THE FRENCH COMPUTER SERVICES INDUSTRY

1980

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mendations and innovative
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THE FRENCH COMPUTER SERVICES INDUSTRY
1980

DECEMBER 1980

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I INTRODUCTION

I INTRODUCTION

A. THE MAS/EUROPE 1980 PROGRAMME

- This report forms part of the Market Analysis Service for Europe (MAS/ Europe) subscription programme for 1980.

- It is written to be read both as a self-contained report on the French computing services market and as a member of the complete set of reports issued under the programme.

1. PROGRAMME STRUCTURE

- The structure of the complete programme for the year is illustrated diagrammatically in Exhibit 1-1. The exhibit also emphasises INPUT's intention to draw comparisons at a continental level between the European market and the market in the U.S.A. in the European Summary Report.

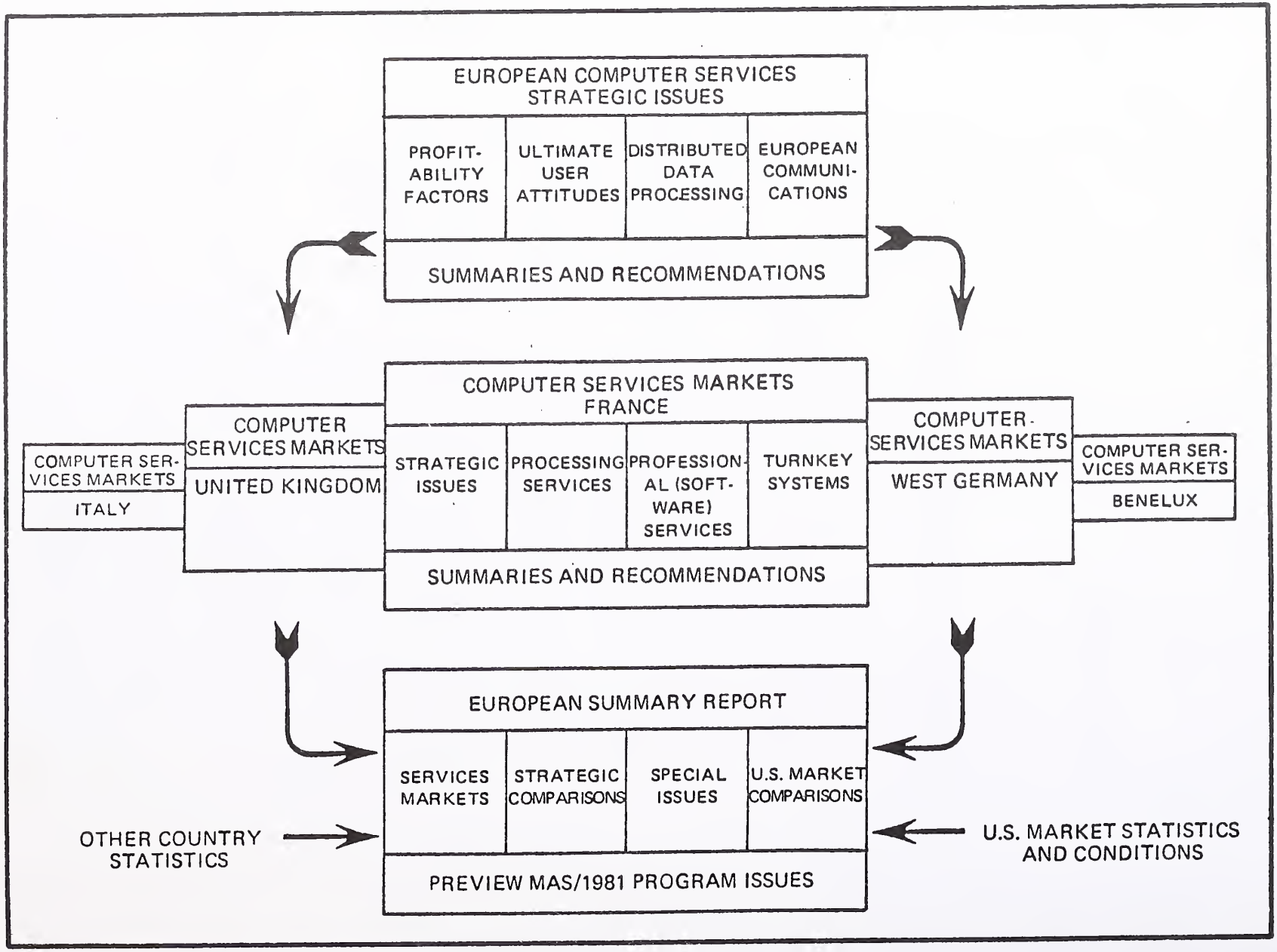
- The MAS/Europe Programme for 1980 has retained those traditional client-orientated elements which have done so much to ensure benefits to subscribers:

