# FRENCH TELEMATICS: HISTORY, POLICY AND PROJECTS*

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*Telematics dates from 1978 when it was used to designate the growing overlap between computers and telecommunications. The initial phase was the provision of an electronic substitute for the telephone directory. The free distribution of Minitels was followed by the Teletel 3 V experiment which gave a test population access to a wide range of services. A special billing system had to be developed. Telematics has been extended to the industrial world and business relations.*

Keywords: telematics, Minitel, Teletel 3 V, kiosk system, regulation

## INTRODUCTION

*Telematics*, the term dates back to 1978 when Simon Nora and Alain Minc used it for the first time in their report on computerisation of society to designate "the growing overlap of computers and telecommunications".[1] Presently, more than 5000 telematic services are available to 3 million households equipped with a Minitel, who may, using these services consult stock market prices, meet new people and consult airline and rail schedules, all with a remarkable ease of access. Telematics in France, of which the Minitel is not the only aspect, has become a veritable phenomenon of society, with social, economic and political implications which are not always well understood. How has this been possible? It is to this question that this article attempts to reply.

At the origin of French telematics, a team of engineers was united around Gérard Thery, Director-General of Telecommunications from 1974 to 1981. When he took over in 1974 the telephone business was in sad shape, placing France far below the rank it should have held in the field of telecommunication with respect to comparable countries. A drastic plan to make up this delay was adopted. Gérard Thery was led by the conviction the telematics should serve as a locomotive, pulling other services along behind it. A large project would be able to mobilise all energies, from the top engineer to the simple technician. In the face of the offensive by IBM Europe, an ever-present worry at the time, which

* A paper prepared for the ANZAAS Centenary Congress, Sydney University, 19 May 1988.

deployed a strategy of sophistication and complexity, the engineers of the DGT deliberately chose a policy of simplicity: they created a simple product accessible to all, both financially and technically, even if it was to become sophisticated afterwards. Thus the telematics plan took shape little-by-little within the DGT, inspired by the philosophy of the Nora-Minc report; namely, the necessary association of data processing and telecommunications.

Initially, the essential part of the work of the DGT bore upon an electronic substitute for the telephone directory, whose development relied on the Minitel terminal. This 'electronic directory' service was designed to meet two needs: replace the paper telephone book function (40,000 tonnes of paper per year), and improve the information service which was continuously saturated. This technical function has, moreover, not been fully realized because the paper telephone book has not disappeared. Generalization of the Minitel by a voluntary commercial policy of public service (Minitels are given away to telephone subscribers) met the double objective of 'opening the after-telephone era' according to the expression of Louis Mexandeau, and supporting a leading industrial sector.

This new service, barely out of the laboratory, immediately caused an outcry by the written press (especially the regional press which felt directly targeted) and its defenders. Journalists, deputies and labour leaders proclaimed in unison their fear of seeing telematics seriously disturb the functioning of the written press, abusively likening telematics to television and fearing that the advertising budgets on which the written press thrives would be hijacked by these new media. There is not enough space here to mention them all: "The development of telematics constitutes a threat to the press," declared Louis Salle, a deputy and reporter on the budget for information; for one thing, because of the nature of information to be distributed — practical local information, weather and sports results traditionally reported by the local press; and for another thing, because of the competition for advertising money. Also worth mentioning are the reactions by the Fédération Nationale de la Press Française, which are surprising today by their violence, going on the principle that the press, with which the "specificity" of informing has always been recognized, cannot allow itself to be competed against by irresponsible groups who escape the applications of the law. The representatives of the written press presented themselves as the "last guarantors of the safeguard of pluralism of information" and called for the "suspension of Télétel and Antiope experiments . . . as long as a judicial structure has not been strictly established." They concluded that this "new mode of information contains a threat to the liberty of each citizen and a risk of increasing his isolation." Of course, free distribution of Minitels, justified by the fact that they would replace the paper telephone book, was no stranger to the fears of the written press, but the facts would provide a formal denial to these apocalyptic predictions.

## THE TELETEL 3 V EXPERIMENT

The DGT was not going to remain with its arms folded against this sweeping offensive made up of virulent criticism and thinly disguised threats. On the contrary, the DGT very promptly lit a counter-fire which would figure in the history of telecommunications services and reverse the trend in its favour. Because the press feared telematics, it was invited to participate in an experiment conducted with the consumers of an urban zone. The principle was extremely simple, but its application somewhat less. Thus, the Télétel 3 V project took shape.[2]

It was named as such because it took place in the three communities of Versailles, Vélizy and Val de Bièvre. The Télétel 3 V experiment was the largest consumer telematics experiment ever organized. The decision was made by the government in 1978 and was carried out by the DGT beginning in 1980. It consisted of equipping a test population and public places with some 2500 Minitel terminals enabling access to a wide range of services offered by more than 120 organizations. These included mail-order sales, banking services, transportation and travel services, 'public' services, news services, games, message services, telematics newspapers, etc.

