

**NEW TECHNOLOGIES, POLICY-MAKING AND PARLIAMENT:  
THE CASE OF TRANSPORTATION**

**Report by the Committee on Scientific and Technological Assessment (VAST) of the  
Chamber of Deputies for the Annual EPTA Conference  
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**1. Parliamentary consideration of technology policies: the role of the Chamber of Deputies VAST Committee**

The VAST Committee, unlike other European parliamentary Committees, was set up as an exclusively parliamentary committee, in other words, without any external experts sitting on it. Furthermore it is an “offshoot” of the Bureau of the Chamber, i.e. the body which is responsible in general for ensuring the smooth running of the business of the House and the proceedings.

The committee is therefore designed as an instrument to support Parliament and the Standing Committees, in order to ensure that all technological options are fully understood and properly appraised as part of the parliamentary fact-finding work.

It is essential when Parliament is conducting its preliminary analysis - by which is meant the fact-finding work, particularly when issues are being dealt with in Committee, in order to acquire essential information for assessment and for policy choices - to be fully aware of the latest developments in new technologies

Since all sectoral policy is strongly conditioned by interdependent cross-sectoral factors, such as the framework of international relations or technological development, Parliament must be equipped with adequate fact-finding tools.

In particular, it is essential to be familiar with the technological environment in order to be able to deal with issues which are so vital to contemporary society, on which daily life is based, and on which there is often heated debate in public opinion, based on inadequate information.

Parliament is the forum where a well-informed public debate ought to take place on the great issues connected with the new technologies. Fact-finding and relations with experts are therefore an essential stage in the decision-making process, and it is essential to reflect on the ways in which parliamentary procedures enable, and to a certain extent "bind", the decision makers to carry out complex assessments based on technological evidence.

This type of information influences the quality of the political debate in Parliament. In many cases, if Parliament ignores the technological aspects, it will not be able to identify or correctly pinpoint the problems and will therefore be unable to assess both the consequences of particular decisions or the various possible options that exist.

From this point of view, the problem is to find the channels to ensure that the technical data can be "metabolised" by policies, clearly bringing out the full potential and the practicable alternatives in the light of the new technologies, and placing the two Chambers in a position in which they are able to take properly informed decisions.

## **2. The seminar organised by the VAST Committee on *"The introduction of new technologies and the development of the transport system to underpin the production system"***

In conjunction with this year's annual EPTA can Conference, the VAST Committee held a seminar on 4 October 2002 on *"The Introduction of New Technologies and the Development of the transport System to Underpin the Production System"*, inviting some of Italy's most distinguished experts on the subject for a face-to-face debate between the world of technology and the politicians on these very issues, together with the members of the Committee and any other members of Parliament interested in the subject<sup>1</sup>.

### **2.1. Methodological issues**

The Seminar addressed the issue of strategic interdependencies which the new technologies are making possible today between the various Transport and Communications Systems, with specific reference to the problems of assessing the impact of the systems on the life of the community.

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<sup>1</sup> The Seminar – with an introductory presentation by Rt. Hon. Bruno Tabacci, Chairperson of the Committee on Productive Activities of the Chamber of Deputies and entrusted by the Speaker with coordinating the activities of the VAST Committee - was attended by: Prof. Carlo Maria Guerci, Milan University, *"Telematic Applications to Mobility Requirements"*; Prof. Riccardo Mercurio, Naples Federico II University, *"Technological Innovation and Organization of Infrastructure and Transport Systems"*; Prof. Maria Rosa Vittadini, University Institute of Architecture of Venice, *"Towards an Improved environmental Sustainability of Transport: Technical Progress and Assessment Tools"*; Prof. Marina Ruggieri, Rome Tor Vergata University, *"The Galileo Programme: Technological Innovation and Applications Developments in the Transportation System, particularly in the Air Sector"*; Prof. Vito Mauro, Turin Polytechnic University, *"A Development Scenario for Telematic Applications in Land and Sea Transportation: the Role of Galileo"*; Prof. Ercole Incalza, Advisor to the Ministry for Infrastructure and Transport, *"The Works envisaged by the Target-Law and the EU Strategic Framework for Transportation"*.

