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A STRATEGY STRATEG FOR DEVELOPMENT ✓

by

W. Owen

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Introduction

1. The revolution in transport is playing a major role in the social and economic revolution around the world. Mobility has contributed to development not only by increasing domestic commerce and world trade, but by establishing contacts among peoples and nations. In the process, it has made possible a global awareness of the problem of poverty and a global effort to find solutions. The scientific breakthrough in transport has accelerated the process of learning and extended the influence of those attempting to apply it to the task of improving man's lot. Every profession is being affected by a more rapid evolution of thought and a greater capacity to act on an international basis. Transport and communications have set the stage for man to think his way as well as work his way out of bondage.^{1/}
2. Soon the international web of communications will be drawn tighter around the world. Supersonic flight will mark a new triumph over time and distance, and all parts of the globe will be linked orally and visually through satellite communications. This will not be a world in which it can be argued that the future of countries on the lower rungs of the development ladder is of no concern to the future of those on top. No country will be able to escape the reality of its political and economic interdependence within the world community.
3. It is evident, however, that in poor countries the web of communications does not extend beyond the major cities and main intercity routes. The transport revolution has been contained in scattered economic islands where mobility and some degree of prosperity go together. There are still vast areas where immobility and poverty persist.
4. Experience in both the developed and the less developed countries makes it clear that transport has played a key role in helping to overcome poverty. In many instances, the failure to provide adequate transport has been the major missing element impeding economic and social progress. But often transport facilities have failed to make an effective contribution. Projects built on the chance that development would follow have led to costly disappointments, and other sectors of the economy have been denied resources that could have been put to better use. Knowing when, where, and in what circumstances transport will make a positive contribution to better living is the key question.

^{1/} Pierre Teilhard de Chardin; The Phenomenon of Man (Harper and Brothers, 1959), pp. 239-40.

5. There are no easy guides to success or failure for the transport decision maker. Transport policies that make sense have to be derived from development objectives that also make sense. The most urgent need is to create a new state of mind in which transport decisions are clearly seen as an integral part of other policy decisions. To do this will mean giving up some global misconceptions about the transport function.

6. The mistake that causes the most trouble is the view that transport is a separate sector of the economy. In reality, it is not a sector but a link among sectors. As a consequence, the idea that transport should be improved for its own sake is erroneous. Actually, the only justification for providing transport lies in serving other objectives. Transport cannot be planned and managed in isolation, for what is done or not done to provide mobility and access will often determine the success or failure of the development effort.

7. This conception has generally concealed the fact that supplying transport is different from meeting other needs. Combating hunger, for example, calls for a specific target for food, expressed in a definite number of calories per person per day. Goals for education can be expressed in plans for children to be instructed through a specified number of grades. But comparable goals for transport would be irrelevant. It cannot be specified that everyone needs to travel a hundred miles a year, or that for each person a thousand ton miles of freight should be hauled. It is impossible to say what amount of transport is enough or too much except in relation to purposes served. Food is necessary to live, and education is necessary to live well, but transport is necessary only to the extent that it helps people to eat, to become educated, or to achieve some other economic or social gain.

8. As a result, it is impractical to lay out a program for transport unless economic trends and objectives are known and translated into transport demand. Then the attempt can be made to determine how much transport is called for, where it is needed, and what kind it should be. The task is not easy. Providing mobility is not like producing cement. When cement piles up in warehouses, someone will see that a halt should be called to making more. But a country can go on for years providing more transport than it needs, and there will be no tell-tale surpluses to suggest a different course. When transport facilities are built that are not used, it is difficult to shut them down like a factory, and it is easy to repeat the same mistake in some other location. The payoffs from transport have been spectacular, but so have the losses.

9. The engineer is generally saddled with the job of determining what is required. In carrying out this role unaided, he is obviously miscast. The engineering contribution is not to determine the need but to meet the need. It is up to those responsible for food production, industrialization, and other targets to say what transport will be required. It is then the task of the builders to determine alternative ways of proceeding, to estimate costs, and ultimately to create the facilities. A systems approach to solutions is needed - meaning not simply that the transport system should be viewed as a whole, but that transport has to be related to the economy. To do this effectively calls for a strategy for mobility.

