

# A new approach to a European information technology policy: the European strategic programme for research and development in information technology (Esprit)

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## *1. Introduction*

“There is simply no alternative to cooperation between previous rivals and between industry itself and the academic world.”

The London Times commented with these words on 19 December 1983 on the renewed postponement of a decision by the Council of the European Community (EC) to finally adopt the EC Commission’s (hereafter: Commission) newly conceived strategy in the field of information technology (IT) policy: the Esprit programme. The commentary referred to the failure of Unidata in 1975, which showed once again how unsuited cross-border joint ventures in the European IT sector were to successfully counter competition from the USA and Japan, which dominated global IT markets. The governments of France, Germany and the UK attempted to do this with national funding programs, which were primarily intended to stimulate research and development.<sup>1</sup> However, their focus was on the national industry (the national champions) for larger computer systems, whose technological backlog – in contrast to the smaller office computers – was becoming increasingly obvious.

The EC, which endeavoured to play an independent role in industrial policy in the second half of the 1970s, also attempted to provide impetus. These efforts culminated in new policy approaches in the 1980s. The IT policy played a pioneering role in this, with Esprit being the first major funding programme for research and development. Although Esprit was rather modest in comparison to the financial volume of the IT funding programmes in the large member states, it should prove to be a blueprint for the future funding of research and development in the EC. It achieved a long-term significance that no national funding programme could match.

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1 See Röhr in this volume.

Although Esprit, similar to all national programmes, failed to achieve its actual objectives, it, nevertheless, had a lasting impact on EC research and development funding.

The new approach to European IT policy, which took concrete form with Esprit in 1984, will be analysed in this article. The following questions are raised: What did the Commission's new strategy look like after the failure of Unidata in 1975? What role has industry played in the remodelling of IT policy? How should European IT policy and funding be integrated into existing national programmes? How has the Esprit programme developed in the first few years? The following questions need to be asked regarding the manufacturers of smaller office computers: What was the significance of the European funding programmes and collaborations for small office computers? What role did they play in the conception of Esprit?

The article closes a research gap by answering these questions. Esprit has already been dealt with in a number of works, but mostly from a very specific perspective. Studies on the development of EC industrial policy or early IT policy<sup>2</sup> tend to mention Esprit in a rather generalized way. This also applies to works on the history of the Commission from the perspective of its actors.<sup>3</sup> Overviews of the history of technology touch on the topic,<sup>4</sup> but they neglect the interdependence of technological development with the institutional development of the EC. The fact that Esprit is also about the EC deepening its interest in the area of industrial policy and, thus, about competences and responsibilities is usually ignored. Contemporary works that deal with Esprit<sup>5</sup> offer important insights, but there is a lack of non-public ministerial decision-making processes within the member states. The joint ventures of European IT companies in the 1960s and 1970s have been researched in much greater detail,<sup>6</sup> although these projects, such as Unidata, were only partly initiated by the EC.<sup>7</sup> Archive-based studies that examine the origins of the Esprit programme and place it in the history of data technology 'made in Europe' are a desideratum.

In terms of content, a number of limitations need to be made. Firstly, the article will have to be about the entire European IT policy. It is neither

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2 Van Laer: *Liberalization or Europeanization*.

3 Van Laer: *Forschung*.

4 Fickers/Griset: *Communicating Europe*.

5 Sandholtz: *High Tech Europe*.

6 Henrich-Franke, *Innovationsmotor Medientechnik*.

7 Hilger: *Von der Amerikanisierung*; Kranakis: *Politics, Business*; Van Laer: *Developing an EC Computer Policy*.

possible nor appropriate to focus solely on the policy for smaller office computers. On the contrary, many manufacturers of small and medium-sized data processing systems, who have played a decisive role in shaping the European path of data technology, could only be reached with difficulty by a policy of support for research and development at national and international level. This was also due to the fact that the new approach of European IT policy focused strongly on the production and development of microelectronics. Secondly, it should be borne in mind that the EC's IT policy cannot really be considered in isolation from other policy areas, such as industry or telecommunications. On the one hand, the IT sector was seen as a key technology for the industrial development of the 21st century. On the other hand, computers and telecommunications slowly merged during this period. As a result, there were repeated conflicts between the telecom and IT industries over the scope of end device monopolies.<sup>8</sup> Despite the interdependencies between IT and telecommunications, which increased in the course of the expansion of digital data networks, telecommunications can only be mentioned here indirectly. Thirdly, the debates on the EC's IT policy and Esprit should not be seen in isolation from the Commission's two endeavours to strengthen the competitiveness of European industry and improve its own position in the EC's institutional structure.