Transport is an issue with very strong economic implications, not only because of the resources that are directly required to implement all the measures necessary to rationalise it, but also because of the huge burden that can be placed on the economy and on production, as well as the social, human and environmental repercussions if transport policies are lacking, delayed or inadequate. Wrong choices or "non choices" bear an extremely high price in this sector and have a negative cascade effect right across the board in terms of production, the construction of infrastructure and the competitiveness of the country, the organisation of the urban centres, environmental issues and so on.

The Seminar examined the linkage between technological decisions and political decisions, linking the "world of technology" with the "political world", to translate technological language into political terms in order to highlight the consequences of the decisions regarding technology on the organisation of the economy and society.

A number of questions were raised regarding the method for governing processes of this complexity, and which technologies should be selected for investment, and why. The pros and cons of the possible alternatives. Whether there was a problem with the coordination of the variables in technological systems. What role could or should politics have in providing incentives for one or another technology. Whether it was possible today to provide the political decision-makers with an overview of the effects that the decisions taken today regarding new technologies will have in the medium and long-term. Whether it is really possible to govern such complexity and such a large number of interdependent variables. In what terms can the potential and the effect of the new technologies as factors for developing the economic and social system be verified?

It emerged that in order to answer these questions, what was first needed was for the decision-makers - and primarily Parliament - to possess a great capacity to interpret the socio-economic situation in order to be able to understand the effects that the application of the new technologies will produce. Parliament's capacity to interpret the situation should, among other things, be able to provide an overall view of the problems and look ahead into the future in order to see the potential of the decisions on technology is making possible, and then making possible to gear the necessary investment to them. In other words, the essential thrusts of sectoral measures must be identified, not merely focusing on specific aspects or specific uncoordinated projects, and to do so within a unified framework. There is also the evident problem of the timeliness of decisions in the face of constantly growing demand and, in many respects, cannot be contained, but which nevertheless has to be organised and directed in order to prevent the whole system from collapsing.

Hence the need to adopt procedures making it possible to respond to complex decision-making models, able to view a set of variables following a systemic rationale, in which the

technological element is the central core in the sense that it ultimately qualifies and establishes the difference between the individual options that are theoretically possible.

## **2.2 The Galileo project**

The seminar then addressed a number of specific issues, which were dealt with in specific papers, relating to initiatives being taken from in the transport sector within Europe, in order to ascertain the adequacy of the parliamentary fact-finding and policy-making procedures.

One issue of particular interest had to do with European initiatives for the "Galileo project" on satellite navigation for civilian purposes, for which the linkage between different kinds of dimensions (political, economic, technological and social) was quite evident.

The political impact stems from the possibility of using a satellite communications system which is not derived from military technologies, but which is civilian in character, and as such is independent of any decisions linked to the defense sector. In addition to choices connected with the adoption of such a system, the political impact of the project is the result of the realisation, that emerged during the course of the Seminar, that the satellite navigation system according to some is bound to become the fifth "public utility" (in addition to water, gas, electricity and the telephone). Since there are alternative technological paths in one and the same sector (Galileo, GPS, UMTS) it is the responsibility of politics to see which is the most applicable in both general terms and from the point of view of the economy, in order to ensure that unambiguous and informed choices are taken.

For the project has formidable social and economic impacts: the possibility of improving the safety and efficiency of transport, with beneficial fallout for the general public and the possibility for developing the production sectors involved, and the creation of a considerable number of jobs.

The technological impact consists in the wide range of services which the system will provide to the public: the open service, the improved GPS system, will be free and cater for a mass market; the safety of life service, to save people at risk, with controlled access; the public regulated service, encrypted, and to be used for the police authorities, with restricted access, so that it can also withstand crisis situations; the search and rescue service, to help shipping in difficulties, and make it possible to respond to danger signals; the commercial service, a commercial service for payment. In particular, in the air transport sector, Galileo could provide a reliable global navigation system and become the only one used by civil aviation, which would ease the air traffic control system and make it possible to develop a dense network of exchanges.

The various aspects that are described summarily above are interconnected and raise significant problems regarding choices and decisions by Parliament and by the public sector in general.

In the applications regarding air transport, for example, the relationship between technological development options and political decisions is significant. One emblematic case, which was discussed at length during the Seminar, is the question of airspace control.

