

TRAPS IN INFRASTRUCTURAL DEVELOPMENT

We are constantly confronted with the telephone misery, the problems in public transport, energy supply or sewage disposal as designers and citizens alike. It is being realized by many that the backwardness of the infrastructure is the most critical hindrance to development. This realisation was reflected in the exercise began in 1984 with the purpose to elaborate the principles of regional and municipal development in that the methodology set forth for infrastructural networks focussed on the assessment of bottlenecks impeding production with a critical approach[&] with a view to provide a basis for future development needs.

To begin with, I will furnish a summary of survey by sectors and counties; then I will deal with conclusions that highlight the causes of the deficiencies noted as well as the deep-set links. By appropriately grouping interrelationships, the common roots and the mechanisms reproducing such scarcities can be identified. Structural development needs can be pinpointed by identifying the mechanisms that affect production, regional processes and the development of the infrastructure as well. To put it plainly, recurring scarcities cannot be eliminated by winding up bottlenecks on a case-by-case basis. The only solution is to find and wipe out the causes of such phenomena and to appropriately change the underlying mechanisms.

Major infrastructural problems and deficiencies

Using the surveys done in Hungary's 19 counties, I summed up the most severe problems by sectors.

In transport, bottlenecks most frequently were identified with the obsolescence of, and the shortages in capacities at railway stations, railway service centers and loading/unloading depots; poor connecting roads among settlements and the congestion



of roads in and around towns. Similar major problems, mentioned directly but less frequently include the need to expand the carrying capacities of some road sections, to reinforce contacts between some of the counties and to do away with the absence of more bridges across the Danube and the Tisza.

In the survey, a most uniform picture has emerged about telecommunications in general, and about the inadequacy of the telephone network in particular; 18 out of the 19 counties deemed it important enough to mention. The adjectives used are worthwhile to quote: low-level, backward, obsolete, overburdened, most critical, full of tension. Further remarks described in detail the causes for the overall scarcity (such as the absence of capacities in telephone exchanges, the backwardness of the switching technology and industry, priority of production), and listed the consequences of such backwardness: it impedes the work of businesses, service companies and management bodies, co-operation within regions, access to market information, the introduction of computer technology, etc.

In water management, the biggest worry is sewage purification that precedes even water supply. As for irrigation, the problems of incentives were raised most frequently; irrigation would have to be used for the good of the national economy, while unused irrigation capacities are available to agriculture. Only water control issues may be regarded as regional specificities since they affect certain regions and counties more closely than the average.

In energy management the biggest emphasis has been put on bottlenecks in medium and low-voltage electricity grids and transformer catchment areas in the county analyses; almost all of the counties have underlined this as a problem. Many have added the problem of expanding the natural gas distribution network as well. This, too, can be regarded as a general worry

which is supplemented by another in counties accomodating high-pressure major distribution pipelines in that so far there was no way to access fuel pumped through the county since there was no opportunity to tap the pipelines.

Having reviewed the list of infrastructural deficiencies by counties one may say that the most severe problems affect more or less uniformly all the 19 counties of Hungary (eg.: the absence of connecting roads, water purification facilities, the critical status of the telephone network, closed transformer catchment areas, extreme fluctuations in voltage).

This uniformity of problems indicates that no local or ad hoc difficulties lie at the core of the phenomena but causes and relationships that apply to the whole of the country. A number of the remarks noted refer to the causes and the incessant re-production of the bottlenecks. Although it would be worthwhile to know all of them, I'd rather select a few of the phenomena and explore them in somewhat greater detail in the next chapter.

Examples to development traps

It is doubtfull whether direct conclusions may be drawn as to infrastructural development projects required on the basis of the information identified by using the method outlined.

Even the concept of "bottlenecks in infrastructure impeding production" has some inherent limitations to possible approaches and may fairly easily given rise to misunderstanding.