In terms of time, the years between the failure of Unidata in 1975 and the adoption of the second phase of the Esprit programme in 1988 will be considered. This period is appropriate for several reasons: Firstly, it is a period in which Europe was characterized by a profound crisis of economic structural upheaval, in which old industries were dying off, especially in the coal and steel industry, and fundamentally new growth engines and growth conditions had to be found.<sup>9</sup> European companies and governments were confronted with tough competition on the global markets for future technologies, in which they were increasingly falling behind their competitors from the USA and Japan.<sup>10</sup> Secondly, this is the period in which even the European producers of smaller office computers and their markets collapsed after initially good sales figures. Within a few years, the entire development of this industry had collapsed.

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8 Henrich-Franke: EC Competition Law.

9 Warloutzet: Governing Europe.

10 Hilger: The European Enterprise.

This article is primarily based on an analysis of the records of the Federal Archives in Koblenz and the relevant literature. It, therefore, focuses on decision-making processes and negotiation strategies within Germany and the companies based there.

## 2. *Unidata: A turning point in the EC's IT policy*

The break-up of the large-scale joint venture 'Unidata' marked a turning point in the attempts to make the European IT industry competitive with American producers. Unidata was a failed attempt at cross-border cooperation aimed at bringing together the entire range of European IT equipment under one roof in order to face competition on global markets with a complete product offering. However, the companies only participated superficially and just agreed on common operational business objectives in individual segments. There was no consistent pooling of resources, particularly in research and development.<sup>11</sup> Of course, this did not mean that cross-border cooperation in Europe was doomed to failure. There was successful cooperation between companies or even amicable takeovers. Philips, a major Dutch corporation, produced smaller office computers in Germany after taking over Siemag.<sup>12</sup> In some segments, the Dutch conglomerate even left its research and development centres in Germany, for example, in Hamburg or Siegen.

The basic problem of cooperation was the national interest of governments or corporate egoisms, which often stood in the way of European projects. In addition, the governments of the larger EC member states launched their own programmes to promote research and development. As these programmes were also intended to strengthen national companies in intra-European competition, they stood in the way of cooperation within the EC.<sup>13</sup>

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11 Kranakis: Politics, Business; Hilger: Von der Amerikanisierung.

12 Henrich-Franke: Innovationsmotor Medientechnik.

13 Warloutzet: Governing Europe, p. 121ff.

### 3. A new approach to a common IT policy

#### a) Considering a new approach: the Commission's IT task force

Parallel to Unidata, the Commission proposed a new strategy in IT policy, which was adopted by the Council of the EC (hereafter: Council) in a resolution on 15 July 1974. The latter set the goal of establishing an independent European data processing industry by 1980, *inter alia*, by co-ordinating national measures. However, the Commission's first programmatic initiatives, including the proposal to initiate a community programme to promote research and development in the IT industry, were rejected by the Council in 1976. The member states had their own support programmes with which they wanted to support their national industries in the face of tough international competition – including with European competitors. A European programme with common goals ran counter to this.<sup>14</sup> For the time being, the Council only approved smaller project studies on IT applications in the areas of legal documentation or medicine (in July 1976) or smaller research projects on the use of IT in administration, for example, at the Commission itself (in September 1977).<sup>15</sup>

The second half of the 1970s was also a time when industrial policy issues were discussed that “jeopardized European industries [...] in order to facilitate positive structural change”.<sup>16</sup> Of course, this implied the conviction that a formative structural policy was the prerequisite for an effective competition policy. During this period, which was also controversial in terms of regulatory policy, few in the EC questioned competition policy as the centrepiece of industrial policy. Nevertheless, many contemporaries – such as *The Times* – emphasized that there were sectors in which an active European structural policy would be beneficial, as “science-based industries” could not develop in Europe *because* “national markets are too small”.<sup>17</sup> To make matters worse, the old industries were still too important due to their high number of employees to simply let them die. The Commission was extremely cautious in this respect in 1977/78. It found it

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14 Sandholtz: High Tech Europe.

15 Preparatory notes for the meeting between the ministers and Davignon on 15 May 1979, Bundesarchiv Koblenz, B102/197906.

16 Statement of the ‘European Centre of Public Enterprises’ on the implementation of a European industrial policy, 9 January 1978, Bundesarchiv Koblenz, B102/197905.

17 *The Times*, 28 January 1978, Bundesarchiv Koblenz, B102/197905.

difficult to designate individual industrial sectors as sectors of the future and, thus, deny others eligibility for support. The EC's industrial policy was also in a transitional phase in which the outcome of the economic crisis was completely unclear.<sup>18</sup> Increasing global competitiveness in the areas of data processing, telecommunications, the aircraft industry or energy and combating high unemployment in the conurbations of the old industries were two sides of the same coin. However, as the Commission had no competence for social policy (and only a marginal one for structural policy), it placed its political focus on generating growth and discussing future growth sectors. In line with its basic liberal orientation, the Commission saw its main task as creating growth-promoting conditions, while the main responsibility should remain with the companies, which would ultimately reap the profits and create jobs. The Commission also, simultaneously, warned that "structural policy should not be overestimated".<sup>19</sup>

