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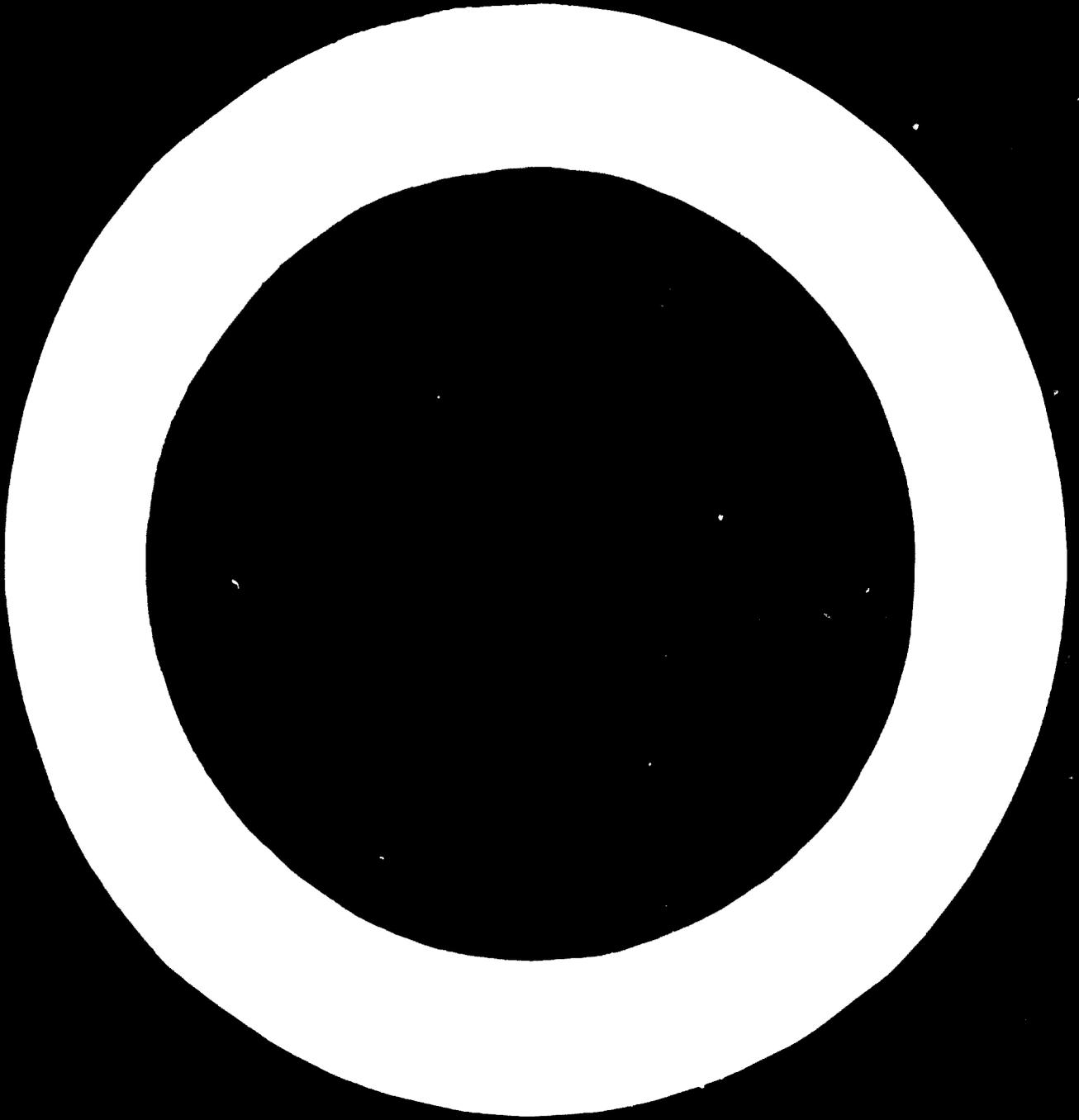
**EXPERIENCES IN ESTABLISHING "SUB-CONTRACTING  
EXCHANGE" IN TURKEY <sup>1/</sup>**

by

E. Taskin  
Industrial Consultant  
Union of Chambers of Commerce  
and Industry and Commodities Exchange of Turkey  
Ankara

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Experiences in Establishing "Sub-contracting  
Exchange" in Turkey

- I. General application of sub-contracting in Turkey.
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## I. General application of sub-contracting in Turkey

Sub-contracting, in broad terms, is a means applied by the industry - in an inorganised form - for a long period in Turkey. Due to its functioning without a specified planning the chance of obtaining fruitful results could not be expected. Although an exception, it is possible to point out successful enterprises in truck and tractor assembly industry that purchase most of their parts in sub-assembled state from the small work-shops producing parts under a sub-contracting plan.

