Abstract: The Plan Informatique pour tous (IPT) was a large-scale government operation that took place in France in 1985. It encompassed the installation of 14,000 nano-réseaux and more than 100,000 workstations in schools, mainly primary schools, as well as the training of teachers. IPT shares several characteristics with similar previous experiences, but its magnitude and the haste with which it was implemented were unprecedented. Drawing on a vast array of public archives, pedagogical journals and budgetary documents, this chapter presents the legacy of previous experiences dating back to the 1970s. It sheds light on the political expectations that led the socialist government to suddenly accelerate the process of equipping schools with computers. Finally, it explores the industrial stakes as well as the pedagogical aspects of an operation that can be considered both as a milestone and a failure.

Keywords: France; industrial policy; teacher training; computers; 1980s; Informatique pour tous

In 1981, for the first time since the beginning of the 5th Republic (1958-...), a socialist – François Mitterrand – was elected president of the French Republic and communists entered the government. This government had to tackle an economic crisis and rising unemployment while fulfilling its electoral promises. The economic measures that were announced included a vast program of nationalizations that also concerned the computer industry, and a proclaimed return of the planning process as a tool in direct investments and the economy. Regarding schools, the most heated topic was the unification of the French school system, or more exactly the reinforced integration of publicly subsidized private schools within the public education service (the so-called “SPULEN”: Service public unifié et laïque de l’Éducation nationale). After a short honeymoon period, difficulties started to pile up for the socialist president. The nationalizations, combined with a stimulus policy, were not sufficient to solve the economic issues and the government was forced to turn back to austerity, just like its right-leaning predecessors.¹ During the summer of

¹ For a recent overview of the so-called “tournant de la rigueur”, its timeline and interpretation, Florence Descamps and Laure Quennouëlle-Corre, “1983, un tournant libéral?,” Vingtième Siècle.

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1984, the SPULEN project was abandoned once and for all after massive demonstrations that led to the resignation of the prime minister and a complete ministerial reshuffle. In this gloomy context, the new government of Laurent Fabius held the public launch of the Plan informatique pour tous (IPT) in January 1985.² This gigantic operation involved the installation of 14,000 nano-réseaux (professional computers linked to workstations) and more than 100,000 workstations in schools, mainly primary schools, as well as the training of teachers; all within a very tight schedule (less than a year).

The operation has already attracted the interest of researchers as a milestone in the development of new technologies in schools³ and the actors involved directly in the process – Georges-Louis Baron, Jacques Beaudé – have played a leading role in writing this history. Logically, they have emphasized the pedagogical aspects of the project. However, current research on the French education budget has revealed a surprising fact: the huge amount of public money lavished on this project, as opposed to the budget restrictions that were holding back other teaching reforms at the same time, for example. Considering the state of French public finance, the economic policy mix adopted by the government, and the rigor applied while negotiating the education budget, we might doubt whether the official pedagogical purpose was the main reason for spending so much money, thus providing a strong incentive to question the political and economic implications of IPT. The abundant bibliography addressing Mitterrand’s first presidency has scrutinized the multiple challenges faced by the President at the end of 1984.⁴ However, polit-

² All quotes in the article have been translated by the author.
ical historians have not paid attention to the role that IPT was supposed to play in securing the French electorate for the forthcoming general elections of 1986. Economists or economic historians have studied the history of the computing industry and its relations with the State but have not specifically explored the role played by IPT, or more generally by public procurement in this policy.⁵

To address the multiple ramifications of the IPT Plan, this chapter draws on a vast array of public archives (cabinets of the Prime Minister and of the President; relevant directorates in the Ministry of Education, the Ministry of Industry and the Ministry of Telecommunications; oral archives) as well as on pedagogical journals⁶ and budget documents. The money voluntarily spent by the French State on computers on this occasion, and the circuits it followed, serve here as a thread to identify the various networks of actors, and the institutional circuits that both shaped and were reshaped by this atypical operation.

This historical contribution thus draws on the French tradition of public policy analysis with an emphasis on the concepts, instruments, and practices of high-ranking civil servants and interest groups, that contribute in the medium and long term to the shaping of public policies.⁷ It also draws on other academic tra-

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⁶ The Association Enseignement public et Informatique, founded in 1971 to accompany the first experiences of computers in classrooms, publishes online various historical documents, including excerpts from its own magazine, the Bulletin de l’EPI, https://www.epi.asso.fr

ditions as it seeks to connect public policy choices to electoral strategies in a methodical manner. All in all, this article presents a story “from above”. Of course, IPT would not have been possible without a wider network of grass-roots computer activists who approved of this operation and tried their best to make it a success. However, the singularity of the operation – a sudden acceleration of an ongoing process, with a significant impact on the State Budget – resulted from decisions taken at the highest level, on which we have chosen to focus.