The Commission focused from the outset on the IT sector, which it regarded as one of the most important future technologies. A first 'Multiannual programme in the field of data processing (1979–1983)', conceived by the Commission as a larger funding programme, was reduced by the Council to less than a quarter of its originally proposed volume and a few contents (standardization, public procurement, funding measures for software). The governments, especially in Germany, the United Kingdom and France, preferred their national funding programmes. The federal government in Germany, for example, completely reorganized its funding programmes after the expiry of the 3rd data processing programme and only gave the EC a supplementary role.<sup>20</sup> However, this was not just about favouring national companies but also about questions of power and competence. The national ministries viewed the EC's intervention in their previous area of responsibility with considerable scepticism and rejection.<sup>21</sup> Industry, instead, which had certainly recognized that the national framework was too small to survive in international competition, complained that it had been neither sufficiently involved in the design of the funding programmes

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18 Döring-Manteuffel/Raphael: *Nach dem Boom*; Raphael: *Jenseits von Kohle und Stahl*.

19 Note from the Federal Ministry of the Interior dated 16 June 1978, Bundesarchiv Koblenz, B102/197906.

20 Internal report of the German Ministry of Economic Affairs on the EC industrial policy, 16 June 1978, Bundesarchiv Koblenz, B102/197906.

21 Interministerial correspondence in the run-up to Davignon's visit to Bonn, 15 May 1979, B102/197906.

nor able to influence the positions of the national governments on the proposed EC funding programmes.

A significant turning point for the EC's IT policy was the appointment of Étienne Davignon as EC Commissioner for 'internal market, the customs union and industrial affairs' in 1977. Davignon took up the issue of the European IT sector with great commitment, as he saw it as a key driver of future European economic development.<sup>22</sup> As early as 1978, the Commission set up a working group 'Forecasting and Assessment in the field of Science and Technology' (FAST).<sup>23</sup> The aim of the experimental project was to identify ways of improving cooperation within the IT industry in Europe and sound out the long-term direction of joint research and development projects. The target was, as Roland Hüber, the main person responsible for IT in the FAST Group, put it: "to create the conditions for European collaboration in the long lead".<sup>24</sup> The Commission's new approach in the field of data processing was embedded in comprehensive efforts by the EC to examine the long-term strategic challenges for European industry in other areas, such as biotechnology. The fact that the European IT industry was structurally lagging behind in research and development, which threatened to have negative consequences for its long-term competitiveness, prompted the FAST Group to focus on research and development.

In 1980, the Commission initiated the 'Joint European Planning Exercise in Information Technology', which can be interpreted as a preliminary stage of Esprit. It became increasingly obvious in the discussions there that the European states alone were unable to invest enough in research and development compared to the large budgets of the funding programmes in the USA and Japan. Europeans were operating too many parallel funding instruments in order to close the technological gap and restore competitiveness. An important turning point in that context was the announcement of the Japanese Fifth Generation Computer project. Even the German government, which was sceptical about the EC's efforts, recognized the importance of the FAST Group for the development of a common IT policy a few years later, because "the very existence of FAST has triggered and

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22 Interview with Étienne Davignon by Arthe van Laer, 14 September 2010. (retrieved from: [https://archives.eui.eu/en/oral\\_history/INT133](https://archives.eui.eu/en/oral_history/INT133), 14 December 2023)

23 FAST, *Die Zukunft Europas*, p. 6–68.

24 FAST, *Die Zukunft Europas*, p. 8.

accelerated certain activities in the Commission's services, e.g. in the field of information technologies".<sup>25</sup>

Parallel to FAST, Commissioner Davignon set up an 'Information Technology Task Force', which proposed a co-ordinated IT strategy for the EC, member state governments and industry, the so-called 'telematics strategy', in September 1979. According to this strategy, the governments had to be convinced that joint funding of research and development would generate concrete added value, after they had previously preferred to distribute funding to their national industry instead of initiating a joint project. This was by no means easy, as the resistance of national governments to an EC funding policy was strong. In Germany, for example, in the run-up to a visit by EC Commissioner Davignon in May 1979, the Ministries of Economics and Research agreed that "the Commission should not be encouraged to draw up funding programmes in the field of data processing".<sup>26</sup> The Commission saw a key to convincing the governments in a clear vote by the industry for a European programme from which it expected real added value and for which it was also prepared to contribute its own funds. It was, therefore, necessary to work together with industry to localize content that appeared so relevant that companies would be prepared to contribute funds themselves, instead of primarily hoping to receive additional funding.<sup>27</sup>

The strategy, therefore, aimed to get industry interested in an EC funding policy in order to win over governments in favour of a common IT policy in the area of research and development. In doing so, the Commission was guided by the long-term programmes for research and development of the governments in the USA and Japan, both of which were leaders on the world markets for IT. Ultimately, however, it was also about 'competition', which was the EC's guiding regulatory ideal. The aim was to promote competition internally, i.e. on the European markets, and, at the same time, to strengthen external competitiveness. In line with liberal ideas of order, the primary responsibility had to lie with the companies.<sup>28</sup> The Commission did not make any strategic considerations regarding the merger of

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25 Assessment of the FAST programme by the German government, June 1983, Bundesarchiv Koblenz, B136/23986.

