

CHAPTER TWO

STRUCTURE OF ORGANISATION

2.1 Introduction

An economic organisation is an institution that participates in the markets by buying and selling goods and services. It organises the workplace and transforms scarce resources into products and services, which are then sold in markets. As the organisation or a firm's activities expand, there would be more transactions involved in integrating its activities and bargaining its terms that lead to negotiation, coordination and monitoring to become more expensive. As a transaction takes place, the costs of carrying out the transaction arises. Transaction costs arise from carrying out transaction either between two parties or within the firm itself. Transaction costs refer to the costs incurred in the negotiation, monitoring and enforcement process which are necessary to assure that contracted goods and services between and within firms are forthcoming. It includes coordination costs such as the costs of monitoring, planning and bargaining arising in the production process. Transaction costs arise for three main reasons (Alston and Gillespie 1989, p. 197):

- i) resources in the production process are owned by different parties and owners have an incentive to monitor the use of their assets. When physical capital is used by someone other than the owner, abusive

treatment may rise out of carelessness. To prevent excessive depreciation of the value of their physical capital, owners will monitor the use of their capital.

- ii) people have a limited ability to process and act on information received
- iii) when effort is not directly tied to reward, workers have an incentive to shirk and consequently, employers have an incentive to monitor work intensity.

We cannot deny the importance of productive labour, capital, technology and scale economies in transforming factor inputs into output to reduce production costs. The assembly line technique with the aid of technology increases productivity through specialisation hence reducing production cost (Alston and Gillespie 1989). Neo-classical firms focus on the importance of scale economies in reducing the production cost but they tend to neglect internal and external transaction costs.

The notion of transaction costs is that some costs of economic activities are not technologically-determined but rather on the form of organisation under which the activities are conducted. Thus other than technology and scale of economies, the structure of organisation may reduce transaction costs by means of efficient contracting and improving its system of coordination, incentives and motivation. Scale economies and technology are important deciding factors for production of goods and services whilst organisation structure reduces transaction costs associated with X-inefficiency, bounded

rationality, shirking and opportunistic behaviour by employees. Both Coase (1937) and Williamson (1981) emphasise the importance of institutional framework or organisation structure that would minimise transaction costs of firms in producing goods. According to Coase (1937) a firm reduces the transaction costs of using the market by lessening information costs, lowering the number of contracts, and lengthening the terms of some contracts. Other economists such as Alchian and Demsetz (1972) argue that efficiency or reduction of transaction costs can be achieved through market competition, cooperation and teamwork by effective metering, which subsequently reduces the cost of managing or supervision. Transaction costs economics stress a relationship among transactional performance, monitoring, and residual claims within the firm (Yarbrough and Yarbrough 1988). It is for this reason that the need for economic organisation, which facilitates cooperation and hence reduces transaction costs, is necessary. Economic organisation attempts to minimise transaction costs through various means such as embarking on formal contracts, negotiation and cooperation among participants. Teece (1986) contends that a leading purpose of economic organisation is to economise on the cost, broadly defined, of business transactions over time. He adds that profit-seeking firms internalise operations and in so doing the costs of organising and transacting business will thereby be lowered.

In this chapter we focus on the organisational structure of MCM with the aim of examining its system of incentives, coordination and motivation.

2.2 Definition Of Organisation

Organisation has various definitions and interpretations. It should be interpreted according to the needs of an organisation. Presthus (1958, p.50) pointed that organisation is a system of structural interpersonal relations..."individuals are differentiated in terms of authority, status, and role with the result that personal interaction is prescribed, anticipated reactions tend to occur, while ambiguity and spontaneity are decreased." Allen (1958) describes organisation as a mechanism or structure that enables living things to work effectively together. Basu, Sahu and Datta (1970, p.25) defines organisation as"a process of establishing the pattern of relationship by assigning duties and responsibilities to each department, section, group and individual of an enterprise, clearly demarcating the authority, responsibility and duties of each and providing the channel of communication and coordination to achieve the objective of the organisation." Viewed from the economic perspectives, organisation is defined as an entity where people interact to reach individual and collective economic goals (Milgrom and Roberts 1992). Economic organisation is also viewed as an institution within which two-sided transactions occur among separate self-interested individuals for exchange of performance and payment (Yarbrough and

Yarbrough 1988). The definition of organisation becomes clearer by examining the elements that constitute the organisation and the level of analysis. An organisation consists of employer and employee with a set of goals and objectives to achieve.

2.3 MCM's Organisation And Its Objectives

The objective of an organisation may be general or specific; it may concern the organisation as a whole, a segment of it within a decentralised unit, or even a particular function such as production, sales, or personnel. One of the functions of organisation is to formulate the organisation's objectives. Objectives are goals established to guide the efforts of the company and each of its components. An organisation can grow and change in an orderly and progressive manner only if well-defined goals have been established to guide its progress. Not only must there be an objective for the total organisation but since each component can accomplish only limited work, there should also be the spelling out of division and departmental goals which serve as specific guides for subordinate units. It is therefore important for a company to define clearly its objectives and ensure that they are simple enough to be understood by the organisation or workers. This enables individual managers to operate with maximum freedom but always within the framework of overall company objectives. Unless such goals are established, there is likely to be haphazard activity, uneconomical commitment of capital

funds, poor utilisation of labour, and inconsistent operating results over the long term.

MCM has the goal of producing and selling quality copper concentrates competitively at the lowest cost so as to gain an adequate profit after taxes for services rendered. Although MCM is a monopoly in Malaysia, in the world market, its market structure is oligopolistic in nature. All the copper concentrates are exported to Japan and the price is based on the average monthly price quoted at the London Metal Exchange. Since MCM is a small producer as compared to those giant producers from Chile and USA, it has no influence and control over the price. Copper producers like Chile and USA may be able to influence the price of copper as they are the two major suppliers to the world market. The copper price is influenced and determined by the interplay and fluctuation of world supply and demand. As MCM has no influence in determining the price of its product, it needs to operate at minimum cost in order to remain competitive. It also aims to be a low-cost producer of the copper concentrates it offers for sale. To achieve this objective, MCM has to be efficient both in its production as well as in its management techniques through an efficient structure of organisation. Low processing costs can be achieved through a better operation of scale economies and technology while transaction costs can be minimised by means of an effective structure of organisation.

