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AUTOMOTIVE CO-OPERATIONS IN HUNGARY 1/

International Co-operation in the Automotive Industry

by

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AUTOMOTIVE COOPERATIONS IN HUNGARY

1. Cooperation and Coproduction. Terminology

"Cooperation" and "coproduction" are terms widely used to describe various business agreements between socialist enterprises and foreign companies. The terms are not too well understood by foreign businessmen - not least because sometimes they are used very loosely.

The key practical point concerning this terminology is that Hungary is prepared to grant certain advantages to firms entering into cooperation agreements.

Hungarian officials tend to use three factors for judging the potential advantage to Hungary of any proposed cooperation or coproductions agreement:

a/ industrial policy: does the agreement help improve technical standards, raise output, etc.?

b/ foreign trade: does it contribute directly to improve the export structure?

c/ balance of payments: does it put an undue or prolonged burden on the balance of payments?

We, Hungarians do not draw a sharp line between coproduction and cooperation. The former means, strictly speaking, cooperation in production.

What the Hungarians do <u>not</u> consider cooperation are:

- simple licensing agreements;

- straight know-how agreements; and
- purchases of patents.

On the other hand, a licensing-plus-subcontracting contract does come nearer to what is intended. If to that, a long-term agreement on distribution channels and marketing is then added, we would definitely consider it cooperation. A critical element appears to be movement of goods in both directions, so that both sides are both giving and taking in the relationship. Another factor is that it should be long-term - e.g. for 10 years.

2. Brief History of the Hungarian Road Vehicle Production

In the industrial structure before the World War II the vehicle producing branch was not a significant factor in Hungary. Though the designer of the famous "T" Ford passanger car was Hungarian-born Joseph Golamb and János Csonka, the Hungarian engineer and industrialist produced the first Hungarian passanger car in 1883, car production has never been an economic goal in Hungary. During World War II more than 80 per cent of the Hungarian vehicle park was destroyed and this happened with the vehicle producing factories too.

The world-wide upswing in the vehicle industry has brought a considerable development of road vehicle production in Hungary. In the years immediately after the World War II a small number of vehicles was produced but road - vehicle production really reached a stable of some importance during the Third Five Year Plan /1966-1970/. This is now

one of the most important branches of industry and its further development can be expected to completely transform the whole production and marketing structure of the Hungarian machine industry in the near future.

In 1965 the vehicle industry accounted 12 per cent of the whole machine industry, by 1970 the figure had risen to 20 per cent, and the estimates show that it will reach 22 per cent by 1975. This structure-forming effect will influence the value changes in vehicle exports of the machine industry.

In spite of the rapid development, however, it has become clear that in order to meet the technical and economic demands on this branch of industry, it is necessary to concentrate on a few selected products, to ensure their rapid development with the aim of ensuring profitable production.

It has, therefore, become necessary to manufacture new, high capacity engines, new driving gears, high-capacity running gears, up-to-date suspension systems, new types of mechanical and hydraulic servo steering gears and the development of other equipment for vehicles at home and purchasing licences from abroad. These tasks were summarized in the central development programme on road vehicle production which was adopted in 1968. Its key point is the further large-scale development of Hungarian bus production. According to the plan, in 1975 the Hungarian vehicle manufacturing enterprises will produce 10,000 to 11,000 buses in the medium and large categories. 13,000

to 15,000 up-to-date Diesel engines for vehicles, 45,000 to 50,000 rear running gears of 8 to 12 tons capacity, 18,000 to 20,000 servo steering gears as well as lorries and special vehicles according to the demand.