First, let me analyse the qualification: "impeding production". If "production" is interpreted in a too narrow a sence, infrastructure would appear to be deficient only if it would hinder production directly. In fact the scarcity of anything that hinders the development of the forces of production, including the reproduction of labour (ie. the "consumption" cycle as well) acts against the efficiency of production.

Both the infrastructural and the background systems and the regional demands represent complex units within the full reproduction cycles of socio-economic processes; although demands from direct production may be defined towards them, one must be fully aware that they constitute groups of factors isolated at random from a comprehensive proportionate system. Precisely, it was this unilateral, production-oriented approach (based on short-term efficiency) that resulted in neglecting regional and infrastructural issues and failing to solve them. Therefore an analysis based on the same unilateral approach cannot be expected to provide a realistic picture about the real interrelationships of the processes. This is the "trap" in the unilateral, production-oriented approach.

Paradoxically, it is the unilateral, production-oriented approach that facilitates the survival of bottlenecks in infrastructure that hinder production. In fact, this approach does not reflect the interests of developing the forces of production but the interests of isolated groups.

The problems with bottlenecks is somewhat different. Undisputably, bottlenecks can be identified fairly accurately, although it is doubtful whether they could be used to draw direct conclusions as to development needs,

Bottlenecks may develop only in existing capacities. No matter where the need is, it will appear as demand in any system where there is a opportunity at least in theory that it may be satisfied; therefore it will manifest itself as demand to expand local capacities. This was the mechanism under which the public road network of Hungary began to be developed after the 1963 traffic breakdown. If something is constantly falling behind, the direct elimination of bottlenecks gains prominence; in the case of the road network, the new highways were built to replace old main roads. The road network became even more heavily concentrated on Budapest, and although 9 out of the 11 bridges across the Danube, connecting the eastern and the western halves

of Hungary are in Budapest (and with the completion of the Árpád Bridge, 37 out of 40 traffic lanes are in the capital), this is where the demand is the greatest, and car queues and traffic jams are the heaviest. Demand always manifests itself in existing structures, whereas restructuring would require systematic intervention which was not done. The network, with its ever increasing rigidity, appears to follow regional demand, in actual fact, however, a self-reinforcing process was triggered in which regional processes become incapable of breaking away from the old structure. Whenever this happens, the huge perceptible backlog burries the sector under an avalanche of demand to expand local capacities, whereby a constant urge to expansion becomes the basis for development instead of a restructured long-term concept. This is the trap of network development aimed at the elimination of bottlenecks.

So, this is the danger that threatens us if development follows micro-economic demand instead of bringing about restructuring. The exact opposite may also occur when corporate efficiency, which is a typical micro-economic category, is blocked by a sectoral approach.

A typical case is when enterprises or co-operatives buy a truck of their own to manage their own deliveries. A co-operative, since it is market-oriented and sensitive to efficiency, can perceive its entire production process, ~~can also decide~~ realistically whether it is worthwhile to have a truck at its disposal all the time even if only half of its capacities may be utilized as this may help prevent the shutdown of bigger production capacities and losses that have arisen while waiting for the services of a shipping company.

A specialized shipping company enters parallel production processes, its activities are not disrupted if a producer is made to wait, it is exactly excessive demand that guarantees for a shipping company to have a continuous flow of orders.

If a prospective client purchases a truck of his own, the large enterprise would trigger a defective cycle as a protective reflex. This is the "trap" of sectoral (macro) efficiency statistics.

The shipping company produces statistics about the efficiency of the shipping sector that at a sectoral (activity) level covers up the low specific utilisation of of a scattered truck stock.

Although true that enterprises owning trucks stated on the basis of their actual efficiency calculations that it is worthwhile for them to have the trucks because they could set that against their other (and bigger) production losses, which is otherwise imperceptible to the shipping company, the simple logic of the shipping sector cutting across all the production processes is difficult to question in that there is an excess in shipping capacities at macro level in the country that could be reduced with rational, central organisation. Whereas the co-operatives can define advantages at micro levels only which fail to add up into indices and apparently they can never compete with the advantages to be expected from a more rational sectoral arrangement.

