of these three inventories.

Table 9.12
Types of Inventory and Their Control

Type	Purpose	Source of Control
Raw materials	Provide necessary materials	Purchasing system and model to make a product
Goods-in-process	Allows grouped production	Control system in the factory into
Final product	Provide finished goods inventory	Several stages that are easier to control
Goods-in-transit (to consumers)	Distribute products to consumers	Production scheduling system, which is related to marketing Distribution and transportation control system

In general, organizations desire to reduce the amount of inventory. However, there is a trade-off involved. If the inventory is small, the organization can reduce inventory costs such as storage costs, the cost of possible defective products, and the cost of capital embedded in inventory. The risk faced is the possibility of lost sales. If consumers come and the goods are not there, they might run to other companies to search for the goods. Conversely, if the inventory is large, the possibility of losing sales is reduced, but the cost of inventory increases. Thus, the organization must find a balance between the risk of a shortage of goods and the cost of inventory.

a. *EOQ Model (Economic Order Quantity)*

The EOQ model tries to solve the trade-off problem using a quantitative approach. Through several manipulation steps, the following model is obtained.

$$EQQ = \left(\frac{2 \times R \times S}{C} \right)^{1/2}$$

Where R = the request for goods during a certain period

S = order fees

C = storage cost per unit

For example, if the company estimates its annual sales to be 5,000 units, the ordering cost is 20, and the storage cost is 1. The economical order quantity is:

$$EQQ = \left(\frac{2 \times 5,000 \times 20}{1} \right)^{1/2} = 447 \text{ unit}$$

In one period, the organization places an order for a total of 12 times. The ordering cost is $12 \times 20 = 240$. While the storage cost is $(447/2) \times 1 = 223.5$. Average inventory 223.5 ($447/2$). The total cost of inventory is $240 + 223.5 = 463.5$. The inventory cost is the smallest/minimal cost.

b. *MRP (Material Requirement Planning)*

In this technique, planning starts with the product to be made. Then the planning is sorted backward to determine what materials are needed to make the product. The necessary materials are listed in the bill of materials (BOM). This is usually done using a computer. With MRP, managers can anticipate delays and damaged products and coordinate the delivery of goods effectively. This is especially useful when hundreds of parts are needed—a coordination task that is impossible for managers to do manually. Some programs can place orders automatically when inventory drops below a certain level.

MRP then evolves into MRP II, where inputs from other departments, such as Finance or Marketing, are included in the planning. The next step is to calculate the existing inventory and determine how much material is required. Labor and other costs

can be calculated in the cost per unit of product, so decision-making can be done more easily. The MRP II program can also communicate with other programs in the computer system, such as order entry, billing, purchasing, capacity planning, and warehouse management. Thus, MRP II can provide better and more comprehensive control over inventory.

c. *JIT (Just-in-time)*

In the 1970s, operations management witnessed Japanese inventory management referred to as "Kanban" or "just-in-time." In said technique, inventory is practically zero; the requirement for goods is equal to the delivery of goods. That way, inventory costs were able to be reduced. Orders and deliveries are made more frequently with smaller quantities. The goods that arrive then go directly into the production process, leaving no inventory. JIT obviously requires very good coordination between the company and its suppliers. Typically, the production process takes between 2 and 3 hours. For example, the components that enter the factory of Chrysler, a car company in the United States, arrive only two hours before entering the production process. If JIT is implemented well, the savings gained through JIT can be impressive. Strict coordination requirements are often even considered a benefit, as organizations will always try to find the best production process design.



Exercise

To understand of the material above, please complete the following exercise!

Identify the value chains for two different companies that operate in the same industry, such as Garuda Indonesia and Lion Air. Both are airline companies, but with different strategies. Garuda is a premium airline, with higher ticket prices and premium services. Lion Air is a low-cost airline with low ticket prices and non-premium services. Identify using the value chain framework, which consists of supporting activities and main activities.

Key Ideas for Exercise Answer

Read the value chain section and draw the value chain as in Figure 9.1. Study it carefully and develop the supporting and main activities, as presented in Figure 9.1.



Summary

Value chains are the activities undertaken by companies that lead to the value (benefits) offered to consumers. Value chain management is the management of these activities. The value chain is made up of supporting and main activities. The supporting activities include corporate infrastructure, human resource management, technology development, and procurement. Major activities include inbound logistics, operations, outbound logistics, marketing and sales, and service. Managers must always improve the efficiency and effectiveness of value chain management.