2.4 Organisational Change and Reduction Of Transaction Costs In MCM

A properly structured organisation reduces both transaction cost and production cost. The change in the ownership of MCM in 1987 brought about a change in its structure of organisation. Restructuring the organisation was carried out to suit the company's new aspirations, to achieve its objectives and to make its structure of organisation more effective. It is a common experience of management consultants that the majority of problems brought to them arise from defects and weaknesses in organisational structure (Basu, Sahu and Datta 1970). MCM's restructuring exercise reviewed the duties and responsibilities of every individual and various groups within the organisation, and how to control, monitor and coordinate its activities. More clearer functions and responsibilities for the groups and individuals in the group was established to integrate and coordinate their activities in perfect harmony.

There are three kinds of work that must be performed in an organisation. They are; division of labour, identification of the source of authority, and the establishment of relationships. If the group is to pool its efforts effectively, there must be a division of the total effort so that individuals in the organisation do necessary, purposeful work which contributes to the attainment of the objectives and ensures that the work of one member of the group does not duplicate or overlap the work being done by others. There must also be a source of authority to secure compliance of individual

members of the group in contributing their efforts to the common goal. It is also necessary to establish cordial relationships between individuals and groups working together within the organisation. Modern organisational theories emphasise the importance of the structure of organisation in contributing to the effective performance of a company.

2.4.1 Structure Of Organisation

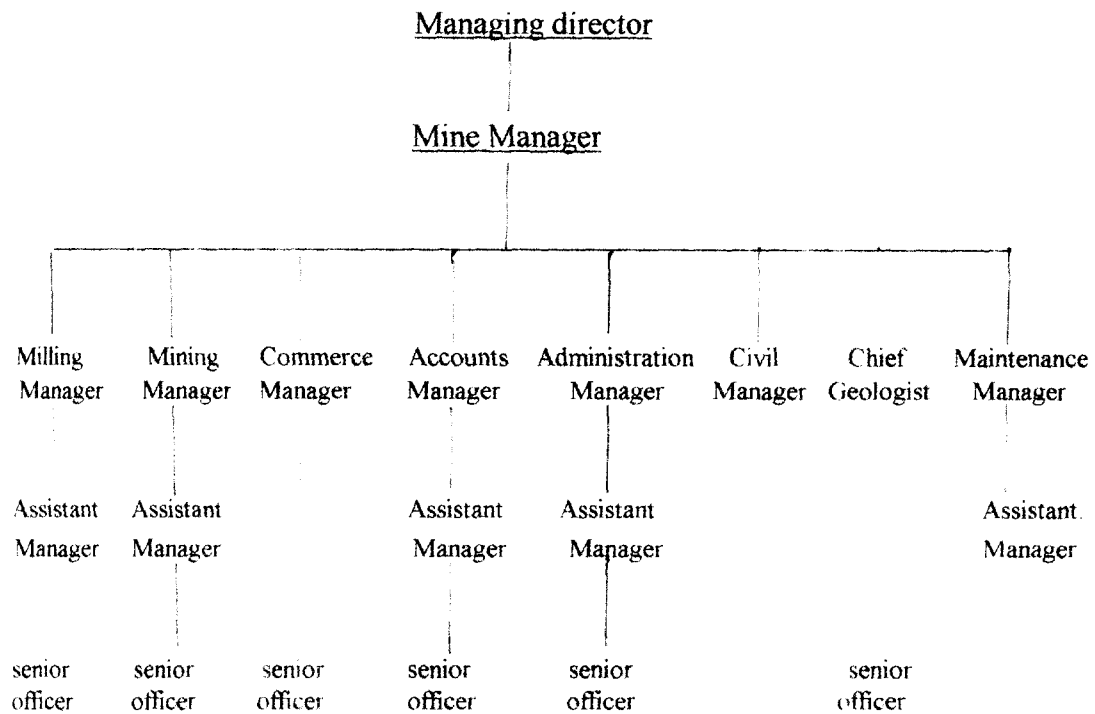
When MCM was under Japanese management, its structure of organisation was different from the current organisation structure which is under Malaysian ownership as shown in the organisation chart of Figures 2.1 and 2.2. The Japanese organisation chart basically follows a line organisation.¹ It depicts a direct straight-line authority and responsibility from the mine manager to the departmental managers and to the superintendents. Each superior official has full authority over his subordinates on all their activities. The immediate superior is the only one who gives orders to his subordinates, hires and assigns duties while dismissal and disciplinary actions rest with the mine manager. The difference between the Japanese structure of organisation chart from the present organisation chart is the absence of the post of senior managers and financial director. Under the Japanese, all department managers reported directly to the mine manager. This enabled the mine manager to get into direct contact with all

¹ A line organisation is based on the relative authority and responsibility rather than on the nature of the activities (Refer to Basu, Sahu and Datta (1970)).

the department heads and the daily operation as well. It eliminated the distortion of information between the mine manager and the respective departments. It also permitted close supervision by the mine manager. Decision making process is decentralised. Departmental managers were allowed to make decision on matters concerning departmental daily activities and responsibilities with the guidance from the Japanese advisers stationed at their respective departments. The disadvantage of this organisation, however, is that there are too many managers reporting to the mine manager. It is almost impossible for him to pay full attention to all the departmental problems addressed to him. There is little time left for him to attend to other more pressing company matters. As a result, the mine manager suffers a loss of control due to either inadequate supervision or inadequate time to attend to the various departmental problems. Coordination appears to be rather ineffective and may have contributed to greater transactions costs.

