Introduction

Steel industry and Megasteel

Steel manufacturing is one of the core businesses of The Lion Group. Under the steel division of Lion Group, the manufacturing plants are Amsteel Mills Sdn Bhd and Steel Industry Sarawak Berhad. Amsteel Mills has been in the steel manufacturing business for more than fifteen years in Malaysia. The steel product of Amsteel is categorised as long product that includes the reformed bar (for construction used) and the wire rod (for making screw, bolt and nuts, welding rod). The main sales of Amsteel are for the domestics market. Megasteel project is a line extension for the current steel business. Megasteel is a green field project undertaken solely by The Lion Group. Megasteel Sdn Bhd will produce a different type of steel product that is categorised as flat product. Megasteel will be making the hot-rolled coil that will be further processed by a down stream plant which turn it into steel plates. This new product is an additional to the current product range. Megasteel will be the first of its kind in Malaysia and it is the mission of The Lion Group to become the leader in steel making in Malaysia for the coming decade.

Megasteel will be the flagship of The Lion Group in steel making when put into production. It is going to be commissioned by the beginning of 1999. The success of Megasteel will be crucial to The Lion Group because the whole project cost about two and a half billion Ringgit (RM 2,500,000,000). The leverage was high because the long term debt of Megasteel worth more than two billion Ringgit and this mainly from the off - shore banks.

It is belief that Megasteel will be the strong contender in the steel industry not only in Malaysia but also among the ASEAN countries. Megasteel will also be in a better position when AFTA come into effect for the steel product. However, Megasteel is likely to suffer from low revenue during this economy down turn. Therefore controlling a tight budget of expenses for all business functions in Megasteel will be among the first priority of the top management.

The difficulties

The current domestic selling price of the steel products i.e. re-bar and wire rod are controlled by the Malaysian government. The ceiling price is fixed and the steel mills must not sell above the ceiling price set by the ministry. In the past years this ceiling price did allow the steel mills to make good profits but the ceiling price practise is now a disadvantage to the steel mills due to the depreciation of Ringgit against all other major currency. The cost of raw material and other consumable material which were imported had increased by more than fifty percent and this wiped off all the profit margin. For example, Amsteel Mills found that it had recorded a loss in the last financial year which ended in June '1998. Therefore steel mills including Amsteel must be more efficient than the other players in the market in other to be competitive in terms of cost. When the selling price is fixed, the steel producer will have only one parameter to look at, the cost, both fixed cost and the variable cost. Re-engineering of the business process will be one of the missions of the new Megasteel Management in order to achieve the lowest possible cost with higher efficiency and productivity.

The introduction of new product, steel plates, into the current business is expected to elevate the company's business into a new dimension of the product life cycle. However, in order to prepare itself for the tough competition in the future, against all the giant steel makers of the advance countries, Megasteel must position itself as a high technology producer which will result in a lower production cost and higher quality product.

External environment

The total consumption of hot rolled sheets in 1995 was recorded at 1,230.740 metric tonnes, cold-rolled sheets coils was consumed for 854,660 metric tonnes according to the statistics provided by MISIF (Malaysian Iron and Steel Federation). These products were all imported and Megasteel's output will be able to replace these imports. With the selling price of two hundred

and fifty US Dollar per metric tonne at the 1995's consumption quantity, Megasteel project looked convincing and promising too. However, the economy melt down had caused the steel consumption to shrink by nearly 50% and price fell by nearly 100 US Dollar per metric in the international market.

The forecast of 1999 and year 2000 for the steel industry is not optimistic when the world demand of steel coil will not be much different from the current level .An over supply condition will continue and may get worst if the global recession do occur. This would also mean that the price level will still be very low thus making the imports cheaper than the local production .The reason is simply because more than 80% of the raw material were imported. In the cost structure, the local portion is mainly in terms of labour cost and electricity cost which makes up less than 30% of total cost. The raw materials are internationally priced and price difference between the steel mills internationally is not very great. The local factor in the labour cost and electricity (or energy cost) will be the determining factor in staying competitive for a steel mill in Malaysia. In order to become a low cost manufacturer, Megasteel had aimed at a high tech production environment, most of the production process are computerised and automation throughout the production floor to reduce labour cost, improve quality by avoiding human error and increase efficiency and productivity.

Internal Environment

The management teams of Megasteel were all the former managers from Amsteel Mills. Therefore the business practise will likely to be similar to Amsteel. The tendency of muddling through (Charles E. Lindblom, 1959) is high thus causing a lack of innovative ideas in the management. It was hoping that the information system introduced would be able to bring changes and new ideas for the improvement of management practises.

In the initial plan, Megasteel financial resources will be partly from the foreign bank borrowing and partly from the internal resources namely the retained

earning of Amsteel. Unfortunately the internal financial resources can no longer keep up to the earlier promises and Megasteel will need to depend on the borrowing from bank for all capital expenditure. Consequently, the budget for development of information system was not even in the allocation of funds. This would mean that the cost of information system for business application should be at the lowest possible level. Indeed, this is a serious constraint in the development of information system for Megasteel.

Same as the other business functions, the purchasing and inventory control, which played a supporting roll in the steel production, shall aim at reducing the inventory cost through efficient purchasing strategy. The purchasing and inventory control will be under staff so as to keep a low expenditure but extreme pressure was also asserted on the staffs to accomplish the objective. The information system that applied shall pave the path for the purchasing and inventory control in achieving its objectives by having smaller number of staff.

The information system that is to be implemented plays an important role in the quest to achieve a low cost and highly efficient environment to survive in this difficult period. This will also mean that the expenses on the information system shall be moderate and appropriate. The capital expenditure must not be a big burden to Megasteel; therefore, various options in the information systems shall be properly evaluated to attain the lowest cost possible. The information systems chosen should be designed to do the job desired and cater for the needs of current slow business activity.