IPT shares several characteristics with similar previous experiences which are sketched briefly in the first section. However, its magnitude and the haste with which it was implemented were unprecedented. The second section describes the strong political commitment and the great expectations placed on this project at the highest level of the State. The third section analyses the respective roles of economic and pedagogic considerations in the choice of the material and questions the immediate consequences of the Plan.

Computers at Schools: The Complex Legacy of Previous Experiences

Computers at Schools: A Small Component of a Larger Industrial Policy?

The IT industry has been a focus of the French public authorities’ attention since 1962. There had been successive strategic shifts; while De Gaulle – president of the Republic from 1958 to 1969 – favored the prospect of a large French industry, covering all sectors of production, Valéry Giscard d’Estaing, elected in 1974, thought a relative specialization would be more adapted to the sector; and favored a liberal approach to the market. These shifts also coincided with changes in the political governance of the sector. Under the presidencies of De Gaulle and Pompidou (1969–1974), State intervention relied on an inter-ministerial structure called the Délégation à l’informatique, created in 1966, reporting directly to the Prime Minister. In 1974, Giscard d’Estaing scrapped this structure and replaced it with a new

directorate – the Direction des industries électroniques et de l’informatique (DIELI) – reporting to the Direction Générale de l’Industrie of the Ministry of Industry. The DIELI had broader competencies, as it supervised not only the computing but also the electronics industry. Reporting to the DIELI, the Mission à l’informatique had an inter-ministerial advisory role in the use of IT in administrations. The election of 1981 marked a new turning point in industrial policy. François Mitterrand, the newly elected socialist president, carried out a vast program of nationalizations which also concerned the computer industry (Thomson and Bull – formerly Compagnie internationale pour l’informatique [CII] and Honeywell Bull). It was proclaimed as a comeback of the planning process as a tool for guiding investments and the economy. In the 9th Plan (1984–1988), the potential of the computer industry was stressed both as a dynamic economic sector (compared to old decaying industries) and as a source of modernization for all types of economic activities. Regardless of the direction taken by successive presidents, regular relations and government intervention in industrial choices, including decisions on recapitalization and crossed holdings, were a constant. The fact that public procurement also had to play a role in this industrial policy was obvious, even if this did not imply an exclusive preference for French hardware.

In the existing literature, it is quite common for authors to point to the coincidences and convergences between the industrial policy led by governments in the computer sector and the various initiatives taken to introduce computers into schools. At the Ministry of National Education, the Mission à l’informatique, the Mission informatique was originally a department of the Délégation à l’informatique. With the disappearance of this Delegation, replaced by the DIELI, this service became an Inter-ministerial Mission – whose denomination has changed several times – directly reporting first to the Director General of Industry, and then, after 1978, to the DIELI. In 1983, the Mission informatique left the Ministry of Industry to join the Ministry of PTT. Investment planning (public and private) began in France in the aftermath of the Second World War. The establishment of the European Customs Union and the economic crisis marginalized the role of the Commissariat Général du Plan in French economic policy in the 1970s. See the testimony of Wladimir Mercouroff, in charge of computer science at the Ministry of National Education from 1970 to 1974: “My game was to get as much as possible from the other manufacturers (Univac, IBM, Bull Control Data, later DEC) as the Compagnie Internationale pour l’Informatique (CII) was the national champion, and then to challenge the CII to do at least as well technically and financially. Given the state of the CII, this game was often quite cruel, but it seemed indispensable if one ever wanted to have a competitive industry; although heavily subsidized, it was struggling on the technical level”. Wladimir Mercouroff, “Témoignage : l’informatique dans l’enseignement et au CNRS au début des années soixante-dix,” Histoire de la recherche contemporaine. La revue du Comité pour l’histoire du CNRS IV, no. 2 (2015): 180–185.
created in 1970, worked hand in hand with the inter-ministerial Délégation à l’Informatique. The mission was responsible for the teaching of informatics at all levels of education, including university and research, the introduction of informatics in the management of National Education, the use of computers for teaching and research, as well as the management of the hardware stock. It supervised the introduction of computers in secondary schools (lycées classiques et modernes), which was implemented between 1972 and 1976, an operation prepared with intensive training for the teachers of the 58 secondary schools involved.

Its brutal interruption in 1976 followed the dismantling of the Délégation à l’Informatique decided by Valéry Giscard d’Estaing in 1974, but also the administrative separation between Universities and National Education (and the disappearance of the Mission à l’informatique, which previously had powers over both schools and universities), and the re-organization, in 1976, of the short-lived Office Français des techniques modernes d’éducation, since called the Centre national de documentation pédagogique. Following this administrative reshuffle, a new operation called “10,000 micros” was initiated in 1978. There was a clear break between this experience and the preceding one, whose evaluation was still not published when it started. It was first and foremost a component of a broader industrial policy aimed at the “computerization of society” and involving all the administrations.