At the present moment, the air traffic control agencies in Europe are fragmented (there are 67 in the 38 European states). In addition to a wide variety of different areas (about 500 in Europe) which may not be overflown for military reasons. This situation is one of the main causes of systematic flight delays (one flight in four is estimated to have been delayed in 2001). Under the Galileo project, the "Single Sky" initiative would make it possible to resolve the present situation by optimising air routes, detaching them from the need for land-based radio assistance (whose facilities could then be decommissioned, which would cut down the maintenance costs) and simplifying control. The purpose is to achieve free route choices (created on board the aircraft) instead of the present system of mandatory routes, with a very high cost-benefit ratio.

The "Single Sky" system, while awaiting the operational startup of the Galileo project, will be able to become effective in 2004 thanks to the augmentation of existing systems (in Europe with the EGNOS system).

As far as this specific issue is concerned, the national and European authorities must address the problem of increasingly harmonising the different systems that exist, in order to remove the asymmetries which are making it impossible to optimise the use of the airspace, and primarily Europe's; or else they will have to adopt innovative control systems, such as the one described briefly above. These are delicate issues which, with the present air traffic control systems, involve not only commercial and civil considerations, but also military defense requirements which are often set out in treaties and in international agreements, and which require appropriate procedures to be defined for examination by the public authorities, and particularly by Parliament.

### **2.3 Planning in the transport sector**

Another issue of particular importance that emerged in the course of the Seminar was the need to link the various segments of the transport sector into a general planning instrument, of an interdisciplinary nature and one that is able to link the technological, economic, town-planning, logistical and social aspects.

Italy has past experience with a General Transport Plan, which comprised some fairly satisfactory aspects. However, from the various scholars' remarks at the Seminar it emerged that the exceptional complexity of transport-related issues cannot be positively approached and solutions found to them unless a single framework is first defined, in terms of which the political decisions can be taken in full knowledge of the facts relating to the adoption of specific technologies or the implementation of particular civil engineering and infrastructure works.

Measures can only be programmed if they are considered together with the demands and the constraints of economic, social, environmental and technological development. The development of intermodality, namely of a system that is capable of maximising the cost-benefit ratio, depends on first having familiarity with all the variables and all the options which are closely linked. However, this presupposes dealing with the critical problem of infrastructure which, among other things, is aggravated by the time scaling of roadworks which is much slower in Italy than in other countries. There is therefore a huge need for infrastructure. Failing this, it might become desirable or necessary to take other measures to discourage private transport systems and to encourage public transport, particularly in large towns and cities.

The introduction of technological innovation into the infrastructure and transport systems sector raises a number of problems: the need for coordination, stemming from the disappearance of traditional modal borders between forms of transport and the wide variety of different parties involved; the presence of the self-reinforcing effects of transport systems, which are "rigid" and tend to create barriers to the entry of innovative solutions, also because of the high costs involved; and lastly the linkage between innovation and organisation, which must be very carefully taken into account.

With regard to policy-making decisions relating to infrastructure technological innovation, account must be taken of the impact of introducing new technologies on the existing situation, and not only of future benefits. For there are two possible alternatives: either to pursue a policy of technological evolution that is compatible with the existing system, or to move in the direction of a policy for a technological "revolution", introducing new technologies that guarantee far better results (at least ten times better than existing technologies) but which demand heavy investment and certainty regarding development.

Public Administrations can play a specific role here, by implementing pilot projects on sufficiently wide scale to be able to carry out reliable tests to assess the available technologies and to ascertain the real fallout from their wide-scale use and to use them as the basis for designing the national telematic architecture.

Emphasis was placed upon the fact that a transport plan must not be viewed solely in national terms, but in terms of the whole of the European Union. One example is the plan for

Euro-Asian Corridor 5 (from Lyon to Kiev), that was set out in the Commission's White Paper on European Transport Policy, a corridor which directly affects Italy; this project could take on 24 percent of all the European Union's traffic, making it necessary to deal with the problem of the constraints on freight traffic no longer unilaterally or bilaterally, including the debate on such constraints as have been imposed on traffic between Italy and a number of bordering countries (Austria and Switzerland).

The problem that emerged quite clearly is that it is impossible, purely at the national level, to produce such systems and optimise their organisation. The lack of programming and planning has encouraged the emergence of problems that are now endemic in this sector, such as traffic congestion which, if they are not resolved, will lead to a paralysis in the traffic as has already occurred in some areas such as air traffic or road haulage.