26 Internal correspondence; Bundesarchiv Koblenz, B102/197906.

27 Interview with Étienne Davignon by Arthe van Laer, 14 September 2010. (retrieved from: [https://archives.eui.eu/en/oral\\_history/INT133](https://archives.eui.eu/en/oral_history/INT133), 14 December 2023)

28 Report on a meeting between EC Commissioner Davignon and the German Minister for Economic Affairs Lambsdorff, 15 May 1979, Bundesarchiv Koblenz, B102/197906.



companies, in contrast to what the German government intended (and had tried to achieve with its support programmes).

The Commission (Davignon) initiated a 'round table' with representatives of European industry to further advance the European 'telematics strategy'. It launched the round table with representatives from twelve member state companies (France: Bull, CGE, Thomson; Germany: AEG, Siemens, Nixdorf; Great Britain: GEC, ICL, Plessey; Italy: Olivetti, STET; and the Netherlands: Philips) in summer 1981. The Commission primarily drew on the expertise of producers of large computers and traditional producers in the telecommunications sector (e.g. Siemens, Philips, IBM). It hoped that such an approach would have a multiplier effect.<sup>29</sup> Although there were also producers of smaller office computers, such as Nixdorf or Philips, their focus was not on this product segment. Companies supported Davignon's initiative from the beginning because they assumed that "unless together we can carry out a sufficiently large industrial program, the greater part, if not the whole of the existing IT industry could disappear within a few years".<sup>30</sup> The company representatives not only took the topics discussed back to their companies in order to harmonize them with existing corporate strategies, but also acted as a link to national governments. The roundtable was complemented by larger workshops at the Commission in Brussels, where contact was made with universities and research organizations. Small and medium-sized enterprises, which were particularly important in the field of medium-sized data technology and office computers, were only involved in the consultations after a considerable delay, i.e. actually only in the course of 1982, when the Esprit programme was actually already a done deal. Davignon further upgraded the 'Information Technology and Telecommunication Task Force' in 1983 and gave it the temporary status of 'department'.<sup>31</sup> Involving the industry from the very beginning of Esprit was a fundamental difference compared with all other initiatives created by the Commission previously.<sup>32</sup>

In view of the ever-worsening competitive situation of European industry, the realization prevailed that cross-border cooperation was the only remaining alternative to maintain Europe as an innovation and production location with its own computer industry in the long term. Earlier rivalries

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29 Sandholtz: High Tech Europe.

30 Letter to Davignon quoted in Guzzetti: A Brief History, p. 77.

31 Koutrakou: Technological Collaboration, p. 30.

32 Guzzetti: A Brief History, p. 76.

between companies and universities/research institutions had to be overcome.<sup>33</sup>

Regarding the IT sector, microelectronics (to the detriment of the data processing industry) played a pioneering role for the entire industrial policy of the EC. More than any other, it was seen as a 'leading sector' that would also have an impact on other branches of industry, because IT would both fundamentally change production and penetrate deeply into other areas of society. Remarkably, the Commission's General Report on the activities of the Community in 1982 spoke for the first time of 'new technologies'.<sup>34</sup> In this context, it was not insignificant that the Commission had been called upon by its Council in May 1980 to reform the EC budget, which was to mean, above all, a reduction in the high expenditure on the agricultural sector. From this, the Commission derived the right to launch new ideas, including the conception of a subsidy policy to improve the European economic structure.<sup>35</sup>

The discussions about a European IT policy, especially concerning funding, always took place against the backdrop of greatly accelerated technological change, in which European companies lost out to the competition from the USA and Japan in terms of innovative strength.<sup>36</sup> At the same time, the development of decentralized data processing (instead of mainframes and centralized processing, such as with Datel), the increases in performance in the computer industry and the synergies from developments in the telecommunications sector, including data transmission via digitalized data networks, have completely changed the industry. This also meant that existing structures, such as national telecommunications monopolies, including in the areas of terminal equipment and data transmission, were fundamentally questioned. The demands for the liberalization of terminal equipment markets and the privatization of telecommunications monopolies also opened up scope for the computer industry to exert influence on political decision-makers, particularly on the issue of decentralized data processing.

