Formosa plastics groups essay

Case 25-3 Formosa Plastics Group For many years, managers at Formosa Plastics Group (FPG) used a management control system with an element that was somewhat unique for a large corporation – all employees were evaluated subjectively. In making their judgments, evaluators looked at objective performance measures but subjectively made many adjustments for factors they deemed to be beyond the employee's control.

One effect of this system was that bottom-line profit was not even considered in the evaluations of some profit center managers: These managers were evaluated only in terms of the controllable factors driving profit, such as meeting production schedules, efficiency, cost control, and quality. The FPG system seemed to work; the company had grown and thrived over the years. A sample of FPG mangers who were interviewed in November 1991 were virtually unanimous in their praise of the company's control system.

For example, Mr. C. T. Lee (senior vice president and general manager of the Plastics Division) said, " We are as close to perfect today as we can be. If we have good ideas, we implement them. We are continually refining our system. " Company History, Organization and Strategy FPG was a diversified chemical company headquartered in Taipei, Taiwan (R. O. C.). It produced and sold a broad range of products, including high density polyethylene (HDPE), chlorofluorocarbons, finished plastic products (e. . , shopping bags, garbage bags), intermediate raw materials for plastics production (e. g. , polyvinyl chloride, caustic soda), carbon fiber, acrylic acids and esters, processed PVC products (e. g. , flexible and rigid film, pipes, window frames), processed polyester products (e. g. , polyester staple fiber, polyester chips,

polyester preoriented yarn), electronic products (e. g. , copper-clad laminate, printed circuit boards), plasticizer, and textile products (e. g. rayon staple fiber, rayon and blended yarn and cloth, nylon tire cord yarn). It also ran a 6, 000-bed hospital, a medical college (500 students), a nursing school (1, 333 students), and a technical college (1, 700 students). Founded in 1954 with a capitalization of NT$5 million, FPG had grown over the years into the largest private company in Taiwan, with over 47, 000 employees. Exhibit 1, which presents operating highlights for 1992, shows that 1992 revenues for the total FPG group exceeded the US$ 6. billion. Mr. Y. C. Wang (FPG's current chairman) still owned a significant proportion of FPG's stock. FPG management was projecting relatively difficult times in the early 1990s because of " the shortage of quality labor, rising wages, and the radicalization of the environmental movement. " But the company had earned a profit for 30 consecutive years, even through some difficult periods, such as the 1973 oil embargo which had a major negative effect on FPG and other petrochemical producers. EXHIBIT 1 Formosa Plastics Group 1992 Operating Highlights | | Unit: USS 1, 000 | | | | | | Company | [pic]

FPG was organized into three main corporations – Formosa Plastics, Nan Ya Plastics, and Formosa Chemicals & Fibre Corp. – and more than a dozen other affiliated companies located in Taiwan and abroad (notably the U. S.). The major corporations were comprised of multiple divisions (see Exhibit 2), each responsible for one product line. The divisions, which were organized functionally, were reasonably autonomous; their managers were able to make their own plans and arrange all production and marketing aspects of their business within the scope of their approved authorizations.

The division managers, who ranged in age from 40-60 years, were invariably career FPG employees (as were most other employees). Many administrative functions, including engineering and construction management, technology (research and development), accounting, finance, procurement, data processing, legal, public relations, and personnel were centralized to take advantage of economies of scale. A unique feature of the corporate organization was a large (340-person) “ president’s office” comprised of 15 “ teams” of specialists whose function was to help division management.

The president’s office form of organization began when the corporation was small. The central staff personnel set up procedures, trained management, monitored performance, and facilitated the spreading of effective practices from one division to others. At times, some of the central staff/division dealings had been confrontational; some division managers had referred to the staffs as “ the Red Guard. ” But more recently, with increased management professionalization, the staff teams placed greater emphasis on cooperating with division management.

They still ensured that the divisions’ operating systems (e. g. accounting, procurement, construction, warehousing) conformed to corporate standards. But they allowed the divisions to operate with production systems that were different in virtually every plant, and they left division management alone if no significant negative performance variances existed. Most of FPG’s chemical divisions sold commodity products, so their strategy was to be the low cost producer in their market segment(s).

