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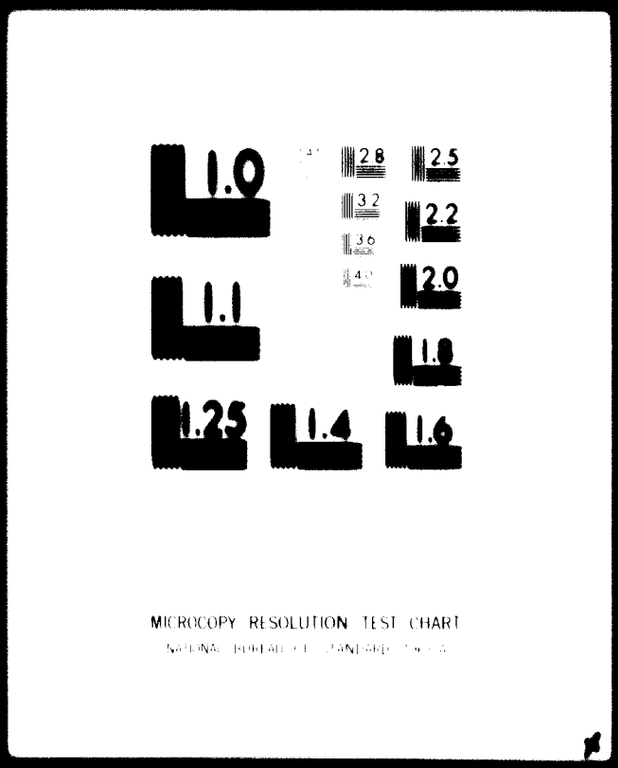

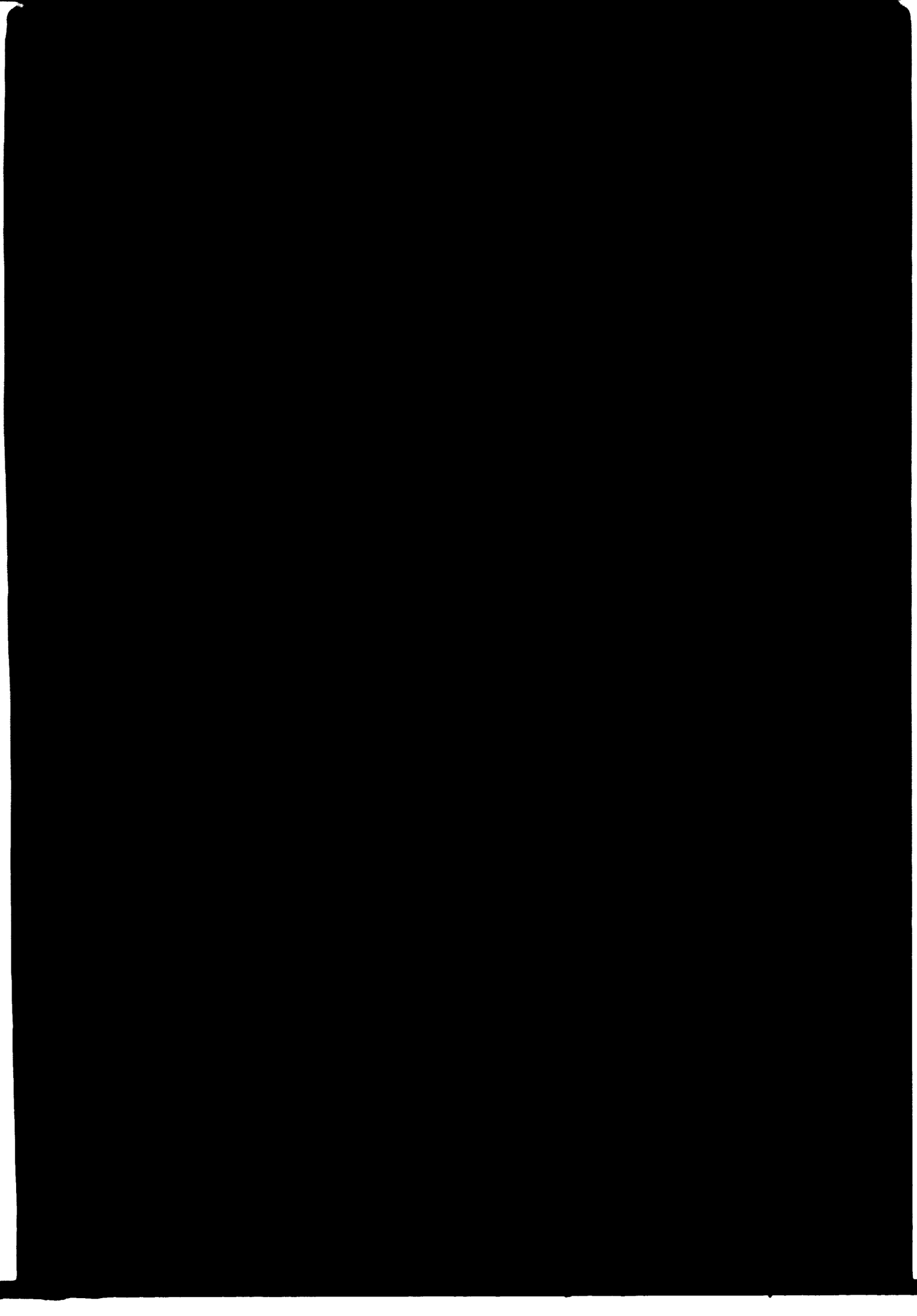

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UNIDO CONTRACT No. 78/42 1978

FINAL REPORT:

On the provision of services for the reorganization and improvement of management systems in existing and newly designed plants in Poland

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Summary

During the autumn of 1970, three consultants from Maynard-Europe delivered 8 man-months of service in Poland. The three consultants were attached to the Polish Management Development Centre (PMDC). Their work was a part of a larger programme aiming at improving management systems in Polish industry. The subjects covered by the three Maynard consultants were: Marketing Management, Corporate Planning and Management Information Systems. Knowledge and experience of these three areas of Management were dessiminated through a number of seminars and direct consulting work. The latter concentrated on the pharmaceutical industry (POLFA).

The seminars covered closely to one hundred officials from Polish industry, industrial associations and governmental bodies associated with industrial development.

The consulting work at POLFA resulted in a large number of recommendations on how to further improve administrative and operational conditions. In the field of Marketing Management emphasis was on increasing exports in order to raise foreign exchange earnings. In the field of Corporate Planning the weight was on long and short-range methods to increase the planning coordination between POLFA headquarters and its many manufacturing units. In the field of Management Information Systems it was recommended to revise existing plans for the installation of a comprehensive computerized system, and to aim at the application of a uniform coding system Advanced techniques to improve financial planning and control in POLFA were also suggested.

The Maynard team operated in a very receptive industrial climate.

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1. The History of the Project

1.1 Introduction

In December 1969 the UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION (UNIDO) invited proposals for the provision of services for assistance to the Government of Poland.

The Inquiry Specification attached to the invitation indicated that UNIDO under its Special Industrial Services Programme of Technical Assistance had "undertaken to assist the Government of Poland in the reorganization and the improvement of management systems in the existing and newly designed plants".

The Inquiry Specification also said that the services of consulting firms would be required to provide two teams of experts:

Team 1.	1.	Management Consulting Expert (Team Leader)	4 months
	2.	Value Analysis Expert	2 months
	3.	Production Scheduling Expert (EDP)	3 months
Team 2.	1.	Management Information Systems Expert (Team Leader)	3 months
	2.	Corporate Planning Expert	3 months
	3.	Marketing Expert	1 month

Maynard-Europe submitted a proposal for supplying Team No. 2.

Early July 1970 UNIDO awarded Maynard the contract for this team. The contract for supplying Team No. 1 was awarded to AB Företagsadministration, Stockholm, Sweden.

1.2 Background

The general background for the UNIDO project was described in the following way:

> "Industrial development in Poland has reached a point where its future expansion depends mainly on the overall improvement of management skills and other related factors. Emphasis is placed on a coordinated effort to incorporate the advanced management techniques. With this in view, the Polish Management Development Centre has been conducting various programmes in the industrial systems. At present, Poland experiences shortage of qualified specialists in the above mentioned fields and therefore needs service of top level consultants and experts in industrial management and organization of industrial production as well as fellowships for managerial personnel."

The Polish Management Development Center (PMDC) was established in 1980 as a United Nations Special Fund Project. The executing agency was the International Labour Office (ILO).

1.3 Original Project Specification

The Inquiry Specification gave the following objective and scope for the project:

> "The experts comprising the two teams shall give consultation to selected industrial enterprises in regard to the introduction of modern management systems, including system design and analysis, value analysis, multi-level decision systems and some operations research techniques. The problems of teachnig techniques will also be included. The teams will be assigned to the Polish Management Development Centre (PMDC) and shall assist the Centre in conducting training programmes for executive personnel in the above-mentioned fields."

Job description for the work of the six experts involved were attached to the Inquiry Specification for guidance purposes.

The Job Description specified two main areas of duties for the experts:

Lecturing, and
Consulting

Lectures and Seminars were to be given to staff of the PMDC and to managers and executives from industrial enterprises, associations and ministries.

Consulting Services were to be provided to the PMDC and through PMDC to the electronic industry.

1.4 Project Specifications in the Contract

The contract for the assignment was received from UNIDO in the early part of July 1970. The duties of the experts listed in the original job descriptions were repeated in § 1.02 with minor changes. In § 1.03 it was added that although the targets set forth in § 1.02 were intended to be reached through a co-ordinated team effort, the experts should individually be responsible for certain tasks.

While the original inquiry specification and the job description just talked about assistance to industrial enterprises in general and specified one sector only (the electronic industry), the contract talked about assistance to four specific industrial associations. (Association of Dyes and Varnishes Industry (FARLY), Association of Pharmaceutical Industry (POLFA), Association of Cable and Electrotechnic Equipment Industry (UNIKABEL) and Association of Automation and Measuring Instruments (MERA)).

1.5 Start of Project

On September 21, 1970 the Maynard team consisting of Nilas Nilsson (team leader, Management Information Systems), Jan Askholt (Corporate Planning), and John Croston (Marketing) arrived in Warsaw.

During the beginning of the assignment several discussions took place

on how to meet the actual needs of PMDC and the Polish industry the best within the limited time available. It was agreed to to rearrange - within the frame of the contracted 35 man-weeks - the apportionment of time between the three subject matters , in the way specified in the Programme Schedule. Management Information Systems was allotted 11 man-weeks, Marketing and Corporate Planning 12 man-weeks each.

The programme schedule agreed to is reproduced in Appendix A.
The Polish counterpart organization is described in Appendix B.

2. General Background

2.1 Polish Economy

The preliminaries for the Polish 1971-1975 Five Year Plan have been characterized by extensive official discussions about the convenience of a further decentralization of administrative and economic responsibilities in industry. In November 1970, the official party organ Trybuna Ludu presented a series of articles outlining a number of planned changes in the economic system and in the organization of Foreign Trade.

It was considered necessary to establish a closer link between the industrial associations and the foreign trade activities. Such steps would reduce the existing separation between Polish industry and the customers in its export markets and improve co-ordination in supplying their needs.

In addition, the methods of accountability and of measuring results within the framework of the global targets of each industry are to be modified to allow for more effective, flexible and direct control of the balance between hard currency exports and the import of raw materials, machinery etc.