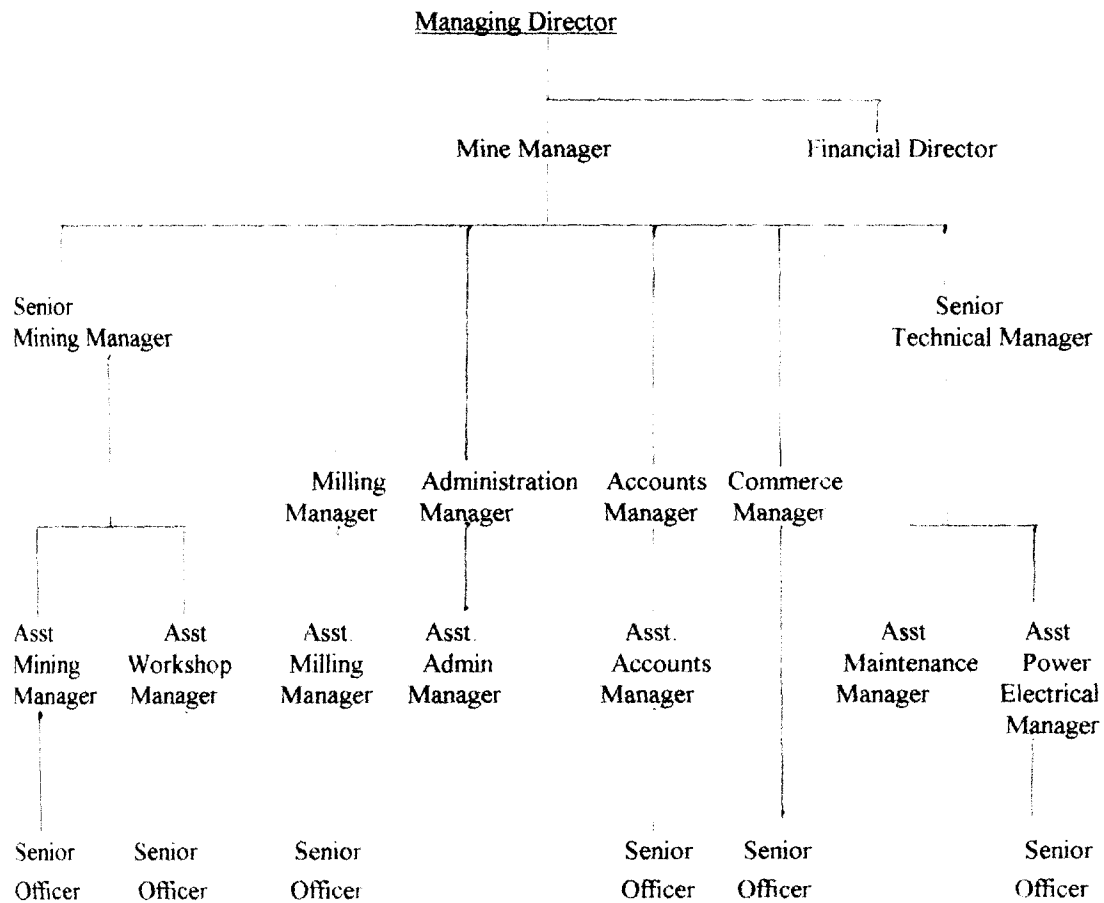
Since 1987, MCM frequently changed its organisation chart in trying to make its structure more effective. The current organisation chart of MCM, which shows the line of authority, is illustrated in figure 2.2.

Figure 2.1:
Organisation Chart Of Mamut Copper Mining



Source: *The Mamut Copper Mining Organisation Structure, 1986.*

Figure 2.2:
Current Organisation Chart Of Mamut Copper Mining



Source: Organisation chart Of MCM, 1993

The advantage of the present MCM organisation (figure 2.2) is that the channel of communication and the line of authority and responsibility are somewhat clearer and there seems to be less problems of interference since departmental heads know whom to report to directly. It also permits more direct action because of the direct chain of command from the top to the bottom. The present organisation structure formed new posts; a financial

controller and two senior manager posts were created. Some department managers are no longer required to report to the mine manager but, instead, they are answerable to their respective senior managers. This allows the mine manager ample time to plan and take charge of the company's operation. The senior managers, on the other hand, can concentrate on supervising and coordinating their respective departments while the financial director takes care of the financial matters of the company. This new structure provides greater coordination than before. Under the present structure of organisation, MCM has shown to be one of the most profitable companies among all the other Mega First subsidiaries.

The delegation of authority by the mine manager to the financial controller and senior managers have made supervision more effective in coordinating the activities of subordinates. However, the present organisation structure also has some weaknesses. Officers have too many responsibilities and this provides no scope for specialisation which is vitally needed in MCM organisation.² Another disadvantage of the present organisation is that it discourages direct contact and discussion from taking place between lower executives and the mine manager as their work is already planned and prepared and many decisions already made for them. Decision making is highly centralised; instructions came mostly from the mine manager. In the Commerce department, for instance, many decisions on purchasing procedures, selection of vendors and negotiation, are determined

² Neoclassical economist emphasises the importance of specialisation to improve productivity.

not by the commerce manager but by the mine manager. All purchase orders, regardless of purchase value must be approved by the mine manager unlike in the past where only purchase value over RM50,000 required his approval. In the beginning of 1994, MCM set up a tender committee comprising the commerce manager, account manager and financial director. This committee is responsible for awarding contracts or tenders to suppliers. Unfortunately, it later became ineffective because very often the mine manager gives the final decision.