Our experience with the small scale industry as exists in Turkey shows us that if we leave these work-shops to their normal rate of development, their progress and survival will be endangered in a short term. The main reason being their incapability to follow up the rather fast technical development taking place in the technologically developed countries.

Consequently, the chance of receiving orders from the giant enterprises will be decreasing continually. The tendency for large concerns to instal units that are duplications of the existing small scale work-shops within their own establishments is due to the above-stated reasoning, i.e. technically undeveloped small scale industry.

The work-shops of less than ten workers and using less than 10 HP (which constitute more than 90 per cent of the total industry in number) cannot provide an office equipped to answer the technical and commercial questions coming from the large industrial concerns in connection with job given or part to be manufactured. In certain cases, as I pointed out above, where sub-contracting planning functions, the technicians and the economists of the sub-contractor help the small industry enterprise to provide the know-how necessary to manufacture the part requested and to calculate the cost price in order to give an offer to the sub-contractor.

The recently developing two heavy industry branches, namely the ship-building and the truck, tractor production industry could be the initiators of a sub-contracting exchange by means of which the under capacity functioning small industry could be organised to specialise and so find jobs in order to survive.

This organisation - sub-contracting exchange - would help in two ways to the industrialisation of Turkey:

- Firstly by controlling the new investments planned to those fields that do not exist or are functioning over capacity.
- Secondly, the existing small industry would automatically specialise in their production.

I believe, by solving these two problems common to all under-developed countries, the need of foreign exchange necessary to make new investments will be diminished and the existing investments would be re-evaluated and gained to the country.

To better illustrate my point, the below-named industrial investments in metallurgical and metal working industry have not been successfully established because specialisation in a branch of production has not been possible in Turkey:

- Die and pattern making,
- Die casting,
- Different quality pig iron casting,
- Non-ferrous alloy casting,
- Forging and stamping,
- Small parts manufacturing with automatic screw machines.

Existing metal working industry today has either one of the following formations:

- (a) Self-sufficient or self-supporting enterprises where it is possible to find some of the above-stated specialised functions being done in one concern. This reduces the productivity of the plant, at the same time the technicians will be unable to follow up the new techniques in all of these branches of metallurgical and metal working industry.
- (b) Too small work-shops - usually comprising of a lathe and/or a shaper or a cupola furnace without any casting technology or a quality control apparatus to completely finish a part according to requested design and specification.

## **II. Early experiences in organising sub-contracting:**

- Co-operation of AID/USA and the Ministry of Education in preparation of a sub-contracting project.

As I pointed out before, the small scale industry as exist- in Turkey comprises of shops having one to five workers and possessing a universal machine tool or two with motive force from 5 to 10 HP. The workers and the owners of these shops in most cases have learned to operate the machine tools from their ex-patrons or chiefs without a technical background. Consequently, it is impossible for the people of the small industry to manu- facture mechanical parts according to a technical drawing.

Although the number of graduates from the State-owned technical schools is increasing steadily, it is a fact that we have to educate technicians on job in order to compensate the existing gap for these men in industry.

Realising this fact the Department of Professional and Technical Education of the Ministry of Education, in co-operation with AID of the United States of America, have prepared a programme for the education of small industry owners and workers entering into the above definition of small scale industry. Pilot industrial zones have been selected to find out what is lacking and the type of education to be followed for these semi-skilled workers. The two cities chosen for the application of this pilot programme were Kayseri and Gaziantep since middle range industrial formation exists here.

During the summer months of 1963, under the supervision of an American professional education consultant a seminar took place in Kayseri to which the teaching staff of the professional technical schools from the concerned cities were invited. During the seminar the existing teaching possibilities were compared with the needs and the lacking aspects of the concerned people and a teaching programme under these criteria was prepared.

Also, during the seminar a group of the owners of these shops were invited to hear a lecture about the functioning of a sub-contracting exchange. It was pointed out that large industrial enterprises were eager to collaborate with dependable small shops to give orders for the manufacture of parts or sub-assemblies in their productions.