The greatest danger is if administrative measures are employed to phase out competitors, ie. enterprises must transfer their trucks to a central body, the co-operative is not allowed to have a truck or if yes it is not allowed to deliver goods at night in Budapest because it is not given a zone permit, and so on. In such cases the total loss hits production.

A more rational solution is if enterprises with excess capacities are allowed to provide delivery services with their unutilised capacities since this way sectoral rationality would come through although at a cost to the shipping company. The shipping company would become really competitive if it would expand its truck

stock to be able to satisfy all of its clients thereby rendering it unprofitable for them to operate trucks at 50% of their capacities. However, such an expansion would result in much worse indices even as compared to a scarcity-based monopoly position, consequently a large enterprise would undertake to do anything like that only as of necessity. (Also, it may turn out that truck utilisation does not improve at all and the only achievement is that most of free capacities have been concentrated in one hand.)

The same sector-based preference tilts development decisions in respective sectors towards large systems, crowding out points of service.

In infrastructural networks, points of service are nodes where the infrastructural networks get into contact with reproductive processes. Such nodes include both ends of transport and telecommunications and the consumer end of water and energy supply and the sewage disposal network.

These had to be set apart because effective demand for infrastructure appears at such points of service. Basically, networks have been set up to include stations, ports, traffic nodes, stops, telephone booths, post offices, water and gas taps, electric outlets and sinks.

Often enough, these points of service are peripheral, representing the lowest rungs in the technical hierarchy, in the eyes of infrastructural network and system operators, although these days less and less sectoral monopolies and authorities may emerge in the service sector, and clients are less and less willing to submit themselves to sermoning, regulation and queueing, the scarcity in infrastructure, similarly to that in all other sectors of the economy, put the suppliers of services (ie. sellers) at an advantage.

It is evident from the summaries of the county surveys that scarcities are the most critical at the points of service. Miscellaneous parts of networks not mentioned above are regarded by operators as the place of their internal operations, based on their sectoral approach. (Such differentiations are rather obvious in the sewage disposal, water supply and telephone networks, the electricity grid, gas pipelines, railways and shipping lines, whereas the case of public roads is more complex since clients, once in the network, have to be served -- see gas stations, signposts, the quality of roads, etc. -- so only a fraction of the network is really the scene of internal operations, with depots and road maintenance outlets, etc.) However, bottlenecks in internal networks are noted by the operator of the infrastructure as well, primarily through queueing. For example, queueing at a loading/unloading railway station queueing causes delay not only to producers but inefficiency in wagon utilisation as well, thereby deteriorating internal indicators as well. Consequently, sectors operating such networks attempt to get priority for the elimination of such errors (hindering their own activities) even at the expense of expanding capacities at the points of service. To put it plainly, in the service sector its services which are regarded as secondary, due to the "trap" in hierarchic management.

Development mechanisms reproducing problems

So, we can say that the problems in infrastructural development are

- very similar in various regions (counties),
- sustained, and the same phenomena are reproduced, and
- the types of problems recurring in different sectors are rather similar.

Obviously, this is no coincidence. Here, we are faced with a complex set of phenomena which are rooted in common mechanisms.

By arranging the problems into groups, I wish to pinpoint these similarities in transport, telecommunications, water

management and energy management. Also, I wish to include phenomena noted in the development of infrastructure, production forces and production, as well as in regional development over the past decades.

The columns in Table 1 characterize the development of the production structure, regional processes and infrastructure, by sectors. The lines in the table highlight relationships among comparable structures. The mechanisms indicated in the first column of the table can be traced back to types of approaches or traps described earlier. As characteristic mechanisms, I have emphasized development focussed on production interpreted in a narrow sense; development to do away with bottlenecks; sectoral preferences; the rigidity of hierarchic management, along with insensitivity to costs; the reproduction of backlogs; the absence of co-operative contacts and the exhaustion of existing capacities.

