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1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that this is crucial for ensuring the integrity of the financial statements and for providing a clear audit trail. The text notes that any discrepancies or errors in the records can lead to significant complications during an audit and may result in the disallowance of certain expenses.

2. The second part of the document outlines the specific procedures that must be followed when recording transactions. It details the requirements for proper documentation, including the need for original receipts and invoices, and the importance of ensuring that all entries are supported by appropriate evidence. The text also discusses the need for regular reconciliations and the timely preparation of financial statements to avoid any potential issues.

3. The third part of the document addresses the role of the auditor in verifying the accuracy of the records. It explains that the auditor will conduct a thorough review of the accounting records and will require access to all relevant documents and information. The text highlights the auditor's responsibility to identify any areas of concern and to communicate these findings to the management and the board of directors. It also notes that the auditor will provide a written report detailing the results of the audit and any recommendations for improvement.



07182



Distr.
LIMITED

ID/WG.233/17
12 October 1976

ORIGINAL: ENGLISH

United Nations Industrial Development Organization

Meeting of Selected Heads of
Research Institutes

Vienna, Austria, 18 - 22 October 1976

PURPOSES, OBJECTIVES AND FOCAL POINTS
OF THE INSTITUTE FOR PRODUCTION ENGINEERING
AND AUTOMATION (IPA) ^{1/}

by

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PURPOSES, OBJECTIVES AND FOCAL POINTS

1) What is the Fraunhofer-Gesellschaft?

The Fraunhofer-Gesellschaft (FhG) for the Advancement of Applied Research carries out research and development in the fields of natural science and engineering on behalf of industry and state agencies. Consequently, the contract-research projects are of direct economic and social significance. By conducting contract research for industry and public authorities, the research institutes of the FhG help put into practice the results of basic research. Moreover, as an organization receiving grants from the Federal Government, the FhG is able to work on research topics of its own choosing and continuously keep track of technological trends.

The Fraunhofer-Gesellschaft (FhG) was founded in Munich in 1949 as a registered, nonprofit-making association. Since 1969 the FhG, as an organization sponsoring applied research in the Federal Republic of Germany, has received increased assistance in form of federal funding. At present, it maintains 24 research institutes, 2 documentation centers and one patent office scattered throughout the Federal Republic. Since 1970 the Institute for Production Engineering and Automation (IPA), located in Stuttgart and directed by Prof. Dr.-Ing. H. J. Warnecke, has been the largest, in terms of staff, independent institute within this organization.

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2) Focal points of research conducted at the Institute
for Production Engineering and Automation (IPA)

In the Federal Republic of Germany, the IPA is one of the largest research institutes in the field of production engineering and automation. The necessarily wide scope of work conducted includes the areas of business organization, factory planning, production and assembly systems, handling techniques and industrial control engineering as well as various manufacturing processes and quality control.

Besides pneumatic and fluidic control systems and surface coating technology, individual focal points are production control, industrial robots, development of methods for occupational training and structuring of work to humanize the work place. The important area of technology transfer to developing countries - discussed in greater detail in the following - rounds off this spectrum.

An important objective of the work carried out at the Institute is that of providing technological contributions to a humane working environment, for example freeing from monotonous work routines the individual integrated into the production processes.

The various areas of research assure that complete solutions can be developed, for example from the task of designing to actual manufacture of a product, and, in the area of planning, from the offer phase to planning of final installation. By maintaining a balance between basic research and application-oriented research, rapid conversion of research results into improvements in the area of production is achieved.

In selecting research projects, the relevance to actual practice occupies the foreground. The convertibility of results into practice is a "must" for those working on a project. The cooperation necessary with industry involves both large companies and medium-sized businesses at home and abroad.

The solving of practical problems from industry is always accompanied by abstraction. Investigation of the applicability of knowledge gained is a continuing task, state financing of research and contract research for industry providing the prerequisites.

The IPA has at present a staff of 150 individuals, a large number of them scientists in the fields of mechanical engineering, electrical engineering, physics and business administration.

The Institute has at its disposal some 2 200 m² of office space, approximately 800 m² of laboratory space and a machinery hall of about 900 m² in size housing the necessary machine tools and large experimental setups. The 1976 budget of the Institute is about 9 million DM. Of the operating funds, almost 90 % comes from contract research for industry and from the state.

In terms of equipment, the product testing departments and facilities of a number of laboratories are available to the Institute, for example the production engineering measurement laboratory and the surface coating and production methods laboratories.

A remote batch terminal with provisions for connection to large computer centers and a Digigraphic terminal allow modern mathematical methods to be used to solve complex problems.