Since the flow of information is restricted and limited, there are major management problems. This has often lead to misunderstandings and strained relationships amongst higher and lower executives. One such obvious example is that lower executives are discouraged from providing feed-back to the top management. Another example is the case of an assistant mining manager, who instead of reporting direct to the senior mining manager, reports to the mine manager. He reports daily to the senior manager to brief him the progress of the pit operation but at the same time is required to discuss matters with the mine manager from whom he receives a different set of instructions. As he put it during the interview, " things are complicated and I just don't know whose instructions to follow " Similar to this interviewee's situation, lower rank officers often receive direct instructions from the mine manager and not from their respective heads of department. Fortunately, the structure of organisation still allows for effective

coordination among departments that are directly involved in the production of copper concentrates. Daily meetings are conducted among mine engineering, mining and milling supervisors to facilitate exchange of information about the operation. Thus, the direct command or straight line authority from the mine manager to the executives seems not to overlook the coordination mechanism which is vital in reducing transaction costs. Moreover, MCM's organisation is action oriented. Problems can be brought up in a monthly departmental meeting. Under the Japanese management, there was hardly any meeting among the departmental heads. Although it appears that the flow of authority and responsibility appears smooth as depicted in the organisation chart, the division of authority and decision-making is actually rather complicated.

2.4.2 Coordination

Production of copper concentrates goes through a number of stages of production. Every stage of production comes under the control and supervision of a department. The Mine Engineering department ensures minimum acceptable ore grade before the mining department hauls and delivers them to the primary crusher. This avoids unnecessary additional processing costs due to power consumption and wear and tear of machinery. The Milling department needs to be informed about the type of ore being supplied to the mill so that the quantity and type of chemical required for ore

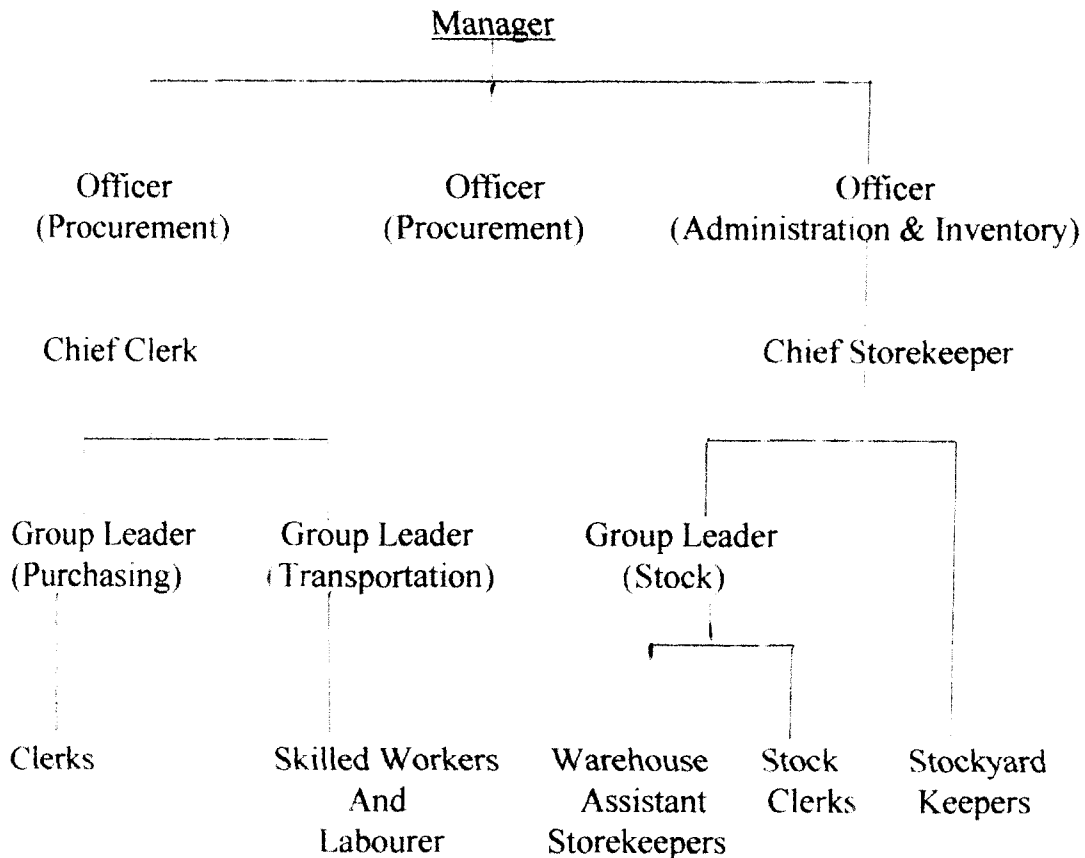
treatment can be determined. Accurate information, feedback and close coordination among the mine's engineering, mining and milling departments are essential to ensure smooth operation and to avoid transaction costs arising from misunderstanding and miscommunication. To ensure smooth operation, the mining, mine engineering and milling departmental heads and the mine manager meet daily to discuss matters pertaining to the daily production of copper concentrates. The meeting enables them to promote close coordination by providing feedback, discussing problems and planning daily activities and mining operation.

Close coordination and monitoring of employees are also possible by grouping them into small groups and assigning them with different tasks under the supervision of officers, foremen or chief clerks and group leaders as shown in figure 2.3. The firm and tough disciplinary action taken by the present mine manager restricts workers from behaving opportunistically and shirking their responsibilities such as malingering and abusing equipment.

In MCM, all departments are required to create their own organisation charts with responsibilities being outlined to ensure smooth coordination and supervision of workers. Figure 2.3 shows the organisation chart for Commerce department.