I. DETERMINING TRANSPORT NEEDS

10. During early stages of development, a given percentage increase in national product will be accompanied by a considerably larger percentage increase in freight traffic. Conversely, an increase in freight movement will be accompanied by a substantially lower percentage increase in the growth of national product. In countries that have achieved a high degree of development, however, the growth of traffic tends to parallel the growth of economic activity. Countries such as the United States and Canada have been experiencing this relationship for some time. In the future, however, the effect of further technological change, particularly in food processing, sources of energy, and techniques of communications, may lead to an economic environment in which increases in living standards will be achieved with less than proportionate increases in transport volume. A strategy for mobility in developing countries should aim at approaching more rapidly the relationship between economic growth and transport volume that characterizes developed countries. Ultimately it may be possible for poor countries to achieve more wealth with less transport through the application of scientific and technological innovations.

11. Investment in transport as a percentage of total investment also tends to decline with economic growth. This trend can be furthered by more effective use of existing facilities, better organization, and improvements in administration, as well as by avoiding overdesign, by construction in stages, by the selection of the most appropriate technology, and by efficient construction methods. In other words, developing countries should take measures that will cause a given investment in transport to accommodate as much traffic and add as much to the national product as possible. This should be the guiding principle in the construction and operation of individual projects as well as transport systems.

The sum of individual projects will determine for the economy as a whole whether the aggregate relationships between levels of economic activity, volumes of traffic, and transport investment reflect a satisfactory degree of transport efficiency. The elements of a strategy to accomplish this goal will differ among countries in different stages of development, but in all cases the first step is to determine what transport is needed.

12. Surveys of natural resources are a prerequisite for providing information on what a nation has to work with - its land, water supply, soil conditions, minerals, forest reserves, and power potentials. No nation can afford to remain ignorant of its resources, which are the essential basis for making development decisions. Aerial mapping and exploration can help to discover natural wealth and to determine feasible transport routes quickly and at low cost. The entire area of the less developed continents should be systematically explored and mapped with international assistance as a first step toward a strategy for development.

13. To establish development goals, resources have to be compared with the needs of the people, and targets set to guide the effort toward better living standards. Goals include requirements for food and other agricultural products, for housing, schools, and health services, for jobs in industry, for power, and for transport. Development plans to help guide national, regional, and urban growth are necessary as a means of allocating capital, labour, and entrepreneurial skills effectively and consistently.

14. To translate traffic into transport needs, aggregate demands for transport can be estimated from the top down on the basis of economic indices, over-all traffic trends, and production targets. Estimates of demand for specific routes and areas, however, require knowledge of the location of economic activities, sources of supply, and markets.

15. The translation of transport demand into physical needs requires a comparison of projected passenger and freight movements with the condition, capacity, and use of existing transport facilities. Physical needs can then be translated into financial requirements by determining to what extent projected use is to be accommodated by new investment, improvements in existing plant, better maintenance and operation, or measures to influence demand.

16. Economic justification of transport expenditures can be measured in part by increased production from reductions in transport cost and improvements in service for traffic already moving. But an additional measure is the volume of new production created by activities that greater mobility makes possible. In judging

the desirability of improved transport, newly generated traffic may be the most important factor as well as the most difficult to estimate. In addition, many of the projected benefits from improved transport will be intangible and difficult to measure. They include the achievement of greater political unity, internal security, the development of cultural ties, the transmission of new ideas and new techniques, the provision of better health services, and the improvement of education. Fortunately, however, most of these benefits are realized only through the movement of traffic. Traffic measures the success of a transport service, and estimates of traffic are the key to economic justification. The decision to improve transport, therefore, depends on whether the volume of goods and passengers to be moved will add sufficiently to the wealth of the country to cover the cost.

17. To date, the projection of traffic has been made by predictions of what is likely to happen if the improvement is made. These happenings generally depend on a variety of private decisions that may or may not be taken after better transport has been provided. A strategy for mobility should seek to assure that such developments actually materialize. Instead of building a road in the hope that it will lead to increased agricultural output, steps should be taken to help make new production possible. This may require colonization programs, fertilizers, irrigation, or agricultural extension services. To provide only for the transport facility, leaving the rest to chance, is an unnecessary gamble. Instead of guessing about the future, it will often be necessary through a balanced regional development program to help fashion the future.