3) Activities of the Technology Transfer Research Group

A Technology Transfer Research Group dealing with industrialization projects in developing countries has existed at the IPA since 1974. In addition to handling research contracts dealing with the topic of adaptation of technology for organizations responsible for economic cooperation, e.g. the Federal Ministry for Economic Cooperation (BMZ), the problems of relocating production from industrialized nations to developing countries are treated. In this regard, the following considerations are taken as a starting point:

The central question for any company is that of profitability. It is precisely today, where many companies are showing greatly reduced profits as the result of cost increases, that this question is gaining in importance. From the viewpoint of a German company, the worldwide trade relations result in increased competition from foreign manufacturers. As the result of stagnating domestic demand and more hotly contested export markets, more and more companies are reaching the limits of their ability to continue operations. Many see their chance only in a relocation of production to foreign countries. This, however, requires sound decision making for which assistance is given by the IPA. How this is provided is discussed in the following. In order to assess whether relocation of production to a foreign country is meaningful, extensive knowledge of the company structure is necessary. The insights required are obtained by conducting a company analysis.

Company analysis

Within the scope of this company analysis, all alternatives to relocation abroad must first be checked. Mechanization, automation and rationalization are subject to limits both from a technical and financial viewpoint. An increase in profitability can, however, also be achieved by improving the working conditions through motivation, attractive pay and humanization of the work routine as the result of improved structuring of the work and the like. The earning power of a company can be increased additionally by streamlining the product line (simplification of the range of products) or introducing the "building block" principle. Further alternatives can be found in diversification, purchase of products and services or in having subcontractors produce on a job basis. In addition, the question of relocation within the country or merging with other companies should be discussed. In addition to these possible business strategies, relocation of production to a foreign country has, in the past few years, represented an alternative used more and more and one which should be weighed against other possibilities.

If relocation of production is planned, the product line, production methods and vertical range of manufacture must next be decided on. In this regard, it should be noted that a step-by-step build-up and expansion of the engagement involves the lowest financial risks. At the same time, however, problems associated with selecting a site must be taken into account.

Searching for and selecting a site

The site problem consists of balancing and comparing the expenditures and returns expected at various alternative sites. In order to select the optimum investment

country when relocating production abroad, many more criteria must be investigated and compared than is the case when searching for a domestic site.

For example, the political situation in the countries being considered must be investigated. A balanced and stable political climate is a major requirement that must be met by an investment country. Another leading motive is the sales market, i.e. the extent to which markets can still be supplied through traditional export and whether this is hindered by import restrictions must be clarified. The latter also play a major role when procuring production equipment at the new site.

Individual countries differ quite considerably when it comes to financing a foreign investment; there are enormous differences in investment laws. Thus, in some countries establishment of a wholly owned foreign subsidiary is in general possible, while in others only a joint venture with a local majority partner is approved. Furthermore, the transfer of profits and contributed capital is handled differently in different countries. In addition, double taxation and capital protection agreements have not been concluded with all countries.

These, as well as many other criteria, must be taken into account when relocating production to a foreign country. It is thus not sufficient to compare only the so-called material site factors such as labor, material, energy and transportation costs as well as property and building costs, but rather the intangible criteria, i.e. those criteria that can only be quantified indirectly, difficultly or not at all in terms of money, must be considered.

The gathering of appropriate data for various countries is one field of activity of the Technology Transfer Group at the IPA. Then, the material site requirements gained from the company analysis are contrasted with the site conditions of the various countries and compared with the aid of a suitable profitability calculation. The intangible criteria, on the other hand, can be made accessible to evaluation through a use-value analysis. To locate the optimum site, the comparison of the countries is carried out on two levels.

Adaptation of technology

Adaptation of technology is based on the fact that to obtain optimum operating results production processes from highly industrialized countries should not, as a rule, be transferred as they are to foreign countries, in particular developing countries, but rather must be adapted to local circumstances. This, however, was often disregarded out of a lack of awareness of the technological possibilities and economic effects of a relocation of production. As a summary of many contributions, the required adaptation of technology can be defined as follows:

"Adapted technologies are those technologies which, in terms of processes and products, strive for solutions that optimally utilize the personnel and material resources of a country for economic and social progress."

To illustrate this statement, the possibilities of adapting technologies when transferring them from industrialized nations to developing countries is discussed in the following by way of example.

Increasing consumer needs and the enormous expansion of production capacities are causing in the industrialized nations a severe shortage of labor and sharp increase in personnel costs in companies. Under these conditions, the goal of minimizing costs leads to a continuously increasing capitalization of production. The technologies existing today are a result of this situation.