Figure 2.3 :

Organisation Chart of MCM's Commerce Department



Source: MCM , Commerce Department 1993, unpublished

The Commerce department's organisation chart shows the flow of authority for workers. The workers are divided into groups which are led by the group leaders. The group leaders report to their respective chief clerk and the storekeeper, who in turn are under the supervision of officers. This type of organisation permits close monitoring, coordination and cooperation among them. The supervisors can concentrate on monitoring individuals in

small groups and this might have influenced MCM's productivity achievement. One can argue that the MCM's inability to measure the workers' productivity accurately can lead to dissatisfaction among workers and this may cause ineffective coordination within the group. However, the cost of monitoring in MCM is minimised because most of the assignments are with deadline to complete. Workers are obliged to complete their job according to the schedule given and investigations are carried out if they fail to complete their jobs on time.

Coordination costs can be reduced by contracting out specific portions of the production process (Masten 1984). Here, monitoring costs associated with work intensity is avoided as it would be borne by the contractor. Contracting may reduce monitoring costs but this is not possible in the production process of copper concentrates where highly and specially trained workers are needed to handle the operation, and they are not easily available in the country. The transportation of copper concentrates from mine site to Usukan port is contracted out to Ranko Sdn Bhd, a Sabah-based company. The previous Japanese organisation contracted it out to the company to reduce costs and also because the contractor had been working with the mine since the early operation of MCM. The present MCM organisation found that about RM200,000 per year could be saved by terminating the services of the same contractor. Thus, in 1993, the service of the contractor was

terminated. By internalising the cost of transportation of copper concentrates MCM has reduced its transaction cost.

The MCM organisation recognises the importance of cooperation with the employees union. MCM has established a long existent cordial relationship between the managerial workforce and the workers union members.³ This is done so as to avoid conflict and misunderstanding which could lead to strikes and other undesirable activities in the organisation. The absence of strikes and demonstration by the workers' union in MCM since its inception illustrated a good working relationship. This relationship is guided by the collective agreement between MCM (employer) and employee. Cooperation is significantly emphasised in this agreement and disputes are often brought into discussion to seek an amicable solution.

MCM also adopts authority relations as a technique to reduce transaction costs. Authority relation refers to one in which one party (the superior) has the right to direct the behaviour of the other (the subordinate), at least within bounds, and to supervise, monitor and punish or reward the subordinate. Authority relations provide net benefits in organising certain transactions, as compared with bargaining between autonomous agents (Dow 1987). It is desirable because it can economise on costly bargaining that could not be performed cheaply by direct negotiation, especially under the condition of uncertainty and bounded rationality. Bounded rationality refer:

³ Workers' Union members comprise workers in the foremen, chief clerks, skilled and unskilled category. Managers and Officers are excluded from the union.

to limitations on human ability that prevent people from foreseeing all possible contingencies and calculating their optimal behaviour due to imperfect or costly information. Authority relation, for instance, reduces opportunistic behaviour in workers through direct order or authority from the superior. The MCM mine manager is aggressive and authoritative in style and the impact has been positive and effective. There is a downsizing effect causing the most needed employees to remain in the workforce. He seeks more contributions from employees. He viewed the previous management in the light that..."**the management in the past has somehow created a great deal of unhealthy and counter productive inter-departmental rivalry which is detrimental to mine productivity and efficiency. Much time and effort was spent to find fault with others and to defend oneself from personal and destructive criticism. Each manager built and guarded his own little empire**" (Yong, 1991, p. 1). The system was dismantled to form a cohesive team with a common goal and everyone was urged to contribute to the well-being of the company. The mine manager urged employees to improve productivity or face disciplinary action - "loyalty works both ways and the company will only reward employees according to their contribution."⁵ The Mine Manager's aggressive style has reduced shirking by employees who fear that they will be dismissed as a result. In fact, there have

Internal memorandum from Yong (Mine Manager) circulated to all department managers, 10 January 1991(a company's confidential document, and unpublished)

Ibid, pg. 3

been fewer warnings issued to employees for shirking, compared to the previous MCM organisation.

Stern warnings and disciplinary actions have often been adopted by MCM to deter irregularities by workers such as malingering and absenteeism. On major issues which affect or involve large numbers of employees such as stealing and abusing company properties, the MCM authorities invite the workers' union for discussion and even directs the union president to issue a memorandum to union members.⁶

Abusing responsibilities or opportunism by workers occur when the employer-employee relationship is not specified clearly in the employment contract. This tends to cause shirking or withholding effort by unskilled and skilled workers⁷ In MCM, workers are not told specifically in the letter of employment how much work they have to finish in a day. Thus, when the services and effort of workers are difficult to measure by inspecting output, either because quality is difficult to assess or because of team production, workers have an incentive to shirk and the organisation or management has an incentive to monitor to increase work intensity. According to Alchian and Demsetz (1972), a worker has more incentive to shirk when he works as part of a team than if his performance could be monitored easily or if he did not work as a team. If the workers' employment contract is incomplete and they

⁶ In April 1993 the union president issued a circular to union members asking them to cooperate and not to abuse company property after an incident in which one of the conveyor belts was intentionally cut off.

⁷ Shirking occurs when a worker pursues on-the-job activities that produce individual utility, reduce the productivity of the firm, and violate the spirit or letter of the employment agreement. (see Yarbrough and Yarbrough (1988) p16)

are likely to take advantage of this defect, a cordial employer-employee relationship and an attractive system of incentives must be established to avoid shirking. In practice, however, a cordial relationship may not guarantee non-shirking and zero transaction costs. The employer should impose obligations on workers and ensure that they carry them out. The workers, however, may behave opportunistically, that is, try to avoid these obligations when they can. As a consequence of this, there will be efficiency losses arising from the costs of monitoring. It is therefore important to have an incentive scheme which develops governance structures that will help prevent opportunism (Williamson 1984). Governance structures are conceived as implicit or explicit contractual arrangements which are used by the parties to a transaction to effect adaptations as circumstances (Dow 1987). However, the governance structures may not always evolve toward efficiency if considerations like bounded rationality, small numbers of bargaining or sunk costs are present in the organisations (Dow 1987). In long term relationships, opportunism can be negotiated because management and workers stand to gain from continuing the cordial relationship. In MCM, a provision is provided for in the agreement where management or workers' union can meet at any time to discuss matters that may affect the interest of both sides. The employee's union will write to the employer if they think that the employer has violated the agreement. The employer would, in turn, invite them for discussion if it is a matter of importance and would serve the interest

for both of them. They are aware of the importance of cooperation thus prefer to maintain cordial relationship and understanding between them. The mutual interest in protecting the employment relationship against non-compliance by the employer or the union, helps to explain the existence of the workers' union in MCM. It seems to appear that transaction costs in MCM are minimised through cooperation within the organisation, that is, between employer and employees.