In the previous five years, experiments had been carried out in which some of the above changes were implemented in individual industries. The present steps aim at an extension of these changes to more industries, and at the establishment of a formal structure for implementation.

2.2 Polish Industry (organization)

Industrial associations in Poland are similar to big industrial corporations or trusts.

In the industries mentioned above the direct organizational responsibilities for foreign trade activities are being transferred to the individual industrial ministries (and in some cases also to

associations) with effect from 1st January 1971. The Ministry of Foreign Trade still retains the over-all responsibility for maintaining balance in this field by coordinating the industrial activities.

A specific directive from the Government, announced at a Plenary Session of the KCPZPR - the Central Party Committee, - was issued, outlining the new organization. The internal organization of each industry concerned is currently being adjusted accordingly. This will involve some movement of personnel within the export function from the Ministry of Foreign Trade to the industrial organizations.

This policy also means that a revised financial structure has to be established with objectives of better control of operations, and emphasis on exports. In general, each industry should be self-financing. Special cases of export financing would be considered by the Bank Handlowy (Commercial Bank) as advised by MHZ (Ministry of Foreign Trade).

Foreign trade earning targets for each industry are to be set, but if the targets are exceeded, a proportion of the excess is to be made available for the financing of imports. The balance is to be retained with the Treasury. This is of particular significance for industries importing machinery from hard currency areas.

The way industries in Poland are organized can best be illustrated through an example. As such the pharmaceutical industry has been chosen and the Organization and Reporting Structure of POLFA is illustrated in Appendix C.

2.3 PMDC

As mentioned above the PMDC originated as a Special Fund Project with ILO as the executing agency back in 1960. Now the Centre is operating as an independant institution. The main fields of activities were from the beginning foremen training, office management and other training courses. Today these activities have developed further into the fields of advanced management, computer techniques, consultancy training, operations research, network analysis etc.

3. Seminars

The general objective of the expert's lecturing was to give a review of the "state of the art" and examples of the application of modern and advanced management techniques in his specialist field.

In accordance with arrangements made with PPDC two types of lecturing were scheduled:

1. General Seminars

   The participants in these seminars were managers and experts from various industrial and commercial groups and organisations in Poland.

2. Experts Panel Seminars

   The participants in these seminars were experts from PPDC and invited experts from various industrial and commercial groups and organisations in Poland.

The team was further asked to give a few lectures on the subjects covered by the assignment to other qualified audiences.

3.1 Marketing

Three identical one-week seminars in Marketing were held at the end of October and the beginning of November. The programme is reproduced in Appendix D.

As can be seen from the programme, an extensive review was made of the modern concept of Marketing, covering many aspects of the subject and with special reference to Polish conditions.

During the seminars practical examples of marketing problems were analysed as proposed by individual participants. Specific examples

were drawn from consumable goods, durable goods, and major capital equipment. Methods of producing a simple marketing model to explain the structure of the situation were derived, using ranking methods, and its further application was not dependent upon the immediate availability of computer facilities.

Each participant was provided with summaries of the lectures. In all, a compendium of over 17 papers, including detailed examples from the Management Information System area as applied to marketing aspects.

Special lectures were arranged to cover "Sources of Information of Foreign Trade Available in Poland", by Director Josef Szamuki from MHZ (Ministry of Foreign Trade) and other lectures describing "Recent Practical Experience in Foreign Trade Enterprises" by Mr. Aleksander Wrzesiński from MHZ (Ministry of Foreign Trade).

4.4 Corporate Planning - Management Information Systems

In accordance with agreement made with UNIDO, and as stated in the mid-term report, the originally planned general seminars in Corporate Planning and in Management Information Systems were concentrated into one general seminar containing the two subjects. The programme is reproduced in Appendix E.

The role of the two lecturing experts in the combined seminar was divided. The Corporate Planning expert mainly covered the conceptual aspects of the strategies and tactics of top management planning and methods of multilevel decision-making. The Management Information System expert gave a number of practical examples from these fields as applied within the framework of MIS - with special emphasis given to Corporate Financial Planning techniques and (together with the Marketing expert) to Marketing Planning techniques.

A great number of overhead projection figures were shown and copies of these were later distributed to participants. Because the PMDC had planned the Seminars rather early in the project, it was not possible to develop cases from Polish industries for educational use in the elaborations at the Seminars. However, Polish participants explained their approach to MIS and Corporate Planning and this was then discussed in the light of the material brought by the team. An illustration of the Polish contributions, a description of "MIS Development in POLFA" is given in Appendix I. An illustration of the team's contribution is given in Appendix J "Major Steps in the Preparation for a MIS".

3.3 Expert Panel Seminars

Again a concentration of the seminar activities was agreed with PMDC resulting in three one-day seminars in the form of expert panels held at the end of the assignment. One day was assigned to each of the expert fields of activity. Details of the seminar objective and schedule are given in Appendix F.

3.4 Concluding Remarks

With the expert panel seminar a frenework for the lecturing part of the assignment was achieved and the three days of expert panel discussions formed a summing up of the major problem areas and the modern management techniques available for their solution.

4. Consulting Work in Polfa

4.1 Introduction to POLFA

The Association of Pharmaceutical Industry (POLFA) controls 12 manufacturing plants, 2 pilot plants, 1 experiemental plant, 2 research institutes (Institute of Antibiotics and Pharmaceutical Institute) and 11 research and development units attached to the manufacturing plants.

The Polish ministerial - industrial organization and reporting structure as applied to POLFA, was referred to in 2.2 and Appendix C.

According to the most recent figures (1969), POLFA has some 15,000 employees with the following category distribution:

- Manual workers 76%
- Engineering and technical workers 15%
- Office Staff 6%
- Others 3%

Imports of raw materials for drugs for 1969 were about equally divided between socialist and non-socialist countries. The division between major product groups was:

- Antibiotics 26%
- Steroidal hormones 23%
- Vitamins 8%
- Psychotropic drugs 3%

The major product groups of POLFA represented 1969 the following percentages of total production:

- Antibitotics 30%
- Vitamins 16%
- Product of animal origin and hormones 10%

About 40% of the total production 1969 was exported, and about 80% of the exports went to socialist countries.

The major exported product groups were 1969:

- Antibiotics 24%
- Hormones 28%
- Psychotropic drugs 10%

The distribution of POLFA products on the home market is performed by a special organization called CEFARM falling under the heading of the Ministry of Health. The export is carried out by another organization called CIECH falling under the heading of the Ministry of Foreign Trade.

4.2 Marketing

4.2.1 Objectives

The objectives for the consulting work in the field of marketing at POLFA were laid down at the start of the assignment and can be summarized in the following:

study the market structure with emphasis on the export market,
develop methods to detect opportunities for growth,
examine the organizational aspects of marketing,
evaluate the utilization of external and internal sources of market information.

4.2.2 Approach and Findings

The Marketing counterpart, Mr. Myszewski, PMDC, had drawn up a general framework of the activities of Marketing which related the analysis of marketing activities to the specific situation in Poland. It was discussed in detail, and after some modification the final form was agreed as a simplified general model of Marketing

and used as a conceptual framework in the consulting work as well as in the seminars.

POLFA already has a system by which information on the world market conditions of pharmeceutical products is recorded and analyzed.

The system was tested in order to determine:

1. the speed at which data could be obtained,
2. the amount of information it would provide upon a number of subjects, including the most likely new developments in a particular field.

This method of classification was found to be effective, and the informations extracted from the file reasonable and up to date. Although manually operated the classification could easily be used in a future computerized data recording system.

The usual characteristics of Pareto distribution were found when an ABC analysis was carried out on the products. During one examination of the original data used for this analysis several comments were made as to the way in which some products were specific to only a few markets, and that perhaps this could invalidate the conclusions of the analysis.

The data therefore were rearranged in matrix form to show the sales of individual products to individual countries, including only countries representing 80% of foreign trade, and products representing 80% of the total manufacture. The gaps in the matrix - which was substantially triangular when the countries were arranged horizontally in decreasing order of total sales - indicated further export opportunities.

Further development of the method showed that by grouping products and types of country, a rapid and effective model revealing opportunities for further growth and utilization of existing resoruces could

be gained. Alternative forms of the same diagram were also used to explore potential markets for which either new products or new marketing methods and techniques would be required.

An analysis was made of the rate of growth of each group of products to determine any obvious changes in their relative importance. The comparison of sales to socialist and non-socialist countries indicated fundamentally different patterns. Possible opportunities for growth of exports were indicated.

The exports to a major developing country were analyzed in order to illustrate the way in which the market position of POLFA in an individual country could be assessed. A separate numerical example was developed. The model used took into account the present share of all world exports of pharmaceutical products, the general position of trade between the country and Poland, and the level of development of the country expressed in terms of total expenditure on such products, and the income per capita.

A satisfactory agreement between the actual and theoretical exports was obtained, and the method of analysis was written up in Polish. It was then applied to a second country with satisfactory results.

For the demonstration of forecasting techniques in POLFA a single computerized (ICL software) model was used comprising a linear trend fitted by standard exponential smoothing techniques to the past data, comprising a 12 point seasonal set of coefficients. The model was modified so that all errors were given equal weight, irrespective of the seasonal coefficient. A statistical test was applied to the errors using the Trigg tracking signal to detect bias in the forecasts.

Methods of estimating possible sales levels of new drugs were examined and a simple manual method for estimating the total sales to an individual country was specified.

During the consultations with POLFA, considerable use was made of graphical representations of the market situation in order to obtain

the relationships between the various factors, and to enable new approaches to be synthesized. Some of these were:

1. Use of semi-logaritmic three cycle graph paper for comparison of the rates of growth of sales of individual groups with each other and with the total production.

2. Two simple block diagrams were prepared relating the sales to socialist and non-socialist countries and the proportion of finished products and raw material.

3. Ranking methods to compare the relative importance of products in socialist and non-socialist markets.

These methods provide indications of considerable opportunities if the relationship between the most successful products marketed in both areas is examined in detail to determine opportunities in long term forecast.

4.2.3 Recommendations

Based on the findings, discussions were held regarding actions required to improve the present situation. Below are listed some of the recommendations developed:

Marketing Management should be developed as a separate function reporting at Director level.

A Marketing Research Department should be set up with responsibility for both market research, forecasting, investigation of methods of marketing, and reporting of opportunities of export trade.

The Marketing Research Department should be responsible to a Sales Director or a similar executive in charge of corporate policies and development.

Information obtained from journals, the Antibiotics Institute, CEFARM, CIECH, and other sources should be aggregated at the Marketing Research Department. The information thus developed should be routinely disseminated throughout the organization.

A report showing changes in demand and the current rates of sales should be prepared at intervals of not more than every two months. This report should be circulated to all concerned parts of the organization.

Mathematical methods should be applied widely to provide the basis for forecasting and control.

The co-ordination of marketing and production should be strengthened, in particular regarding the introduction of new products.

4.3 Corporate Planning

4.3.1 Objectives

Soon after the start of the assignment it became clear that it would not be feasible to aim at the original objectives for this part of the consulting work. The main factor being the limited calendar- and consultant time available.

The objectives were consequently modified to:

> demonstrate and discuss the many elements and activities inherent in the process of corporate planning in general as well as with particular emphasis on the conditions in POLFA.

4.3.2 Approach and Findings

The consulting work in POLFA started with a number of informal lectures and discussions.

The elements and activities of corporate planning were illustrated through a conceptual planning model. This model was described in the form of a comprehensive series of flow-charts and the areas covered are shown in Appendix G. : "A Systems Framework for the Development of a Corporate Plan".