The situation in developing countries, on the other hand, is characterized by an extreme surplus of labor, shortage of energy and capital as well as markets with little buying power. In this different situation, companies have a chance in selecting an adapted technology. To achieve satisfactory operating results, the production factor "work" must be made use of to a much greater extent. If a manufacturing facility is to be established in a developing country, it is often only a modified factor combination of capital and work that yields the optimum production method. It is only in this manner that the low wage level and large potential labor force in the developing country are taken into account. In this connection, a comparison of technological variants conducted from this angle is accorded special significance.

Many production-cost comparisons for alternative technologies, conducted at the Institute using data from domestic and foreign production facilities, confirm the above statement. Based on these investigations, the IPA offers production planning assistance for setting up production facilities in developing countries.

Setting up production

Rapid economic usage of the production factors requires that production be set up so that cost budgets are not exceeded and deadlines are met. The complexity of

projects of this kind require even in industrialized nations a great deal of planning and organization. Where developing countries are concerned, this is not only increased but is made more problematical by the lack of experience, thus increasing the risk of failure for the company. The problem here is that, on the one hand, factors that can be calculated only with difficulty or not at all have an even larger uncertainty factor and, on the other hand, empirical values verified with sufficient accuracy in the home country are, as a rule, no longer applicable.

The key to setting up production in a foreign country so that only few problems are encountered lies in selecting and specifying the course of the project such that the decisive factors can be determined and checked quickly, while keeping the company's risks relatively low.

A procedure has been developed at the IPA for this purpose. In the first step, the entire course of the project is laid down in the conventional manner. Those subprojects, which upon completion represent an independent production unit, are considered meaningful, taking account of the possible division of labor between the parent company and subsidiary. Then, the decisive variables are determined, their uncertainty factors are specified, and the financial risk is calculated. A sequence can now be set up wherein those subprojects having the lowest financial risk and the greatest - relative to the entire project - number of uncertain variables are scheduled for completion first. This course of action, which at first appears unconventional, allows the initially unknown circumstances specific to the foreign country to be recognized quickly, thus allowing rapid evaluation and utilization for the following activities. Empirical values, which increase the accuracy of prognosis as the degree of completion progresses, can be obtained by evaluating the results after each of the respective subprojects has been completed; this improves the chances

of success for the following investment-intensive projects.

All of these functions of the IPA are based on requirements and problems of German industrial concerns. For example, just recently an extensive company analysis was prepared for a company of the automobile industry in Brazil. In particular, the production and organization methods were investigated to determine to what extent they were adapted to the circumstances in the country. In addition to showing simple rationalization proposals, how the optimum degree of mechanization or automation must be obtained for the individual production processes is now being determined. The proposals obtained from this information are at present being realized in cooperation with the company. Providing such consultation to domestic and foreign industrial concerns, however, is only one aspect of the Group's activities. Assisting organizations responsible for development aid is another important function.

4) Functions of the Technology Transfer Center (TTL)

After many discussions with the responsible agencies in the Federal Republic of Germany, a "Technology Transfer Center (TTL)" was established this summer at the IPA by the FhG and entrusted with the following tasks:

The Technology Transfer Center of the Fraunhofer-Gesellschaft at the Institute for Production Engineering and Automation aids the Government of the Federal Republic of Germany in the intensification of technology transfer to developing countries. As a research group, it receives assistance from the Federal Ministry for Research and Technology (BMFT) and from the Federal Ministry for Economic Cooperation (BMZ).

Within the scope of economic cooperation between the Federal Republic of Germany and developing countries, the activities of the TTL aim mainly at

- Making the results of research and development establishments (R & D) in the Federal Republic useful to developing countries;
- Initiating R & D projects of special significance for problems in developing countries;
- Encouraging and fostering development aid projects with R & D character.

The major task of the TTL is that of determining technological needs in developing countries and finding solutions at sources of know-how in the Federal Republic. In performing this task, the TTL will attend in particular to needs which show themselves in a conventional manner only with difficulty or not at all. This intermediary function is performed by the TTL both within the scope of specific contracts from a joint committee of the BMPT and BMZ and on its own initiatives.

The TTL promotes subject-oriented communication between those with the need in developing countries, those with the know-how in the Federal Republic and other parties interested in technology transfer. To this end, it systematically collects relevant project proposals from sources of know-how in the Federal Republic, but, above all, project requirements from developing countries for the most varied areas of production. It thus offers itself as a "port of call" for representatives from developing countries. Using this information, the TTL participates, in a consulting capacity, in the definition of technological development aid projects and R & D projects for developing countries in the Federal Republic of Germany.

5) Possibilities for cooperation

For both national and international organizations responsible for economic cooperation and development aid as well as for foreign companies, many different possibilities for cooperation are offered by this Technology Transfer Center. A few are listed by way of example:

In many developing countries, technology transfer centers that are to function as know-how clearing houses on an international level are currently being planned. Not least because there are certain relations between these projects and the TTL can the IPA offer assistance in the conception. A representative project has already been completed by a study group within the scope of a field study in Malaysia.