Once again, the political change of 1981 led to an abrupt interruption of the operation. However, the introduction of computers within schools resumed rapidly, following the report by Claude Pair and Yves Le Corre. The first operation, launched in January 1983, aimed at equipping schools (primary schools, middle schools and technical schools) with non-professional micro-computers (6,000 computers). A new target was set in the 9th Plan, adopted in 1983 for the period 1984–1988: 100,000 computers; 100,000 teachers trained. The IPT Plan of 1985 marked a sudden and unexpected acceleration of this strategy.

14 Mercouroff, “Témoignage”.
17 Record of decision of the Committee on the Development of IT Applications, presided by the First Minister, November 23, 1978, Archives nationales [AN], 1987035515.
This stop-and-go pattern of the plans to introduce computers at schools, and the fact that they did not coincide with changes in the Ministers of Education suggest that these policies were not fully driven by the Education Ministry but rather relied on political decisions taken at the highest level of government where inter-ministerial stakes take precedence over educational views. The ability to document the autonomy or dependence of the Ministry of Education when it comes to the choice of hardware is of paramount importance in confirming this hypothesis. For the period 1970–1974, Wladimir Mercouroff gives an interesting but enigmatic insight into the policy of purchasing computers at the Ministry of National Education: the representative of the Délégation à l'informatique had a “veto power, which he used in favor of the national industry rather than the coherence of the project, but he could not always use this veto”.²⁰ However, we may assume that the first operation – “58 lycées” – was probably small enough to let the Ministry of National Education decide: this first operation did indeed involve CII, but also IBM and Honeywell. On the contrary, the role of the Minister of Industry in the decision-making process can be clearly documented for the “10,000 micros”.²¹ The transition from an experimental process to widespread use probably implied a relative loss of autonomy in terms of purchasing policy. The Ministry of Education did not have much to say about the equipment for the IPT plan, but we do not have sufficient evidence for the purchases decided on in 1983 and 1984.²²

**Computerization Rate Understood through Budgetary Data**

The structure, evolution, and discussions raised by the Education budget from 1970 to 1985 also reveal interesting aspects of the introduction of computers in the sphere of the Education Ministry.

They primarily show the significant time lag between the early introduction of “administrative computing” (*informatique de gestion*), electronic classes and computer equipment in universities, and the late stabilization of a budget line dedicated to “educational computing” equipment (*informatique pédagogique*). Back in the

²⁰ Mercouroff, “Témoignage”.
²¹ For the “10,000 micros”, the decision can be tracked back to the “Conseil restreint du 22 novembre 1978”, AN 19870355/1S. See also Michel Biju Duval, direction des affaires financières du ministère de l’Éducation nationale, “Incidence sur le budget de l’Éducation de textes législatifs ou de décisions gouvernementales,” ca. March 1979, AN 199306462.
1960s (at least 1967), annual budget documents (Services votés. Mesures nouvelles) submitted to Parliament mention the additional appropriations allocated each year – through capital expenditures, or current expenditures, including the recruitment of “Programmeurs” – to the électronique de gestion, renamed in 1971 the informatique de gestion. That same year, the administration created a Bulletin d’informatique de gestion du Ministère de l’Éducation nationale. These appropriations first benefited the central administration, but as early as 1969, Grenoble and Toulouse were chosen as pilot education authorities to test the use of computers and information systems to enhance the management of educational resources at the local level. After 1972, some of the appropriations for the Informatique de gestion were clearly earmarked for local school administrations. While the history of the informatique de gestion is more complex than this brief sketch suggests, there is nonetheless a clear, ongoing trend made possible by explicit and coherent budgetary decisions.²³

This is not the case with the introduction of computers in classrooms in the school system (universities excluded). Before 1980, the corresponding expenditure was practically invisible in the budget documents. Although computers did enter classrooms before 1980, this introduction was financed through various budget lines, reflecting the variety of aims pursued (a pedagogical auxiliary, a new technical discipline, a part of a modern culture, etc.) as well as the diversity of structures involved. Contrary to the Informatique de gestion, there was apparently no political need to isolate these appropriations in the description of the mesures nouvelles. In 1972, the socialist senator Robert Schwint inquired about the share of the national education budget devoted to teaching materials (audio-visual materials, programmed teaching, computer-assisted teaching, etc.) by type of equipment, by educational cycle, and by origin of acquisition. The tortuous answer from the Minister gives a fair idea of the difficulty in grasping and isolating the introduction of computers in the classroom from larger operations involving other types of devices.²⁴

Consequently, the first budget that clearly isolates, in its mesures nouvelles, the financial efforts made to introduce computers within classrooms is that of 1980, which mentions, in relation to the “10,000 micros” operation, the allocation of

7,000,000 Francs to the “sensibilisation à l’informatique d’élèves des établissements scolaires du second degré”\(^{25}\). After 1980, and for a few years, it became possible to isolate the credits effectively targeted at the introduction of computers, or “modern technologies” within classrooms. In 1985, a new line (“chapitre 56–37”) was created in the budget to isolate the appropriations devoted to “Dépenses pédagogiques-technologies nouvelles : premier équipement en matériels spécialisés des établissements scolaires : rénovation des enseignements”. Why this change? At that time, the government was planning to devolve a series of current and capital expenditures to local authorities, as part of a huge decentralization process. However, according to the law, “pedagogical expenditure” would still be supported by the state.\(^{26}\)

The creation of a new chapitre allowed the government to track appropriations earmarked for educational capital expenditure; those that the state would still control once the devolution process was over.