The model comprises the following system flow-charts:

31.1 A Calculation of Potential Market
31.1 B Calculation of Sales Forecasts
31.1 C Calculation of Sales Targets
31.2 A Establishment of Advantageous Marketing Methods
31.2 B Establishment of Marketing Plan
31.2 C Division of Marketing Plan and Budgeting
31.3 A Collection of Data for Control of Order Level
31.3 B Preparation of Proposals for Corrective Actions
31.3 C Alternative Planning and Revision of Plans

The meetings highlighted a number of problems regarding short-range as well as long-range planning, e.g.:

One Year Plan:

1. High amount of buffer inventory,
2. Long factory cycle time,
3. High inventory of final products,
4. Production time per ton varies widely for some products in synthetic department.

Five Year Plan:

1. Targets for the Plan are static, in spite of a short life cycle for important products,
2. Difficulties in establishing priorities for research and development,
3. Difficulties in defining objectives such as profitability, security, social etc.

As causes for these problems, the following suggestions were mentioned:

a) no strategic planning for the production
b) no market investigation
c) no sensitivity analysis of the costs for alternative production plans for the same sales target
d) insufficient quality control
e) average life time for products are approximately four years
f) economic contribution (in dollars, rubles and zlotys) for an individual product is not known.

The problems and activities of corporate planning were further elaborated through discussions on subjects like:

1. Information needed for gross production planning in the short-range. Emphasis was placed on specifying needs for each product in discrete time periods of short duration, which is the forecast-order output of an organized marketing system,

2. Priority rules for loading factory capacity, including making allowance for the effects of uncertainty,

3. The application of direct costing techniques to determination of cost contributions of subproducts, and products,

4. Sensitivity cost analysis to analyze alternative production batch sizes and alternative inventories of final products,

5. Simulation methods for the strategic plan to meet the difficulties of a static planning system in spite of rapidly changing of objectives and targets,

6. The organization problems in POLFA which makes it difficult to analyze alternative plans in a centralized planning system.

4.3.3 Recommendations

During the many discussions, a number of suggestions developed on how to strengthen the planning function within POLFA. Recommendations of more general nature were e.g.:

> Give increased attention to establishing policies and long-range targets for the pharmaceutical industry as a whole, and for each manufacturing unit.
>
> The manufacturing units should interact more closely with POLFA headquarters regarding their detailed knowledge of actual operating conditions.

Recommendations of a more specific nature were e.g.:

> Production targets need to be adjusted in order to reflect conditions which arise.
>
> Production batch sizes need to be flexible.
>
> Methods for reducing uncertainty of production times need full investigation.
>
> Direct cost methods for establishing the currency contributions of products and sub-products are required.

4.4 Management Information Systems

4.4.1 Objectives

After discussions with the PMDC and POLFA it was agreed that the objectives for this part of the assignment should be:

1. To make a review of the Tarchomin EDP pilot system together with Corporate Planning expert,
2. To make a review of the financial reporting system and the costing system within POLFA.

The purpose was to find out if the existing systems and the possible plans for their future development would tie in with the expected information requirement inherent in a future development and application of modern management systems and techniques in the areas of Marketing, Corporate Planning and Management Information Systems.

4.4.2 Approach and Findings

The consulting work in POLFA concentrated on the philosophy behind the approach and the contents of the information system rather than on pure computer techniques.

A study was made of the major features and the information contents of the EDP pilot system under development in the Tarchomin Factory. The foundation for this development was laid by a number of ILO assignments in the years 1963-1965. The six master files in the Tarchomin pilot system are listed in Appendix H which also contain the data processing sub-systems inherent in the pilot. The system is still under development and implementation and it is estimated that the full completion of the "analytical" phase will take another 2-3 years.

The plans appear to be basically sound but far too general in specifying the details of the future development to allow for an opinion as regards their specific characteristics and adequateness to cover future management information needs.

The 16 digit product code applied in the EDP pilot system at Tarchomin is different from the standard product code developed for the pharmaceutical industry in Poland. The first seven digits of the latter code forms the so called "SWW code" which is a standard product code covering all industrial activities in Poland. The SWW seven digit code group is immediately followed by a second code group of six digits, forming the so called "SWA code" which has been specially developed for the pharmaceutical industry.

The 13 digit SWW/SWA code is not satisfactorily constructed and its capacity will not be capable of coping with the needs for future extensions. This short coming should receive special attention in a future review of the MIS system in POLFA.

The fact that the Tarchomin pilot system comprises a product code which is different from the Polish standard industry code may be of minor importance as long as it is kept entirely within the pilot files. The planned transmission of product data via a communication network from the computer files of one unit to another within POLFA will, however, be seriously hampered by this difference in product codes.

A review of the financial reporting system in POLFA was made by studying the general chart of accounts of the Polish industry and especially the chart of accounts for the chemical industry. The study was then extended to the financial reports between the manufacturing units and POLFA Headquarters.

The chart of accounts was very systematically and well developed with detailed instructions for the accounting of all possible operating and financial transactions.

Equally systematic and well developed is the current financial reporting system based on quarterly financial statements (Balance Sheet and Profit and Loss) from each unit in POLFA, backed up by operating statements making detailed comparisons between planned and actual results, calculated on the basis of a costing system which also seems to be very well elaborated with detailed instructions.

However, the study gave the impression that the prime purpose of the reporting system is the control aspect, which seems to have been given too detailed emphasis at the expense of the planning and decision aspects.

The costing system in POLFA is very systematically and well developed and detailed instructions are issued for the calculation of an accounting for production costs. The method of full absorption costing is

generally and consequently applied - but no examples were given of the marginal costing approach.

In order to establish in practice what facilities the POLFA costing system offered for the application of a marginal cost analysis a number of basic cost elements were extracted from the cost accounting reports of all manufacturing units in POLFA for the years 1967-1969. It was found that elements in the cost sheets could be directly used to form the basis for a marginal costing or breakeven analysis (e.g. per manufacturing unit, per product group, per product).

4.4.3 Recommendations

The consulting activities generated a number of discussions on how to speed up the POLFA MIS installation and how to improve its usefulness as a tool for decision making.

Recommendations along the following lines were discussed:

POLFA should considerably broaden its systems development activities in the sense that all manufacturing units are instructed to organize themselves for the computerization of certain basic procedures.

The experience gained by the Terchomin pilot should be utilized on a much broader basis in order to shorten the time cycle in new installations.

POLFA should settle for one product code to be applied in all its systems. It appears natural to chose the SMW/SWA industry standard code as a basis - provided it can be modified to allow for future product expansion .

POLFA should develop standards for the coding of inputs - a sort of "meta code" - which would facilitate the development of a common data bank structure and future information storage and retrieval procedures.

A systematic application of financial planning and control techniques such as:

- Financial and Operating Ratio Analysis
- Interfirm Comparisons
- Financial Planning Models
- Flexible Budget System
- Responsibility Accounting System
- Marginal Costing Analysis

would considerably improve the present financial control system.

The calculation and comparison of financial and operating ratios could also form the basis for developing financial planning models of great value for the corporate planning and control activities within the POLFA Group.

A review of the existing costing system within POLFA should be made in order to meet the new and more profitability oriented policies for the marketing of export products.

As soon as the contemplated changes in the organizational structure of POLFA have been clearly established the basic operating systems, the organizational relationships and information flows should be surveyed. Its objectives should be to prepare a detailed 5-10 year plan for the development of a computerbased "inter-unit" MIS between POLFA Headquarters and its manufacturing and distribution units which are geographically dispersed within Poland.

Outside assistance should be sought for the above survey as well as for the introduction of the suggested financial planning and control techniques.

5. Other Consulting Activities

As a result of the seminars and the publicity given to the project by PMDC, a number of officials approached the Maynard team to discuss problems from their own organizations. Some examples of this consulting is listed below.

5.1 The Shipbuilding Industry

Two members of the industry wanted to discuss the organization of Market Research. A draft proposal of the planned activities was presented and discussed, and a final solution was agreed to.

In addition, charts of the information flow and the role played by Market Research were prepared in order to show its relationship to the decision making structure of the industry.

5.2 The Automation and Measuring Instruments Industry (MERA)

Consultations were held with representatives from ERA and a representative from NETCONEK to discuss further development and organization of export marketing.

The computer programme for exponential smoothing was applied to a series of data on export, and showed clear turning points.

The methods of analyzing such data were discussed with members of PMDC who will repeat the analysis for the further service supplied, and report on their characteristics.

5.3 The Automobile Industry

The majority of the POLMOT consultation was with respect to marketing organization, and the preparation of new organization charts and specifications of responsibilities.

Each activity was specified, and the departments in which it should occur were discussed. A number of reviews of the total activities

of the organization were made and a first proposal of an organization chart was presented.

The chart was discussed in detail, and two weeks later, a further draft was proposed. Comments were made on this draft and the implications discussed in very great detail. It was suggested that additional charts were needed in order to specify functional relationships as well as the departmental and line relationships.

Further analysis of the position of Market Information and of Market Research in the organization appeared necessary to ensure that both the long term and short term needs were met.

It was recommended that the final chart and job descriptions should be checked against the list of activities to ensure that all have been fully specified, and that no overlap occurred.

6. Acknowledgements

The assignment carried out in Poland was an extremely interesting and challenging job. The PMDC provided excellent working conditions and the team is most indebited to Dr. Janusz Gościński, the PMDC Deputy Director, and his staff for the support received and the way in which the seminars and the consulting activities were organized.

The team is also greatly indebted to Mrs. Tarschalska, Director General of POLFA, and the POLFA staff it became associated with during the consulting work. The good cooperation and the open-mindedness of everybody the team got in contact with greatly facilitated the work. The same productive situation was experinced in all the other associations and organizations the team worked with.

The climate for further improvement of management systems and productivity in Polish industries seem very promising.

The friendliness, kindness and hospitality of the Polish people in general contributed to make the team's stay in Warsaw a very pleasant experience.

APPENDICES

Appendix A.