Conclusions

Table 1 also underlines that there are close connexions among problems and scarcities noticeable in certain infrastructural sectors, and the phenomena are defined by the underlying mechanisms.

Setting sectoral phenomena against a more general background helps to find out that the attendant scarcities have not arisen as a result of some -- or single -- bad measures. Problems were not listed to underscore the responsibility of some sectors in scarcities but to point out that measures are rooted in mechanisms that force them on collusion courses and as a result no successful solutions can be achieved under such circumstances thorough interventions on a case by case basis.

Obviously, these mechanisms are tightly intertwined: on the one hand, structural development intended to phase out bottlenecks is a direct consequence of insensitivity to costs and the

permanent exhaustion of existing capacities, on the other hand it is the cause of rigidity in hierarchic management and the permanent reproduction of existing structures and the absence of co-operative contacts, but this chain can be continued at any point.

A consequence of this tight set of relationships is that there is no use looking for random solutions to do away with the deficiencies noted; intervention in the form of single responses to single problems is impossible. The monolithic presence of problems exemplifies that they are unavoidable consequences of mechanisms, they are embedded in a set of inter-relationships, therefore any attempt at change, any intervention should come in the form of comprehensive reforms to be able to succeed. The job is to change mechanisms which regularly reproduce existing problems.

In search of progress

The analysis of development tendencies in respect of types of infrastructure can be concluded with the conclusions of the preceding chapter. The study, however, would be unfinished if proposals for progress were not added to it.

In my analysis, I used the phenomena as a starting point to look for the common causes, and I proceeded from the phenomena towards the underlying mechanisms through generalisations; when searching for a future, however, a reverse order would be required.

I am not going to describe the future (or future phenomena) first, but the development mechanisms. The mechanisms shown in Table 1 can be used for this purpose: the inherent traps should be avoided and circumvented by some comprehensive and consistent system of mechanisms. Of course, we must not pretend as if we were to enter upon an untreaded path, since we wish to seize the cornerstones of an economic policy change after all which is referred to by buzzwords like the introduction of an intensive production structure, a new growth path or restructuring production. Although the whole country was shocked

to realize the unavoidability of such changes by the changing impact of foreign markets in the 1970s, and the measures to be taken are linked to the maintenance of solvency that has gained priority over the short term, I will concentrate on internal mechanisms in my discussion which should be effective in the long run so that both the immediate and the long-term objectives, set forth in economic policy, could be achieved.

I have summed up the flaws of a too short macro-economic approach as lopsided production-oriented development.

As for the lopsided expansion of production, the recognition of the users' interests, the avoidance of scarcity management and growth governed by demand should become dominant as opposed to lopsidedness. In a regional breakdown this can be supported by intervention aimed at boosting local competitiveness which, in turn should be propped up from an infrastructural aspect by an approach attaching greater importance to contacts with clients.

As for production development, attention should be called to the fact that it is technology development that devines the growth rate and not good intentions striving attchieve economic growth through the expansion of investment projects.** In this process, key roles are assigned to computer and information technologies and the instruments at work shoudl include an up-to-date and extensive telecommunications network as well as a labour force that can use advanced technology properly.

As for network development hitherto based on the elimination of imminently threatening bottlenecks that rigidifies current structures, a long-term strategy and comprehensive and large-scale planning would be required, based on a macro-economic approach.

** Vámos, Tibor: Individuals, Culture, Society and Techological and Economic Progress, in Társadalomkutatás, NO. 4, 1983

Development, trying to patch up either production or infrastructure to catch up with the other, is also held hostage by a short-term efficiency approach which has led to the exhaustion of current capacities through neglecting maintenance. A way out of this trap is infrastructural development to ensure a more even regional distribution that would take into account local resources and needs as well.