  - Enquiry consulting service.

  - In-house presentation.

EXHIBIT I-1

MAS/EUROPE 1980: REPORTING STRUCTURE AND PHILOSOPHY



- Joint Client Conference (added this year).

2. RESEARCH APPROACH

- The service is underpinned in Europe by two programmes of research:
  - User research, aimed at a variety of organisations chosen by reasons of their size and structure rather than for their industry affiliation.
  - Vendor research, aimed at a smaller target sample, but one chosen again principally by size and national coverage criteria.
- Three levels of user interviews were conducted:
  - Multinational corporations, both those with headquarters in Europe and those based in the U.S.A.
  - Major national companies and major subsidiaries of the multinationals.
  - Smaller national independent and subsidiary companies.
- Vendors were interviewed at two levels:
  - Worldwide and European multinationals, including:
    - . Computer manufacturers.
    - . Processing services suppliers with European networking capability.
    - . Software product suppliers.
    - . Professional services companies - system and software houses, consultancies and turnkey systems suppliers.

- National companies offering:

  . Processing bureau services.

  . Systems and software.

- The interview is INPUT's main methodology for obtaining up-to-date information in this field. INPUT supplements this by drawing on past data in the company's database and by using additional data derived from concurrent custom research projects. For the French research in 1980, three questionnaires were used, one for users and two for vendors. The two vendor questionnaires address the two types of data being handled:

  - Market size and company product data.

  - Issue data, consisting of supplier company attitudes: either taken from its own policies, or attitudes to the market as a whole.

- The user questionnaire is directed at EDP management.

- The objective behind choosing research participation from companies according to their size and national coverage characteristics is:

  - To assess the impact of the trend towards dispersed or distributed data processing as it affects organisations of varying size and geographic spread.

- A broad classification by industry type is being made, namely a division by three major classifications:

  - Discrete manufacturing.

  - Process manufacturing.

- Service industries and others.

- This sector spread is not intended to disclose significant variations by industry, but to ensure a comprehensive and unbiased choice of user samples.

- Exhibits I-2 and I-3 illustrate diagrammatically the user and supplier interview sample hierarchies, and show the sample constituents and targetted numbers.

- Exhibits I-4 and I-5 give the actual numbers of users and vendors interviewed and analysed for the production of this report on France.

- The numbers in the body of Exhibit I-4 for France are presented in threes. The significance of the positioning is as follows:

  - The left-hand number is the number of companies interviewed at the level indicated to the right of the diagram.

  - The central number is the number of completed EDP User questionnaires at that level.

  - The right-hand number is the number of completed management questionnaires at that level.

- At the foot of the France column is a box of four numbers indicating the numbers of:

  - Completed EDP User questionnaires.

  - Completed management questionnaires.

  - Companies that have completed both.

  - Companies that have completed at least one questionnaire.