HHH Co	Description: UNIDO/PMDC PROGRAMME SCHEDULE	PMDC/COBRIC; Date 70 10 16/NN

SUBJECT	MONTH	SEP →			OCT →				NOV →				DEC →		COMMENTS
	WEEK ENDING	19/9	26/9	3/10	10/10	17/10	24/10	31/10	7/11	14/11	21/11	28/11	5/12	12/12	19/12
TOTAL ASSIGNMENT WEEKS DURING 1970	PROG. WEEKS	1	2	3	4	5	6	7	8	9	10	11	12	13	

PREPARATION: G/S = GENERAL/SEMINAR; R = REPORTS

LECTURES: O = SEMINARS; ⊗ = EXPERT PANEL

CONSULTING: P P = POLEN; E E = ENGINEER; X X = STUDIES; ▭ = EVALUATION OF TRAINING PROGRAMS

ALTERNATIVES:

A = ORIGINAL SCHEDULE PROPOSED BY PMDC; B = MODIFIED SCHEDULE PROPOSED BY HRM; C = FINALLY AGREED SCHEDULE

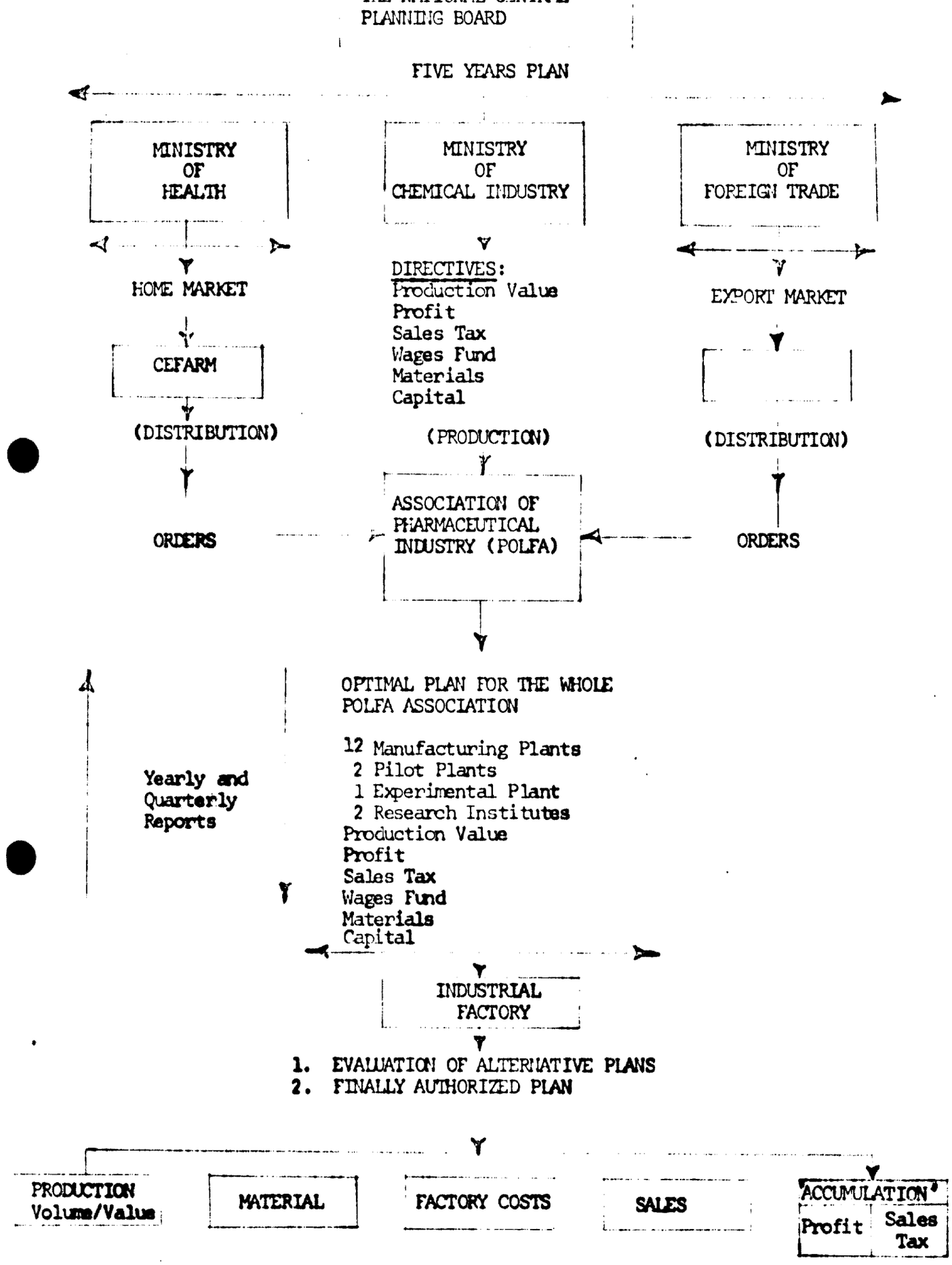
SUBJECT	ALT.	1	2	3	4	5	6	7	8	9	10	11	12	13	COMMENTS
MANAGEMENT INFORMATION SYSTEMS (MIS) (N. Nilsson, J. Askholt / B. Croston)	A					G	O	E	E	E	P	P	X	R	= 9 WEEKS
	B	G			P	P	P	P	P	P	E	E	⊗	R	= 11 WEEKS
	C	G			P	E	N	E	E	O	E	P	⊗	R	= 11 WEEKS (O: COMBINED WITH CORP. PLANNING)
MARKETING (B. Croston / N. Nilsson / J. Askholt)	A	G	P	P	E	O	O	X	X	O	—	—	⊗	R	= 13 WEEKS
	B	G	P	P	P	O	O		O	E	E	X	⊗	R	= 12 WEEKS
	C	G	P	P	E	O	O		O	E	E	X	⊗	R	= 12 WEEKS
CORPORATE PLANNING (J. Askholt / N. Nilsson / B. Croston)	A	G	P	P	P	P	P	O	O	E	⊙	P	P	R	= 13 WEEKS
	B	G	P	P	P	P	P	O	P	P	P	R	⊗		= 12 WEEKS
	C	G	P	P	P	P	P	E	E	O	E	R	⊗		= 12 WEEKS (O: COMBINED WITH MGT. INF. SYSTEM)

NOTE

CHANGES CAN BE MADE BETWEEN THE INDICATED ORDER OF THE CONSULTING WEEKS AT CONVENIENCE

COUNTERPART ORGANIZATION

A. According to PMDC Plan and Schedule, July 1970		B. Actually Functioning Counterparts	
Management Information Systems			
PMDC: Data Processing Division (DPD)		Part-Time	
		Mr. Richard Kruk	POLFA
Mr. Zbigniew Drabek	PMDC	Mr. Zbigniew Drabek	PMDC
Mrs. Danuta Krolikowska	PMDC	Mr. William Dylewski	POLFA
Mr. Marian Kaminski	POLFA	(from Jelenia Gora Factory)	
Dr. Marek Greniewski	MERA	Dr. Marek Greniewski	MERA
Mr. Wodzimierz Mardal	MERA	Full-Time	
		Mr. Marian Kaminski	POLFA
Corporate Planning			
PMDC: Management Division (MD)			
Mr. Jerzy Idzikowski	PMDC	Mr. Jerzy Idzikowski	PMDC
Mr. Janusz Piasecki	POLFA	Mr. Janusz Piasecki	POLFA
Mrs. Kwieta Kurkowska	POLFA	Mrs. Kwieta Kurkowska	POLFA
Marketing			
PMDC: Management Division (MD)			
Mr. Antoni Myszewski	PMDC	Mr. Antoni Myszewski	PMDC
Mr. Jerzy Steczniewski	POLFA	Mr. Jerzy Steczniewski	POLFA
Mr. Teresa Wilczewska	Dyes		



The Present POLFA Organization and Reporting Structure.

SEMINAR OF MARKETING

Godzina	Poniedziałek	Wtorek	Środa	Czwartek	Piątek
9^{00} - 9^{45}	Introduction: dr hab.J.Gościński Mr. N.Nilson Mr. J.Croston	Objectives of Marketing Management	Management Information System and Discussion	/Consumer Behaviour/ Advertising	Relationship of Marketing to Corporate Planning
9^{55} - 10^{40}	Structure of Marketing	External Environment /Desk Study/	-"-	Discussion	Discussion
10^{50} - 11^{35}	-"-	-"- /Surveys/	Forecasting /Discussion including/ preparation for planning	Pricing and Promotion	Organisation Charts of Marketing Responsability and Control
12^{00} - 12^{45}	Questionnaire	Sources of Information in Poland	-"-	-"- /Discussion/	Discussion
12^{55} - 13^{40}	Computer Game Introduction	Discussion	-"-	Brochures and Technical Literature	Questionnaire
13^{50} - 14^{35}	Management Game - First Run	Game Analysis	New Product Sales Estimation /Optimisation with R.D and Production/	Discussion	Final Comments and Summary
15^{30} - 16^{15}	Management Game Continuation	Methods of Investigating Discussion /Including market experimentation	New product Sales Estimation	Sales Service and Product Quality Testing	
16^{35} - 17^{10}	-"-	-"-	The Introduction of the New Product /including discussion/	-"- Discussion	
17^{20} - 18^{05}	-"-	Ljubljana Germany -"- Polish bicycles	-"-	Personnal Selling, and use of Agents	
18^{15} - 19^{00}	-"-	-"-	-"- Distribution	Discussion	

COMK Z.nr 939 n.100

Appendix D.

THE CORPORATE PLANNING/ MANAGEMENT INFORMATION SYSTEMS

SEMINAR PROGRAMME

Monday 16.XI.	Tuesday 17.XI.	Wednesday 18.XI.	Thursday 19.XI.	Friday 20.XI.
1.1 9^{00} - 9^{45} Introduction Dir. E. Prochot Dir. J. Gościński Mr. N. Nilsson Mr. J. Askholt	2.1 9^{00} - 10^{30} Discussion on 1.2 and 1.3 Mr. J. Askholt	3.1 9^{00} - 10^{30} Discussion on 2.2 and 2.3 Mr. J. Askholt	4.1 9^{00} - 10^{30} Model for Diversification Doc. J. Gościński	5.1 9^{00} - 10^{30} Discussion on 4.3 Mr. J. Askholt Mr. N. Nilsson
1.2 10^{00} - 12^{00} Planning and Control of Corporation Mr. J. Askholt 14^{15} - 14^{30} Questions	2.2 10^{40} - 12^{40} Strategy of 5 Year Plan Mr. J. Askholt 12^{25} - 12^{40} Questions	3.2 Organization Mr. J. Askholt Mr. N. Nilsson 12^{25} - 12^{40} Questions	4.2 10^{40} - 12^{40} Management Information Systems Mr. N. Nilsson 12^{10} - 12^{40} Discussion	5.2 10^{40} - 12^{40} Corporate Planning and Computer System Mr. J. Askholt
1.3 12^{30} - 14^{30} Strategy of Economics Mr. J. Askholt Mr. N. Nilsson 11^{45} - 12^{00}	2.3 13^{00} - 15^{00} Corporate Plan Mr. J. Askholt Mr. N. Nilsson 14^{45} - 15^{00} Questions	3.3 13^{00} - 15^{00} Production and Direct Cost Mr. J. Askholt 14^{45} - 15^{00} Questions	4.3 Marketing Mr. N. Nilsson Mr- J. Croston 14^{45} - 15^{00} Questions	5.3 13^{00} - 15^{00} Summary Mr. J. Askholt Mr. N. Nilsson Doc. Gościński

Appendix E.

CODKK - UNIDO - PRZEMYSŁ

INFORMATION No 3

The first part of the UNIDO programme of assistance will be accomplished in December 1970. The consulting and teaching service of experts from Maynard Co and Företagsadministration covered the areas of five subjects, namely MANAGEMENT INFORMATION SYSTEMS, PRODUCTION SCHEDULING, CORPORATE PLANNING, MARKETING, and VALUE ANALYSIS. Several seminars were carried out with almost two hundred of participants. Four associations, MERA, POLFA, UNIFAPB, and UNIKABEL were consulted as well as several short-time discussions with some other industrial units took place.

In cooperation and with the acceptance of experts a final seminar will take place on December 9, 10, and 11. The objectives of this seminar are the following :

1. To present the most important ideas and know-how in some of subjects covered by the programme of assistance using the panel-discussion method,
2. To present some experts conclusions and our follow-up policy in these areas in the near future.

The seminar will be carried out in English /without translation!/ in room 305.

ATTENTION !

1. All panelists ! You are invited to a meeting on Monday, December 7th, 2 p.m. room 113 to exchange ideas to prepare panel - discussions.
2. All invited CODKK workers ! Please deliver a short list of problems you intend to discuss or expect to be presented on a piece of paper to Mrs. Alicja NAROŻNIAK /room 113/ not later than December 3 rd.