2.4.3 Incentives And Motivation

A good employment relationship and coordination within the organisation enables workers to work harmoniously and productively. Workers want to be paid for the work they do but, if organisations expect them to do better, then they must be sensitive to the workers' needs such as pride, recognition, sense of belonging and employment security. Unlike machines, workers can adjust the quality and pace of their work in line with their preferences. They can choose not to work hard depending on their utility function and this leads to X-inefficiency. X-inefficiency refers to the extent to which a given set of inputs do not get to be combined in such a way as to lead to maximum output. This concept is not necessarily applied to merely cost problems that could be cured by alterations of plant scale and adoption of new technology, but it is related to inefficiency associated with a weak motivation (Leibenstein 1973 and Greer 1992). Workers may choose

not to shirk their responsibilities or behave opportunistically and this will increase productivity and minimise supervision, hence reduce transaction costs. Employees need motivation and they require an appropriate system of incentives and motivation in the organisation.

Motivating employees begins with communication, which is difficult enough with a heterogeneous workforce. In multicultural Sabah, it becomes much more complicated when the message has to be communicated to individuals grouped separately as Malays, Chinese, Bajaus, Muruts and Kadazans. Messages have to be tuned to cultural sensitivities and different behavioural norms of the workers. One must also know the appropriate incentives that could motivate them. The Chinese, by and large, are inspired by financial rewards which they know can give them instant liquidity and freedom of choice. The Malays, on the other hand, are motivated by the recognition of their job in the company, contribution of the organisation to their family, community and the nation (Hamzah 1991). Thus, while the system of incentives must suit the needs and aspirations of the different racial groups, other systems of incentives that are generally acceptable to heterogeneous workers should be looked into; such as training and employment security. In MCM, the need to associate incentives and motivation with cultural sensitivities does not pose a big problem because the majority of the workers are Kadazans. They feel motivated if they feel the organisation can offer them long term or permanent employment. Social

interaction among the supervisors and workers during office and outside working hours motivates them to work harder. Almost all the Kadazan workers come from rural areas and socialising is part of their way of life. It is not uncommon to see supervisors and workers at MCM socialising together during weekends. Local workers respond better to productivity increases if they see benefits accruing to the company which are also felt by their families. They feel motivated if they are allowed to work more overtime hours because this would supplement their income.⁸

Using sophisticated machines may reduce production costs but workers are still needed to operate these machines. Although the increase of automation in a plant reduces supervision or monitoring costs of large work forces and thus reduces production costs, monitoring is still necessary for it serves both to deter irregularities and to detect workers from abusing their responsibilities. However, if the cost of supervision or monitoring is higher than the rate of increase in productivity and production, monitoring is economically inefficient and does not serve its purpose. Incentives should therefore be provided to the workers to discourage them from abusing their responsibilities. This leads to minimum supervision and lower costs of monitoring.

There are many types of incentives used to motivate workers such as; contract agreements linking wages and salaries to the individual's productivity and skills, piece rate system where a specified amount of

⁸ This is the personal observation and experience of the author while working with MCM.

payment is made to every unit of goods produced by a worker and sales commissions. The contract linking wages and salaries to individual productivity or wages tied to output, is difficult to implement due to the difficulty in measuring the productivity or output of individual workers. Although the piece rate system could reduce workers' incentive to withhold effort than when under wage contracts, it is not an appropriate incentive to be used in MCM because copper concentrates are produced by automated machines. Consequently it is almost impossible to quantify the exact number of output per worker.

Incentive in the form of monetary reward is one of the instruments to motivate employees to work hard. However, money could be a relatively weak motivational force. Cox (1986, p.27) points out that... **"financial incentives can encourage greater effort but cannot generate self-motivation. Self-motivation comes from an employee's self-esteem and self-respect, and an awareness that others hold him in comparable esteem and respect. A self-motivated employee will accept the goals of his organisation as his own and this is the key to productivity."** Monetary reward alone is not always enough to motivate. Increases in wages and security benefits to motivate employees may no longer be effective once they feel that their existing wages and benefits are adequate. Incentives other than money are, therefore, necessary. Incentives such as participation in decision-making, job enrichment or skills training, recognising worth, creating opportunities, and fostering individual freedom of expression can be important parts of better

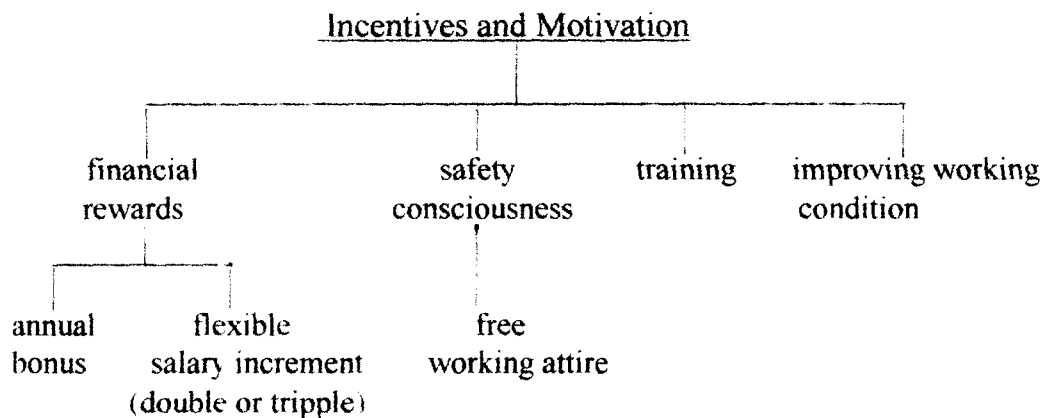
motivation. Transaction costs may be reduced when each employee is self-motivated, that is, when each individual worker decides on his own to produce at his best in the way he feels best and finds himself free to do so.