The programme has been launched successfully and is making good progress. The necessary capacity for manufacturing annually 13,000 to 14,000 up-to-date Diesel engines on the basis of a MAN licence has been ensured, rear axles are being produced on a floor space of tens of thousands of square metres; and a new, huge workshop suitable for the latest technology of bus assembly has been set up. A well-organized basis for the manufacture of hydraulic servo steering gears, gear boxes and other components has been established and the production of a new bus family, the IKARUS-200, has started. Thus the industry produced 6,000 buses and approximately 4,000 lorries and special vehicles in 1970. The factories giving the bulk of this production are: The Hungarian Railway Carriage and Machine Works at Győr employing some 18,000 workers, the Csepel Car Works having approximately 10,000 employees and the IKARUS Body and Coach Building Works, also employing 10,000 workers. An important part is played also by the Automobile Electric Equipment Works, which manufactures dynamos, starting motors, A.C. generators, etc. for vehicles; the Small Motor and Machine Works which produces fittings for motors, pneumatic brakes and body elements; the Driving Gear and Lift Works where gears and clutches are made. The scientific and technical development activity of industry is coordinated by the Research Institute for the Car Industry.

Some 80 per cent of the buses manufactured in ever bigger series are exported and continue to be one of the most

important products in our active participation in the international division of labour. In 1970, more than half of the rear running gears and more than two-thirds of electrical equipment for vehicles were exported. Thus buses constitute 60 to 62 per cent, lorries and special vehicles 16 to 18 per cent, rear running gears 10 to 12 per cent and electrical equipment 4 to 5 per cent of our total export of the road vehicle industry. In the import of vehicles, passenger cars represent 53 to 55 per cent and lorries 35 to 40 per cent.

Over and above traditional foreign trade, the importance of specialization and cooperation contacts with foreign firms in the manufacture of vehicles has increased. This has been taken into account when drawing up the central development programme. An example of this kind of cooperation is the organization of the production of the Rába-MAN engines. In the period between 1965 and 1970, cooperation agreements were concluded between Hungarian and Soviet, and Hungarian and Polish enterprises in accordance with the concept of establishing close contacts between the Hungarian vehicle industry and the same branches in the countries of the Council for Mutual Economic Assistance /COMECON or CMEA/. Under the agreements in exchange for Hungarian rear axles, the Soviet partner supplies front axles, hydraulic pumps and shock-absorbers, the Polish partner injection pumps, slide bearings etc. An outstanding example is the large-scale cooperation in the manufacture of the Soviet FIAT /VAZ 2101, Zhiguli/ cars. The Hungarian factories are also cooperating with some Western European firms. The Hungarian Railway Carriage and Machine Works, Győr supplies engine parts to West German MAN under a licence agreement, and buys boxes for lobbied and speed gears in exchange for rear axle parts.

IKARUS has established production contacts with Swedish Volvo, Austrian Saurer and French Berliet.

The next step in technological development is to modernize the body building while increasing the produced quantity. The IKARUS-200 family will be further developed and is intended to include 12 types in categories ranging from 8,5 to 18 metres. The design of these types is based on the module system and mass serial production. Not only will the capacity of the vehicles increase, but the travelling properties and facilities for comfort will also be improved and they will be more attractive externally, too.

The next tables /Table 1 to 3/ will give the reader a brief look at the production, export and import figures of the Hungarian economy.

Table 1

The Production, Export and Import of Lorries in Hungary between 1960-1971

/units/

Year	Production	Export	Import
1960	2,923	2,090	3,976
1961	3,401	2,295	1,329
1962	3,669	1,499	1,676
1963	3,697	1,224	3,241
1964	3,791	1,629	3,617
1965	3,617	1,946	2,056
1966	4,197	2,416	4,702
1967	4,095	1,859	8,497
1968	4,643	2,007	6,729
1969	3,973	1,824	5,902
1970	3,815	1,485	15,618
1971	3,975	1,717	14,274

Table 2

The Production and Export of Buses in Hungary between 1960-1971

/units/

Year	Production	Export
1960	1,877	1,181
1961	1,955	1,538
1962	2,300	1,531
1963	2,299	1,248
1964	2,385	1,924
1965	2,688	2,173
1966	2,920	2,314
1967	3,375	2,816
1968	3,985	3,126
1969	4,790	3,925
1970	5,983	4,745
1971	6,360	5,024

Table 3

The Hungarian Passenger Car Import and Passenger Cars in Use in Hungary between 1960 - 1971