Complex planning tasks for expansion or concentration to achieve greater economy also occur in businesses in developing countries. Within limits, the planning capacity of the IPA can also be used for these tasks in companies outside of Europe.

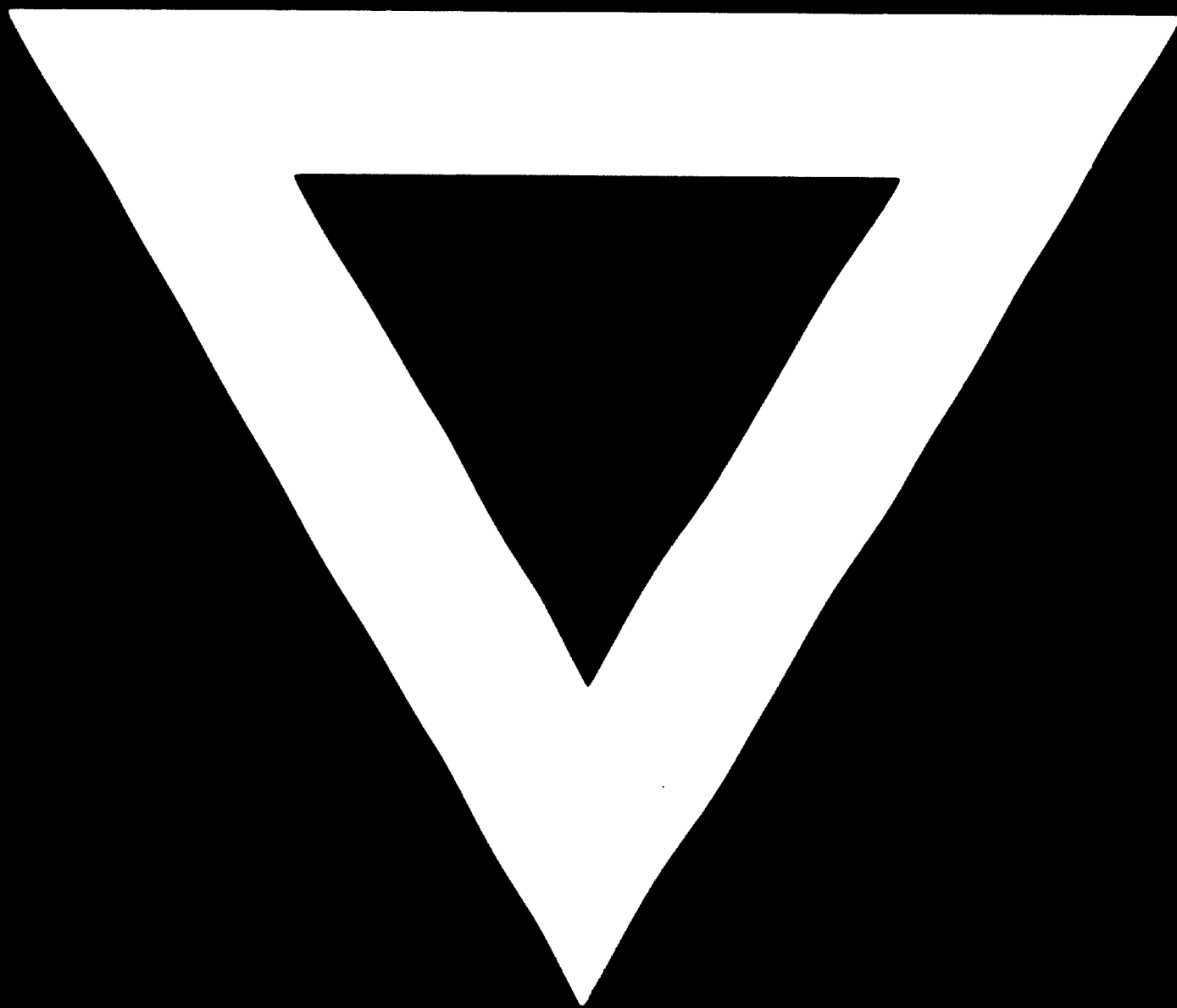
Making the know-how and planning aid of the IPA available, however, is only one small service offered by the newly established TTL. Its task is much more that of matching the technology demand to the technology supply in general. In doing this, it will call upon the diverse knowledge and capabilities available at other FhG institutes as the need arises.

In searching for sources of know-how, however, the need is always the starting point. Beyond the framework indicated, the solution to the problem is thus always sought at R & D establishments or companies having sound knowledge of the subject matter.

With this list of services offered as an example, the IPA hopes to be able to make a problem-oriented contribution to economic development even in regions that at present still have a weak economy.



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