The newspapers who accepted to play the game were not legion. The first to jump into the water was the *Parisien Libéré,* for two reasons, it seems. First, the *Parisien* had an edition in the Yvelines where the experiment was conducted. It was thus directly concerned. Next, and above all, the impetus of one woman, Martine Tournier, was decisive. At the head of an independent cell of professionals motivated by an unshakeable faith in the future of these services, she knew how to make the "P.L.", the telematic newspaper of the *Parisien Libéré* containing practical and local information, one of the most consulted services. It still is one of the most consulted telematic services in France, in an improved form. Alongside the *Parisien,* the *Journal Electronique Français* (JEF), the product of various regional dailies, became an undeniable success with users, without however being able to match the PL.

Who was going to make up the test population? The composition of the sample posed a problem. In order to have an exemplary character, it had to be socially diverse and as representative as possible. But would too-popular a sample be receptive to new techniques? Wasn't there the risk of a high rate of non-participation, precluding the experimenters from all possibility of using the results? However, with a population too exclusively composed of persons from privileged socio-cultural milieux (the most likely to be interested in telematics products), the dice would be loaded from the outset. How to reconcile these two objectives? It was necessary to cut the pie in two and the decision was made to use a mixed solution: a 'socially representative' sample of 1500 persons and an 'over-sample' of 1000 persons composed of potential 'large users'. Such a composition made certain the results of an experiment would be delicate to handle, but combined two contradictory imperatives.

The beginnings were timid. Households confronted by this unknown technology tapped into it an average of six times per month, consulting twenty or so services for an overall use time of a half-hour per month.

Use of the Minitel was not uniform, far from it. Young people, especially under 30, used the terminal more than older people. Men used it more than women and the average number of uses increased as you go up the social ladder. Few surprises then, from the point of view of the user. However, the calls to services upset the working hypotheses and the prospective calculations. The services massively called were the message services, games and the two electronic newspapers. Data banks and reservations, for example, were used very little by the Vélizy sample.

What conclusions can then be quickly drawn from the Vélizy experiment, considering the fact that it represented a particular situation because all services could be consulted from a single access number? Its principal objective was to test the technology of the full-scale system, enable the creation of the first Télétel services and evaluate their acceptance by consumers. It may be said that these objectives were largely attained.

Among the few dark points of the operation one phenomenon had already appeared and would go on to become particularly tenacious: that of the 'closet' terminal. A good third of the population never used the Minitel while less than one-quarter of the population made more than 60 per cent of communications. The similarity of these figures with present-day figures is striking. From the outset, a typology of services began to appear. On one hand, the transactional services, widely used, affected only a proportion of users. On the other hand, there were the message services with their unwavering fans. Then, the games, highly valued by more than one-half of users, and finally the information services at the very bottom of the list!

The experiment was nevertheless a success. But looking further, a few lessons may be drawn. The suppliers of services knew how to offer users very diversified and very complex services. And households appreciated the personalization of services, their interactivity, the richness of the information supplied and the rapidity of updating.

T3V — the press repeated it endlessly at the time — constituted a worldwide first. Such an experiment had never been tried before, resulting in the total absence of user demand. This gave to this adventure, because it certainly was one, its exalting character, but all of its difficulty as well.[3]

## AFTER VÉLIZY — 1983

Once the emotion passed, the Vélizy experience would serve as the detonator in the telematics explosion. New synergies came into being. Contrary to what everybody pretended, the press began getting into telematics little by little. Far from being the victim, it finally knew how

to take advantage of it. On October 15, 1983, the *Parisien Libéré* inaugurated its first server centre and set up its telematics newspaper in almost its final form. The fruit of three years experience, it was the second generation of telematics information. Developed by a specialized team, this newspaper gives updated briefs every two hours, practical information, and gives in-depth coverage of certain news stories, sporting events in particular. Many newspapers, dailies or weeklies from Paris or the provinces, would soon follow this example, each in its own style or according to its financial needs.

### *Pioneer projects*

During the year 1983, a certain number of pioneer projects emerged nearly everywhere in France. Among the principal ones were: *Claire* in Grenoble, *Telem* in Nantes and *Gretel* in Strasbourg.