Time Schedule of the Seminar

Wednesday, December 9th. 10 a.m. - 3 p.m.

Subject : M A R K E T I N G

Panelists : Mr.John CROSTON, Mr.Nilas NILSSON, Mr.Antoni MYSZEWSKI, Mr.Aleksander KRZYMIŃSKI,

Invited participants from CODKK :

Mr.Andrzej NISIEL, Mr.Leopold ZĄBKOWICZ, Mr.Jerzy IDZIKOWSKI, Mr.Witold KOSMALA, Mr.Stanisław ZARZYCKI, Mr.Włodzimierz SOKOŁOWSKI, Mrs.Wanda WOJCIECHOWSKA,

Invited guests :

Mr.Klemens BIAŁECKI /SGPiS/,

Mr.Jerzy STĘCZNIEWSKI /POLFA/,

+ ten workers from associations and foreign trade companies, graduated from our MARKETING SEMINARS.

Responsible for the organization and invitations :

Mr.Antoni MYSZEWSKI.

Thursday, December 10th. 10 a.m. - 3 p.m.

Subject : MANAGEMENT INFORMATION SYSTEMS

Panelists : Mr.Nilas NILSSON, Mr.GUsta THOREN,
Mr.Marek CHERNIEWSKI, Mr.Janusz GOŚCIŃSKI,

Invited participants from CODKK :
Mrs.Danuta KRÓLIKOWSKA, Mr.Włodzimierz SOKOŁOWSKI, Mrs.Wanda ŁUTOSŁAWSKA, Mrs.Wanda WOJCIECHOWSKA, Mr.Henryk SADOWNIK, Mr.Witold KOSMAIA, Mr.Jerzy IDZIKOWSKI, Mr.Andrzej KISIEL, Mr.Andrzej KIEŁCZEWSKI, Mr.Zbigniew CHRÓŚCICKI, Mr.Marek ŻELAWSKI, Mr.Stanisław ZARZYCKI,

Invited guests : Mr.Andrzej TARNOWSKI /ZOWAR/,
Mr.Zbigniew GACKOWSKI /RSiP SEPD/
Mr.Dariusz KUCHARSKI /CROPI/,
Mr.Andrzej FIELICH /KOZ/,
Mr.Marian KAMIŃSKI /POLFA/
Mr.Zbigniew POGDANOWICZ /ZETO-Szczecin/.

Responsible for the organization and invitations :
Mrs.Danuta KRÓLIKOWSKA.

Friday, December 11th. 10 a.m. - 3 p.m.

Subject : PLANNING SYSTEM /from Top-[illegible] to the Production Planning with Data Processing/.

Participants : Mr.[illegible] [illegible], Mr.[illegible] [illegible], Mr.Witold [illegible], Mr.Jerzy [illegible], Mr.Jan [illegible],

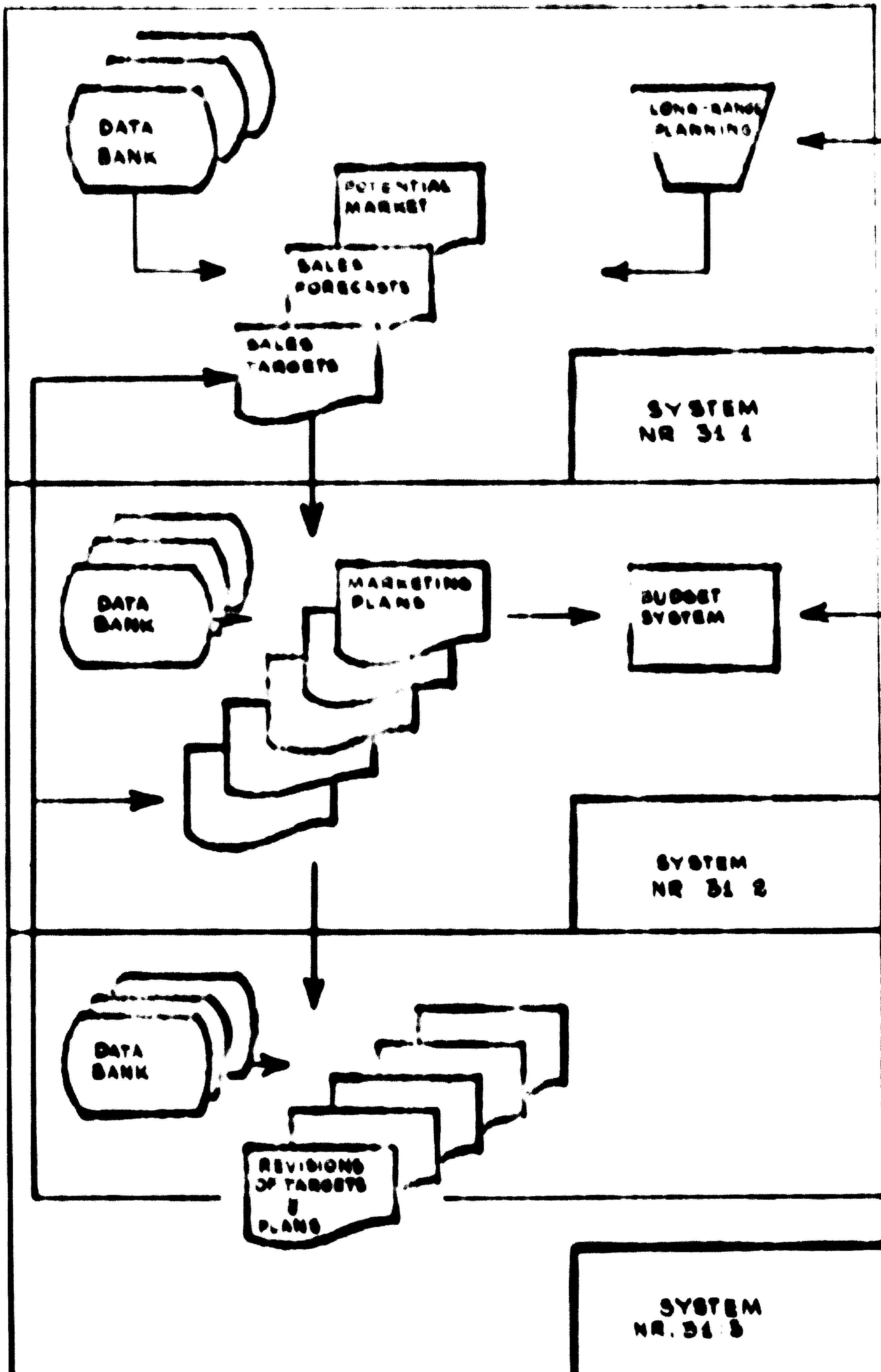
Invited OCDMK [illegible] :

Mrs.Danuta KRÓLIKOWSKA, Mr.Włodzimierz [illegible], Mrs.Wanda [illegible], Mrs.Wanda [illegible], Mr.Henryk [illegible], Mr.Andrzej [illegible], Mr.Leopold [illegible], Mr.[illegible] JA[illegible]SKI, Mr.Marek [illegible], Mrs.[illegible] [illegible], Mrs.Jadwiga [illegible],

Invited guests :

Mr.Andrzej [illegible] /[illegible]/,
Mr.Zbigniew [illegible] /[illegible]/
Mr.Andrzej [illegible] /[illegible]/,
Mrs.Kwieta [illegible] /[illegible]/,
Mr.[illegible] [illegible] /[illegible]/,
Mr.Marek [illegible] /[illegible]/,

Responsible for the organisation and invitations: Mrs.Danuta KRÓLIKOWSKA and Mr.Jerzy [illegible].



A system framework for the development of a Corporate Plan.

SPECIFICATION OF THE INFORMATION CONTENTS OF THE TARCHOMIN PILOT SYSTEM

The system comprises the following six master files:

K 1 - MATERIAL AND PRODUCTS (Installed)

K 2 - TECHNOLOGICAL DATA (Under installation)

K 3 - OPERATING STANDARDS (Planned but not installed - specification under development)

K 4 - SUPPLIERS AND CUSTOMERS (Planned but not specified)

K 5 - FIXED ASSETS (Planned but not specified)

K 6 - PERSONNEL (Planned but not specified)

The data processing systems are divided into the following three groups:

1. Planning Systems - partly installed
   - production plan
   - material usage, standards
   - material supply plan
   - semi-finished products balance
   - direct cost plan
   - sales plan
   - monthly planning documents

2. Control Systems - partly installed
   - material level
   - material usage, actual
   - material cost, actual
   - cost analysis
   - cost distribution

3. Analytical Systems - planned
   - cost control
   - production plan control

MIS DEVELOPMENT IN POLFA

Counterpart: Mr. Mariam Kaminski, POLFA.

The Role of BOZETO.

BOZETO (The POLFA Group Centre for the application of EDP Techniques) is planned to play a coordinating role in the development and implementation of systems within the POLFA Group. The importance of an active support of this development by management at all levels within the Group is emphasized.

Systems development at the Tachormin factory - where the BOZETO Computer is being installed - serve as a pilot for the subsequent implementation of similar systems at other manufacturing units in the Group.

Information from the systems for each manufacturing unit will form the basis of a centralized planning system for POLFA. Decisions regarding the appropriate steps to be taken in the development and implementation of the central system will be taken by the Group Management upon the presentation of proposals from BOZETO.

BOZETO is also responsible for the development of mathematical/statistical models and the application of other OR-techniques in the local as well as in the central information systems.

Philosophy.

The diagram on page 6 illustrates the basic philosophy of the Polish experts' systems approach in POLFA (translated from Mr. Kaminski's original in German).

Preparatory Steps.

The development and implementation of computer systems within the POLFA Group is planned to be preceded by a number of preparatory steps, such as:

a. A number of seminars will be organized for the managers at all levels in the POLFA Group in order to train them in the employment of modern management methods and techniques.

b. A special coordination and training program will be worked out in order to prepare the individual experts in the systems development teams for the necessary close cooperation under the supervision of BOZETO.

c. A common code system and other standardization and modularization of system elements (input, programs, output) and their current updating will have to be introduced.

The preparatory steps involve considerable organizational difficulties as regards coordination and availability of trained experts.

Development of Manufacturing Unit Systems

The table on page 7 is an illustration of the planned general scope of the development of EDP systems for the local manufacturing units in the POLFA Group. A portion of the system has been installed but the major part of it is pending implementation awaiting the installation of new tape-oriented computer (ODRA Model 3104) which is now taking place.

At the manufacturing unit level distinction between two phases of planned information output is made, viz:

1. The analytical phase producing information (plans, reports, analysis) inherent in the present Polish structure of recording, planning and reporting, primarily on a monthly bases.

2. The decision-oriented phase producing information to be aggregated and selected for decision-making at various organizational levels, usually with a shorter time cycle than one month and aiming at a real-time application.

In the present systems development at Tachormin, priority is being given to the analytical phase (number 1 above) for the following reasons:

a. It comprises a large volume of input data for which the manual processing is very time-consuming. The implementation of the EDP system should thus result in considerable savings in clerical work.

b. It constitutes the basis for the very difficult and time-consuming task of developing and structuring the data bank.

c. It contributes to the establishment of the necessary skill and discipline in processing data.

Development of the Central POLFA System

At the POLFA Group level it is also planned that the two phases - the analytical and the decision-oriented - will be applied.