Hierarchic management had a rigidifying effect in every sector. An over-centralized organisation would dodge market impact and flexible adaptation. Autonomous corporate and local initiatives should be utilized to facilitate development. This, on the one hand would affect the large enterprises and organisations of the infrastructural sectors as producers, and on the other hand would set higher requirements in respect of transport and telecommunications as services.

Excessive development of radial contacts goes hand in hand with the decay of horizontal co-operation -- ie. co-operation among equals -- better we say, such contacts fail to develop altogether or there seems to be no desire to have them at all. Demand gets shifted to the center, thereby reinforcing the the growth of the center that has already started. It has been realized both through technical and social systems studies that hierarchic systems with seemingly very logical structures end up in chaos and failure in more complex systems of relationships. A higher degree of organisation can be achieved with the so-called co-operative systems.* In these co-operative systems, "joint" affairs and superiority and inferiority are replaced by "reciprocity" and co-ordination as the governing principles. The components function autonomously: the network of multilateral information contacts guarantee the conditions of operation, but no one element enjoys priority over the others.

* Vámos, Tibor: Co-operative Systems. New Development Perspectives in Valóság, No. 4, 1983

Some aspects of this system can be applied to regional and municipal organisations as well and they also play an important role in the future of infrastructural and production systems as well. As opposed to central production management, market contacts imply co-operative systems. Obviously, co-operational contacts among autonomous enterprises and settlements demand a different kind of network from the hierarchic elements of infrastructural systems than the sustained radial contacts between centers and outlets (transport, telecommunications).

It is to be mentioned that the development of co-operative systems improved co-operation among infrastructural organisations (contacts among water purification plants owned by plants, co-operatives, water associations, etc.), and generally speaking, the ability and the discipline to maintain contacts should also rise (supplies to agricultural co-operatives, households, etc.).

While co-operative systems describe the abstract sphere of contacts, the priority of market effects renew the content of such contacts.

Once settlements and regions become autonomous business units, they can make decisions about local issues as participants of markets in accordance with their needs, weighing pros and cons among sectors -- but not excluding a bottom-up initiative for association or co-operation (eg.: water supply). A market approach may become general in contacts between local manufacturers and local suppliers (of infrastructure) and may also provide orientation in respect of major issues and decisions about service networks. A precondition to this, however, is a pricing structure that reflects costs. From a regional aspect differences in costs must be made perceptible to enterprises, while the profitability of production must be noticeable for the entire region. Rendering regional differences perceptible implies the development of appropriate transport tariff proportions; similarly in water and energy supply proper orientation can be expected of realistic prices only.

Having mentioned market effects and prices promoting savings on costs, attention must be called to the fact that the new price ratios get regions or strata into disadvantageous positions without a chance of choice, primarily in respect of services to households. Such disadvantages should be eliminated through central intervention in a way that the need for intervention should not grow, but diminish over time. Support to transport, energy and water supply should take forms used in social policy directly instead of compelling enterprises to render services contrary to their interests (supply of services to regions with very small villages). Generally, planned intervention is required if spontaneous, but already assessable, processes are to be sidetracked.

Special consideration is required in respect of investments and developments in networks with long useful lives which usually cannot be appraised objectively from a micro-economic point of view by the enterprises that operate them. The most backward infrastructural sectors need central subsidies anyway: it is impossible to make current users pay for the costs of the cumulative backlog.

Finally let me emphasize that the essence of this study is summed up under the heading "Conclusions" in that current development mechanisms regularly reproduce scarcities and hierarchic relations. As for a search for progress let me emphasize that no conclusion can be drawn from whatever can be pinpointed from the present mechanisms that the one to replace the present mechanism will automatically be good. Plenty of debate and correction will be required to come up with future mechanisms. This study did not wish to state that throwing away current mechanisms would automatically guarantee progress; what it wants to suggest is that progress and development is impossible without doing so.