The table below documents the rapid rise of the expenditure targeted to informatique pédagogique between 1980 and 1985, but it also reveals the much bigger sums allocated to other special pedagogical equipment, which includes, in particular, the machine-tools used in technical schools, by far the biggest item of expenditure in this category. The machine-tools raised questions that were also relevant for computers: how to fund and organize maintenance, manage breakdowns, and keep track of the stock of these special machines within schools? All these questions were far from resolved in 1982. The actors were at least conscious of the problems that could be posed by a stock of technical machines dispersed over the territory.\(^{27}\)

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26 Laws of January 7 and July 22, 1983. The discussions raised in 1984 by the funding of pedagogical expenditure are documented in the archives of the Minister of the Interior, AN 19860676/31. The decree was finally signed on February 25, 1985.
27 In 1978, the Ministry of Education launched a “RCB study” (étude de rationalisation des choix budgétaires) to address the maintenance of machine-tools. However, the RCB experiment was interrupted in 1982, and the study thus stopped, but various intermediary reports are available in the archives, AN 19910282/1.

<table>
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<tr>
<th>Écoles normales primaires</th>
<th>Collèges</th>
<th>Lycées</th>
<th>Global amount of appropriations for chapter 56–35</th>
<th>Budget voté – Ministry of Education (enseignement scolaire)</th>
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<tbody>
<tr>
<td>1980</td>
<td></td>
<td>7 million «Sensibilisation à l’informatique d’élèves des établissements scolaires du second degré»</td>
<td>270 million</td>
<td>89,020 million [€38,801 million 2020]</td>
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<tr>
<td>1982</td>
<td>6 million «technologies modernes»</td>
<td>55 million «technologies modernes»</td>
<td>511.026 million</td>
<td>122,074 million [€41,959 million 2020]</td>
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<tr>
<td>1984</td>
<td>32 million «technologies modernes»</td>
<td>55 million «technologies modernes»</td>
<td>80 million «technologies modernes» 38 million «filière électronique»</td>
<td>796.1 million</td>
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<tr>
<th>Écoles normales primaires</th>
<th>Collèges</th>
<th>Lycées</th>
<th>Global amount of appropriations for chapter 56–35</th>
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<tr>
<td></td>
<td>40 million «filière électronique»</td>
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<td>158,402 million</td>
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NB: the data recorded by the Budget Directorate of the Ministry of Economy and Finance, in 1984, for «informatique pédagogique» are coherent but slightly different, with a starting point at 7 million in 1980, and a global amount of 288 in 1985; direction du Budget «Dossiers perspectives 1985», Centre des archives économiques et financières [CAEF], PH041_90_art3.
From the “Ateliers de Pratique Informatique” to “Informatique pour tous”: A Political Coup

*Informatique pour tous* was in a certain way a sharp acceleration of the strategy announced in the 9th Plan for the introduction of computers into schools. However, this analysis gives a very partial view of the process, as the first version of this program, called *Ateliers de pratique informatique*, only used schools as a setting. This program had political stakes that went far beyond the mere introduction of computers into classrooms. These political stakes influenced the choices ultimately made.

From the “Ateliers de Pratique Informatique” to “Informatique pour tous”: A Political Coup led at a Higher Level

“*Informatique pour tous*” started in 1984, with three initiators who, for various reasons, felt that the time had come for a vast and ambitious project. Jean-Jacques Servan-Schreiber was trained as an elite engineer (at the Ecole Polytechnique). This totally atypical character became highly successful as a journalist and press owner in the 1950s and 1960s (with the *Express Magazine*), then, in the 1970s, he bankrupted himself in political campaigns (in the center of the political game). In the 1980s, he still had an audience as a visionary man: the *Défi Mondial*, published in 1980, reached a large audience just as the *Défi américain* had done thirteen years earlier.²⁸ Fascinated by new technologies, he was convinced that computers would change the economy and society. He acted as a shadow advisor to President François Mitterrand, who created for him the short-lived “Global center for IT”. His purpose was to “convince the president that computers [were] not a ‘futurist dream’ but ‘the instrument of the necessary work’”.²⁹

The second initiator was Gaston Defferre, a close friend of both François Mitterrand and Servan Schreiber. From the beginning of the socialist presidency, he also tried to convince the president of the extraordinary potential of IT. As a Minister of the Interior of the first government, he had overseen the huge process of