EXHIBIT I-2

MAS/EUROPE 1980: USER ATTITUDE RESEARCH - TARGETTED SAMPLES

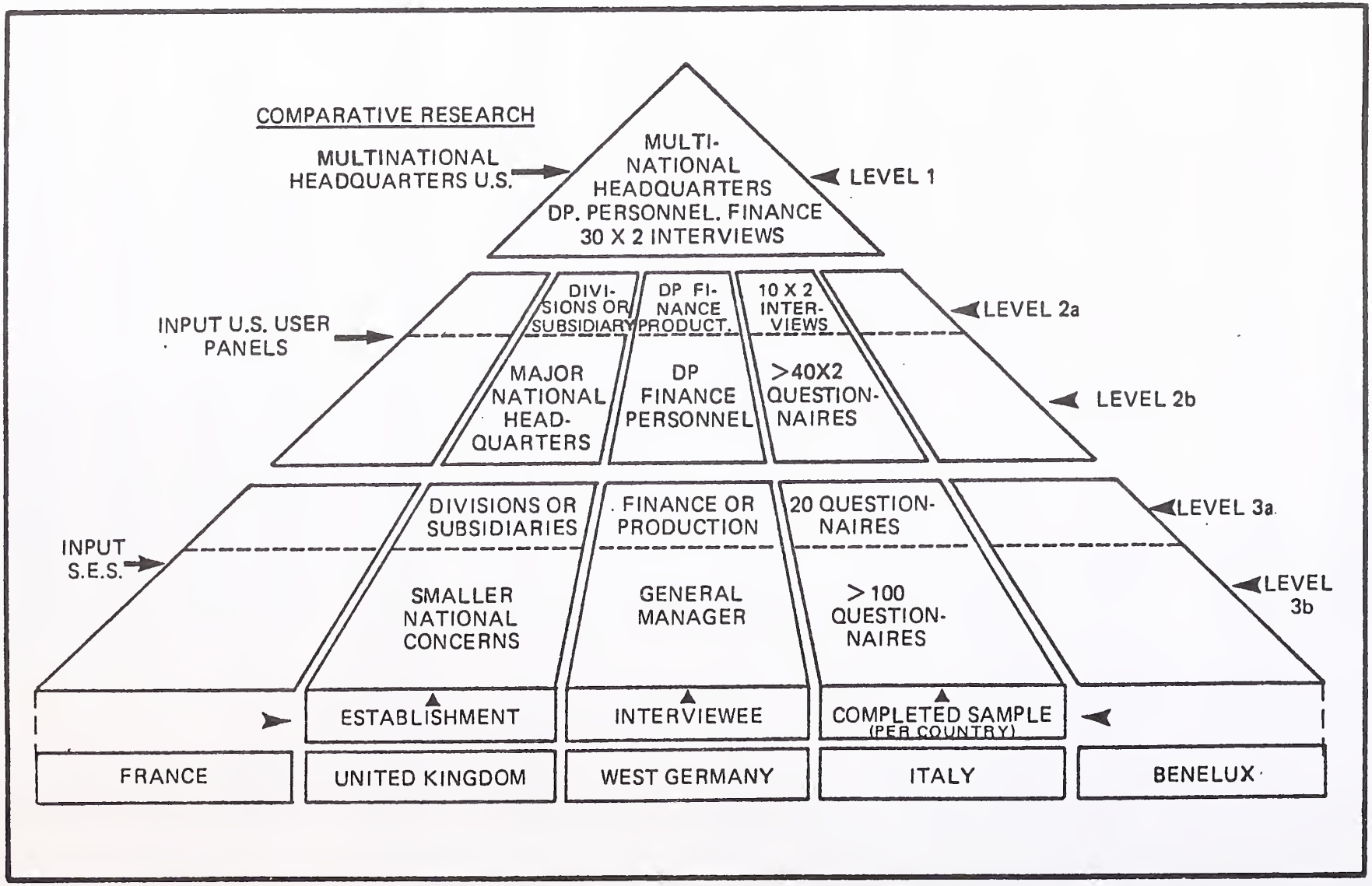


EXHIBIT I-3

MAS/EUROPE 1980:
VENDOR RESEARCH ON PROFITABILITY AND OTHER ISSUES -
TARGETTED SAMPLES

TYPE OF VENDOR	NUMBER OF INTERVIEWS BY COUNTRY/MARKET					
	MULTI-NATIONAL	BENELUX	FRANCE	ITALY	UNITED KINGDOM	WEST GERMANY
COMPUTER MANUFACTURER	15	-	-	-	-	-
PROCESSING SERVICES	10	5	5	5	5	5
SOFTWARE PRODUCTS	5	5	5	5	5	5
PROFESSIONAL (SOFTWARE) SERVICES	5	5	5	5	5	5
TURNKEY SYSTEMS	5	5	5	5	5	5