MECHANISM	STRUCTURE OF PRODUCTION	REGIONAL PROCESSES	TRANSPORT	TELECOMMUNICATIONS	WATER MANAGEMENT	ENERGY MANAGEMENT	INFRASTRUCTURE
Development focussed on production, interpreted in a narrow sense.	Earlier, the raw materials and energy industry regions became centers of development, to be replaced later by engineering, the light and food industries, centralized from the beginning of the 1970s.	Absorption and production-oriented development first relied on the urbanisation axis, then on some of the poles.	A goods transport oriented approach was dominant with-in transport, as opposed to a regional approach.	Even today, two-thirds of telephones are used by companies.	10% of the population has no access to healthy drinking water. The absence of sewage disposal networks is almost universal.	Energy supply is geared to production, often with overly excessive "jet lag".	Infrastructure followed production with constant lags, with services closely linked to employment and direct production enjoying priority.
Rigidity of hierarchic management	Efforts to decentralize the overly concentrated production structure did not go beyond setting up outlets in centrally designated major towns. The relative centralisation of prod.man. & dev't capacities continued to grow both in industry and in agriculture.	In the predominantly Budapest-centered country, a still over-centralized system of regional centers has emerged, and the importance of county seats in decision making increased. In development projects preferences are given to major centers.	Radial links in the transport system have been reinforced, i.e. the county seats' links with Budapest are fairly good, but horizontal links in general, and links between county seats in particular leave a lot to be desired.	As a result of development, radial communication networks have emerged. The ratio of phones 'tween Bp and the rest of the country is 5 to 1, with about half of all the phones in the country, concentrated at the county seats.	Development of water utilities was concentrated in major towns. Drinking water is available through water mains to 98% of people in Bp & to 40% of people in minor towns. Sewage disposal networks are available to those with advanced industry. Bp, 70% of people in major towns and 2% of people in minor towns. (in 1980)	Better than average variety of energy and energy supply can be pinpointed in and around the capital structure, there has been growth in volumes of people in Bp & in minor towns. Sewage disposal networks energy sources & are available to those with advanced industry.	The radial/hierarchic structure is dominant circular/horizontal links are missing. As for service infrastructure, there has been growth in volumes as only in the centers.
Exhausting existing capacities	Fixed assets in industry are rather obsolete due to the fact that technological development and the acquisition of up-to-date technologies were neglected.	Development in industry exhausted existing infrastructure (such as the energy axis, poles, intellectual capacities, etc.)	Only a third of the roads maintained by councils are up-to-date. The rate of obsolete, out-moded railway stations and service facilities is high.	Traditional telephone exchanges are dilapidated and obsolete.	Since production enjoys priority & little has been spent on sewage disposal and purification, sewage causes damage to the environment, dolomitic regions & potable water reserves.	The ratio of out-moded energy producers and users is high.	Service facilities usually lost out on development. In the centers basic infrastructural capacities and reserves have been exhausted.
The undynamising effect of planning based on bottlenecks	Upgrading fixed assets often implies that an obsolete production structure is retained; the product itself is more obsolete than the equipment developed to produce it.	Migration followed prompts given by development projects "enclosed" in centers, thereby re-producing specific shortages in such centers (generated shortages).	Development efforts aimed at phasing out bottlenecks in the transport network have reinforced the radial nature of the system (see highways and the bridges across the Danube) & did not enhance cross-ways contacts.	With the expansion of the traditional telephone exchanges, restructuring is put off.	The expansion of water works imply systems development limits in water supply that could be overcome by the development of regional supply systems. Established priorities in water supply however define the future sequence of demands for sewage purification.	New energy grids, designed to supply production centers reinforced the already existing industrial axes.	Development projects are rendered rather expensive by the need to exceed built-in limits. At the same time, development projects aimed at eliminating bottleneck cannot break away from the limitations of given structures, and they follow set patterns.