Freely given effort may result in greater output than through monitoring and threats. Leibenstein (1977), for instance, attributes the success of Japanese firms to the loyalty of its workers rather than by strict monitoring. The Japanese management team in MCM attempted to emphasise loyalty, trust and employment security, but the workers' response seemed to be negative probably because they knew that MCM would not provide permanent employment. There were cases, although the number now is declining, where workers were reprimanded for absenteeism, issued with warning and dismissed due to shirking.⁹ Most of these cases were related to workers' attitudes such as; absence from work, sleeping while at work, coming late to work, leaving early, and misuse of equipment. Incidents such as theft and stealing spare parts are declining although they do occur when workers are not closely supervised. In 1994 there were only two cases of stealing spare parts as compared to four in 1993. Under the present MCM organisation, very few cases of workers were caught for neglecting responsibilities. This could be due to the conditional financial rewards adopted by MCM, that is, rewards tied up with effort of individual. This

somewhat implies that monetary reward is effective in motivating workers in MCM. Figure 2.4 shows MCM scheme of incentives offered to its workers.

Figure 2.4:

System Of Incentives In Mamut Copper Mining



MCM's organisation emphasises more on financial rewards that are based on skill and expertise of employees and the effort taken by them to improve work performance. The pay- for- skill type of incentives is effective because they encourage workers to exercise their potential, and explore and improve their skills. They help to discourage workers from withholding private information that may be valuable to MCM. If, for instance, mechanics or technicians have no incentive to use or share their skills and knowledge, it may cause delay in repairing trucks and machinery. Problems may arise because, unless the system is designed appropriately, employees have the incentives to withhold the information they have or to distort their reports (Milgrom and Roberts 1992). In such a situation, transaction costs arise due

to the informational incompleteness.¹⁰ In MCM, however, technical officers are technically more knowledgeable than technicians and mechanics, for they also have worked as skilled workers for a number of years before being elevated to the position of officer.¹¹ Thus, there is less room for workers to behave opportunistically

MCM's scheme of financial incentives includes annual bonus payment to all employees and a flexible salary increment. The amount of salary increment that is paid to workers is based on the appraised individual work performance. Workers are paid with an annual bonus equivalent to one month of their basic salary while officers are paid two months bonus and an additional incentive of 0.3 per cent of their basic salary. Effective from December 1993, salary increment for all officers is fixed at 2 per cent of their basic salary. Variable ex-gratia (additional incentive) is paid according to the appraisal assessment point obtained by each individual. For example, a 100 per cent assessment point would be paid the equivalent of one months salary while a 50 per cent point would be paid half of the basic salary. Payment for bonus remain unchanged. The workers' entitlement is incorporated in the employer and employee agreement of service condition as agreed upon between the management and the employees' union. Bonus entitlement to all

¹⁰ Informational incompleteness means lack of complete information, especially when an action of one party may not be observable by others. See Milgrom and Roberts (1992) p600.

¹¹ Of the total 87 technical officers, 77 or 89 per cent of them have been promoted to officers from skilled workers with 10 years minimum experience at supervisory level (foreman). See Table 5.1.

employees may not generate effective motivation in the long run for workers with a poor work performance, are also entitled for the payment.¹² Consequently, workers see it as an entitlement rather than an inducement to work harder. However, workers cannot afford to perform poorly because they will not receive any bonus if they have been issued with the last warning (third warning) due to unsatisfactory work performance and indiscipline.

Salary increment is paid according to skill and work performance although there is as yet no standardised appraisal system. So far assessment is based on the personal judgement of managers. The payment of salary increment based on individual work performance helps motivate employees since only workers with a better work performance are rewarded with either a double or triple increment. Workers are issued with warning letters and they risk their chances of being upgraded to a higher salary scale if they perform poorly. One can observe that the reward system in MCM helps to deter its workers from shirking. Another important factor that contributes to workers satisfaction in MCM is the concern for safety measure. The company's safety committee, which comprises the management staff and the workers' union, carry out a monthly inspection to check safety conditions. The MCM authorities also improves safety awareness by providing working attire such as free safety helmets, safety shoes, earplugs, dust musks, hand gloves, eye goggles, and compensation in the form of insurance.

¹²

A worker will not receive any bonus if he is absent from work for 3 consecutive days within a year

Honesty and loyalty to MCM are important for its organisational success. Therefore, a 'caring' attitude towards workers is important. Employment security alone are inadequate to motivate them. Better working condition is equally important to motivate workers to reduce supervision and transaction costs.

2.4.4 Supply Of Workforce And Transaction Costs

One of the functions of an efficient organisation is to attract and maintain high quality workforce. Quality generally refers to the skill, expertise and efficiency of the workforce. Quality of labour is one contributing factor to higher productivity. In a labour-intensive organisation, management must ensure that it has an adequate supply of skilled and productive workers to carry out its operation. MCM believes that each individual employee of the company can contribute positively to its well-being and growth. This echoes its philosophy of developing the "quality" man, that is, to build character before products. To this end, MCM has created a conducive working environment such as prioritising workers' safety and providing better working conditions with strong management support and interest in all activities.