These phases, of course, are dependent on the completion of their counterparts in the individual manufacturing units. Development in stages is planned.

First Stage.

In the first development stage, to be implemented between 1971 and 1975 the central system will only comprise a limited level of integration. This comprises mainly the planning function including "optimization" (mainly static models). This is due to the fact that there are no facilities available for the transmission of data between the various geographically dispersed units and the central data processor.

Second Stage.

Completion of the analytical phase of the central system is first of all dependent on the similar completions at the manufacturing unit level. It is believed impossible to do this before the end of the year 1975 for the following reasons:

a. inadequate data processing facilities (computers and means for data collection and transmission)

b. organizational complexities in the implementation of the integrated system would slow-down the systems-development within the individual manufacturing units.

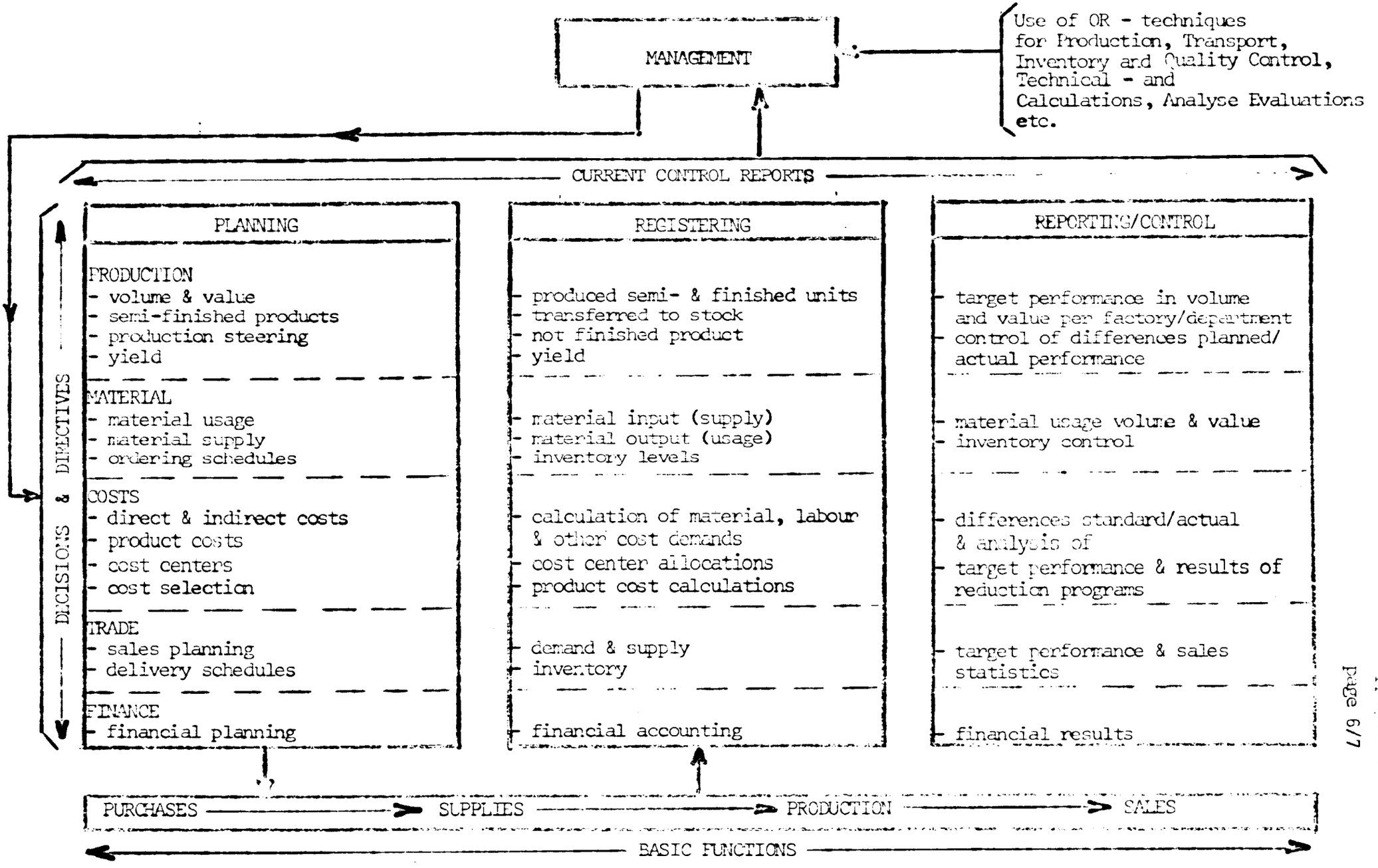
c. organizational difficulties connected with the problems of getting the Group Management to accept and use advanced information systems.

Third Stage.

The next stage in the development of a central system is the introduction of automatic replenishment of materials and the allocation of other resources to the local units. Again, the level of development and integration in the local unit determines the pace by which a central planning system can become operational. This stage will be completed in the 1975-1980 time frame.

To accomodate such a centralized system it is necessary to achieve effective communication methods. It is foreseen that sometime between 1975-1980 all individual manufacturing units in the POLFA Group will be equiped with small "satellite" computers connected with BOZETO by means of a telecommunication network. The first experiements with such data transmission techniques, based on equipment imported from the USSR, is planned to start in 1972-1973.

The time lag before this level of integration can be achieved is believed to have the advantage of making allowance for the improvement of the actual planning system. The scope of development of a central computerized planning system is the factorization of the technical and economic plan through the employment of a large number of analytical, technical-economical indices measuring volume of operation and financial performance. The information base will in this case consist of data from the local master files. It is stated that aggregated planning based on computers makes it possible to work out several alternative plans facilitating decision-making by making allowance for a quick evaluation of the consequences of each alternative.


MANAGEMENT
Use of OR - techniques for Production, Transport, Inventory and Quality Control, Technical - and Calculations, Analyse Evaluations etc.
CURRENT CONTROL REPORTS
DECISIONS & DIRECTIVES
PLANNING
PRODUCTION
- volume & value
- semi-finished products
- production steering
- yield
MATERIAL
- material usage
- material supply
- ordering schedules
COSTS
- direct & indirect costs
- product costs
- cost centers
- cost selection
TRADE
- sales planning
- delivery schedules
FINANCE
- financial planning
REGISTERING
- produced semi- & finished units
- transferred to stock
- not finished product
- yield
- material input (supply)
- material output (usage)
- inventory levels
- calculation of material, labour & other cost demands
- cost center allocations
- product cost calculations
- demand & supply
- inventory
- financial accounting
REPORTING/CONTROL
- target performance in volume and value per factory/department
- control of differences planned/ actual performance
- material usage volume & value
- inventory control
- differences standard/actual & analysis of
- target performance & results of reduction programs
- target performance & sales statistics
- financial results
PURCHASES
SUPPLIES
PRODUCTION
SALES
BASIC FUNCTIONS

SCOPE	PLANNING	RECORDS	CENTRAL ANALYSIS	OPTIMISATION
FUNDAMENTAL PRODUCTION				
Production of goods and global quantitative - qualitative production	x	x	x	x
Balance of semi-finished products	x			
Production capacity	x	x	x	x
Technological background of production	x	x		
Control of production	x	x	x	x
MATERIALS ECONOMY				
Wear and tear	x	x	x	
Demand	x			
Orders	x		x	
Delivery	x	x	x	
Turnover of materials		x	x	
Quantity of stocks	x	x	x	x
Clearing of suppliers accounts		x	x	
COSTS OF BASIC PRODUCTION				
Calculation of costs	x			
Clearing the costs		x		
Standard costs	x			
SALES				
Home & export sales	x	x	x	x
Turnover tax	x		x	x
Profit	x		x	x
Turnovers		x	x	
Quantity of stocks	x	x	x	x
EMPLOYMENT AND WAGES				
Employment and wage fund	x	x	x	
Calculation of wages		x		
Structure of employment		x	x	

MAJOR STEPS IN THE PREPARATION FOR A MANAGEMENT INFORMATION SYSTEM (MIS)

STEP 1 - DEFINITION OF OBJECTIVES

1.1 Corporate Long-Range Objectives (3-5 years)

The normal long-range planning horizon for a corporation is five years, and comprises:

Development of Products and Product Mix
Development of Plants and Equipment
Development of Logistics Facilities etc.

1.2 MIS Objectives

The objectives of the overall corporate information system development activities must be determined. Generally, they are the following:

a. To supply top-management with all information necessary to develop strategic corporate plans and policies.

b. To supply operating management with reports showing the difference between planned and actual performance.

c. To adjust flexibly, and economically, details of the operating plan to reflect actual conditions as they occur.

If these general objectives can be achieved it also means that the following information needs can be satisfied:

a. To have ready access to all information necessary for the support of management decisions in situations which were not foreseen.

b. To transform basic data to valuable information assisting management in planning the long-range activities in their area of responsibility.

c. To supply valuable information both horizontally and vertically within the organization so that top management as well as operating management and departments are being informed in the right way. The value of the technique called "management by exception" is to be stressed because it allows management at all levels to avoid being "snowed down" with information which in it self could be valuable but not necessary for the individual manager because:

- it falls outside his area of responsibility
- the results reported lies within the limits established in the plan.

d. To supply information when it is needed - i.e. in situations where immediate decisions must be taken - so that these situations can be kept under control and priorities established.

The importance of coordinating the establishement of long-range corporate objectives with the objectives of MIS must be recognized. This relationship is, however, often ignored.

STEP 2 - ORGANIZATION FOR MIS DEVELOPMENT

2.1 Organization Plan

The development of MIS is a comprehensive and time-consuming task. It is therefore essential that the organization of this work is well planned right from the beginning. It is necessary to have an organization capable of planning, designing and implementing all phases of the system. An example from practice (SKF) is shown on page 7, fig. A.

It is necessary that the responsibility for comprehensive system development is put on one single person within each organizational unit involved - the Central and Local Project Manager in the attached example - reporting directly to the Central and Local Managing Director.

The Project Manager has at his disposal a Working Group of experts representing the System Techniques and the System Application Areas outlined in the lower left part of the "MIS Development Structure" on page 7, fig. B.

It is also essential that the system development activities are supported by representatives from the various departments involved. These could be organized in Reference Groups (see page 7, fig. A). The advantage of such an arrangement is two-fold:

- many years of practical operating experience can be brought to bear upon the MIS development
- resistance from those representing the practical experience can be brought to light. By taking part in the development process as advisors they will also psychologically be better motivated for, and comitted to, changes.

Depending on the size of the organization involved it is also advantageous to arrange for regular meetings with special Information Groups comprising other representatives (executives, union leaders) of the organization not directly involved in the MIS development. The purpose of these meetings is to give current information about the system development activities - their scope, problems encountered etc.

Another important type of technical support to the Project Manager is the assignment of outside consultants. Their contribution is of special significance because they can draw from their practical and technical experience of similar assignments. Consultants also have the advantage of representing an independent and unbiased opinion which may differ from the "official" internal management attitude.

2.2 Selection and Training of Systems Staff.

This is an important factor in the development of the MIS plan. Since the design and implementation of MIS involves many new techniques it is necessary to have a program for the training of the systems staff - which preferably should be recruited from inside the organization. This emphasizes the importance of the activities of PMDC and other institutions for management and expert training.