To illustrate the working principle of a sub-contracting exchange a demonstration was made with the help of a tractor production plant and a refrigerator manufacturing concern. The part to be manufactured with its detailed technical drawings was presented by the teachers of the technical schools to the small industry work-shop owners and they were requested to make the same parts according to the tolerances of the drawings. This was a very satisfactory demonstration of the problem in two aspects; as to functioning of the exchange office and to show the routine to be followed in the manufacture of a part according to a technical drawing.

As decided during the seminar, the Ministry of Education introduced a programme of night courses during the school terms of 1963/1964 for these semi-skilled workers covering the following subjects:

- technical drawing,
- quality control,
- marketing,
- machine tool operation,
- simplified cost price calculation.

These courses attracted the interests of the group since the subjects selected suited their exact needs. Grace to the priority given for financial aid to the successful candidates by the Peoples Bank - a State bank - and orders placed by large enterprises, the number of night course graduates have increased in great numbers.

The Ministry of Education accepted extra payments to be made to the staff of the professional technical schools for training on job and solving the specific problems arising from the new orders received due to sub-contracting.

Under the above explained education programme, a series of booklets have been published during the same year. The names of the published series are:

- Cost price calculation,
- Marketing,
- Technical drawing,
- Lathe operation,
- How to use carpenters' hand tools,
- Practical oxygen and arc welding,
- Co-operatives for small scale industrialists.

Ten thousand copies of each of the above booklets have been distributed to the people concerned and close interest has been transmitted.

The application of this programme has attracted close attention of the Ministry of Industry and the State Planning Office. These authorities have accepted in principle to encourage and foresee the studies and applications to be made on the subject in the second Five-Year Plan.

As outlined in the preceding paragraphs, the idea and the principles of organised sub-contracting has widely spread and accepted in industrialist circles and some forms of incentives have been originated by the government authorities and large enterprises.

The AID consultant, having great difficulty in responding to the questions and requirements of the sub-contractors, offered to the Union of Chambers of Commerce, Industry and Commodity Exchanges, and requested a reorganisation similar to those functioning in Europe.

III. Union of Chambers of Commerce, Industry and Commodity Exchanges efforts in establishing a Sub-contracting Exchange in two pilot Chambers of Commerce and Industry, namely Kayseri and Eskisehir.

The first step taken by the UNION was during 1964 when a French consultant was invited to Turkey to make an investigation and a short term research to find out the possibility of forming an organised sub-contracting exchange office. The expert, after examining the metal working industry as concentrated in Istanbul, Ankara and Izmir, had foreseen the establishment of one in either one of these centres of industrialisation of Turkey.

The UNION then decided to train and specialise technicians and economists by sending them to France to observe the functioning of sub-contracting bureaus in the different localities. This programme was completed by the beginning of 1966. During 1966 two consultants from CERTES were invited to work with the UNION experts to make studies in two smaller zones where small industry is located, namely Kayseri and Eskisehir. Visits made to the typical small industry enterprises made it possible to observe the type of jobs they were performing. The French consultants after the meeting held in the local Chambers of Commerce and Industry, in which members of the small industry had a chance to point out their views about the subject, handed questionnaires to be filled-in by the UNION experts in co-ordination with the local Chamber.

These questionnaires were further evaluated to determine whether the magnitude of the small industry in that particular zone made it practical and economically feasible to operate a sub-contracting exchange. Unfortunately, the result was negative in the sense that sub-contracting in these two cities would not function since all these small industrial enterprises were sub-contractors while large manufacturers that would give orders were situated in Izmir, Istanbul and Ankara with a minimum distance of 300 km. away from the two towns concerned. Consequently, the orders and production of parts would be in one direction only, i.e. from industrialised zones to these cities, while the competition of the ancillary part producing small industry exists.

The selection of these less industrialised zones was due to the fact that it would be an easy case to start with and preliminary studies, as explained in Section II of the report, had taken place in one of these towns, the people of which were very eager to possess such a modern institution that would help fast development of their town.

Personal contacts have been made between administrators of Chamber of Industry and the Chamber of Commerce of Istanbul and the consultants to form a sub-contracting exchange bureau within the Chambers. This was accepted in principle by both parties. It was then decided that experts from the UNIDO be invited and a fund to cover the expenses of these experts to make a research on the subject for the final decision. An acceptance has been received from the concerned department of the UNIDO that a project has been foreseen with which a team of two consultants will be visiting the UNIDO recently for finalising the formation of a sub-contracting exchange office in Istanbul.