The market for computers and data processing technologies must be differentiated and considered as part of the large microelectronics sector,

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33 Interview with Étienne Davignon by Arthe van Laer, 14 September 2010. (retrieved from: [https://archives.eui.eu/en/oral\\_history/INT133](https://archives.eui.eu/en/oral_history/INT133), 14 December 2023)

34 Annual report of the EC Commission on the activities of the EC, 1982.

35 Van Laer: *Forschung*, p. 287ff.

36 Sandholtz: *High Tech Europe*.

in which the backwardness of European manufacturers in the field of microchips was perceived as particularly threatening.<sup>37</sup> Although these were rather low-priced products that did not represent a significant financial factor in the economic calculations of European device manufacturers, they were, nevertheless, decisive for the future development of the computer industry. While European manufacturers increasingly lost ground, particularly in the area of larger computer systems, manufacturers of smaller and medium-sized devices continued to be successful (despite all the demarcation problems caused by the increasingly flexible use of peripheral devices) and were able to report positive business figures. It is precisely in these application areas that European manufacturers do not seem to be generally lagging behind.

#### b) Esprit I

The years 1980 to 1982 can be regarded as key years for the introduction of an EC IT policy, the core element of which was to be the promotion of research and development within the framework of Esprit. The Commission and the European Parliament worked intensively on joint programmes. The Commission presented a community strategy for industrial innovation on 20 October 1981, which was followed on 1 January 1982 by a regulation on joint actions in the field of microelectronics. In May 1982, the Commission finally launched its official proposal for the Esprit programme and, only a few months later, in August 1982, outlined its idea of what a pilot phase of the programme could look like.<sup>38</sup> During this phase, the Commission also discussed the programme with small and medium-sized enterprises from the IT sector, which resulted in the Commission proposing that they, as well as universities and research institutes, could apply for 70 % of the project funds in exceptional cases. The Commission, thus, attempted to compensate for their limited financial resources by reducing the contribution required by these developers to 30 %. It was also significant that the European Parliament, which, after all, had to approve the EC budget,

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37 European Commission, Proposal for a European Scientific and Technical Strategy Framework Program 1984–1987, COM(82)865.

38 Internal report of the German government on the European research policy (political analysis), 28 December 1982, Bundesarchiv Koblenz, B136/23986.

presented a resolution on the market situation in the electronics sector on 18 June 1982, which emphatically supported the Commission in its plans.<sup>39</sup>

In November 1982, the fundamental decision was made in favour of Esprit as the Community's first substantial technology programme to promote the competitiveness of industry in the EC. The experimental character of the programme was emphasized, which was also reflected in a rather broad-based funding concept consisting of five core areas, which had been developed in close cooperation with industry:<sup>40</sup>

- Microelectronics
- Software technologies
- Advanced data processing
- Office systems
- Factory automation

A first step should be taken towards a long-term strategy to maintain an adequate market share in the field of microelectronics and information technologies. The aim was to avoid dependence on imports of basic technology.<sup>41</sup> However, the funding was not allowed to influence competition within the EC, so that only research and development in a 'precompetitive' phase could be funded. It was mainly about basic research, which is why there were only limited opportunities for small and medium-sized companies to participate. They purchased these components, especially microelectronics, rather than producing them themselves. Collaboration within the research projects funded should be characterized by three principles: resource sharing, risk sharing and result sharing. The Commission sought to put cross-border cooperation within the EC on a new basis to pool European resources better than the joint ventures of the 1970s.<sup>42</sup>

Once the basic decision in favour of the Esprit programme had been made, the lines of conflict from the Commission's earlier efforts to establish an EC IT policy resurfaced when it came to the overall financial volume of the programme, ensuring the participation of national representatives in

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39 Report by the German government on the Esprit programme, January 1990, Bundesarchiv Koblenz, B196/151525.

40 ESPRIT in der Haushaltssackgasse, Vereinigte Wirtschaftsdienste, 14 December 1983, Bundesarchiv Koblenz, B102/301516.

41 Internal report of the German government on the European research policy (political analysis), 28 December 1982, Bundesarchiv Koblenz, B136/23986.

42 Report by the German government on the Esprit programme, January 1990, Bundesarchiv Koblenz, B196/151525.

decision-making on larger projects and the final decision-making power in the event of conflicts, especially after the Commission had presented its ideas on the details for the first phase of the Esprit programme in June 1983.<sup>43</sup>

These conflicts broke out again mainly because Esprit had a pioneering role, and the content and administrative design of the programme could quickly become a blueprint for the EC's entire future industrial policy research and development funding. For this reason, the German Ministry of Economics also urged that national governments in the Council or Esprit's intended board of directors should approve with a positive qualified majority for all larger projects with a volume of over 5 million ECU. According to the Ministry of Economics, which had massive influence on the German negotiations, the financial volume should also be limited to 400 million ECU instead of the 750 million preferred by the Commission. The larger EC member states particularly did not want to provide the Commission with too many powers and resources in order to protect themselves from any undesirable long-term consequences of industrial policy. The German Ministry of Economics even warned the Minister of Research, Riesenhuber, of "effects on other policy areas that should not be underestimated".<sup>44</sup> It continued to prioritize national programmes in the IT sector because it was convinced that the federal government's own three funding programmes that had been launched in the 1970s had been successful. The Ministry of Economics assumed, with extreme confidence, that poor business decisions were responsible for the ongoing backwardness of the German computer industry, for which the state could not compensate.<sup>45</sup> With its stance, the Ministry of Economics also divided the new German government led by the Christian-Democratic chancellor Helmut Kohl, as the Foreign Office (for diplomatic reasons) and the Research Ministry underlined the need for 'joint action' by the EC.<sup>46</sup>

Research Minister Riesenhuber took a significant step towards the realization of Esprit when he opposed the vote of the Ministry of Economics

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43 Report on the Council of Research Ministers, 5 November 1983, Bundesarchiv Koblenz, B102/301516.