*Claire* was the prototype for a failed telematics experiment. Under the impetus of Grenoble mayor Henri Dudebout, a team was set up to organize a complex of telematization of local information, going by way of municipal agents at their insistent demand. Complicated and too remote from the daily preoccupations of people, *Claire* was never accepted by the Grenoble public and was abandoned.

*Telem,* inaugurated in Nantes in February 1962, was the first municipal telematics service after Vélizy. Different from *Claire* , which was a work tool supplied to municipal agents to inform the population, *Telem* directly distributed information to the Nantes public from 23 terminals installed in public places. Used 1500 times daily, it was an undeniable success.

*Gretel* was, at the start, the telematics service for the *Dernières Nouvelles d'Alsace.* Little by little it was diverted from its original goal to become what is called a convivial message service. This experiment became a kind of living laboratory for telematics and prefigured the explosion of consumer telematics.

### *The kiosk system — the 3615*

From these projects was deployed a veritable battle plan for the rise to power of the electronic directory on the one hand, and message services (and servers) on the other. 120,000 terminals were installed in 1983. In 1984 there were 145 different services offered, 2071 in 1986, and 5000 at the present time. This growth, in which the DGT played a leading role (and as such, it has never become involved in services other than the electronic directory), would not have been possible without the telematics *kiosk* billing system. By means of this ingenious system, the totality of consumer telematics sales passes by way of DGT billing. The user pays a charge every 45 seconds, and a portion of the amount

received by the DGT is paid to the supplier of the service according to an agreement between the DGT and the supplier. The latter is then responsible for turning over to the message service which he houses the percentage due (which is contractually defined).

Why the adoption of such a system? Since the population concerned is particularly large, special billing could not be applied if subscription costs, which would be too dissuasive, were to be avoided. This system of remuneration for the supplier of the service is particularly sober: no subscription management, no billing. The user is billed in terms of his consumption. There is no fee to be paid in advance, no password to be memorized and services may be consulted at will. As soon as a telephone user receives a Minitel, he has in his hands a wide range of services which he may consult at his leisure without formalities.

### *The kiosk system — the 3669*

This is the *other* kiosk, the telephone kiosk which has grown up in the shadow of its big sister under the discrete but decisive impetus of Alain Bernard, managing director of the *Journal Téléphoné*. The differences between the two kiosks are essentially legal, structural and technical in nature, but the idea for a telephone kiosk flows from the telematics experience. Legally speaking, authorization is given to *distributed* information services, i.e., one-way services. Any service containing interactivity (network or message service) is theoretically prohibited.[4]

The structure is also different. The telematics kiosk is a game with three players: the DGT, the telematics server and the service supplier. The telephone kiosk is a bipolar system inasmuch as the server and the supplier of the service are the same. Payment by the DGT to suppliers is moreover the subject of debate between the SNEPTT (Syndicat National des Editeurs de Presse Télématique et Téléphonique) and the DGT, which bears on the price paid to the server with respect to telephone rates.

Lastly, the principle of charges is different. For the telematics kiosk, charges begin at the videotex point of access and are therefore not subject to a use limit time, the cost of the communication is calculated on a pro-rata basis with respect to the duration. However, for the telephone kiosk the system is all-inclusive: a call systematically costs 3 units for a duration limited to 140 seconds. This system has not yet been extended to all of France. The entire French territory will be fully covered as of July 1, 1988. This all-inclusive charging poses problems inasmuch as it perpetuates a 'two-speed' system with telematics information which is preferred with respect to telephone information!

### *A few remarks*

The kiosk billing has, moreover, its particularities. In effect, such a financial activity is not a part of the ordinary attributions of the DGT.

This activity, for which it was not prepared, makes it run a double risk: first of all, a non-eligible financial risk inasmuch as swindles are going to multiply them. Will financial companies outside the network even be willing to assume such costs? The problem is also posed in terms of moral obligation. Via the DGT, a state administration, the state is an accessory to 'blue' message services which are certainly not the essential part of telematics activity in France but which nonetheless constitute a good proportion.[5]

The undeniable success of French telematics must not be cause for a certain vulnerability to be overlooked. In France, the major part of telematics connections, to or from a computer, passes by way of the Transpac data transmission network. The network abruptly became blocked in June 1985 and Transpac went down. Each month, 400 billion data transit over the French network (4 times more than Tymnet, its American counterpart). At the time, 800,000 Minitels were already connected to this system. Their use in consulting Télétel services was multiplied by four in just one year. The enormous growth in consumer telematics use is then no stranger to this failure. This event pointed the finger at the fragility of data processing systems and somewhat shook the certitudes of those who give blind confidence to these new techniques based upon data processing. But it helped to better shield the public network against major breakdowns.[6]

### *Professional telematics*

If the Minitel has known a brilliant success among consumers, this success cannot be limited to this sector; professional telematics has also entered into good custom. There exists the 'gray' Minitel, reserved for the industrial world and business relations, notably using codes 3613 and 3614 with a password and a special subscription. The terminals installed in companies may be used either for purely internal needs (circulation of information, E-mail), or to connect them with usual parties such as customers or suppliuers. At BMW France, for example, the Minitel is used as a management aid and means for stimulating sales. Centralization of business activity is also concerned; for example, 10,000 customers, for the most part isolated businesses are connected by Minitel to the CETELEM group for calculation of consumer credit and immediate constitution of files.