#### IV. Centre of Productivity's experiences in sub-contracting

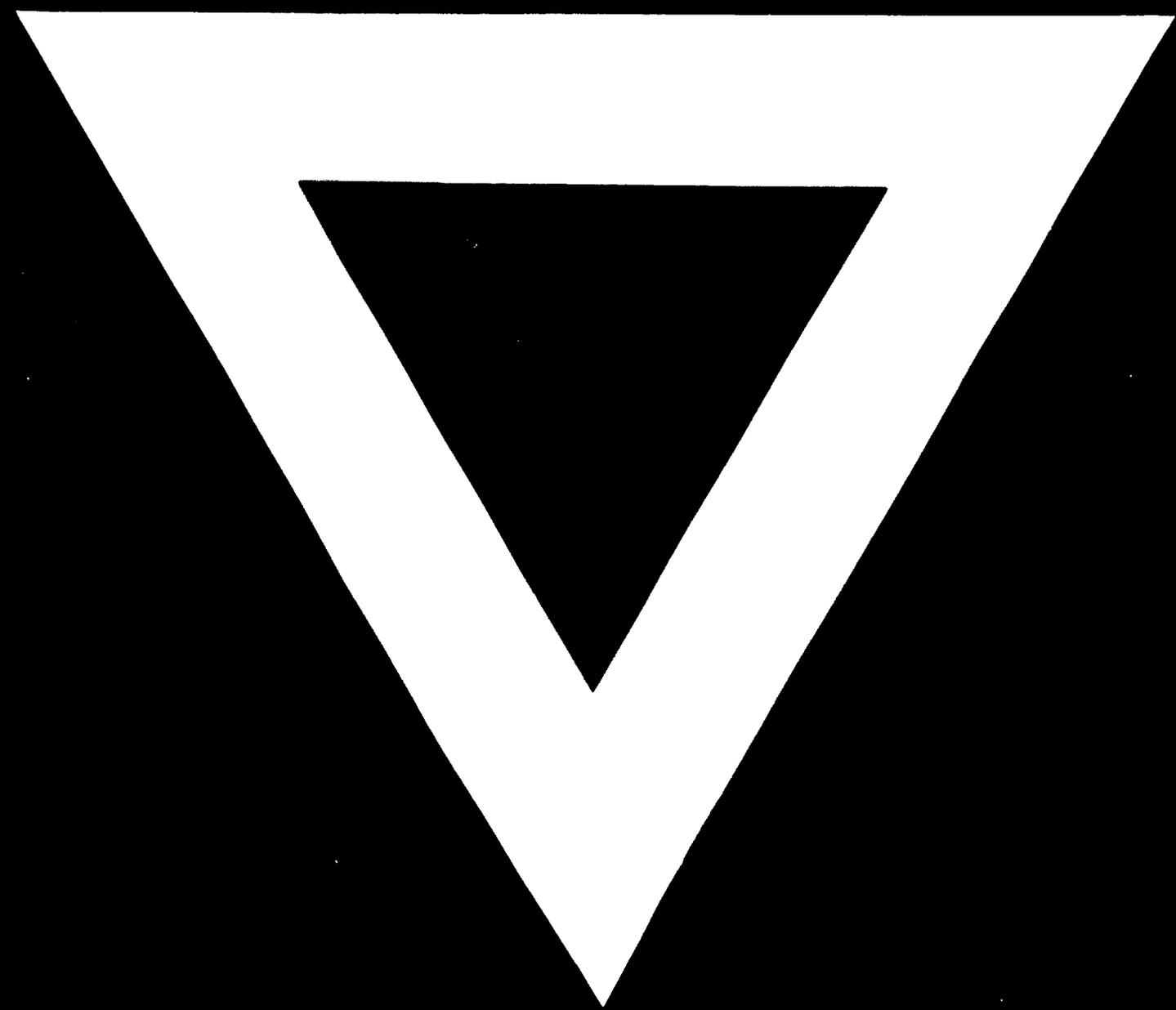
Centre of Productivity has selected the cities of Bursa and Izmir since after examining the industrial structure of these cities they have found out that sub-contracting relations are very poor in these cities.

Preliminary studies as to the number of small industry work-shops are almost completed. The two new automotive production plants will be situated near Bursa. Therefore, there is a great possibility that the small industry in this city will be planned to work as an ancillary parts production shop for the automotive production plants.

Their programme is to study and apply the same procedure to Izmir since the second is a larger town and has more complicated industrial structure.

We hope to collaborate the studies and the efforts made by the UNIDO with the experiments of the Centre of Productivity so as not to duplicate the work.





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