BASE REFERENCE: INPUT'S CAMP DIRECTORIES AND DATA ON OVER 4,000 COMPANIES

EXHIBIT I-4

MAS/EUROPE 1980: USER ATTITUDE RESEARCH - ACTUAL INTERVIEWS, FRANCE

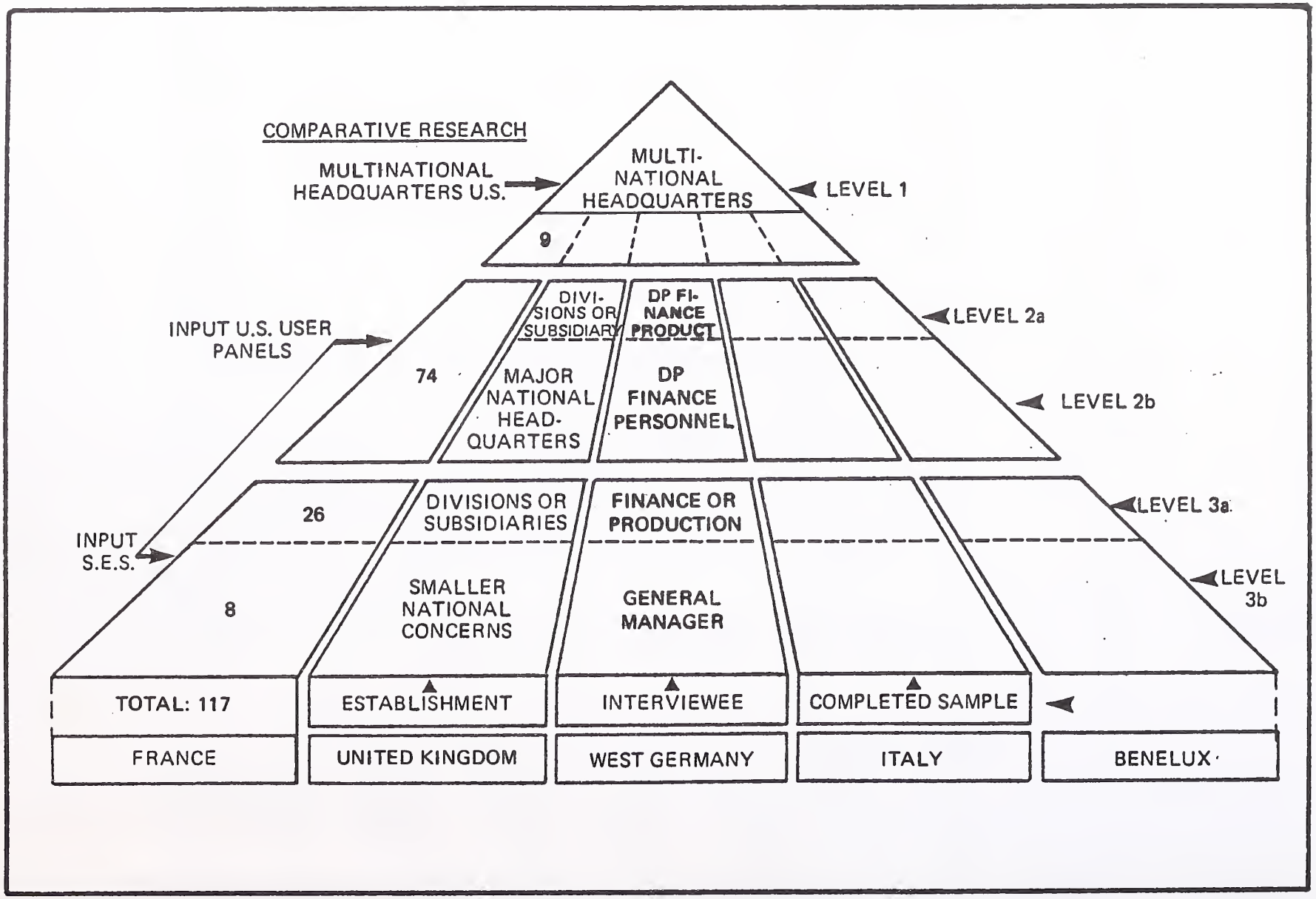


EXHIBIT I-5

MAS/EUROPE 1980:
VENDOR RESEARCH ON PROFITABILITY AND OTHER ISSUES -
ACTUAL INTERVIEWS

TYPE OF VENDOR	ACTUAL NUMBERS OF INTERVIEWS BY COUNTRY/MARKET					
	MULTI-NATIONAL	BENELUX	FRANCE	ITALY	UNITED KINGDOM	WEST GERMANY
COMPUTER MANUFACTURER	12	-	-	-	-	-
PROCESSING SERVICES	13	5	8	13	11	6
SOFTWARE PRODUCTS	5	5	-	5	4	5
PROFESSIONAL (SOFTWARE) SERVICES	8	5	6	7	2	13
TURNKEY SYSTEMS	3	5	4	4	4	-

BASE REFERENCE: INPUT'S CAMP DIRECTORIES AND DATA ON OVER 4,000 COMPANIES

3. TERMINOLOGY

- For 1980, INPUT has enhanced the set of market sector definitions in the MAS/Europe programme, at the same time retaining comparability with results from MAS/U.S. and other INPUT programmes in the U.S.A.

- This has been effected by:

  - Introducing one new major sector - turnkey systems.

  - Bringing new services definitions (e.g., User Site Hardware Services USHS) into the traditional sectors to reflect their latest trends.

- The full set of major and sub-major sectors is shown in Exhibit I-6. In addition, processing services are analysed under the application (functional) headings:

  - General business.

  - Scientific and engineering.

  - Industry specialty.

  - Utility.

- A glossary containing INPUT's definitions for these terms is found in Appendix A.

B. SCOPE OF THE REPORT

- The aims of this report are twofold:

EXHIBIT I-6

MAS/EUROPE 1980: COMPUTER SERVICES MARKET SECTORS

COUNTRY MARKET ANALYSIS AND FORECASTS			
PROCESSING SERVICES	PROFESSIONAL (SOFTWARE) SERVICES	SOFTWARE PRODUCTS	TURNKEY SYSTEMS
• BATCH • REMOTE COMPUTING - INTERACTIVE - REMOTE BATCH • F.M. • USHS • 1980-1984	• CONSULTING • PROGRAMMING AND SYSTEMS DESIGN • EDUCATION • 1980-1984	• SYSTEMS • APPLICATIONS - INDUSTRY-SPECIFIC - CROSS-INDUSTRY • 1980-1984	• CROSS-INDUSTRY • INDUSTRY-SPECIFIC • 1980-1984