18. Establishing the need for transport investments has become more and more dependent on the presentation of elaborate analyses of project costs and benefits. This process has facilitated the task of decision-making, but there are two dangers in the current trend. One is that concentration on individual projects can limit economic perspectives and defeat the objective of developing an integrated transport network. Second, the concentration on project proposals has led to meticulous and time-consuming study of details, the validity of which may depend on broad underlying assumptions that depend primarily on good judgment. If the now affluent countries had put their faith exclusively in benefit-cost ratios, it is not altogether clear that they would have achieved their present state of development.

II. THE CHOICE OF TECHNOLOGY

19. The cost, performance, and development impact of alternative methods of transport will differ with the transport tasks to be performed with geography, and with resource availability. Railways and water carriers will continue to be the preferred method for long hauls and heavy traffic. The movement of food grains, staple agricultural commodities, industrial raw materials, and fossil fuels make up the bulk of the traffic moving by these methods. But road transport continues to be the most rapidly expanding method of transport and accounts for the largest share of transport investments. A large proportion of transport for short hauls, high-valued commodities, perishables, and small consignments will be by motor vehicle. Roads afford the best means of providing access to land and other resources, and affect the lives of the largest number of people. The fact that road transport comprises a much larger network of routes than either rail or water transport makes it the most universal method of movement.

20. A common mistake is the attempt to maintain uneconomical railway services that could be provided more satisfactorily by other methods. A related policy that frustrates development is restricting the use of motor vehicles on grounds of protecting the railways or conserving resources. The railways are not protected by the retention of traffic they are not suited to carry, and the resources conserved by inhibiting the growth of motorized transport have to be weighed against the resources that as a result remain unused.

21. Although road and rail transport generally account for as much as 75 per cent of the transport bill, other methods of movement are playing an increasingly important role. From many points of view, the airplane and helicopter are ideal transport media, since they require a minimum commitment of resources and provide the necessary services within a minimum time period. The fact that air vehicles refuse to fly without proper upkeep has also inculcated good maintenance practices in the most unlikely places. The pipeline, too, has much to commend it, being the ideal method of transport from the standpoint of economic planning. No one builds a pipeline without knowing what is to be piped. The greater use of both these forms of transport should be beneficial to developing countries.

22. Technological advances, especially in ground-effect machines and air transport, promise new possibilities for the solution of transport problems. The difficulty of foreseeing the future course of technological development and the certainty that innovations will continue to render existing facilities obsolete emphasize the importance of flexibility and the need for avoiding unnecessary commitments.

This can be accomplished by adopting minimum standards, avoiding large fixed investments, and favouring projects with an early pay-off. Meanwhile, research and development efforts to hasten the practical use of new methods of freight and passenger movement will be of key importance and should be given top priority. The greatest hope is that science and technology will provide entirely new ways of solving old problems.

23. Technology outside the transport field offers important opportunities for influencing the nature of a country's transport problems. Energy sources, energy distribution, and processing techniques for agricultural and mineral output may greatly lessen the transport burden. So may the location of industries and the design of urban areas. Scientific innovations that reduce unnecessary demand for transport may prove as important as increasing transport supply.

24. Improvement of communications will also be important. If a nation is to emerge from subsistence, the most important trade will be the trade in ideas. An effective development program requires an understanding of what is at stake. Participants need to know that living conditions can be improved and that economic progress has something tangible to offer. A revolutionary movement toward higher living standards will not take place until the word gets through to areas and people now beyond reach. Thus a basic requirement is a communications network for the dissemination of knowledge, and this network no longer depends exclusively on transport. Communications can provide a new impetus to growth by extending the scope of technical advisory services, by compensating for the scarcity of teachers, and by expanding medical aid and other help to remote areas.

III. IMPLEMENTING TRANSPORT STRATEGY

25. The conventional practice of planning and operating competitive transport media under separate administrative agencies has made physical coordination of facilities difficult and has introduced conflicting criteria for investment decisions. The result is often an uneconomic allocation of resources and perennial controversies over rates and government regulations. This lack of cooperation runs counter to trends in technology, which have made different methods of transport complementary. A compartmentalized approach is obsolete. Transport investment programs in the public sector need to be integrated through an appropriate single administrative agency, and principal common carrier services need to be operated as a unified system. The provision of facilities and services also needs to be responsive to the physical and social targets established by national and regional development agencies. Not many countries can yet provide the comprehensive plans

on which transport decisions need to be based, but initial steps can be taken to establish a consistent set of national goals by establishing appropriate planning and programming operations.