Data banks now occupy an important place. Jurisdata, for example, is one of the principal legal data banks. It was created in 1970 by Editions Techniques to make available to attorneys a base of documentation constituted by the interpretive sources of the law: jurisprudence, unpublished in large part, and doctrine. These documents are recorded in the form of abstracts developed to give an exact idea of the contents. Research is conducted largely in open language on the text of the abstract using original software developed beginning in 1970. This software

contains automatic processing of the vocabulary, and enables interrogation on quantified data. The richness of the jurisprudential base and the rigour of the method has enabled a great uniformity in the stored data to be reached.

Functions diversified with the introduction of the 3616, then the 3617. Since September 1987, more than 80 new services have been connected to a number. Among them, many in-depth professional directories, more specific than the printed phone books which already exist. There is found, for example, credit-sale services, insurance and retirement computation services with simulation, etc. In a word, the 3615 provides access to information or conviviality, and the 3616 and the 3617 to *service*, which is a product capable of adapting to the specific need of the customer. The cost is greater than the 3615, but it is also realized by the kiosk.

## FROM THE REGULATORY POINT OF VIEW

From the regulatory point of view, the first impression from this entire experience is of liberalism. Throughout the various governments, socialist or liberal, the freedom to undertake and create has remained total in a legal status of private law.

The partners in the telematics network, administration, servers and message services, have *commercial relationships* with their customers. Transpac, the telematics support service, is a commercial activity regulated under common law. The electronic directory is the only service ensured by the administration among the 5000 services presently available. This particularly liberal legal status was favourable to the very wide development of French telematics, which would not have experienced such an explosion without it.

The authority responsible for examining the legal status applicable to telematics services during the period of start-up and growth, has been, up to now, the Commission de la télématique. This Commission was created in 1980 for the purpose of associating the representatives of French parliament and the press with the telematics experiments, particularly the introduction of the electronic directory and the Vélizy experiment. Placed under the authority of the Minister responsible for telecommunications, it is composed of the representatives of service suppliers, the press, suppliers of telematics equipment, members of parliament and representatives of the ministries concerned. By means of close cooperation between the recipients, it has known how to settle most of the problems with which it has been confronted in a flexible, consensual manner rather than by restraint, a procedure which is, to say the least, unusual in France. During these years, it was one of the essential elements to make the press admit the positive character of the new telematics media, and ripen the adaptation of data processing, which reversed the trends of 1978.

However, this quasi-jurisprudential status must now give way to a more durable regulatory status able to regulate a telematics sector which has stabilised. Such a status is not within the competency of the Commission. Taking a resolutely pragmatic step, we can from now on regulate by taking bearing on the jurisprudence of the Commission which makes for an excellent experimental base. The paradox which would consist in wanting to regulate in a liberal status is but apparent; this does not mean the law of the jungle. Game rules are necessary to arbitrate.

This positive policy in some ways contains the regulation of value-added services. The market for value-added services is expanding rapidly. Thus, the new regulation will not be static. It must, on the contrary, provide flexible mechanisms to be able to adapt to a context which is, necessarily, changing. On the whole, the future regulation of telecommunications will be a pragmatism inspired by this original experience.

## NOTES AND REFERENCES

1. Simon Nora et Alain Minc, *L'informatisation de la société*, La Documentation Française, 1978.
1. Marie Marchand-Larousse, *La grande aventure du Minitel*, 1987.
2. See 'Prospective et Telecom', *Revue*, No. 7, December 1985; M. Pondaert, P. Georgiades and A. Magnier, *Communiquer par Teletel*, La Documentation Française, 1983.
3. There exists, however, an exception since July 1987: the telephone kiosk service enables the telephone user to send a message to people carrying electronic paging units.
4. An important political debate took place in the press and French parliament in 1987. Special tarification and dispositions to protect minors have been taken recently.
5. Jean-Pierre Chamoux, *Menaces sur l'ordinateur*, Le Seuil, 1986.