KEY COMPETITION	KEY COMPETITION	KEY COMPETITION	KEY COMPETITION

▼

EUROPEAN MARKET SUMMARY		
EUROPE		U.S.A.
MARKET SIZES GROWTH FORECASTS COUNTRY COMPARISONS	◀	▶ MARKET SIZES GROWTH FORECASTS COMPARATIVE ISSUES
KEY COMPETITION		

- To describe and review the state of the computing services market in France during 1980, and to present forward forecasts through 1984.

- To highlight and discuss the strategic issues for vendors operating in France. These issues will be a subset of those dealt with in the INPUT report, 'Strategies for the Computer Services Industry in Western Europe, 1980-1989,' produced at the start of the MAS/Europe 1980 programme.

- The structure of the report is such as partly to separate and partly to intermingle these two aims in its treatment of the subject matter:

  - Chapter III gives an overview analysis of the whole market.

  - Chapter IV analyses the aspects of this year's research findings that are common to all types of computing services vendor, or are common across all users.

  - Chapter V presents INPUT's views on the strategic issues researched.

  - Chapters VI through IX detail the market for each of the four major types of service:

    . Processing services.

    . Software products.

    . Professional services.

    . Turnkey systems.

  - The detail in Chapters VI through IX includes:

- Development of the market sector during the last calendar year (1979) for which published results exist in the main.

- Sector forward forecasts for the five-year period 1980-1984.

- Impact of strategic issues on vendors operating principally in the sector.

- Competitive analysis.

- Chapter II is an Executive Summary consisting of:

  - Treatment of the key issues.

  - Conclusions and recommendations.

- Appendices B and C contain the vendor questionnaires, while Appendix D contains the user panel questionnaire.