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French decentralization giving more power to local authorities. In the ministerial reshuffle of July 1984, he lost the Interior Ministry and became Minister for Territorial Planning. For him, computers were a tool that would make decentralization more effective and efficient. In 1984, he advocated the idea of “popular computer labs”; his aim was for “each district of each city, each village, each canton of each department, [to have] its own practice workshop, within everyone’s reach”.30

The third personality concerned was François Mitterrand, the socialist President of the Republic, elected in 1981. Contrary to the other two, at the beginning of his presidency he was rather skeptical about computers. Though he created the Global center for IT, the budget was too small to make a real change. However, he had political reasons for taking up the project, as revealed by the sentence attributed to him by Deferre in one of his letters to the Prime Minister: “We have at most one year left for a new climate to be created, a momentum for the future, a return to confidence...”.31

Elections for the National Assembly were planned for March 1986 and his presidency was failing. On the economic front, the expansionist strategy had failed, and he had to endorse the decision to turn to austerity.32 Politically, the reform of the private school system, a symbol for the socialists, had been thwarted by monster demonstrations in July 1984, leading to the nomination of a new government, headed by Laurent Fabius. Consequently, the risk of an electoral defeat was real, and something needed to be done to save his presidency.

Various notes exchanged in the fall of 1984 between the Prime Minister, Defferre, Jean-Jacques Servan Schreiber, the cabinet of the President, and the SNIPPEGC (Syndicat national des instituteurs- Professeurs d'enseignement general des collèges) reveal the options considered at that time. In Defferre’s project, schools were more a setting than a target, the main stake being to make computers available for all citizens, whatever their age, in the most remote regions of France. One of his letters explicitly states: “I asked Chevènement (Minister of Education) not to oppose the use of schools”.33 Why schools? Decentralization laws had devolved the construction and maintenance of school buildings to local authorities and opened up the possibility for municipalities to use these buildings for other purposes: these workshops would have given a first example of this local reappro-

31 Quotation of François Mitterrand, inserted in a letter addressed by Gaston Defferre to Laurent Fabius, September 24, 1984, AN 19960290/6.
32 Descamps and Quennouëlle-Corre, “1983, un tournant libéral ?”.
prietion of schools. The second characteristic of this first draft was the preference given to Apple and its brand-new Macintosh, given the technological advance (three years) of the Macintosh compared to similar products. The idea was to produce a Macintosh under a French brand, thanks to a joint venture with French industrialists and the setup of a new plant on French territory.\[34\]

The person who was in a position to lead such an ambitious project within the government was not Defferre, but the Prime Minister himself, the young Laurent Fabius. He officially presented the operation to the press on 25 January 1985 (at a press conference), introducing its new name *Informatique pour tous*. It was not just a communication issue; Laurent Fabius and his cabinet took control of the operation, which was led by a delegate reporting to his cabinet, Gilbert Trigano. This coincided with the marginalization of Servan-Schreiber and Defferre in the process, and with several changes to the initial project. In his official presentation, education and pupils were clearly at the forefront; access for all citizens was the second aspect, and teacher training the third. But industrial policy was looming in the background, as clearly shown by this excerpt from the minutes of an inter-ministerial meeting held on 17 January: “*Le matériel informatique : – il sera français*”\[35\] [emphasis in the original document]. The project had also been significantly scaled down with regards to the number of workshops (from 50,000 to around 10,000), the number of computers to be installed (from 250,000 to 100,000), and the total cost (from 8 billion to 2 billion Francs). This scaling-down was not primarily due to financial considerations. The various stakeholders – both in the French IT industry and in the Ministries, including the Ministry of Education – pointed out that the scale of the first project was unrealistic in terms of (French) industrial capacity, of teacher training and of logistics.\[36\] In January 1985, the die was cast for the futuristic dream of the super-modern Apple hardware being accessible to every inhabitant in each French village. It was clear, at that time, that *Informatique pour tous* would be a matter of French industrial policy as well as a political coup with a strong pedagogical dimension.

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34 G. Defferre to L. Fabius, December 7, 1984, AN 19960290/6.
35 Minutes of the inter-ministerial meeting held on January 17, 1985 (the minutes date from January 21, 1985), AN 20180982.
A Financial Maze: When Political Will Breaches the Administrative Order

At the same time, the government had to find money to finance this huge investment. An amount of 1.890 billion, 1.263 billion in equipment; the rest in furniture, teacher training, and software. How much did this weigh on public finances? Not much compared to the state budget of 1985, which was 999 billion Francs, or to the whole budget of the Ministry of Education for primary, secondary, and technical schools (Universities excluded), which was 158 billion. More relevant is the comparison with the amount of really “new measures” – those that allow for new policies, once the amount corresponding to mere adjustments is taken out – that had been painstakingly negotiated by the Ministry of Education during the summer of 1984, for the budget year 1985: 1.121 billion Francs for universities and “enseignement scolaire”. ³⁷