EXHIBIT 2 Formosa Plastics Group Organizational Chart – 1991 v a | Polyvinyl Chloride Division | Plastics #1 Division | First Chemicals Division | | | Tairylan Division | Plastics #2 Division | Second Chemicals Division | | | Calcium Carbide Division | Plastics #3 Division First Textile Division | | | Machinery Division | Plastics #4 Division | Second Textile Division | | | Polyolefin Division | PVC Window Division | Nylon Division | | | Engineering Division | Polyester Fibre Division | Engineering Division | | | Fibre Division | Dyeing & Finishing Division | | | | | Plasticizer Division | | | | | Foreign Trade Division | | | | | Engineering Division | | | | | PC Board Division | | |

It was important for them to produce at full capacity because most production costs were fixed; the only significant variable costs were for raw material and selling. On average, labor costs were only 20% of the total production cost, but since Taiwanese labor costs were rising along with the country’s higher standard of living, FPG managers were constantly looking for ways to automate production processes to improve productivity. More than 80% of their products were exported. FPG was making sizable investments to improve existing products, product quality, and production efficiency, and to prevent pollution. It was also increasing its investments to develop new products. Over the years, FPG had developed some new, lower volume, but higher value-added, products (e. g. carbon fiber), but these products still accounted for a very small proportion of total company sales. FPG employed 600 people in its central technology department, and its expenditures for new product development accounted for 3. 6% of its total sales. Financial Control System Within FPG, companies and divisions were measured on a return-on-investment (ROI) basis. The profit element of the

ROI measure (the numerator) included allocations of all corporate expenses including interest, but profit was measured before taxes. The investment element of the ROI measure (the denominator) included only the investments that could be traced to the divisions (e. g. , equipment, buildings, inventory, and working capital).

No corporate assets were allocated to the divisions, plants and product groups were considered as profit centers; distinct production processes and group of machines were cost centers; and non-production-oriented units (e. g. , sales, technology, and management) were expense centers. A key element of FPG’s financial control system was a detailed cost accounting and reporting system. Standard costs were set for every aspect of manufacturing (e. g. , labor, raw material, steam, packing, and waste). The manufacturing processes tended to be stable, so the company had extensive historical records, and the cost standards were highly refined and accurate. Indirect costs were allocated to entities and products using a variety of allocation bases (e. g. , number of people and production quantity).

Where necessary, transfer prices for products sold internally were set either at market price less costs not incurred on internal transfers (e. g. , selling costs, duties), or at full standard cost (less costs not incurred) plus a markup. The cost standards were revised promptly when conditions warranted, and they were used to motivate continuous improvement. For example, if an investment project aimed at improving productivity was scheduled to be completed in July, the cost standards were changed in July. If the project was delayed or improvement was not as expected, the problem would show on

an irregularities (variance) report. The company produced an extensive set of performance reports on a monthly basis (see Exhibit 3).

These reports allowed management to attack problems quickly. FPG’s president monitored performance closely. Each month, he met with 30 senior managers (including division managers) in a detailed performance review meeting that typically lasted 2-3 hours. Every business was discussed at this meeting, and the president asked questions about sales, the competitive situation, future trends, and future products. About this meeting, one division manager said, “ The president learns the details of our businesses. Sometimes we get new ideas from one or more of the managers at the meeting. Sometimes we get yelled at. ” Performance-related bonus plans were also an important part of FPG’s control system.

All personnel in the company were included in one or more plans, and the plans were structured the same in all countries in which FPG operated. These were the major plans being used: 1. Year-end bonuses were given to everybody in the corporation based on the performance of the corporation. These bonuses were usually in the range of 3-5 months of base salary; the recent average was 4. 2 months. About this plan, one corporate manager said, “ This form of payment is typical in the Chinese culture. It is used by all companies in Taiwan. Most give a bonus of 1 or 2 months of total compensation, which is roughly equivalent to what we do, although we base the payments on base salary. ” 2.

All people under section chief level (one level below a functional manager in a division) were included in a performance bonus program. Under this

program, their bonus was calculated based both on their position and the percentage of their performance targets reached. Staff and personnel in service departments were given either the same amount of bonus as those in direct departments or the average amount of bonuses given to direct departments. The purpose of this bonus program was to increase employee morale and efficiency. The bonuses awarded averaged approximately 20-26% of the employees' salaries. 3. All employees at section chief level and above were evaluated annually.

A portion of these employees' salaries were reserved to create Management's Special Bonus Fund which was used to award a special bonus immediately after the close of the year. The special bonus was calculated based both on the individual's performance and on the performance of the employee's corporation. Different bonus potentials were set for different levels of management, such as section chief, plant manager, and division manager. 4. FPG also provided incentive awards for employees, such as R&D staff, who generated good ideas that increased company value. In all cases, top management decided subjectively the sizes of the awards and the bases on which to give the awards. The factors considered in making the performance evaluations and their relative weightings varied across roles and divisions.