II EXECUTIVE SUMMARY

II EXECUTIVE SUMMARY

A. THE FRENCH COMPUTER SERVICES MARKET SIZE AND GROWTH

- The French computer services market is the largest single country market in Western Europe. It has maintained this position now for a number of years, and in 1979 its total revenues were 6,038 million French francs.

- This market size is calculated excluding:

  - Turnkey systems, which are treated in this report as a separate submarket.

  - Revenues exported to overseas clients from operating companies based in France.

  - Revenues earned overseas by the foreign subsidiaries of French companies.

  - Captive revenues.

- France is forecast to maintain her leading position in Europe through the five-year forward period of this report. Her nearest European rival is West Germany, which is forecast to attain 82% of French revenues in 1984 (measured in constant dollars and adjusted to have similar inflation factors).

- Exhibit II-1 illustrates the growth of the major market sectors between 1980 and 1984.

- The incremental growth during the period is 124 billion French francs. The average annual growth rate (AAGR) is 25%. These figures are calculated in current French francs and, therefore, include INPUT's estimates of the likely effect of price increases in the intervening years.

- This dynamic growth is fuelled by the present central government's policy for the data processing industry. This policy has picked out the computer services sector, and particularly its leading companies, for special attention and support.

B. 'LA TELEMATIQUE'

- The event which appears to have focused French policy into its present direction has been the converging of computing and telecommunications. The company which symbolises successful control of this technological marriage is IBM, and IBM has set its European headquarters in the French capital. In particular, it is the implied threat to national communications (highlighted by the Nora/Minc report) which has alerted the French national conscience.

- Having failed earlier to mount a successful counter to IBM in the mainframe area, the French administration has inaugurated a new policy which:

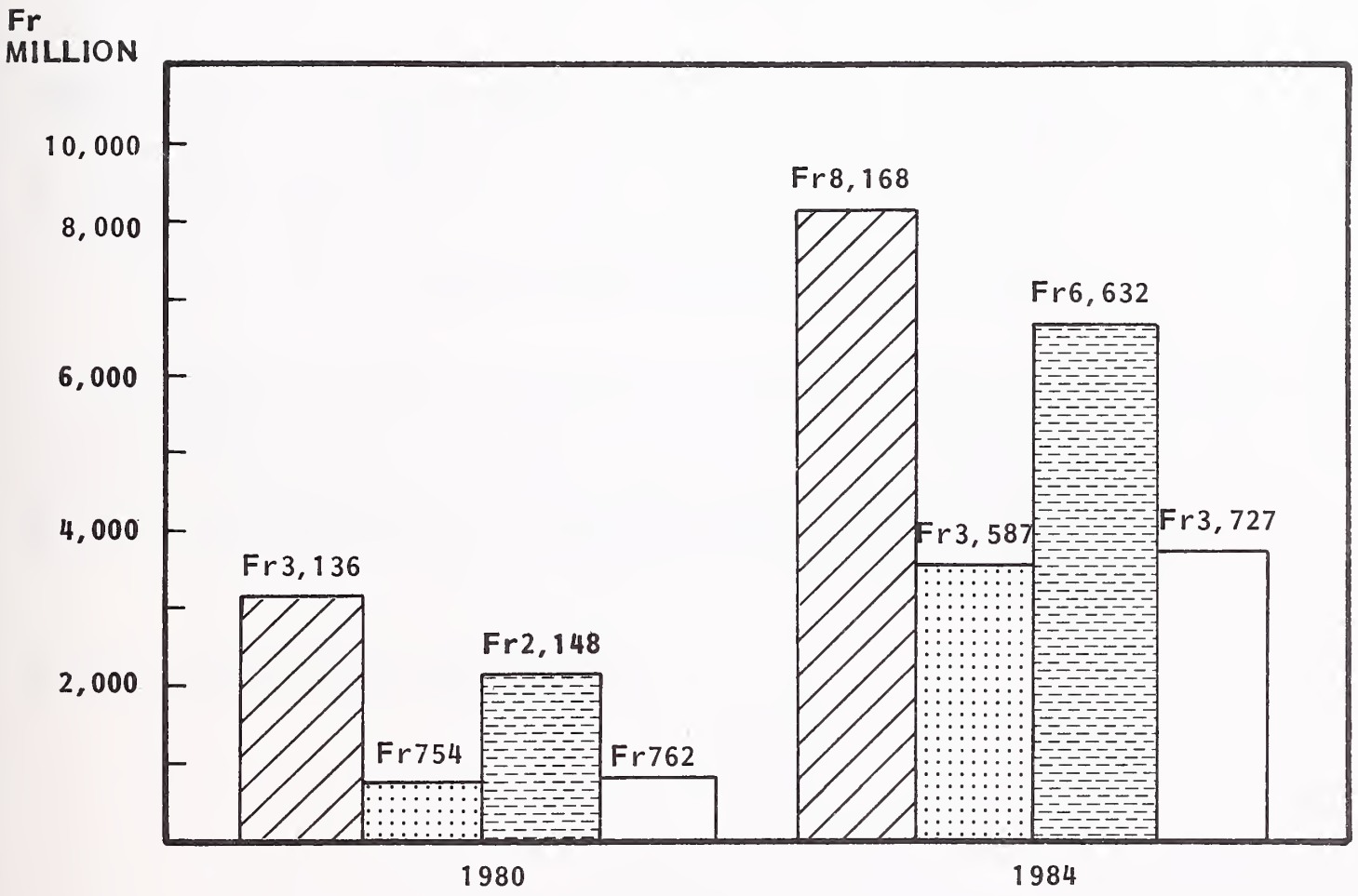
  - Refrains from challenging IBM outright.

