

programs have done little more than contribute to improving the bottom lines of the recipients.⁵⁷

Sub-programs of the FPs include ESPRIT (European Strategic Program for Research and Development in Information Technologies) with a budget of 1.4 billion ECUs for the period 1990-94, BRITE/EURAM (Basic Research in Industrial Technology for Europe/Europe Research in Advanced Material), RACE (Research and Development in Advanced Telecommunications Technologies for Europe, BRIDGE (Biotechnology Research for Innovation, Development and Growth in Europe, SCIENCE (Stimulation des coopérations internationales et des échanges nécessaires aux chercheurs en Europe), the Controlled Thermo-nuclear Fusion program and the Environment program.

The Community has also supported some projects (HDTV and JESSI) under EUREKA, which is an independent research program involving some 20 countries, including the EC 12⁵⁸. EUREKA was created in 1985 as the result of a Franco-German initiative in response to former U.S. President Reagan's Strategic Defense Initiative. Funding of EUREKA projects comes predominantly from national governments. EUREKA sub-programs include JESSI (Joint European Submicron Silicon Initiative), EUREKA Audiovisual or HDTV (High Definition Television Project) and PROMETHEUS (Program for European Traffic with Highest Efficiency and Unprecedented Safety).

JESSI, which is the "flagship" of the EUREKA program, has been plagued by a number of difficulties. This program "launched in 1989, ...at a cost of 3.8 billion ECUs, was seen as a response to SEMATECH", with the focus of its research on developing new chip technology. Since its inception, the consortium has experienced funding problems (in 1991 the EC cut its contribution and participant companies, which are only required to match public funds, also cut theirs) and some changes in membership (Philips dropped out in 1990 due to a shortage of cash and IBM joined through its partnership with JESSI participant Siemens).

During the French presidency of EUREKA, the number of new EUREKA projects has grown to 200 from 100 in 1992. Priority is now being focused on smaller projects among small and medium sized enterprises. Also, there has been an attempt

⁵⁷ See recent article in *The Economist* entitled "Europe's Technology Policy: How Not to Catch Up", January 9th, 1993. A UK Treasury survey concluded: "The best evidence available suggests that special fiscal incentives increase R&D by an amount that is roughly one-half of the revenue foregone by the government: the remainder goes to swell companies' cash flow and post-tax profits." From Paul Stoneman, "The Use of a Levy/Grant System as an Alternative to Tax Based Incentives to R&D", *Research Policy*, 20 (1991), pp. 195-201, cited in OECD, DSTI/STP (93) 3, *The Impacts of National Technology Programs*.

⁵⁸ EC Research Funding, 3rd Fully Revised Edition, *A Guide to Applicants*(January 1992), p. 33.