44 Letter from Department E in the Federal Ministry of Economics to Research Minister Riesenhuber, 19 December 1983, Bundesarchiv Koblenz, B102/301517.

45 Ahrens: Strukturpolitik und Subventionen.

46 Protest note by the Ministry of Economic Affairs' Secretary of State, Schlecht, to the Research Ministry's Secretary of State, Haunschild, 16 December 1983, Bundesarchiv Koblenz, B102/301517.

and its national industrial policy focus at the meeting of the EC Council of Research Ministers on 13 December 1983.<sup>47</sup> This gave the Commission the final right to decide on the approval of larger project applications in the Esprit programme, which strengthened the European character of the programme enormously. However, the Council was unable to adopt the Esprit programme at its meeting in December 1983 because it failed to decouple the agreement on Esprit's financial volume from the general agreement on the restructuring of the EC budget. Neither the British nor the German government wanted to agree to a pioneering project such as Esprit as long as the basic budget architecture of the EC had not been finally negotiated. Since the British government vehemently refused to co-finance the constantly increasing agricultural subsidies and, therefore, demanded a reduction in its own contribution to the EC, no final decision could be made about the financial volume of Esprit and its launch.<sup>48</sup> The German newspaper *Die Welt* even had a headline: "Europe is in danger of becoming a 'microelectronic colony'".<sup>49</sup>

The pressure to act was so great in the winter of 1983/84 that all controversial points were finally clarified in February 1984 and the Esprit programme was approved by the Council. The EC Commissioner Davignon had previously warned, once again, that the industry would have to look for non-European partners if no decision was made for intra-European cooperation. The European Parliament even called for a much more extensive redistribution from national to European funding programmes in the "sense of land consolidation".<sup>50</sup>

The Council finally approved the financing of Esprit in February 1984, with 750 million ECU coming from EC funds, while the same amount had to come from industry. A total of 441 project consortia ultimately applied to the official call for proposals in March 1984, of which 90 were selected. Esprit's financial volume overall was comparatively small. The German IT industry in 1986, for example, spent around 12.5 billion DM on research and development, funding from the federal government was 3.5 billion DM and funding from Esprit funds (in the Federal Republic) was 0.35 billion

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47 Letter from the Department for European Affairs at the Ministry of Economic Affairs to the Research Minister, Riesenhuber, 19 December 1983, Bundesarchiv Koblenz, B102/301517.

48 Brunn: Europäische Einigung.

49 *Die Welt*, 19 December 1983, p. 7.

50 Resolution of the European Parliament on the problems and prospects of a European research policy, Bundesarchiv Koblenz, B136/23986.

DM.<sup>51</sup> In the mid-1980s, it was national governments and companies who decided on the main content of research and development in the IT sector, while Esprit was more of an additional element. The Commission had to present a work programme annually, drafted in collaboration with a management committee made up of two representatives from each Member State, a consultative committee, composed of experts in the sector and the Executive Committee created by the twelve companies from the roundtable.

The successful initiation of the Esprit programme should, nevertheless, give the EC an enormous boost in the research and development policy in the technology sector.<sup>52</sup> Under the slogan 'Towards a technological community', the Council approved a further increase in community funding to promote cooperation between industry and universities, such as innovative companies in spring 1985. On the way to the desired European technology community, Esprit acted as an initial spark for similar programmes with which the Commission wanted to strengthen the competitiveness of community industries and stimulate cooperation and exchange in science and technology. Technologies such as smaller office computers and their manufacturers were hardly included in the Commission's funding programme. Instead, the EC targeted highly innovative technologies and basic IT research, which were explicitly not (yet) relevant to the market and competition.

### c) Esprit II

The Esprit programme was considered to be of great political importance, therefore, the commission carried out an evaluation of the programme early on, in the spring of 1985, by a small group of experts, which was chaired by the previous head of the research department at Philips, Eduard Pannenberg. This took place against the background of dramatically changing conditions on the IT markets. On the one hand, the market shares of European producers had fallen significantly for all types of computers and their technical components, even for small business computers (see other articles). On the other hand, it became apparent that spending on research and development would increase significantly in the second half of the

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51 Preparatory documents for the council meeting on 8 April 1986, Bundesarchiv Koblenz, B196/76925.

52 ESPRIT, The first phase: progress and results, (COM(86)687).

1980s. The Commission assumed an increase from ECU 35 billion in 1985 to ECU 90 billion in 1990.<sup>53</sup> It warned urgently that competitors from the USA and Japan would be able to counter this growing cost pressure even more effectively in the near future due to the strong government demand in those countries and their extensive funding programmes for research and development.