  - Fosters a computing industry, which is truly user-oriented but which operates through the normal market mechanisms.

  - Favours, without penalising small firms, a few large concerns capable of competing on a global level.

EXHIBIT II-1

GROWTH OF THE FRENCH COMPUTER SERVICES
MARKET SECTORS BETWEEN 1980 AND 1984



PROCESSING SERVICES
SOFTWARE PRODUCTS
PROFESSIONAL SERVICES
TURNKEY SYSTEMS

- Seizes the current opportunity offered by the microprocessor to develop national products and national systems.

- Three planks appear in this policy, known as 'la telematique':

  - Support for a local French component capability.

  - Support for minicomputer and 'peri-informatique' companies, chief among them SEMS, Logabax and Sagem.

  - Support for prime contractor 'main-line' companies capable of building and integrating the new products and systems, and also capable of bringing them to market to all sizes of organisation and even to the consuming public; chief among these are the 'Big Four' service companies - GSi, CISI, SG2, CAP/Gemini/Sogeti.

- This new support policy should not be thought of merely in financial terms. Its chief significance lies in what it is attempting on the social plane, and this significance extends outside France because it is acting to provide a new social framework within which technology and its dynamism can coexist with stable democratic values.

- 'La telematique' is seen as providing conditions which act counter to the destabilising economic factors:

  - Unemployment.

  - Economic blackmail of the oil exporters.

  - Undue influence of the multinationals.

- Whether or not 'la telematique' is successful, one cannot ignore this experiment because of the sheer size and scope of it. The spin-off benefits to other countries will alone be considerable:

- Imports of contract programming and other professional staff.

- Imports of auxiliary technological products, software, firmware, hardware and systems.

C. USERS' ATTITUDES AND KEY MARKET TRENDS

- French users are still largely driven by the IBM philosophies. At this moment, their most important activity is that of installing on-line systems. This phase is expected to be followed by:

  - Implementation of DBMS, decentralisation and DDP.

- The DP manager's chief problem is that he cannot deliver systems to his end user on time.

- To counter this he is reluctantly adopting the tactics of decentralisation. This reluctance is caused by his instinctive desire to install systems which have been developed in-house. Outside purchase of software is largely restricted to operating systems and utilities.

- Professional staff shortages are acute throughout the French market.