STEP 3 - SYSTEMATIC DOCUMENTATION OF NECESSARY INFORMATION

3.1 Detailed Analysis

A systematic documentation should be made of necessary (existing or planned) information flows within the organization - based on established policies and long-term targets of the company as mentioned at the outset. It is necessary to make very detailed and comprehensive studies in order to collect and document the information required for a complete definition of the problems in this area. A carefully worked out system for classifying the documentation is also necessary.

The analysis should start with a detailed documentation of the existing system. This is, above all, valuable for locating weaknesses which could be corrected without the need for changing the whole of the basic system. Such rapid improvements many times pay for the efforts made. This detailed analysis also forms a basis for the development of a plan for the MIS work and serves as a checklist and source of reference for the MIS implementation. It also substantially diminishes the risk that minor but vital details in the system is neglected.

The detailed documentation analysis is based on the application of the following techniques:

a. Flow-charts indicating the data flow from input to output in the system under study, and the volumes of data with a prediction of growth.

b. Diagrams indicating the flow of documents and information between units, divisions departments and individuals with the organization.

c. Administrative cost analysis based on work measurement, job descriptions etc. also including the establishment of how the performance of one unit, division or department influences other units.

d. Restraints placed on the system, such as timing of various critical events.

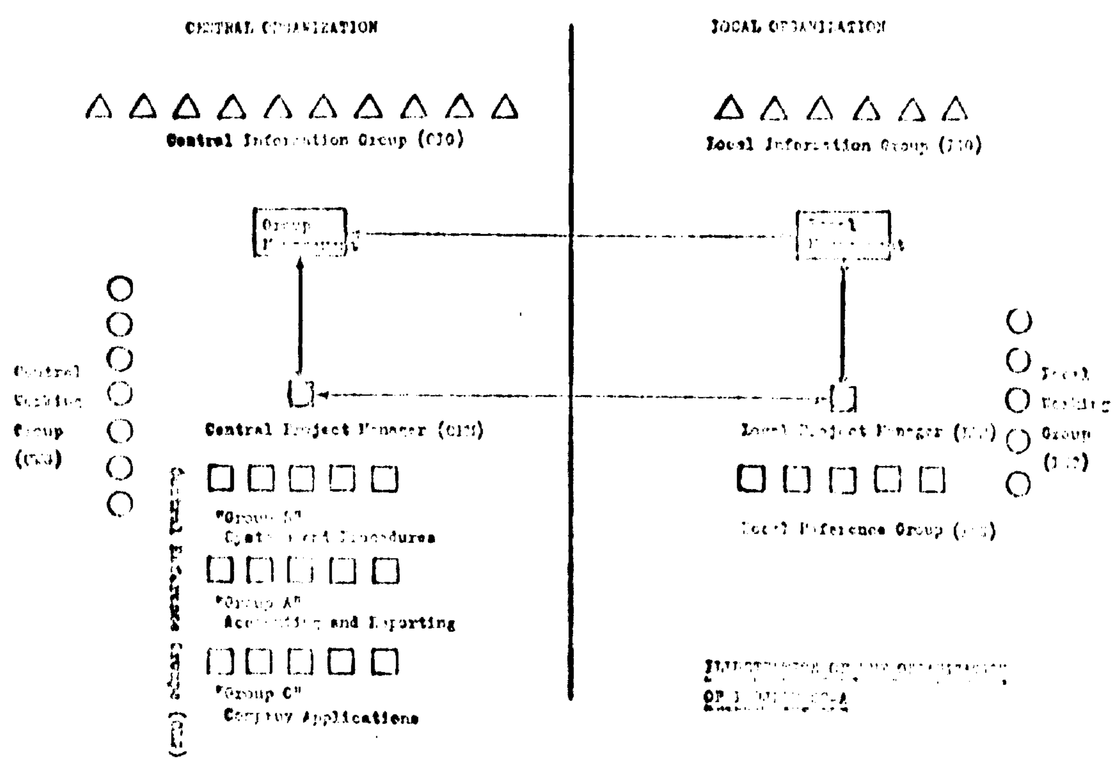
e. Analysis of reasons for the existing system being the way it is, including the philosophy behind the management reporting methods.

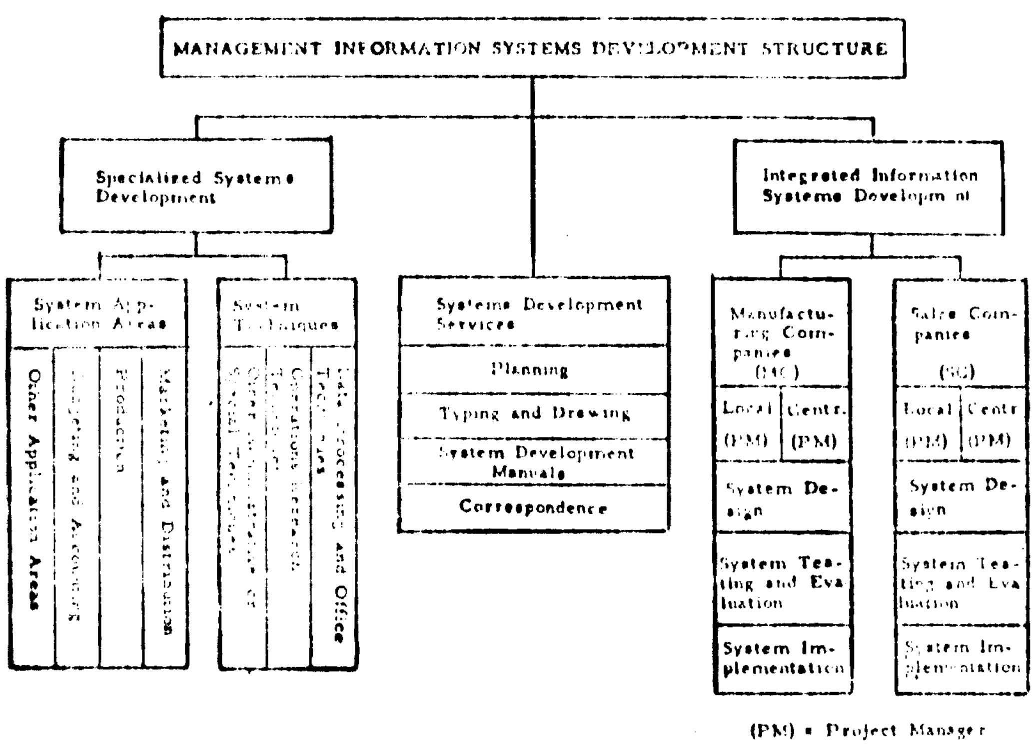
The scope of the systematic and detailed analysis of the information flows is to reduce voluminous reports and massive flow of detailed statistics to crisp, short, meaningful control documents allowing management to concentrate their attention on the significant facts.

3.2 Control by Network Planning

This detailed documentation and analysis work is very comprehensive and time-consuming. It is necessary that it is carried out within specified time limits. It is therefore recommended that modern techniques of net work planning be applied to this activity.

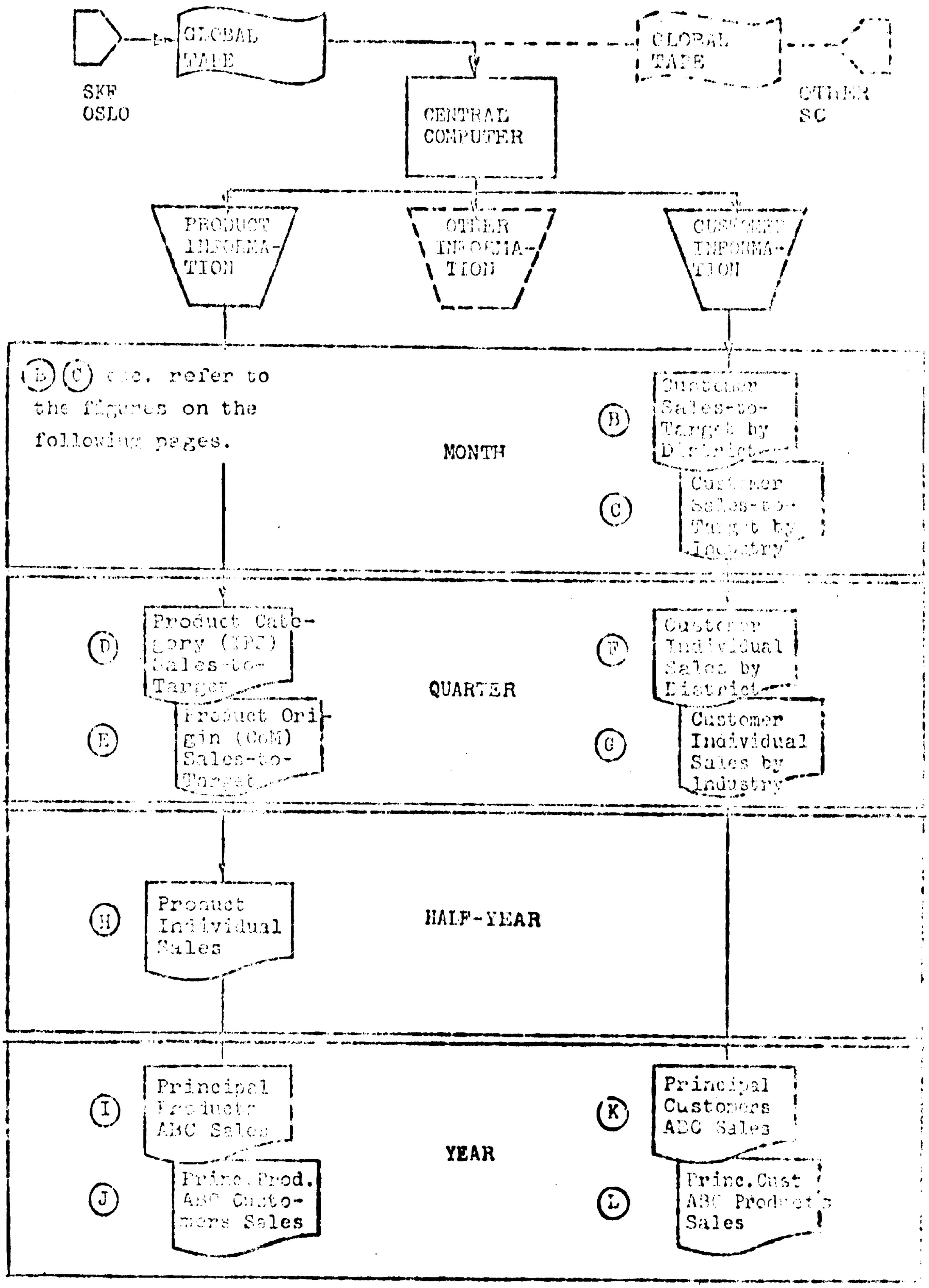
Further illustrations of the above methods are given on pages 8, 9 and 10.





Outline of Systems Development Structure.