26. An integral part of the problem of organization and finance is the establishment of rates and charges for transport services that will reduce the drain of the transport program on general tax revenues without inhibiting the use of transport investments. When transport fails to pay its way by a wide margin, it drains support from other urgently needed development projects and encourages transport obsolescence. When there is some degree of self-support, a predictable source of income can be counted on to permit long-term physical and financial planning. The degree to which transport charges cover total costs, however, will differ with stages of economic growth, and financial policy has to be tailored to what is most conducive to development. In all cases, one of the key requirements is to budget the amounts necessary to maintain investments already made.

27. The appropriate roles to be played by the public and private sectors raise important unresolved questions. More administrative and financial experimentation is called for to provide the managerial talents, financial incentives, and the partnership of government and industry that can get the job done. For example, the supply of entrepreneurial talent can be supplemented by management contracts that fill the initial void and help in the training of personnel. The success of such contracts between the airlines of developed and less developed countries suggests that railway, trucking, and other transport operations might benefit from similar contractual arrangements. Cooperatives offer another means of assisting in transport management by providing distribution services that include assembly, storage, transport, marketing, and financing.

28. Errors in strategy often stem from the division of responsibility between roadbuilding in the public sector and the provision of vehicles in the private sector. Large outlays are made for roads while the availability of vehicles is restricted by high duties, burdensome taxes, and punitive restrictions. Putting the main emphasis on roads and neglecting the vehicle is a reversal of the policy followed by industrial nations. In the latter it was the encouragement of vehicle ownership that created the pressure for good roads. But the ideal approach is to achieve balance. Total transport costs will be excessive if either vehicles or roads are neglected, since poor roads mean high vehicle operating costs, and restrictions on the supply of vehicles mean high unit costs for roads. The division of total outlays for road transport can be varied by trading off road costs and vehicle operating costs, and thus shifting the cost burden between

the public and the private sectors. A single focus of responsibility is needed for effective decision-making in this area.

29. The dimensions of transport strategy also need to be extended beyond the transport system to the supporting industrial structure, and beyond national boundaries to the international economic community. In the more advanced societies, the transport sector has created a variety of industries providing materials, equipment, and services that have important spillover effects for the economy as a whole. Much of this supporting structure will fail to develop unless specific provision for it is made in conjunction with the transport program itself. A feasible program of industrial support helps to provide new economic opportunities, entrepreneurial skills, and technical competence.

30. Extension of the radius of transport operations has introduced the opportunity for economic development to be undertaken on a broader geographic scale. Individual countries can benefit from improved transport by developing their comparative advantages and avoiding unnecessary duplication of industrial, agricultural, and power projects. A major need is to expand the present focus on national plans to plans for international economic integration that modern transport can help achieve. At the same time, the introduction of modern transport with its heavy capital costs makes it increasingly important for nations to share the responsibility for transport facilities crossing national boundaries. Joint use of facilities, interchange of equipment, and through traffic arrangements can facilitate movement and reduce costs.

31. If the transport strategy of low-income countries is to succeed, it will have to be more effectively supported by the rich countries. But present approaches reflect the lack of a common strategy, and views on foreign assistance in many instances amount to self-deception. The view has been stated that aid programs are overextending the rich countries, when in reality they have hardly begun to tap their potentials. Moreover, aid is a two-way street, with benefits to donors often overshadowing benefits conferred. The feedback includes investment opportunities, growing demands for transport materials and equipment, and prospective long-run expansion of overseas markets in countries now too poor to trade. An additional by-product is the insight that developed countries are gaining into their own problems and into solutions that could work at home. It is a misconception, then, to stress how much poor countries need help without considering how much this help can mean to countries that are rich. A strategy for mobility should view the global revolution in perspective.

32. The basic fact to be recognized is that capital made available through aid programs to help build transport capacity in developing countries has failed to reach a critical level capable of breaking the transport barrier. A larger international effort is needed. A voluntary levy of a small percentage of the gross national product of developed countries could create an international development fund to multiply assistance efforts. Ultimately a percentage of savings from the reduction of armaments can help to provide the funds that will boost the poor nations into sustained economic orbit.