Among the performance-related factors considered in evaluating division managers were profit as compared to plan, production efficiency, quality, new product development, production quantity, production cost, and safety and environmental factors. Evaluators often also considered the person's ability and potential for future, years in the company, teamwork,

cooperation, and the situation faced. The evaluations were done subjectively because, as one manager explained, “ Some factors are not easy to evaluate because it’s hard to separate the controllable factors form the uncontrollable. It’s certainly not easy to put all these items in a formula. EXHIBIT 3 Formosa Plastics Group Operational Performance Reports | 1. Financial Reports | | | F | | | U | | | N | | | C | To show the complete operational conditions of a company and its divisions, including income statements, balance sheets, inventory | | T | reports, and labor costs reports. | I | | | O | | | N | | | C | Income Statement (corporate) | | O | Income Statements (by divisions) | | N | Balance Sheets (corporate and by divisions) | | T | Inventory Reports | E | Raw Material Report | | N | Supplies Report | | T | Work-in-Progress Report | | | Finished Goods Report | | | Consigned-out Materials Report | | | Labor Costs Reports | | | Labor Costs Analysis Report | | | Cooperative Administrative Expenses Report | | | Comparative Selling Expenses Report | | | Comparative Cash Flow Report | | II. Income Statement/Cash Report by Plants | | F | | | U | | | N | Analyze the contents of variations between the actual and target incomes of each Profit Center. | | C | Reports on the rate if achievement on efficiency and on the operational irregularities. | T | | | I | | | O | | | N | | | C | | | O | Income Statement by plants | | N | Unit Cost Comparison Report | | T | Fixed Manufacturing Cost Comparison Report | | E | Selling/Admin/Fin.

Expense Allocation Report | | N | Financial Expenses Calculation Report | | T | | | | III. Income Statements and Efficiency Variation Reports by Plant | | F | | | U | | | | N | Analyze the contents of variations between the actual and target incomes of each Profit Center. | | C | Reports on the rate of achievement on

efficiency and on the operational irregularities. | T | | | I | | | O | | | N | | | C | | | O | Sum-up reports on income variations. | | N | | | T | Analytical reports on income variations. | | E | | | N | Sum-up on efficiency evaluation of plants. | T | | | IV. Irregularities Report | | F | | | U | Listing of the efficiency items which have been achieved for three consecutive months for revision of targets. | | N | Listing of the efficiency items which exceed the control standards for the analysts of the President’s Office and Division | | C | Manager’s Offices to investigate and follow-up. | | T | Listing of the cost items which exceed the control standards for the departments concerned to investigate and improve. | I | | | O | | | N | | | C | | | O | | | N | Efficiency Achievement Report | | T | Efficiency Loss Report | | E | Cost Variations Report | | N | | | T | | The total bonus amounts paid did not vary much over time. A corporate manger explained that: These [total] amounts are put in the budgets at a fixed number and are not varied by the actual profit for the year. If the corporation earns a big profit, corporate managers take a portion of the bonus and reserve it for another year. If this year is no good and next year is no good, then maybe we will consider a lower bonus. It makes the situation more steady. Performance Standards and Evaluations One-year profit, revenue, and cost targets were set during a bottom-up planning process that started in September and ended in December. 1] The process began with division-level functional managers producing a sales plan and then a production plan. Labor cost parameters were sent to the divisions from corporate, and division managers were involved early in the planning process to make some key planning assumptions (e. g. , selling price, key raw material costs). Generally every section in every plant was expected to reduce its costs every year (continuous improvement), which was not unreasonable because

each was supported with improvement-project monies. The functional plans were reviewed and approved by division managers, the corporate accounting department, and corporate management.

Corporate managers wanted the division targets to have an 80-90% probability of achievement. The divisions' first plan submission was rarely accepted because, as one corporate manager expressed it, " While the division managers understand their businesses better than does top management, they have a tendency to be very conservative about the figures. " Thus in the review process, top management generally asked the division managers to raise their profit targets. (Sometimes, however, typically in recessionary periods, they asked for the targets to be lowered.) Often the division managers had to revise their plans several times before top management approved them.

However, even at the end of the discussions, the division managers did not always share corporate managers' perceptions of target achievability; for example, in 1991 one manager said he believed his chances of achieving his profit target were only 30-40%; he said, " The president squeezed very hard this year. " At the corporate level, the annual plans had proved to be quite accurate, with usually less than a 3% deviation between budgeting and actual expenses. If necessary, the performance targets could be revised during the year, monthly at the plant level and semi-annually at division level. Annually, the corporate accounting department performed a detailed analysis of each division's performance to understand where the profit came from and to know if the profit produced was reasonable given the circumstances faced.