Business Strategies

The information system plan must be aligned with the strategies of the firm in order to survive through this difficult period. Plant automation, where most of

the manufacturing processes are control by computers to replace manpower thus improve the productivity and efficiency of operation. Besides plant automation, effective inventory control is crucial in preventing the production down time. The opportunity loss will be more than five million Ringgit if Megasteel stops production for a total of twenty four hours. In order to achieve cost leadership, Megasteel must keep inventory cost at a very low level. .The solution is consignment stocks but proper control and monitoring is required to ensure the successful implementation of consignment stocks. Cost reduction can also be achieved through business process reengineering, namely the centralised purchasing, that combines the purchase of both Amsteel and Megasteel into one. Information system plays an important role to carry out these strategies.

Objectives of Project

1. To investigate the options available to Megasteel and choosing the suitable information system development method.

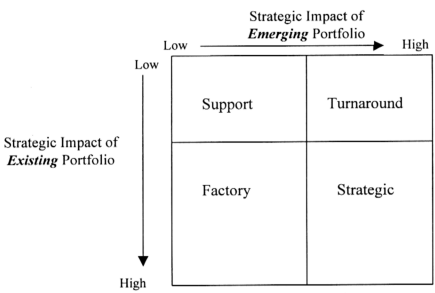
2. To analyse the strength, weakness, threat, and opportunity of the recommended solution in meeting the information requirements of centralised purchasing and inventory control.

3. To established an implementation plan for the recommended development method.

Evaluating Information System Importance

1. IS Strategic Grid

There are several methods that we can use to help determine how much of effort whether a large-scale or small-scale information system strategic planning is required in the business that we are in. One of these methods is " IS Strategic Grid".



IS Strategic Grid
Source : Computer Technology Research Corp. , 1991, p.50

The four boxes are labelled: Support, Factory, Turnaround and Strategic. The vertical axis of the grid indicates the strategic impact of the existing systems. The horizontal axis indicates the strategic impact of the future systems. (Computer Technology Research Corp., 1991, p.49)

Using this approach, we shall analyse our *existing applications* base on the followings:

1. Are they vital to the operation of the organisation?
2. Are they relatively stable?
3. What would happen if they were disrupted?

4. What would be the cost and difficulty in replacing the existing base of applications?

Next we shall think about the company's future applications (presumably ones under development): -

1. Are they likely to have a significant impact on the strategic posture of the firm?
2. If they were delayed in being produced, would the firm clearly suffer in the marketplace?
3. Is the overall payoff and significance of the applications of great strategic value?

Answering to these questions allows us to classify the strategic impact of the existing and emerging sides of our applications portfolio into the high and low positions. The will enable us to find ourselves in a given grid position and a specific category.

In the case of Megasteel, where the company is just starting its operation we should analyse along the impact of emerging portfolio and take the position of existing system as low since there isn't any at the point of writing.

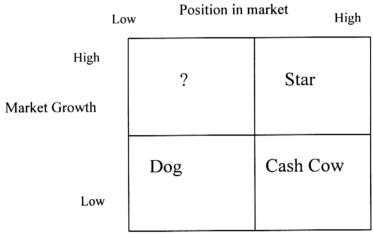
Megasteel is a steel coil manufacturer and the purchasing and inventory systems play a supporting role in the overall operation therefore it is unlikely that the applications will have any serious impact on the future strategic posture of the firm. Megasteel may continue to share the system in Amsteel and this will not cause Megasteel to suffer in the marketplace because Megasteel will be operating in a rather stable industry environment. The heavy investment in the information system for purchasing and inventory control may not bring significance payoff and strategic value to the firm.

We may conclude that the application is classify as *support* category in the strategic grid. This means that the posture of the Megasteel may not be much

affected by the low key investment and effort in the information system for purchasing and inventory. This does not mean that we do not need to plan but a lower involvement and investment is justifiable.

2. ***BCG Matrix***

We may use the Boston Consulting Group's (BCG's) matrix to examine how important Information System to a particular business.



(Source : Computer Technology Research Corp. p52)

Megasteel will be the only producer of hot rolled coil in Malaysia by 1999 and it is expected to be in the same position for the next two to five years. It's mainly due to the huge investment (RM 2.5 billion) and the current economy condition that will hinder the setting up of new plant in the near future. Therefore the position of Megasteel in the Malaysian Market will be high. The used of hot rolled coil are mainly for the making of steel pipes and the feeding material for the cold rolling process to roll into cold rolled coil which will then shear into plates for industrial usage. The growth of hot rolled coil usage in Malaysia shall be directly related to the growth of cold rolling, which is expected to be slow for the next five years.

We may therefore conclude that Megasteel's product, hot rolled coil, is actually a cash cow which generate a steady cash flow but the profit margin could be low. Again the objective of Megasteel to achieve a low cost of production is vital to ensure the success of Megasteel during this economy down turn. The role of the information system, therefore, is to help Megasteel achieves a low cost of production. The information technology used in the steel making operation is a proprietary asset developed uniquely for the operation and not within this scope of discussion.

However, generally the information system for the business application in a *cash cow* business is not as critical as in the *star* type of business. Information system may not be the critical factor in determining the competitive edge of the Megasteel business.

We shall conclude that Megasteel needs only to invest moderately in its information system development. This is because excessive expenditure may not bring the expected return to Megasteel especially in the current difficult period. The recommended budget for this project should be below One Million Ringgit (RM. 1,000,000,000.00) which include every expenditure that may required to put the system into successful production.