33. An international development fund is called for to permit a grant program for transport to supplement long-term loans for "bankable" projects. Grants are to be preferred in a period of rapidly changing transport technology because transport facilities may be obsolete before long-term loans can be paid off. In addition, the constant accumulation of loans for transport development threatens an excessive burden on poor countries. Grants for transport should be matched, however, spent on designated transport systems; and made contingent on acceptable designs and satisfactory maintenance.

34. The principal role of individual countries should be the support of international programs. But bilateral arrangements also can play an important role by sponsoring special projects and programs for transport in particular countries. Bilateral aid will continue to be maintained for political and strategic purposes and between countries with special ties. Its desirable features are indicated by such programs as the distribution of surplus United States agricultural commodities and by the work of the Peace Corps. Bilateral aid also provides an opportunity to experiment with solutions to transport problems.

35. International sponsorship is better suited to carrying out the critical task of undertaking surveys and plans to guide transport development. Conducting surveys of transport needs and assuring plans that are sound yet imaginative are undertakings basic to the entire program. Costly surveys that are one-time efforts leading to large volumes relegated to the shelf should be avoided. Instead, emphasis should be placed on the creation of local institutions and staffs that can participate in the planning process on a continuing basis. The United Nations should be the principal sponsor of pre-investment survey work, with the aim of producing results acceptable to all, and the World Bank, which serves as the specialized agency for transport, is the logical focus for this activity.

36. At present the number of well-prepared and economically attractive transport investment proposals being submitted to national and international agencies for financing are insufficient to absorb the funds available. Yet a far greater effort will be necessary if a significant attack is to be made on world transport problems. What is necessary, therefore, is an acceleration and improvement in the process of transport program planning and project preparation. A first step should be the creation of a fund for the support of a continuing planning process in those countries not now equipped to make the necessary surveys of their development requirements. Donor nations should set aside 1 per cent of the development funds being made available each year, to be earmarked for the support of appropriate programming efforts. This can help to assure a continuing flow of useful projects through the international financing pipeline and to reduce the excessive lag between project conception and execution. The 1 per cent fund could be used for training programming personnel and for helping to finance advisory services. This would be a first approach to making capital assistance contingent on projects being part of a transport system plan, based in turn on over-all development plans.

37. To carry out these programs, the ultimate solution is a world transport centre in the United Nations. The purpose of such a centre should be to further the role of transport in the development process by mobilizing talent, conducting or contracting for research, disseminating information, and furthering the efforts of the regional commissions and development institutes of the United Nations.

38. Finally, trade policy and aid for transport need to be linked. The potential value of trade for developing countries dwarfs the amounts available in loans and grants. Measures to increase the ease of movement need to be accompanied by measures to increase the freedom of movement and to reduce the gap between export yields and import costs.

39. The rich countries as well as the poor countries have a stake in the results. For the favoured position of developed countries is by no means assured. Rapidly altering political, economic, and technological conditions have created uncertainty about the position of each on the development ladder tomorrow. Indeed, the problems of the poorest countries are often only a different aspect and a higher magnitude of the same problem faced by many who live in more developed countries. It is not likely that an effort to resolve either problem separately can succeed in the long run.