FIGURE A: AN OUTLINE OF PRESENT INTER-UNIT [illegible]



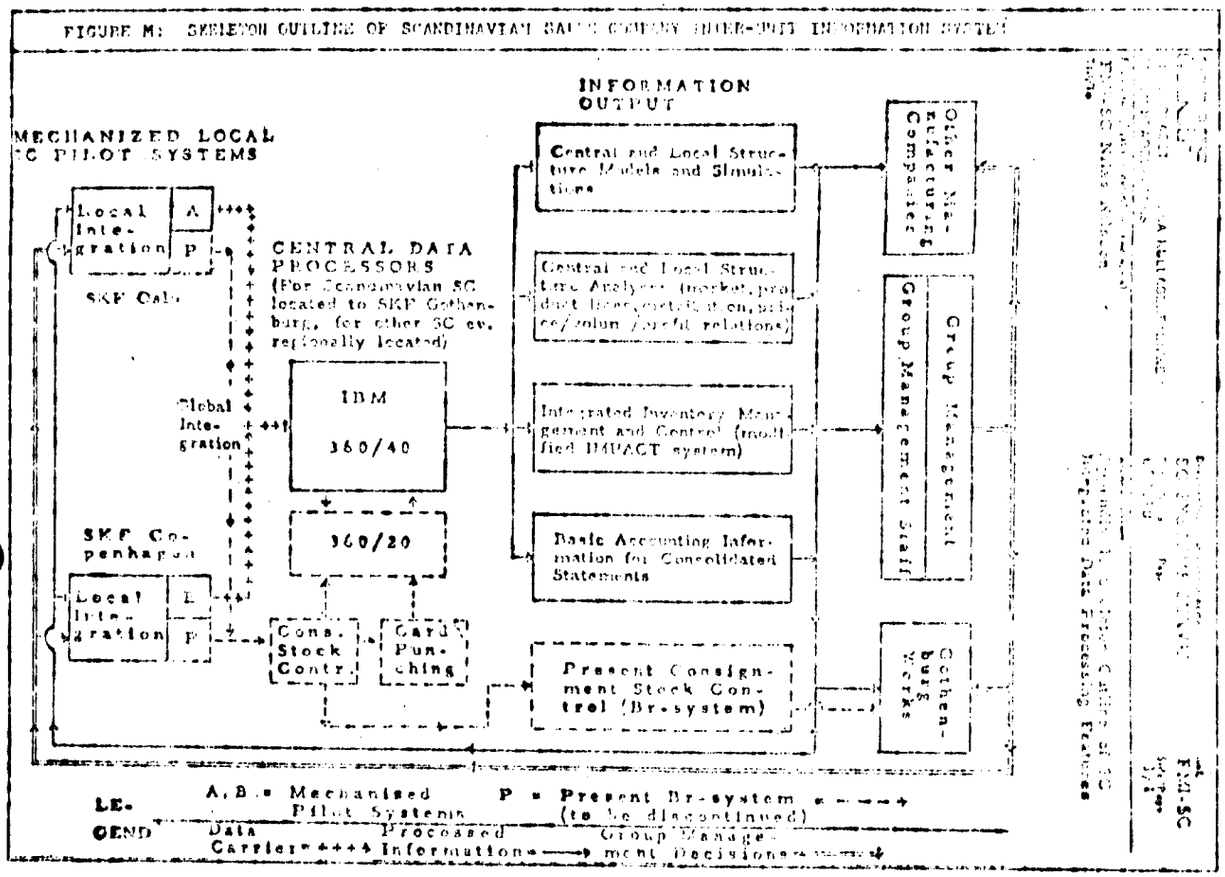
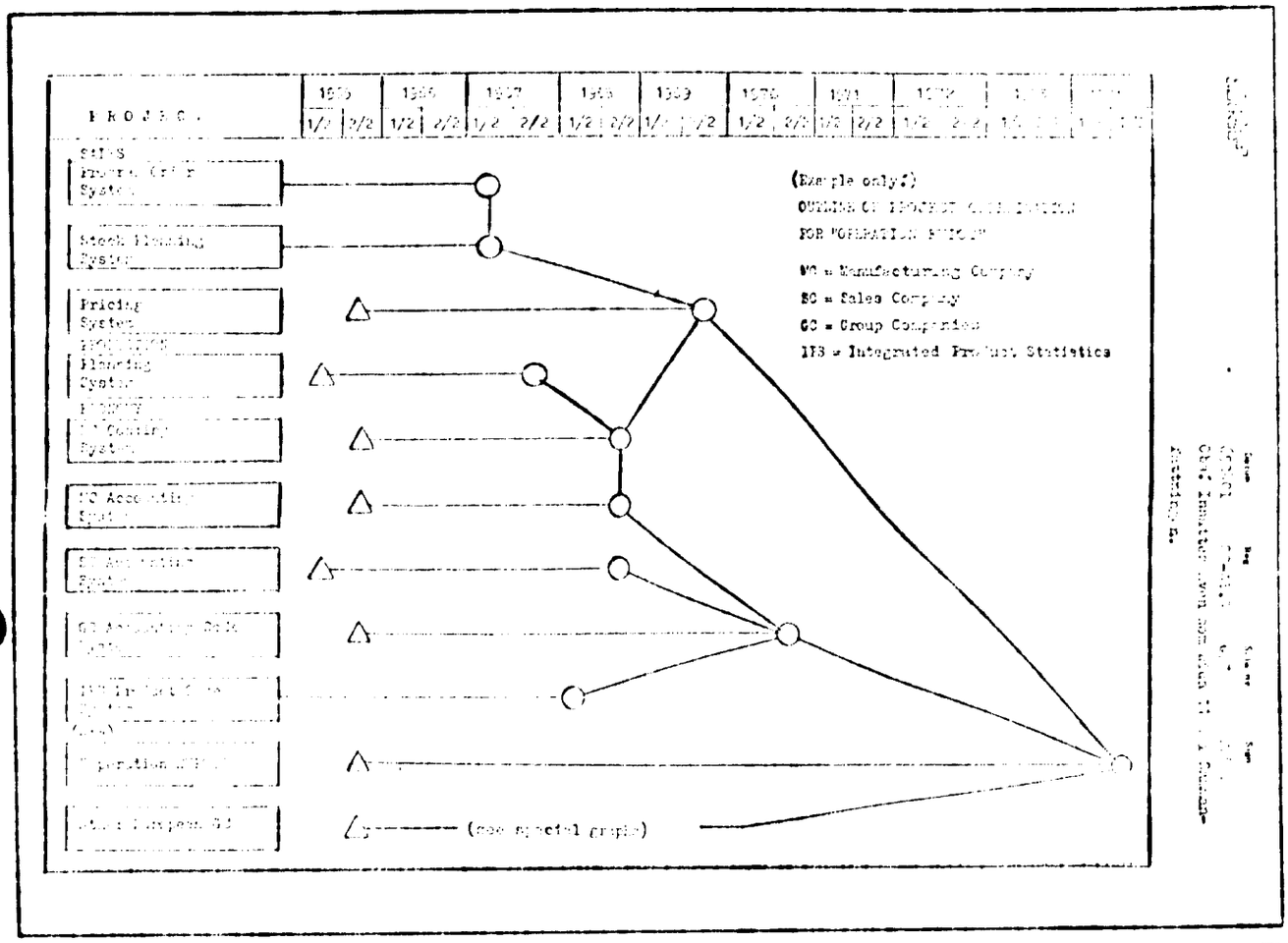
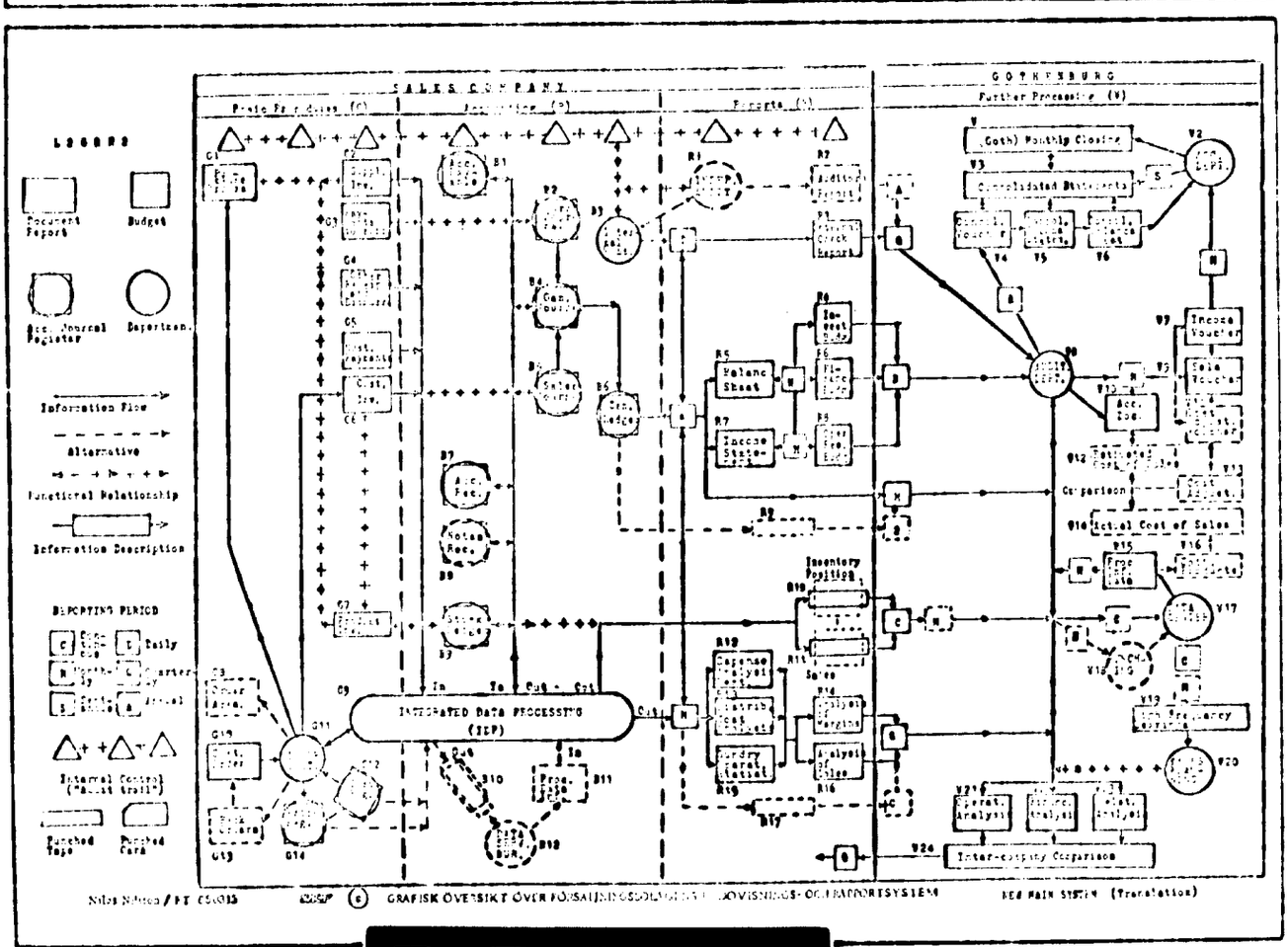


FIGURE M: SKELETON OUTLINE OF SCANDINAVIAN BALL'S COMPANY INTER-UNIT INFORMATION SYSTEM

CODEX 2.nr 970 n.100


(Example only!)
MC = Manufacturing Company
SC = Sales Company
GC = Group Companies
IPS = Integrated Product Statistics
(non operational graphic)


SALES COMPANY
GOTHENBURG
Legend
Document Report
Budget
Acc. Journal Register
Department
Information Flow
Alternative
Functional Relationship
Information Description
REPORTING PERIOD
Daily
Internal Control ("Audit Trail")
Punched Tape
Punched Card
INTEGRATED DATA PROCESSING (IDP)
Balance Sheet
Income Statement
Inventory Position
Actual Cost of Sales
Inter-company Comparison

B – 559

81.08.24