Among the items normally factored out as uncontrollable: • prices of products sold (in commodity product divisions only). In some divisions, the market price was treated as controllable because the division managers set their products' prices; • raw material prices; • effects of raw material (e. g. , oil, power) supply problems; • major problems deemed to be outside the manager's control (e. g. , a fire caused by lightning); expenditures approved by top management after the plan was finalized. A corporate manager explained, " If it's approved, we don't care about the financial problems it causes to the budget. We want to encourage new ideas. "

Because selling prices and raw material prices were considered uncontrollable in commodity product divisions, managers of these divisions were evaluated basically on quantity of product sold, product quality, consumption of materials, and production efficiency. This is well illustrated by describing the situation in 1991 in the Polyolefin Division. 1991 at the Polyolefin Division The Polyolefin Division produced polyethylene, a commodity petrochemical used in a broad range of products, including plastic packing materials (e. g. , shopping bags, bottles), rope and fishing nets, and toys and athletic equipment. Because Taiwan's polyethylene import duty of 2. % was the lowest in the world, the division had to compete, primarily on the basis of price, with competitors from all over the world and especially Korea. Division sales were not growing because the high density polyethylene output of the division was limited due to a shortage of ethylene supply from CPC, the only local ethylene supplier. Ethylene was the only raw material used in polyethylene production, and it was the major cost item for the division, accounting for 60-65% of the total production cost. (Direct labor

accounted for less than 3% of total production costs). There was only one local ethylene supplier, CPC, a government corporation, and importing was difficult and expensive because thylene had to be stored at high pressure and at -104 degrees Celsius. Freight for importing ethylene to Taiwan was approximately US$60-80 per ton from Japan or Korea, and approximately US$120 per ton from the U. S. The Taiwanese government set ethylene prices at the average of the U. S. and European prices. In 1991, FPG was paying ethylene prices that averaged 4-5% higher than U. S. prices. Ethylene caused the Polyolefin Division supply problems because a severe shortage existed in Taiwan. FPG had been trying for many years to secure permission to build its own ethylene plant, but the government had not given the permission because of worries about over-capacity.

CPC (the government firm) was permitted to build another ethylene plant, but construction had been delayed because of environmental concerns, and FPG managers knew that a supply shortage would still exist even when this plant was completed. Ethylene also caused financial planning problems because the Taiwanese ethylene prices fluctuated significantly, as is shown in Exhibits 4 and 5. Furthermore, the ethylene and polyethylene prices did not fluctuate together; both prices varied with market supply conditions. Lags of varying lengths existed before changes in ethylene prices were reflected in polyethylene prices. Thus division profits also fluctuated significantly. EXHIBIT 4 Formosa Plastics Group Sampling of | | Ethylene Prices in Taiwan | | Year | | Month | | Price per ton ($US) | | 1990 | | November | | 781* | | | | July | | 494 | | | | January | | 501 | | 1989 | | July | | 678 | | | | January | | 701 | | 1988 | | July | | 612 | | | | January | | 436 | |*Gulf war started.

| EXHIBIT 5 Formosa Plastics Group | | 1991 Ethylene Prices in Taiwan | | | Month | | Price per ton (US$) | | | January | | 695 | | | February | | 658 | | | March | | 589 | | | April | | 508 | | | May | | 462 | | | June | | 443 | | | July | | 415 | | | August | | 422 | | | September | | 427 | | | October | | 462 | Mr. Hsiao Chi-Hsiung, the division general manager, described his thinking in setting the plan for 1991: The Gulf War had just started when we began to prepare our plan, and we knew that would have a major effect on our business because ethylene is a petro chemical.

We had to assess how long the war would last and what it would do to our selling prices and our ethylene costs. We thought the Gulf War would not last very long, so we forecast that the average ethylene price would be around US$500 for the year. We concluded that our customers would worry about supply, so we forecast a higher selling price for January and then assumed a decrease. Starting this year, material from our Korean competitor should be very competitive. I did the work to forecast our selling prices and ethylene costs. We had to revise our production and sales plan several times according to the current market situation before we reported it to our top management for approval. Mr.

Hsiao knew, however, that he would also be evaluated in terms of each of the items on a list of controllable factors, not solely on achievement of the profit plan. He recalled that, “ Sometimes we earn a nice profit, but it’s not only from our endeavor. It’s mainly influenced by the market prices. ” Mr. Hsiao could not explain exactly the bases on which his performance rating would be based, but he guessed they would be similar to the controllable factor list which he used to evaluate his plant manager: • production

efficiency (output/input); • quality (proportion of output meeting customer specification); • unit consumption of important elements of cost (e. g. , ethylene, solvents, labor[2]); • cost of maintenance; leadership (including union relations, responses to employee suggestions, management of the monthly plant employee meeting, maintenance of hard work). When pressed as to how these factors were weighted in relative importance, Mr. Hsiao said the first factor would be weighted about 40%, the second about 30%, and the other three about 30% in total. But he emphasized, “ The weightings are not made very clear to anybody. ” It was clear to Mr. Hsaio, however, that achievement of his division’s profit plan was certainly not the only factor on which he was evaluated. ————————– [1] FPG managers did not use the word budget ! u[2]?? [pic]AA ? ? … † ‡ ± ? I i ¤AA? c KhA. h†JhA. h†J5? CJaJhA. h†J5? CJOJQJaJ hp5ACJaJ h†JCJaJhOMH5? CJaJ hOMHCJaJ h” uCJaJhTX