In terms of content, the assessment of the Esprit programme by both the expert commission and the member states was quite ambivalent, but fundamentally positive. Everyone involved particularly praised Esprit's potential to create a culture of cross-border collaboration that went beyond joint ventures. Everyone involved shared the conviction that Europe-wide co-ordination and alignment of actors towards common goals must be strengthened. According to the unanimous verdict, Esprit ensured new practices in the evaluation of joint research programmes, the development of new research strategies and, thus, the establishment of a European research area. In addition, Esprit was creating uniform European norms and standards that were previously missing. The German Research Minister Riesenhuber, therefore, even described Esprit as the "flagship of EC research policy".<sup>54</sup>

Some criticisms and suggestions for the further development of Esprit were formulated:

(a) The very broad content concept of the programme (too many small projects) would provide too little impetus for economic exploitation and the rapid increase in competitiveness on international markets. Companies such as Siemens, therefore, warned of a lack of strategic support. Against the background of falling market shares and rising cost structures, quite a few actors, including the Federal Ministry of Research, called for a stronger market-driven strategy that should pay more attention to potential industrial applications and economic effects without abandoning the fundamental focus on precompetitive research. Ultimately, it concerned directly visible effects on the markets. Such demands were incompatible with the Commission's basic liberal ideals. As a 'guardian of competition', she shied away from providing financial stimulus that would directly benefit individual companies and give them economic advantages over European competitors.<sup>55</sup>

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53 Communication from the EC Commission to the EC Council, 21 May 1986 (Com(86)269), Bundesarchiv Koblenz, B196/76925.

54 Riesenhuber von Esprit begeistert, in: *Handelsblatt*, 29 September 1987, p. 1.

55 Bussière: Industrial Policy, p. 305ff.



The Commission also called for greater co-ordination of the EC funding programmes that were currently being set up with the existing national programmes. As far as the EC programmes were concerned, the Commission proposed that Esprit should continue to represent basic IT research, while other programmes, such as RACE (Research in Advanced Communication in Europe, a programme for the development of a broadband communications network in Europe) or DELTA (Dedicated Road Infrastructure for Vehicle Safety in Europe), should be added to this and address specific application-oriented goals. The member states that did not yet have a significant IT industry and/or funding instruments also wanted the broad funding strategy to be continued. The more the funding policy was oriented towards strategic market needs, the less their industry could successfully compete for European funding.<sup>56</sup>

(b) In addition to the more needs-oriented funding policy, companies and individual national ministries, especially from member states with established IT industries, suggested greater consideration of ambitious projects with high innovation potential.

(c) Weaknesses in the administration, project requirements and application procedures were also highlighted. The complex application procedures with the low funding rates of less than 20 % were rather discouraging, particularly for companies in difficult market situations, as was the case for the majority of the European IT industry. It was also criticized that only structurally equivalent partners would join to form project teams because, in principle, all project partners benefited equally from the results of the project work.

(d) Clear criticism was directed at the lack of opportunities for participation by small and medium-sized enterprises, for example, in the area of smaller office computers, in the first phase of the Esprit programme. What is particularly important here is that, although these companies were very successful on the markets, they did not have the capacity for precompetitive research. Applied research played a much larger role for them. In addition, potential partners in other EC countries were often neither known nor trusted. Therefore – according to criticism from business – national ministries were responsible for setting up advisory centres for companies (and

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56 Ministerial assessment report on Esprit, 24 January 1986, Bundesarchiv Koblenz, B196/76925.

universities) to provide assistance with the application procedures.<sup>57</sup> The German government set up an ‘International Liaison Bureau’.<sup>58</sup>

The evaluation of the Esprit programme demonstrated that the first phase of Esprit was a trial phase, in which European research funding had to find its way, especially in a dynamic field such as IT. The problem, however, was that developments on the international IT markets did not actually allow for a trial phase. The Federal Research Ministry also judged that “cross-border industrial cooperation has been promoted [...] and companies and markets have therefore become more European”. They assessed the overall “indirect effect of Esprit as positive”, but also pointed out that “on the other hand [...] the direct effect [...] must be viewed soberly”.<sup>59</sup>

During the preparation of the second phase, despite all positive assessments, Esprit ran into conflicts about the general expansion of the EC’s research and development programme and the deepening of cooperation in advance of the internal market project. It was the three ‘large’ member states – Germany, France and Great Britain – which themselves had a complex set of policy instruments for promoting research and development, that spoke out against a major expansion of the EC’s research framework programme.<sup>60</sup> Once again, a lot of time passed during which there was uncertainty about the continued existence of Esprit. This coincided in 1985–1987 with a phase in which the entire European computer industry, including manufacturers of small and medium-sized computer systems, lost competitiveness compared to non-European producers. It took until July 1987 – after the elections in Great Britain – for the Council to take a decision on the research framework programme. This was accompanied by significant cuts at Esprit of a total volume of 1.6 billion ECU compared to the Commission’s proposal of 2.2 billion ECU. Although this was a reduction compared to the Commission’s proposals, it was more than double the volume of Esprit I. These figures also show that the programme met with broad approval.<sup>61</sup>

In terms of content, the course was set in autumn 1987, which the Council of Research Ministers finally approved on 11 April 1988. Given the

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57 Circular letter of the Ministry for Research and Technology, 18 August 1987, Bundesarchiv Koblenz, B196/76925.