/units/

Year	Import	Passenger Cars in Use
1960	5,707	31,268
61	7,870	39,872
62	17,752	53,118
63	15,278	71,297
64	9,702	86,247
65	11,561	99,395
66	19,083	116,677
67	24,900	144,601
68	27,545	163,636
69	25,634	192,300
1970	48,993	240,300
71	54,381	291,100

3. Hungarian-Soviet Automotive Cooperation

/Hungarian Components in the Soviet Fiat-Zhiguli passenger car/

For reasons of economy Hungary does not now produce passenger cars and, neither is she intending to set up a passenger automobile industry of her own in the forseeable future. Life, however, dictates a throbbing tempo and the country needs passenger automobiles in rapidly increasing numbers. The figures of Table 3 reveals the rate of development of Hungary's passenger car fleet. From 100,000 in 1965, the number rose to 240,000 by 1970, and is expected to rise to 500,000 to 600,000 by 1975.

Hungary relies on fine traditions on valuable experience in the manufacture of vehicles; IKARUS buses, special-purpose road vehicles, tractors, etc. built in Hungary have become known and much sought after in many countries of the world. This experience will become especially valuable when Hungary, in addition to numerous international cooperation agreements takes her share in the implementation of the large-scale VAZ programme of the Soviet automobile industry, based on a licence purchased from FIAT.

Under a cooperation agreement concluded in 1968, five Hungarian factories supply 13 different parts and accessories to the Soviet VAZ 2101 cars, known widely as the Zhiguli, in series of 300,000 a year each, which in fact is nearly half of the total needed for the cars to be produced annually in the Soviet Union.

In return for the parts, the Soviet automobile industry supplies 12,000 to 12,500 cars a year to Hungary. Since this number covers only part of the country's needs, Hungary, in line with her industrial and trading policy, is ready to cooperate with car factories in other countries, with special emphasis on the new types of passenger cars on the drafting boards in the socialist countries. The success of the VAZ agreement is proven by the fact that 50000 Zhiguli automobiles will be on the highways of Hungary by the end of 1975.

3.1 List of the Components Hungary Supplies Under the Zhiguli Cooperation

1. Windshield wipers.

   Complete stainless steel assemblies with motor and pantograph, operating at two speeds.
   Manufactured by: Bakony Works,
   Veszprém.

2. Ignition Distributers

   Complete assemblies.
   Manufactured by: Bakony Works,
   Veszprém

3. Horns

   Double toned

   Manufactured by: Bakony Works,
   Veszprém

4. Ignition Switches

Built integral with the steering lock, complete with key. Four position switch: in addition to the basic position with the steering gear locked, it has a neutral so-called parking position /steering gear locked/, an ignition position /steering wheel rotatable/ and starting position.

Manufactured by: Bakony Works, Veszprém.

5. Instrument panel

Complete assemblies with built-in warning lights and instruments.

Manufactured by: MMG Factory of Mechanical Measuring Instruments,
Budapest

6.-9. Door locks /front right and left, rear right and left/

The locks stand up to temperatures between minus 40° centigrade to plus 40° centigrade.

Manufactured by: ELZETT Works,
Budapest

10.-12. Outside door handles /both sides front and rear/

Modern flush design in high-class zinc alloy.
Manufactured by: ELZETT Works,
Budapest

13. Inside door handles

High-gloss handles

Manufactured by: ELZETT Works,
Budapest

14. Motor bonnets

Open from the passenger space

Manufactured by: ELZETT Works,
Budapest

15. Luggage compartment locks

With extra key

Manufactured by: ELZETT Works,
Budapest

16. Car radio

All-transistor super type sets for medium and long or medium and short-wave, according to order, complete with speaker and aerial.

Manufactured by: Videoton Factory,
Székesfehérvár

17. Tyre pressure gauges

Part of the tool kit.

Manufactured by: MMG Factory of Mechanical Measuring Instruments,
Budapest

18. Headlight bulbs

Manufactured by: United Incandescent Lamps and Electrical Factory Ltd. /TUNGSRAM/, Budapest

All but two of the above listed components are manufactured by FIAT drawings and know-how. The car radio and the headlight bulb are Hungarian design.