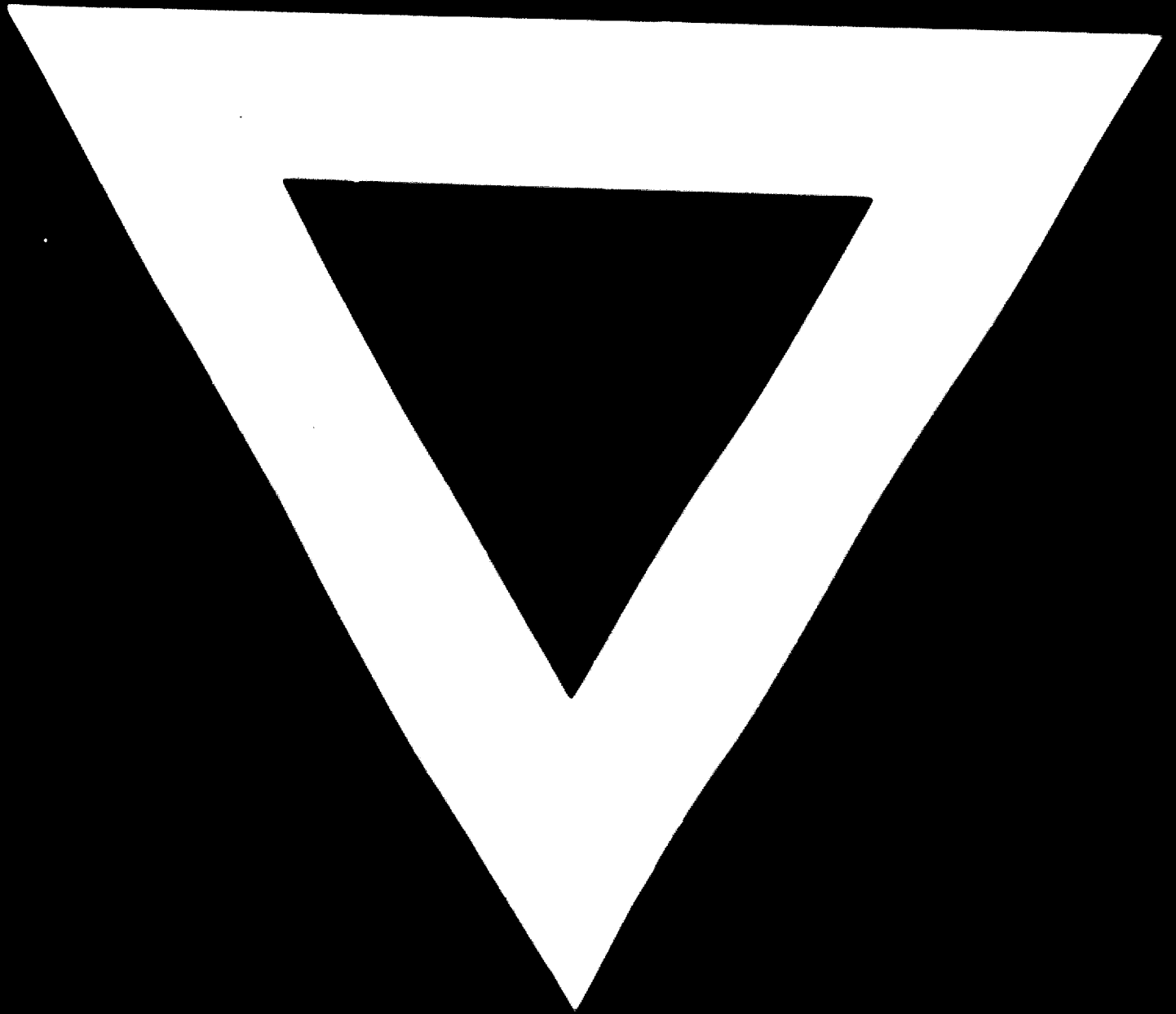
40. If the developed countries are to find outlets for their productive capacity in an age of automation, they will have to look to the limitless needs of the less developed world. They will also have to be willing to buy from these areas as well as sell. To the extent that capital and technical help can increase per capita incomes in Asia, Africa, and Latin America, large additions to the demand for goods and services and to the total volume of international transactions will result. Progress for others can mean progress for all.

41. Finally, what the developed countries are urging on the less developed are things they ought to be doing themselves. High costs, accidents, congestion, and the obsolescence of both transport facilities and transport policy have created many unfavourable conditions in the West. Study of transport in less developed areas has provided a laboratory in which large numbers of people have acquired a new awareness of the problems they face at home. These problems have been difficult to identify on the local scene because they are too complex, too familiar, or too easily concealed.

42. Yet transport still plays an important role in the rich nations, just as it did in the nineteenth century. These countries have been too preoccupied with regulating the competitive struggle among carriers to see the positive role of transport in economic growth. Now they are beginning to understand more clearly the need to establish national goals, to formulate transport policies and programs on the basis of these goals, and to look at the transport network as an integrated system. National objectives will not be achieved if transport is overemphasized or underemphasized to the detriment of education, housing, urban renewal, and other economic and social goals.

43. The task of overcoming poverty is global and the scientific and technological means of achieving abundance are at hand to meet the challenge. One of the preconditions for success is a wellconceived attack on the transport aspects of the problem. What is required is a combined strategy by rich countries and poor that will create the standards of mobility on which the rest of the development effort depends.





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