Moreover, this sum had to be provided for in a totally abnormal calendar. This operation had been decided on after the vote of the 1985 finance bill, and it was to be implemented in 1985. They had to find innovative solutions. The main contributor was not the Ministry of Education, but the annex budget of the Post and Telecommunications (PTT) Office. Since 1923, the resources and expenditures of Post and Telecommunications were no longer included in the general budget of the State but had been the subject of an annexed budget. This provision should in principle have given greater financial autonomy to this sector and allowed its managers, in particular, to use operating surpluses for investment. ³⁸ Faced with budgetary restrictions, the government had already chosen, in the fall of 1984 (for the 1985 budget), to transfer spending on the modernization of the “computer industry” (filière électronique) to this budget, which had significant surpluses. ³⁹ The door was thus open for another transfer.

However, whatever its resources, the budget of the PTT was already fixed for 1985, and there was no easy way to redirect the planned expenditure. The Ministry of the PTT came up with a providential (but complicated) solution: a leasing co-

tract (credit bail). There would be a four-part convention signed between the UGAP, the PTT, the Ministry of Education, and the leasing company. The bulk of the equipment was thus to be paid from 1986 onwards (the franchise and the progressive repayments to the lender). Given the budgetary legislation and the use of public money, this solution was considered heterodox and costly, and was severely criticized by the Cour des Comptes (the supreme body for auditing the use of public funds) afterwards.

Moreover, this financial operation led to a recentralization of the school computerization process. The strategy of the Ministry of Education had previously been to contract with local authorities: this was the strategy that should have been followed for the 9th plan. If the local authorities were ready to pay part of the sum, the state would subsidize the operation. This process was certainly slower, and the shared exercise of competence was not fully in line with the aim of a “coherent block of competences” officially pursued through the decentralization process. However, so far, it had allowed for a real mobilization of local teams (operation Micro-ordinateur grand public), and it weighed less heavily on state finances. IPT broke this dynamic and even created some discontent among local authorities that had been pioneers in equipping their schools as they were not a priority target to receive IPT endowments. The most motivated teams were frustrated by the process. Lastly, the opening to the public, which would have involved added financial charges for the local authorities, encountered such difficulties that the results in this field seem very limited.

This financial heterodoxy attests to the high political stakes associated with the experiment.

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40 12 février 1985, note from Jean-Claude Hirel, cabinet director of the PTT minister to Louis Schweitzer, cabinet director of the Prime Minister, AN 19860179/5.
41 The Union des groupements d’achats publics (UGAP) is a service responsible for the supply of material and equipment to administrations.
43 François Roussely, cabinet director of the Minister of the Interior, to the Prime Minister (addressed to Christian Bècle, technical advisor), “Plan informatique pour tous,” November 20, 1985, AN 19870028/11.
Industrial Meccano or Pedagogical Experiment?

If the political wager was compatible with the industrial Meccano, the haste of the process obviously affected its pedagogical relevance.

Arming the French Computer Industry for Global Competition

The constant involvement of the DIELI in the setting up and implementation of the Plan attests to the fact that that IPT was a piece of an industrial Meccano set. The history of the IPT plan is linked with that of the filière électronique, the new label chosen by the French government in 1982 to encompass the initiatives taken in order to promote the French electronics and computer industry.\(^{44}\)

The nationalizations carried out by the socialists in 1982 had further tightened the links between the computer industry and the government. These nationalizations were primarily an ideological choice: this policy was not specific to the electronics or computer industry. Nonetheless, major players in the computer industry – Thomson and Bull – were included in the pack. Unhappily, the government very soon discovered that Thomson was not the expected “goose that lays the golden egg”; the financial results were below expectations.\(^{45}\) This highlights the strong voluntarism of the so-called Programme d'action pour la filière électronique, launched on 28 July 1982 by Chevènement, who was then Minister of Research and industry. This program was first and foremost a brand, a communication tool.\(^{46}\) It also encompassed a multitude of subsidies, contracts, direct investments, etc., for a total (promised) amount of 140 billion Francs, with 55 billion to be paid by the State (11 billion per year; public procurement not included). This promise was eventually compromised by the rigorous fiscal policy officially adopted after March 1983: as usual for these highly publicized announcements, it is hard to know what was really spent on it. Considering the global amount announced, Informatique pour tous and its 2 billion Francs looks like a tiny drop in the ocean compared to the money spent lavishly on the filière électronique. However, it

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44 Barreau and Mouline, L’Industrie électronique française, 6–8.
46 This was also the defense line adopted to avoid criticism from the European Commission. Comité interministériel pour les Questions de coopération économique européenne. Secrétariat général, “Filière électronique et aide à la recherche,” May 16, 1986, AN 19890634/9.
was enough to focus attention and guide technical choices and public contracts. Numerous archives from the Cabinet of Edith Cresson (Minister of Industrial Redeployment and Foreign Trade) bear witness to IPT’s industrial vision.47

The first challenge of IPT was to stimulate supply and demand: “Contribute to the financing of the modernization and extension of the productive apparatus and therefore of supply”.48 Correspondence with Thomson and Exelvision shows that the contracts were large enough to make a difference in terms of production and industrial capacity; those companies needed to open new production lines to meet the targets set by the government. The archives also reflect the hopes that this operation would eventually stimulate private demand for computers, both because the price of each unit would fall, and because people using computers in computer labs would eventually buy a computer.