In short, it has become clear that only if all the interdependent variables are known will it be possible to properly assess whether or not specific technological options should be taken or specific programmes and projects implemented, in preference to other alternatives.

### **3. Conclusions**

The conclusions which the Committee drew from the Seminar, and from this first phase of its deliberations, regarding a method for parliamentary action, are the following:

#### **3.1 The Role of Parliament and the Galileo project**

From the parliamentary point of view, the VAST Committee has set up a working group responsible for developing interparliamentary relations at the European level and establishing linkages between Parliaments to support this initiative.

In order to be successful, consistency must be sought between the national decisions and the European framework. In more general terms there is an underlying problem of European harmonisation: the advantages provided by the new technologies would be multiplied if common languages and systems could be used in all the different countries of the Union.

The Galileo programme is perhaps the most eloquent case in point: by having a commonly shared policy at the European level a whole range of potential benefits are ensuing at the national level.

In this connection it could be extremely interesting if the various delegations were to be able to carry out an overview of the prospects for using the Galileo programme as they are being

analysed in their various countries. Dialogue between the parliamentary representatives and parliamentary pressure on governments should help to pursue the objective of hastening its implementation, which can also be done by immediately making it clear how each individual country intends to become involved in the programme.

### **3.2 Parliamentary procedures and technology policies**

Speaking in more general terms, the ideas that emerged from the Seminar raise the problem of ascertaining whether the parliamentary procedures and decision-making processes are appropriate for bringing technological aspects to the fore, and capable to effectively and efficiently provide a response, and a timely response, to the demand from society.

One could imagine the public sector, and particularly Parliament, playing the role of a "groundbreaker", spearheading the dissemination of technologies, and making an overall assessment of the economic, social and political impact of introducing them. It should be pointed out that even though the new technologies hold out the prospect of decidedly innovative scenarios emerging, so far their applications seem to have been fairly limited. Both in scientific circles and in the mass media it is frequently pointed out that they have tangible possible applications and potential, but, particularly in the case of transport that is being analysed here, the impression that one gains is that their impact on daily life is pretty small, even though some of the new technologies can have a significant impact on improving the living standards of our citizens.

On the subject of the new technologies, there is certainly a problem of communication and of exchanging information, which must be posted on the Internet by a range of authorities and parties to make the system capable of producing useful results.

It is the public sector and Parliament that has the responsibility of carefully appraising the instruments that have to be used, as one way of improving familiarity with the new technologies by parliamentarians, and with the economic and social environments into which they may fit, carefully appraising the incentives and the promotion or measures that would be introduced at that level.

As far as the situation of the Italian Parliament is concerned, the VAST Committee is thinking of working in two directions as far as the immediate future is concerned.

When the work of the Conference and the further hearings and study seminars with experts in the sector are all finished, the VAST Committee intends to formalise the results of the preliminary analysis performed by the Committee on specific issues, whose results may be

usefully translated into a document providing ideas for debate and proposals. In this particular case regarding transport which is the subject of debate today, but more generally speaking it would deal with other initiatives taken by the Committee, which will be submitted to the Speaker of the House so that it can be drawn to the attention of the parliamentary bodies concerned, and of all the parliamentarians.

The document can raise, first and foremost, the problem of the parliamentary working method which has been mentioned here several times: how to contribute towards creating decision-making processes which make it possible to bring out and to evaluate technological issues.

A second approach may lead to the introduction of specific procedural steps as part of the general responsibilities of the Committees to conduct fact-finding inquiries, in order to introduce assessments of the technologies into the general workings of parliamentary procedures relative to the examination of draft legislation.

It is essential to guarantee that, when appraising individual issues, firstly within the framework of government, the right degree of emphasis is given to technological aspects, as occurs today with financial aspects, and this can be done by creating procedures that will introduce the systematic assessment of technological aspects of issues that fall to the responsibility of Parliament.

In other words, provisions must be made to ensure that when, for example, seeking solutions to problems that have to do with infrastructure, transport or environmental matters, the Parliamentary Committees must be able to appraise the opportunities offered by technological progress when they carry out their preliminary analysis. To this end, the linkages between the parliamentary decision-making bodies and the public and private players involved in various ways in research and technology must be further developed and institutionalised.

If those attending this debate feel with us that it is necessary to open up the parliamentary decision-making processes to deal also with technological matters, common forms for setting out the problem and proposing solutions could be considered.