Sectoral preferences, regional differences	Glaciering large-scale organizations as the general norm has shown that activities unfit for such outfits cannot be profitable and thus too small for accommodating large organizations are at a disadvantage.	Once direct regional interests were pushed into the background, they strove to find unjustifiable channels for themselves, such as competition for certain types of investment, statistics to prove rises in population, elevating the status of settlements, etc.	Overvaluation of the transport capacities' utilization hinders labour distribution among transport vehicle owners that would be best geared to the efficiency of production processes.	The telecommunications network has fallen behind even as compared to its own sector. Only 10% of all the settlements belong in the direct dialing system.	Preferences for large sectoral projects deny priority to regional development and the protection of local water reserves.	As opposed to the utilisation of resources, usually the average terms & conditions of utilisation ratios defined in national programmes were deemed governing even for regional development.	By using the summary indices as plan targets, service sectors managed to retain elements of the command economy and planning methods alien to local conditions for the longest.
Lack of co-operative contacts	Intellectual centers capable of innovation and management are few and far between outside Budapest.	Only unilateral, at best bilateral, contacts have developed 'tween regional centers & sub-centers; horizontal co-operation is missing. Nowadays, admin. boundaries play an excessive role in life.	Secondary road networks & agric. road networks are deficient. The lowest level of railways, i.e. branches, have been partially closed down. Public transport is provided by the "Volán" Bus Co.s whose smallest units are organized county by county.		Co-operation between different water works (owned by factories, water associations, local authorities & the gov't) is deficient. Co-operation among industry, agric. & the general public has failed to develop sufficiently (eg.: the utilisation of purified sewage and slurry.)	Lack of co-operation 'tween sectors (such as that 'tween industry and communal facilities) is resulted in the deficient construction of parallel heat generators & pipelines. Lack of co-operation in the energy sector may have resulted in the construction of 3 separate energy supply networks.	Secondary infrastructural networks facilitating contact among settlements are poor.
Insensitivity to provisions, generated excessive demand	The price structure provides no incentives to save on provisions.	The opening of new factories & the chain of production is little affected by "regionality". Feedback and regional incentives towards the profitability of local production are marginal.	The tariff system leads to squandering transport services, no real efficiency monitoring is in place.		Due to the regional distribution of water reserves the costs of getting water are different which, however, is not reflected in prices. This leads to erroneous regional incentives dissaving and an increase in the no. of bottlenecks.	Energy prices do not provide sufficient incentives to save energy & to use types of energy that would be most economical for the respective sectors of the economy.	Due to a pricing structure that fails to reflect costs, generally there is excessive demand for infrastructural services. This exacerbates tension due to effective shortages.
Re-production of backwardness and detrimental terms of trade	Due to incessant subsidies to production based on under-developed technologies there is no internal compulsion to change and innovations.	Differences in the development between upstream & downstream regions have increased, conflicts between centers & peripheries have deteriorated.	In large cities commuting causes problems in supply of goods & services, while in smaller regions the quality of supplies & services conflicts with the interests of the large service companies.	The global backwardness of the telecommunications network tends to maintain unsophisticated technologies in production & the backwardness of disadvantaged areas.	800 villages have water in dug wells that is detrimental to health. The no. of endangered villages fails to fall despite continual action because water reserves get contaminated. The unilateral development of water supply exacerbates the rift between water supply and sewage disposal systems.	The development of consumer distribution systems (eg.: medium & low voltage electricity grids & gas distribution pipelines) fell behind the development of the national grids & networks, together with the utilisation of local sources of energy (such as geothermal energy, biomass).	The lowest level of settlements had only a fraction of development projects in communal services. Most of the traditional functions have been concentrated in centers of districts (which influenced migration in the district).