Operations management is the management of the activities required to convert inputs into outputs, and bring those outputs or products into the hands of consumers. Such operations are day-to-day activities. This chapter discusses topics such as operating management systems, operating system design, quality management, and productivity management. The operating system model basically transforms inputs into outputs through a transformation process. Operations management can be applied to both goods and services, although there are differences between the two. Quality is becoming an increasingly important issue. Quality can be measured in several ways. The old view used to see a trade-off between quality and profitability. However, the new view, which some organizations are already adopting, shows that profitability and quality can go hand in hand. Good quality lowers costs, which in turn increases profitability. There are several quality control techniques. A newer technique is Total Quality Management which includes several components. Productivity is a measure of the efficiency of an activity, usually defined as the output/input ratio. There are several ways to increase productivity, such as improving operations and engaging employees. Operating systems can be put in place for control, purchasing, and inventory management activities.

TERMS INDEX

Goods	Dimensions of quality
<i>Economic Order Quantity</i>	Inbound Logistics
Services	J.M. Juran
<i>Just in Time</i>	Coordination, collaboration, sharing
Quality circle	Supply chain management
Value chain Management	Operation management
Material requirement planning 1	Material requirement planning 2
Outbound logistics	Productivity
Partial Factor Productivity	Project Management
Purchase	Process control procedures
Value chain	Total Factor Productivity

Formative Test 3

Choose the correct answer!

- 1) The value chain from raw material suppliers to the company's production process is called the ... chain.
 - A. supply
 - B. value
 - C. production
 - D. distribution

- 2) Activities to bring goods and services from outside parties to the company are called
 - A. *outbound logistics*
 - B. marketing and sales
 - C. operations
 - D. *inbound logistics*

- 3) The difference between supply chain management and value chain management is
 - A. internal-oriented supply, external-oriented value
 - B. external-oriented supply, internal-oriented value
 - C. supply for services, value for goods
 - D. supply for goods, value for services

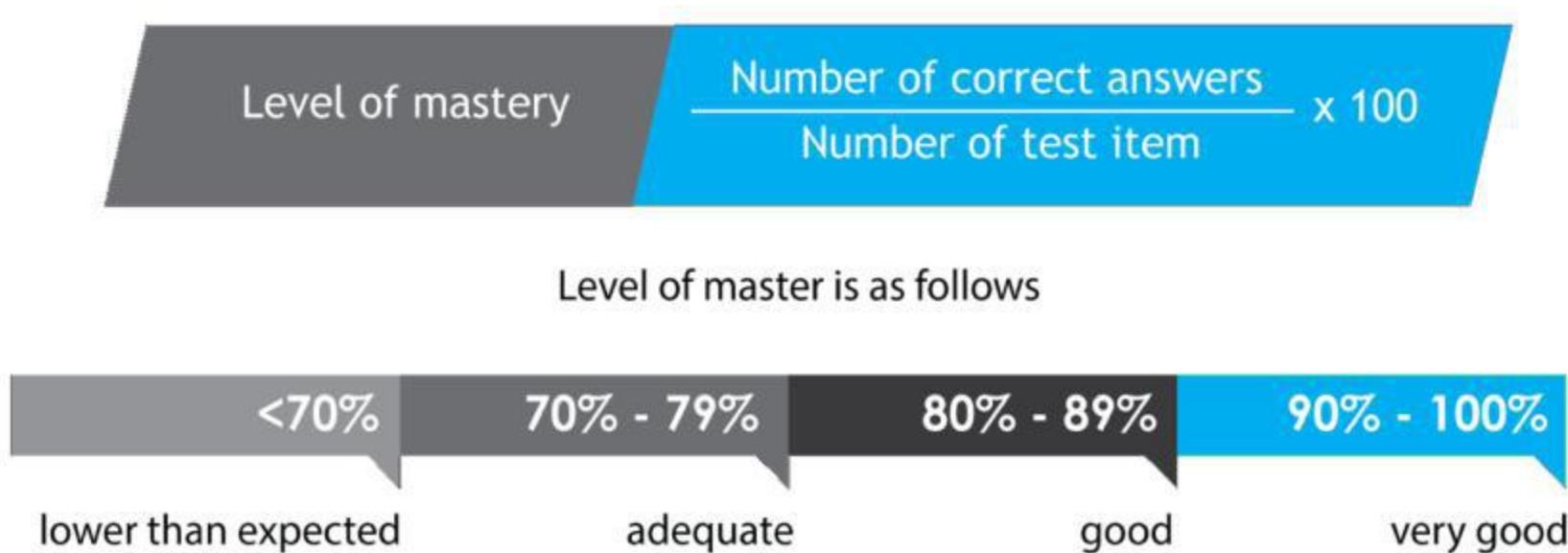
- 4) *Total Quality Management* was introduced to Japanese society by
 - A. W. Edwards Deming dan J.M. Juran
 - B. Peter Drucker
 - C. Tom Peterson
 - D. Frederick W. Taylor