4. Automotive Cooperations of the Hungarian Railway Carriage and Machine Works, Győr

4.1. Brief history of the factory

The Hungarian Railway Carriage and Machine Works, one of Hungary's major industrial plants, celebrated its 75th anniversary in 1970.
Its establishment in 1895 coincided with a period of industrial development. This period witnessed the expansion of the country's railway system with its demand for new and more rolling stocks. In 1898 five railway carriage factories were in operation in Hungary, one of them the MRCMW in Győr. In the same year the factory manufactured its 1,000th railway carriage. The products of the factory were internationally recognized. The first powered cars of the London Underground, for instance, were supplied by the factory. The Győr factory was among the first to begin the

building of motor-coaches in 1902 and the first also in the history of motor coach production, to appear with a four-wheel-driven new construction in 1904. In 1907 the plant began the production of motor lorries, first under a Daimler, later under a Praga licence. The latter type, marked with the RÁBA trade mark remained in production until the late twenties. In 1928 the plant aquired another licence, this time from the Krupp Works in Essen, covering modern high-capacity road trucks. As a result of a new licence purchase, the factory introduced between 1939-1942 the production of RÁBA-MAN Diesel engines and trucks powered by these engines. The annual truck production was some 300 units per year in that time. From the mid-sixties Győr was assigned the production of 200 h.p. Diesel engines for the fast development of bus building in Hungary. Another important job was the production of running gears to implement the country's large-scale road vehicle development programme.

4.2. Diesel engine production under M.A.N. licence

For the production of 180 to 250 h.p. vehicle engine the MRCHW factory bought a licence from the West German firm M.A.N. and signed an agreement concerning the supply of the equipment of the engine plant with the M.A.N.-Renault-Ferrostaal consortium. The annual capacity of the

engine factory is 13,000 units of engines. The capital investment was about US dollars 22m. The plant began normal operation in 1969 in its 29,000 sq.m. new assembly hall. It produces horizontal, vertical and inclined engines with capacities of 192, 200 and 215 h.p. for buses, trucks and heavy duty camions. The contract with the M.A.N. company stipulates continous contacts and according to the agreement Győr takes over M.A.N.'s new designs and constructions as well. These constructions include the 123 mm bore 250 h.p. inclined engines which are already in serial production and the 256 h.p. turbocharged planting engine which will be manufactured soon.

4.3. Road vehicle production

Since the MRCHV corporation established the basic technical requirements for the manufacture of up-to-date road vehicles, the factory began to produce special-purpose lorries.
The following basic models are manufactured:

Table 4

Features of basic truck models manufactured by MRCHV corporation, Győr.

Model	H.P.	Load capacity /kp/
RÁBA-831	215	7,620 - 10,620
RÁBA-832	215	13,000
RÁBA-833	215	14,000

Out of the basic models, there are semi-purpose types too:

The RÁBA 331-572 model assembled with a trailer, has a tilting cabin and it fits to the international transport regulations. The RÁBA 333-574 model is a three-axle semitrailer. The traction part of the lorry is suitable for towing various special-purpose semi-trailers as well, such as containers, panel carriers etc. The RÁBA-335 model is a three-axle lorry with two driven axles, tilting platform and a 230 h.p. inclined engine.

5. Motorbus Cooperations of the IKARUS Body and Coach Building Works, Budapest

5.1. Brief history of the corporation

The factory was founded in 1895 and started to manufacture bus bodies in 1913. It is now one of the largest motorcoach building plants in Europe. In 1959 the 10,000th IKARUS bus rolled off from the assembly lines. The production was rapidly increased during the last two decades. The factory has close cooperation links with its Hungarian partner corporations and under this scheme the engines, manufactured under MAN licence and the running gears to Hungarian design, are manufactured at the Hungarian Railway Carriage and Machine Works in Győr. The basic features and data of the IKARUS are shown in Table 5.