The second challenge was to strengthen and restructure the French sector in the face of international competition. Priority was given to French players over IBM, whose dominance on the French market needed to be countered, but also for the Prime Minister over Apple, whose success would have been a direct threat to Bull and its professional computers. The purpose for the Minister of the Industry was clearly to favor French actors, but which ones? The French IT sector – both professional computers and domestic computers – encompassed big companies and small challengers. There were many discussions about how to divide the “IPT” cake between French companies able to provide both types of computers (table 1).

Table 2: French IT companies (1985)

<table>
<thead>
<tr>
<th>Professional computers</th>
<th>Domestic computers</th>
</tr>
</thead>
<tbody>
<tr>
<td>– Bull</td>
<td>– Thomson</td>
</tr>
<tr>
<td>– SMT-Goupil</td>
<td>– Exelvision</td>
</tr>
<tr>
<td>– Logabax</td>
<td>– Matra</td>
</tr>
<tr>
<td>– Leonard</td>
<td>– MTB</td>
</tr>
<tr>
<td>– Matra</td>
<td>(Matériel technique de Boulogne)</td>
</tr>
</tbody>
</table>

47 The archives of Christian Mitjavile, then Technical Adviser to the Minister of Industry and Telecommunications for electronics, information technologies and telecommunications industries, keep a precise record of these discussions, AN 19860179/5.

Clearly, this was not fair competition for the actors, and there were rather questionable public contract procedures considering the French rules, European rules, as well as those set by the General Agreement on Tariffs and Trade. This organization was seized upon by the Americans, dissatisfied with the process. Practically, the authorities exploited the existence of the contracts signed in July 1984 for the implementation of the 9th Plan. The procedure of the amendments to initial contracts gave them a certain freedom to choose suppliers when the quantities would in principle have justified a new call for tenders.

There were also technological reasons for choosing French equipment. These technological aspects are multiple. In terms of processing power, Apple was clearly ahead, since it mastered the 32-bit technology, whereas French computers were at best on 16 bits. However, other questions were raised: compatibility and interoperability with the existing hardware, which was one of the main criticisms of the Apple solution. Discussions also mentioned the availability of pedagogical software in different languages, potential telematic developments (linked with the launch of the French Minitel), etc. But the main argument defending the French solution was the original structure of the nanoréseau. The idea was to use powerful professional computers as network heads connected with a handful of domestic computers (workstations). Users of the workstation therefore had access to the software library, to a range of peripherals, and to the processing power of the network head. However, considering the potential of the Macintosh developed at the same time by Apple, it was not clear that the nanoréseau was such a good technological solution; the Thomson workstations would soon be outdated.

As early as June 1985, the Minister of Industry and the industrialists decided to seize this opportunity to sell the French integrated solution abroad; it would soon be too late. They prepared a leaflet (both in French and in English), as well as a series of promotional events linked to operation IPT. Attempts were made to sell this integrated solution to various categories of countries, with different strategies depending on the centralization of their educational systems. In February 1986, contracts had already been settled with Catalonia, Belgium, Portugal, and Al-

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49 Ministère de l’Économie, Directeur des relations économiques extérieures, “Plan IPT : respect de nos obligations internationals,” March 27, 1985, AN 19860179/5.


52 The English leaflet of 1985 is entitled “Teaching and the computer: French educational project design. A world first”, archives of the DIELI; Ministry of Industrial Redevelopment and Foreign Trade; Marc Mathieu (DIELI) to the cabinet director of the Minister “Objet : bilan et perspective de la promotion pour l’exportation du nanoréseau,” February 6, 1986, AN 19860179/5.
geria, and discussions were pretty much advanced with Russia. It has not been possible to document what happened to these initiatives after the electoral defeat of March 1986.