- 5) Inbound logistics activities will be more important for companies in the sector of
 - A. distribution
 - B. banking
 - C. restaurants
 - D. sophisticated goods manufacturers

- 6) The following characteristics of services are
- A. can be produced into inventory
 - B. units are large enough to take advantage of economies of scale
 - C. high contact with buyers
 - D. minimal customer participation
- 7) The following are dimensions of quality, *except*
- A. price
 - B. reliability
 - C. aesthetics
 - D. appearance
- 8) *Total factor productivity* is calculated as
- A. partial output / partial input
 - B. aggregate output / input
 - C. output / partial input
 - D. aggregate output/ partial input
- 9) The method of minimizing inventory is called
- A. economic order quantity
 - B. productivity management
 - C. total quality management
 - D. just in time
- 10) The planning method starts with the product to be made. Then the planning is done backwards to determine the materials needed to make the product. This method is called
- A. material requirement planning
 - B. economic order quantity
 - C. supply chain management
 - D. total quality management

9.58 Controlling

Use key answers for Formative Test 3 which is located at the end of this module to determine the correctness of your answer. To make sure your mastery of the learning materials use the following formula.



When you attain level of mastery 80% or more, very good, you may continue to the next module. Otherwise you have to review the material of Learning Activity 3. Pay attention to parts which you don't master yet.

CASE

Enterprise Risk Management at Chase Manhattan

Chase Manhattan is a company engaged in banking. Banking is fundamentally a risky business because risks are always inherent in banking activities. Consider the following scenario: money is piling up in the bank; criminals may take advantage of the situation; banks make loans to businesses, exposing banks to the risk of bad credit. There is a saying that says “if bank risk can be controlled,” then profits will flow naturally. Against this backdrop, Chase is planning the most effective way to manage banking risks. Effective risk management is expected to increase Chase’s enterprise value (by increasing cash flow and profits while controlling risk).

Business Characteristics of Chase Manhattan

Chase Manhattan is a bank with a global business that includes three major business groups, as shown in the following table.

Table
Details of Chase Manhattan's Operations

Segment	Description
Global Bank <ul style="list-style-type: none"> 1. Global Market 2. Chase Capital Partners 3. Global Investment Banking 4. Corporate Lending and Portfolio Management 5. Global Private Bank 	1. Trading, lending, underwriting, research for foreign exchange, derivatives and fixed instruments markets. 2. Private (individual) equity investment. 3. Syndicated funding, merger and acquisition advisory, underwrite high yield (high risk) securities, private placement. 4. Credit services with pressure to initiate lending with distribution. 5. Bank services for the rich (millionaires)
National Consumer Services <ul style="list-style-type: none"> 1. Chase Cardmember Services 2. Regional Consumer Banking 3. Chase Home Finance 4. Diversified Consumer Services 5. Middle Markets 	1. Credit card issuance and servicing: merchandise seller processing. 2. Small business and retail (consumer) banking services in New York and Texas. 3. Mortgage lending and servicing 4. Provision and servicing of automotive and leasing loans, student loans, investment products. 5. Financial services for medium-sized companies in New York and Texas

Segment	Description
Global Services <ul style="list-style-type: none"> 1. Global Investor Services 2. Chase Treasury Solutions 3. Capital Markets Fiduciary Services 	1. Custodian services and other investor services to investment managers, mutual funds, and others. 2. Cash management, treasury, and other services to corporations, government agencies. 3. Processing services for securities issuers.