Table 2

MECHANISMS

Line headings in Table 1
to analyse current status

Line headings in the new table

Development focussed on
production, interpreted
in a narrow sense

New approach reflecting the
importance of technology
development

Rigidity of hierarchic
management

Demand-led growth, improving the
"scarce economy"
Reinforcing local autonomy and
flexibility in services

Exhausting existing capacities

More balanced infrastructural
development

The undynamising effect of
planning based on bottle-
necks

Development of a long-term
strategy

Sectoral preferences,
regional dispreferences

Priority to market effects

Lack of co-operative contacts

Facilitating bottom-up co-operation

Insensitivity to provisions,
generated excessive demand

Development of a pricing structure
to provide incentives to save
on expenditure

Re-production of backwardness
and detrimental terms of trade

The role of central intervention
is to provide assistance
to the disadvantaged, once
automatisms have taken effect.

Infrastruktúra-fejlesztési csapdák

Fleischer Tamás

Mint tervezők és mint állampolgárok egyaránt folyamatosan szembe találjuk magunkat a telefonhelyzet, a közlekedés vagy az energiaellátás, a szennyvíz-elvezetés problémáival. Az a felismerés, hogy bizonyos ágazatokban az infrastruktúra elmaradása a fejlődés alapvető akadályát képezi, mind általánosabbá válik. Ez a felfogás hatotta át a terület- és településfejlesztés irányelveinek előkészítéséhez 1984-ben megindított munka kérdésfeltevését is, amennyiben a tematika a hálózati infrastruktúra tárgykörében, kritikus szemlélettel, közvetlenül a termelést akadályozó szűk keresztmetszetek felmérésére kívánt koncentrálni, a jövőbeli fejlesztési szükségletek megalapozása céljából.

Kiindulásképpen e felmérések ágazatonkénti és megyénkénti összesítését ismertetem, majd azokra a következtetésekre térek ki, amelyek a tapasztalt hiányosságokat előidéző okokra, mélyebb összefüggésekre mutatnak rá. Az összefüggések csoportosításával felismerhetővé válnak az egyes ágazatokon túlmutató közös gyökerek, a hiányjelenségeket újratermelő mechanizmusok. A termelést, a területi folyamatokat és az infrastruktúra fejlődését egyaránt meghatározó *mechanizmusok* szintjén lehet rámutatni a *strukturális* fejlesztési szükségletekre: nevezetesen az állandóan *újratermelődő hiányjelenségek nem szüntethetők meg* az alkalmi szűk keresztmetszetek egyedi felszámolásával, hanem a jelenségeket előidéző okok, mechanizmusok megfelelő irányú megváltoztatására van szükség.

Az infrastruktúrával kapcsolatos fő hiányosságok, problémák

A megyék által készített helyzetfeltárás alapján ágazatonként összesítettem a legélesebben felvetődő problémákat.

A *közlekedés* területén a legtöbbször említett szűk keresztmetszetek rendre a vasútállomások, vasúti kiszolgálóhelyek és rakodók kapacitáshiánya, korszerűtlensége; a településközi összekötő úthálózat hiányos kiépítettsége; a települési átkelési szakaszok, városi elkerülő és bevezető szakaszok kapacitáshiánya. A ritkábban, de konkrétan szereplő főhálózati problémák közül megemlíthető egy-egy szakasz kapacitásbővítésének igénye, néhány megye közti kapcsolat erősítésének az igénye és több dunai, illetve tiszai átkelés hiánya.

A teljes felmérésben a legegységesebb kép a *távközlésről*, ezen belül a távbeszélő-hálózat elégtelenségéről alakult ki: tizenhét megye tartotta fontosnak ezt leírni. Érdekes idézni a jelzőket: alacsony színvonalú, elmaradott, korszerűtlen, túlterhelt, a legkritikusabb helyzetű, feszültségekkel teli. A további megjegyzések

Fleischer Tamás építő- és gazdasági mérnök, a Városépítési Tudományos és Tervező Intézet tervezője.

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