Table 5

Basic Production Data and Features of the IKARUS Works

	1950	1970
Number of manufactured buses /units/	175	5,981
Total labour force /head/	1,820	9,450
Number of buses exported /units/	-	4,738

5.2. Cooperations of the IKARUS Works

The IKARUS Works has entered into several cooperation ventures with West European companies, including VOLVO of Sweden and the STEYR Company in Austria. Under these contracts, IKARUS builds the bodies while the chassis and engines are supplied by these two companies in compliance with the buyer's specifications. In many cases the Hungarian factory cooperates in designing completely new types of vehicles. This cooperation has made it possible for Hungarian motorcoaches to be supplied abroad, with engines which have servicing facilities within easy reach. On the other hand, the West European companies can sell more of their chassis and engines through such cooperation agreements.

Table 6 shows the models manufactured by the IKARUS Works.

Table 6

Characteristic Features of Bus Models Manufactured by the IKARUS Works

Model	Engine capacity /hp/	Overall length /metres/	Remarks
IKARUS-311-321	95	8.5	city and intercity
IKARUS-620-630	145	9.3	city, suburban and intercity
IKARUS-55-66	145	11.4	intercity, suburban, turist
IKARUS-556	192	10,8	city
IKARUS-250	192	12.0	De luxe turist
IKARUS-180	192	16.5	Articulated city

More than five years have elapsed since the first bus with an IKARUS body mounted on a VOLVO chassis left the plant. This deal marked an important juncture in the HUNGARIAN enterprises' exports. The IKARUS body on VOLVO underframe became the first of a series of similar deals.

IKARUS's relations with the STEYR-SAURER vehicle concern in neighbouring Austria are likewise expanding. One of the objectives in their joint work is to develop a new small bus to be called 7 metres long.

6. Conclusions

The rapidly developing and expanding automotive cooperation is a world phenomenon. Both partners enjoy the obvious advantages of these ventures.

Licencors or corporations who are keenly interested to set up cooperations with other factories can expand their market activities, spare overhead and labour costs, and sell technical know-how and licence. All these advantages are resulting a final goal: to increase production and reduce cost.

Partners who buy licences and technical know-how enjoy the advantages of these kind of ventures too. In many cases economists and technicians realized that it is cheaper to buy technology than to develop it. Therefore corporations with good technical background and fairly good technical standard tried to seek partners, to set up joint cooperation or simply just to buy licences. The latter is fairly seldom, since the buyer - whenever it bought a licence - would like to sell the product

produced under the new licence. However, lack of marketing experience sometimes blocks these wishes, therefore the best solution is to sign a cooperation contract. But out of the mentioned advantages there are other things which favour to the buyer. The bettering of technology and quality of the products, the increase of the number of serial products and the reduction of manufacturing as well as overhead costs.

Hungarian corporations which are involved in the so called "Zhiguli cooperation" are enjoying all the above mentioned advantages.