According to Alston and Gillespie (1989), transaction costs may be associated with constraints on the availability of labour. An inelastic labour supply may provide the opportunity for workers to hold up their employer at

critical times in the production process. This is true in a situation where a country is already in full employment and the number of workers available is limited. With imperfect monitoring and full employment, workers may be tempted to shirk (Shapiro and Stiglitz 1984). The same also applies in a highly-unionised industry where trade unions have strong control over the supply of labour to maintain the level of wages. The availability of skilled labour in Ranau is small but this has not led to a situation where the workers, union of MCM can hold up the supply of labour. So far there is a sufficient supply of skilled labour in Sabah but the main setback is that the mine is located in a remote area and vocational graduates and experienced skilled workers are more attracted to work in urban areas. Moreover, the workers available in Ranau can be trained into skilled labours. The management provides intensive inhouse training for workers. As a result of good earning prospects, fringe benefits, working conditions and an attractive system of incentives, the staff turnover is observed to be very low. About 90 per cent of the skilled workers who are in employment have been with the company for more than fifteen years. The transactions costs arising from the constraints supply of labour does not arise in MCM.

As at the end of August 1992, the total workforce of MCM was 1155 workers with 966 skilled labour. Unskilled labour represented a mere 8 per cent of the total workforce of MCM. The composition of the managerial workforce by academic background is shown in Table 2.1

Table 2.1 :**Composition Of Workforce**

Nature Of Work	No. Of Workers	Academic Background
Management & Professional (Higher Management)	22	22 Degree Holders
Technical Officer (Middle Management)	87	3 Degree Holders 7 Diploma Holders 77 (promoted from skilled worker)
Supervisory (Foreman) & Clerical	30	
Skilled	966	
Unskilled	80	

Source: MCM, Manpower Report 1992, unpublished

Table 2.1 shows that those in the higher management levels are all degree-holders. The majority of technical officers are those promoted from skilled workers and who have a maximum secondary education up to Form Five and 10 years minimum experience at supervisory level. Skilled workers comprise about 95 per cent of the workforce while 5 per cent were unskilled workers in 1985. The percentage of skilled workers in 1991 increased to 92 per cent and unskilled workers to 8 per cent. The increase in skilled workers is due to the training programmes provided for by the company. Although the percentage of skilled workers is high, it is inadequate to meet the company's

needs for a highly-technically trained team of workers. To overcome this, local and foreign contractors are employed on a project by project basis. At the same time, the company gets back up services from its suppliers as part of their technical backup-service particularly in the servicing of heavy equipment. Contractors are also employed to reduce the monitoring costs associated with work intensity to reduce transactions costs

2.5. Limitation Of MCM Organisation In Reducing Transaction Costs

An inefficient structure of an organisation incurs higher production as well as transactions costs. MCM is quite dynamic in changing its structure of organisation to make it more effective. A sound organisation structure attenuate opportunistic behaviour and reduces miscommunication due to bounded rationality. MCM has been trying to reduce transaction costs through changes in its organisational structure, maintaining good rapport with the workers union, an encouraging system of incentives and motivation. Changes in the MCM structure of organisation improved the system of incentives, coordination and supervision, eliminate the red tape, bureaucracy, and service of inefficient contractors while retaining and hiring efficient contractors. However, despite measures taken by MCM, bounded rationality and opportunistic behaviour by both managers and workers may exist, hence limiting the role and efficiency of the MCM organisation.

The other factor that could limit the efficiency of the organisation is the rationality which is limited by neurophysical and language boundaries (Williamson 1975). According to him, neurophysical limits are the physical limits which restrict the volume of information the human brain can receive and manipulate. The limitation of language which individuals face when they are unable to articulate their knowledge or feelings by using words and numbers that will make others understand them is another factor. However, the sophisticated technology used in the production of copper concentrates and processing information using computers in MCM may overcome the problem of bounded rationality and language limits. Technical innovation serves to upgrade the processing capability of copper concentrates and reduces the need for worker monitoring. This could lessen the problem of bounded rationality. The problem of language, if it exists, can be solved through intensive training programs provided for workers. In MCM, intensive inhouse training is provided for workers to enhance their skills and capabilities.

Opportunism by employer through hoarding of information may lead to the organisation inefficient. The employer may try to exploit this to gain an advantage over the union. Hoarding of information pertaining to profit prospects and costs may weaken union bargaining power. The union may not be able to negotiate effectively with the employer due to lack of information or if the employer does not provide accurate information to the union. The

workers turn to be unhappy and in some cases employer and union are unable to reach satisfactory decision. This may result misunderstanding, dissatisfaction and shirking by the workers. In early 1991, MCM implemented a cost-saving exercise to reduce operation costs. Prior to its implementation, the management informed all departments about company matters pertaining to profit prospects, price of copper concentrates and labour costs incurred by the company. This had been disclosed and explained to the workers. However, the accuracy of information provided, however, is hard to determine as there has been no evidence to refute this claim. Thus, even if the employer (MCM) discloses any information, it could have been exaggerated as part of strategy to win disputes during negotiation of collective agreement between them. Since the employee has no authority or control to monitor employer's opportunism, this may lead to the MCM organisation becoming inefficient and unable to reduce transaction costs.

The costs of transacting are real but they are not always easily separated from other kinds of costs (Milgrom and Roberts 1992). Processing of copper concentrates is fully automated so that the cost incurred due to shirking by workers is negligible because the workers' responsibility is merely to oversee the control panel of machinery and equipment. One can argue, however, that if the technology and scale effects alone reduce production costs, the production and total costs should have been lower between 1980 to 1986 than in 1987 to 1993. Therefore, the low total cost (Table 3.2) after 1987 may

have been achieved through the decrease in transaction costs as a result of the changes in the organisational structure of the company. The magnitude of shirking and opportunism by workers was also observed to have fallen after 1987. Our claims of evidence are based on the reports and warnings issued by administration department.¹³ In this particular case the restructuring of MCM has shown to be a cost reducing exercise both in terms of production cost as well as its transactions costs.

¹³ MCM Internal Reports, 1990-1993 (unpublished).