Sales (revenue) and profit by segment group can be seen in the following table.

Table
Chase Sales by Segment

Segment	Sales	Profit
Global Services	13,3%	9,10%
Consumer Services	42,2%	29,10%
Global Bank	44,5%	61,80%

As a major bank, Chase Manhattan's business activities are broader than those of traditional banking. The traditional banking business focuses on attracting funds from the public and lending those funds. The bank earns interest income from this business. Such conventional banking activities carry two risks: credit risk (if the loans go bad) and liquidity risk (if people withdraw their funds against the bank's expectations). Chase sells most of its loans (almost 90%). Chase then earns revenue from fees for credit initiation and servicing. This way, in addition to reducing credit risk, Chase also saves the capital it uses for its business (capital need not be tied up in loans). Almost half of Chase's profits come from capital market activities and private equity investments. This shows that Chase's exposure to market risk is substantial.

Risk Control Plan

Risk Management Committee

Chase believes that the key to managing risk is diversification and strong controls. An important part of the control process is the risk management committee. The following figure illustrates the structure of the risk management committee.



Sources: Hanafi, 2010

The task of the committee is to formulate risk management policies. The policy will then be derived into procedures and programs (activities).

Shareholder Value-Added (SVA)

Chase planned to launch an SVA program as part of the bank's risk management. Before the program was launched, Chase's asset growth was quite high, reaching about 15% per year. Such rapid growth was a concern (the risk could be too high). Chase then launched a program that was considered less complex and easily understood by all levels in the organization, namely SVA. SVA is essentially a residual income concept, which calculates profit by subtracting charges to capital from operating income.

$$\text{SVA} = \text{Operating income} - \text{Charges to capital}$$

The concept links reward to risk through risk-adjusted capital. In other words, if a manager uses capital for risky activities, risk-based capital (or risk-adjusted capital) will also increase. If the risk capital is high, the burden that must be borne also increases and will reduce the manager's SVA. The charge is set at 13% of risk-based capital. Managers are evaluated based on their contribution to long-term SVA growth. Evaluations are regular and automated, and everyone understands the rules of the game.

How does SVA work?

SVA = Operating income – capital expenses

Let's say there are two traders (A and B) who both have Rp100 million. Trader A trades government securities with lower risk. Trader B trades stocks that have a higher risk. Since the risk is lower, the required profit (cost of capital) for A is 6%, while for B it is 11% (since the risk is higher). If A wants to have a positive SVA, it must earn a profit of at least 6%, while B must earn a profit of at least 11%. This way, risk is automatically factored into the evaluation of the trader's performance.

The SVA program is expected to be useful because it makes managers look at risk in every decision. In addition, through the SVA program, Chase's asset growth is slower and its risks are smaller.

Risk Management Activity Plan

There are several activities related to risk management planned. First, Chase intends to conduct more intensive risk measurement activities. There are three categories of risk that will be focused on: market risk, credit risk, and operational risk. The following summarizes the measures that will be taken for these three risks.

Risk Type	Risk Size
Market Risk	Value at Risk <i>Stress-testing</i>
Credit Risk	Portfolio Concentration NPL (Non Performing Loan)
Operational Risk	Self-evaluation using a set of questionnaires

After the measurement, Chase planned several activities to manage the risk as follows.

Risk Type	Risk Management
Market Risk	Set limits, if the risk has exceeded the limit, there is a review process diversification
Credit Risk	Credit sales, Chase only takes initiating fee diversification
Operational Risk	Improve credit acceptance procedure Improve operational procedure

Discussion Questions

- 1) Briefly explain the key to risk management at Chase?
- 2) Evaluate each of the risk management plans mentioned above. What do you recommend, are they all recommended? Or just some of them? Which ones?

Source:

Adaptation of Hanafi (2010) and Barton et al. (2002)

Answer Key to Formative Test

Formative Test 1

- 1) A
- 2) C
- 3) D
- 4) D
- 5) A
- 6) B
- 7) C

Formative Test 2

- 1) A
- 2) C
- 3) B
- 4) A
- 5) C
- 6) B
- 7) A
- 8) C

Formative Test 3

- 1) A
- 2) D
- 3) A
- 4) A
- 5) C
- 6) C
- 7) A
- 8) B
- 9) D
- 10) A

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