58 Federal Government Report, January 1990, Bundesarchiv Koblenz, B196/151525.

59 Internal note of the German Ministry for Research and Technology, July 1986, Bundesarchiv Koblenz, B196/76926.

60 Warlouzet: *Governing Europe*, p. 180ff.

61 Sandholtz: *High Tech Europe*, p. 195ff.

different ideas of the Commission, member states and industry, this seemed to be more of a continuous transition from Esprit I to Esprit II, which did not show any radical substantive or conceptual breaks. The much-discussed stronger strategic (application-oriented) orientation of funding particularly occurred rather gradually, as member states with a less competitive (or non-existent) industry had little interest in it.<sup>62</sup> The EC, thus, remained true to its regulatory policy guidelines that no funding should be provided that could lead to distortions of competition. Instead, it allowed funding of 100 % of costs of universities and research centres. The focus of the content was also only slightly changed. The original five focal points were reduced to four:

- Information processing systems
- Office and business systems
- Computer integrated manufacturing
- Microelectronics

With Esprit II, considerations began, particularly in the three large member states, to align national funding programmes more closely with European priorities. This led to the German federal government completely withdrawing from funding agency systems.

#### *4. Conclusion*

The EC took a first step towards developing sustainable funding programmes for the research and development of future technologies with the implementation and development of the Esprit programme. The EC, thus, moved into an area of industrial policy that had previously been the sole domain of national governments. However, the new approach to a European IT policy that was pursued with the Esprit programmes was not able to significantly improve the competitiveness of European computer technology producers in the 1980s. On the contrary, both the mainframe segment and the medium and smaller computer systems constantly lost market share.

Although Esprit was unable to achieve its actual goal of making EC IT producers competitive in the short term, it, nevertheless, plays a pioneering role in European research funding policy. Esprit turned out to be a

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62 Mitzner: European Research Policy, p. 321ff.

significant door-opener for the independent funding of research and development by the EC. The efforts of the actors involved to ensure the future competitiveness of European IT producers played a key role in the further development of European industrial and research funding policy. Esprit resulted in a more open atmosphere among companies, which discovered that cooperation and competition were equally important. Its “success” was also an important piece of the puzzle on the way to a comprehensive framework programme for research funding. However, the coming into being of the Esprit programme demonstrates that common EC strategies could often only be implemented at a slow pace and against sometimes bitter national and corporate reservations. That Esprit was unable to help save European manufacturers of smaller office computers from technological backwardness in the first half of the 1980s is probably due to these long periods of time. What was much more important, however, was that Esprit was not suitable for producers of smaller office computer systems in its first phase because it focused on research and development in a precompetitive environment. These producers, which had usually emerged from manufacturing medium data computers, had hardly carried out any basic research. Instead, they bought microelectronics and focused more on the application of technology (customer and service orientation), especially in software. The few European producers of such systems that had successfully managed to assert themselves on the markets until the mid-1980s were hardly addressed by Esprit. Especially the small and medium-sized enterprises among them found it difficult to overcome the high administrative hurdles (e.g. searching for foreign project partners, formulating research proposals). When the second Esprit programme finally opened up better application opportunities for producers of smaller office computers after 1988, they were either already insolvent or about to be bought up by non-European competitors.

It is difficult to assess what successes Esprit actually achieved or whether it even contributed to the competitiveness of European IT manufacturers. However, it is undisputed that Esprit contributed to a Europeanization of the IT industry and a new ‘culture’ of intra-European cooperation between companies and/or research institutions, which subsequently became noticeable beyond funding programmes. Joint Esprit projects led to the creation of personal networks or corporate collaborations, such as the

establishment of a joint research laboratory between Siemens, Bull and ICL, which emerged directly from an Esprit research project.<sup>63</sup>

Finally, Esprit also played a central role in the fundamental debate in the late 1970s and early 1980s about deepening and expanding the EC. Regarding the structural crises of the economy at that time, many political protagonists viewed a deeper integration of Europe, including a comprehensive industrial, technological and research policy as well as greater decision-making powers of Commission, as a necessary step to raise European competitiveness in a globalizing world. The threat to European industry, which was perceived as particularly intense in a future sector such as IT, practically forced cooperation – according to the protagonists of European integration.

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63 Sandholtz: *High Tech Europe*, p. 207–208.

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