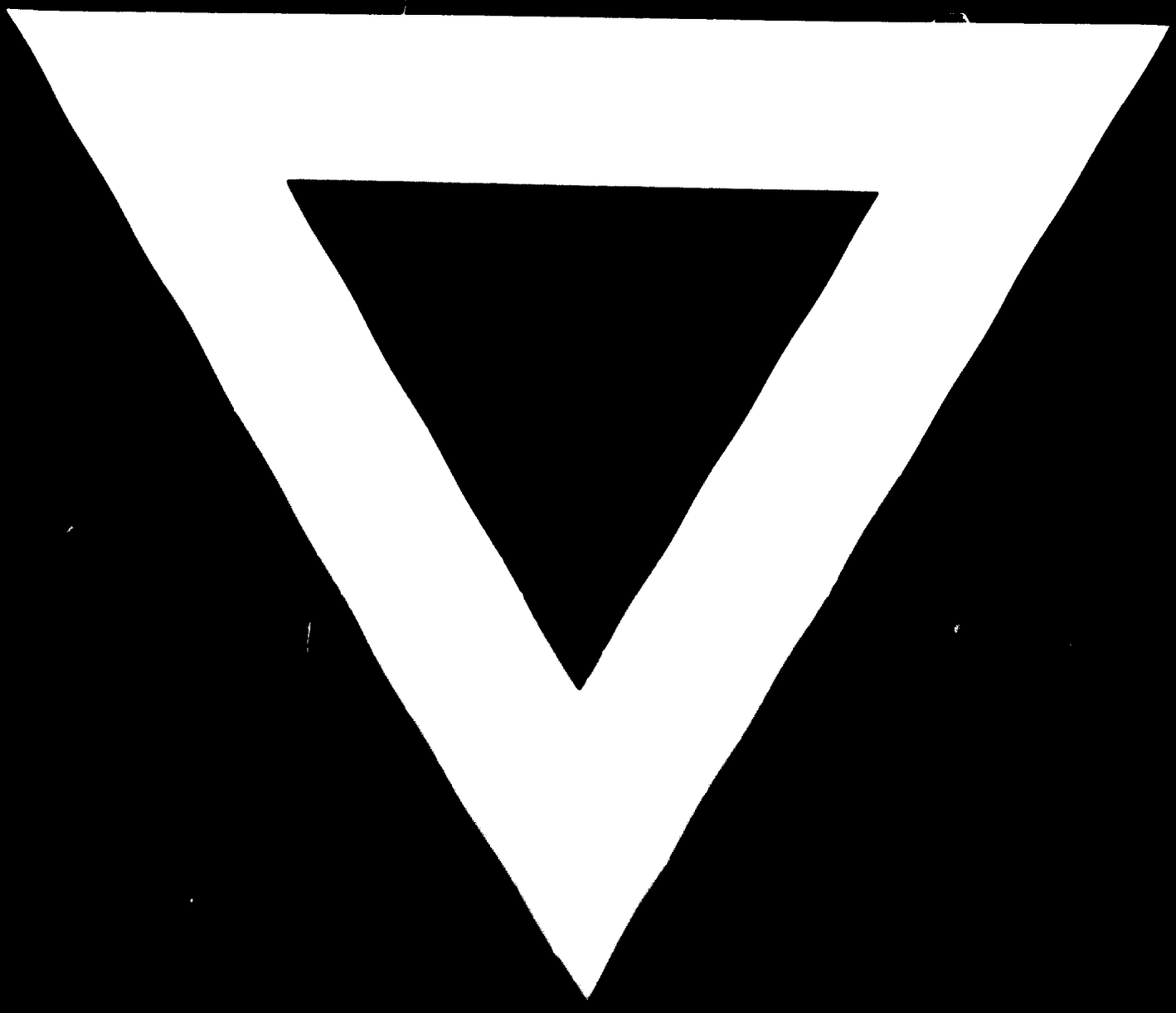
The cooperations deals, essentially most successful, have also brought to the surface a few questions, which, if duly considered, will promote further development. Although experience shows that, generally speaking, cooperation ties between small and medium size companies are rather successful on account of their greater mobility but in some instances adequate manufacturing and technology potentials are missing and their technical adjustment ability is not always so good. These latter conditions tend to be better in the case of major companies, who have, however, most often only marginal interest in cooperation ventures.

The prices set by the Western company for components and parts for delivery to them are sometimes not attractive enough for Hungarian industry. The Western customs duties levied on the spare parts of manufactured commodities delivered as counterpart also raise problems for the

Hungarian manufacturer. /For example, the import duties for machinery component is 11 % in the Federal Republic of Germany/. The demands forewarded in value by the Western companies for the delivery of components from Hungary in many cases are substantially lower than the value represented by the intellectual product or product unit delivered by them, and as a consequence, the cooperation transaction is not always balanced. This means that the venture is not always anchored to firm foundations.

Generally speaking: experience shows that the problems metioned above do not hamper the development of future cooperations, rather stimulate experts to find the best ways and means to eliminate them and to improve the structure and quality of the cooperation.

As far as the developing countries concerned, the Hungarian Market Research Institution recently made a brief outline on the automotive cooperations between Hungary and the developing countries /"Expansions of Trade Through the Promotion of Complementary Economic Structures." UNCTAD TD/B/591. p.23/.



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