**Computers for All: The Pedagogical Failure?**

Considering the genesis of the project, there was clearly a risk that the operation would be considered as “carried out from outside”. This was emphasized by a representative of the Ministry of Education in an inter-ministerial meeting in January 1985: “the steering of the project must ensure the mobilization of the network of schools and teachers and not give the impression of an operation conducted from outside”.⁵³ They may have had in mind the criticisms raised by the “10,000 micros” operation.⁵⁴ Some actors also remembered the piecemeal introduction of audiovisual equipment at the turn of the 1970s, which did not have the desired effect due to a lack of adequate teacher training.⁵⁵

This shed light on the efforts made to secure the support of teachers and their representatives. Back in 1984, Gaston Defferre had enlisted a strong ally: the SNI-PEGC – the biggest union of elementary teachers and a traditional political ally of the socialists.⁵⁶ There are records of discussions between Defferre collaborators and union delegates that show the approval of the union, even if the SNI-PEGC considered Thomson hardware as completely outdated and clearly favored the Apple option. Secondly, the Minister of Finances accepted, for the first time, that teachers would be paid to attend training sessions during their holidays.⁵⁷ It would have been impossible to find enough substitute teachers to train them during school

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⁵³ A quotation from the Ministry of National Education, written in the minutes of the inter-ministerial meeting of January 17, 1985 (minutes of the January 21, 1985), AN 20180498/2.
⁵⁶ “The National Union of Teachers said it was enthusiastic about this project. It is indeed an opportunity to improve the image of teachers in the country and to mobilize them around a project for the future, which is particularly necessary after the debate on private schools.” Draft of a letter addressed by G. Defferre to L. Fabius, November 2, 1984, 19960290/6; Ismaïl Ferhat, *Socialistes et enseignants: le Parti socialiste et la Fédération de l’Education nationale de 1971 à 1992* (Pessac: Presses Universitaire de Bordeaux, 2018).
time and impossible to find enough volunteers to attend the training sessions during the holidays without any compensation. Once again, this financial compensation gave clear evidence of the political stakes of this project. Teachers responded enthusiastically to this offer: there were four times as many volunteers as there were places in the training sessions. Clearly, from a political point of view, pedagogical success was important enough to justify unprecedented efforts.

However, the political will to act quickly, before the elections of March 1986, had several problematic consequences, as pointed out by a general inspectorate in a highly critical report written in July 1986: “Slow and disappointing start-up of pedagogical uses, clearly out of step with the rate at which equipment is installed in schools. This delay seems to be mainly due to the uncertain definition of training activities with low efficiency and the unequal technical and pedagogical value of the available software”.58 The inadequacy of the software – scarce and of mediocre quality – and the content of the training – turned towards programming in BASIC – had been widely criticized.

At that time, the socialists had already lost the elections of March 1986, and there was no political reason to rebuff criticism against this initiative promoted by the political adversary of the new government. While the repayment of the IPT Plan continued from 1986 to 1989, the right-wing government again reoriented its IT strategy. New credits for equipping schools with computers were mainly and discreetly earmarked for private schools, late beneficiaries of this initiative.59

**Conclusion**

*Informatique pour tous* followed a series of initiatives dating back to the early 1970s: “58 lycées” and “10 000 micros” paved the way for IPT. These previous experiments – along with the vivid memory of the hopes and disillusions linked to the introduction of audiovisual devices into schools – had highlighted the paramount importance of teacher training in any such endeavor.

Despite a certain continuity, IPT differs markedly from previous operations in the scale of the public resources deployed and the speed of the process. This difference is the result of a strong political commitment at the highest level of the State. In a sense, IPT was a political gamble with an eye on the general elections of 1986.

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59 Confidential note, September 3, 1986, “Note sur l’évolution des crédits de la filière électronique en cours d’exercice,” archives of Gérard Longuet’s cabinet (Gérard Longuet was at that time Secretary of State for Post and Telecommunications), AN 19890634/9.
Economic considerations relating to French industrial policy also influenced the
decision and its implementation, especially with regards to the choice of equip-
ment. However, as shown by the exceptional attention given to teacher training,
political leaders were clearly aware that the political gamble could not be won
at the cost of failure on the pedagogical front.

Politically, IPT may have helped to limit the extent of the defeat in 1986, which
was much less severe than had been feared among the socialists, but it did not lead
the government to victory, nor did IPT save the French computer industry in the
long run. An exploration of the companies’ archives might possibly serve to clarify
the short-term effects of this plan on both their financial balance sheets and their
industrial strategy. As for its medium- and long-term educational effects, the anal-
yses of computer advocates (EPI members) tend to value the symbolic impact of an
operation that suffered above all from the lack of continuity. In the short term,
however, it seems clear that although computers entered thousands and thousands
of schools, they did not necessarily make their way into the classrooms on this oc-
casion. A selection of case studies could highlight local variations. Given the variety
of stakeholders, different scales may be relevant: the local education authority, the
department, the areas covered by the inspecteurs départementaux de l’enseigne-
ment primaire (departmental inspectors of primary education), the municipalities,
or the schools themselves.

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60 Gérard Grunberg, “Les élections législatives de 1986,” in François Mitterrand, les années d’alter-
39–53.

61 EPI, “Quelques jalons pour un historique de l’informatique dans le système éducatif français.
Depuis 1970”: “This operation, which is often criticized, especially by those who did not know about
it, had the merit of raising awareness of the importance of IT for the education system and beyond
for society as a whole. This long-term plan was unfortunately interrupted for the most part by a