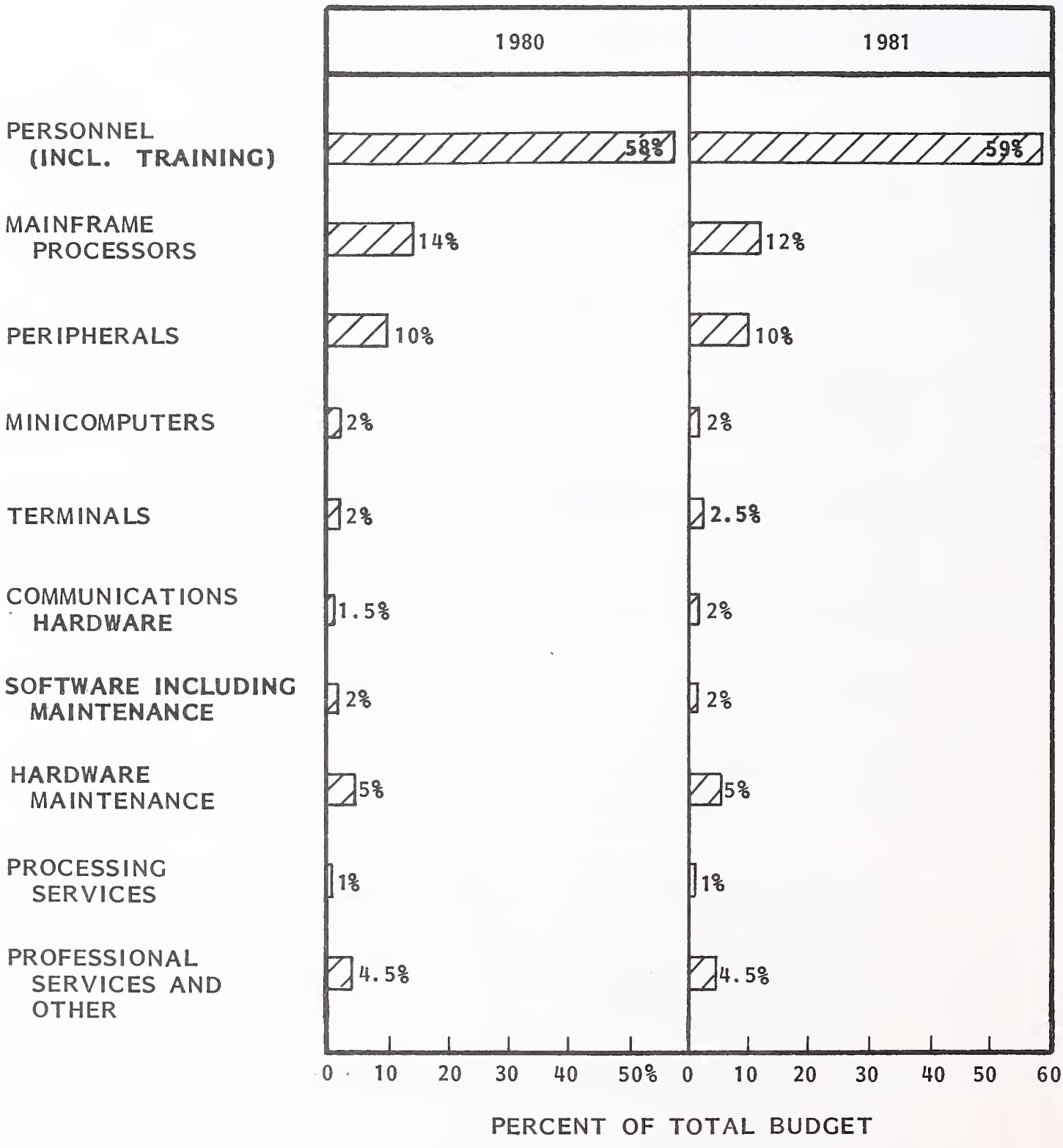
- Exhibit II-2 shows the breakdown of user expenditures over 1980-1981, illustrating the emphasis placed on in-house development.

- Non-computerised small companies and the general public are being subjected to government-inspired marketing of the new 'telematique' and to propaganda on the manner in which the new consumer 'informatique' will alter their lives, both business and personal.

- Key developments that are already well under way are:

EXHIBIT II-2

GROWTH OF EXPENDITURES FOR INFORMATION PROCESSING,
AS ANTICIPATED BY DATA PROCESSING MANAGEMENT FOR 1980-1981



- The Velizy project to develop a videotex system to surpass the British Prestel.

- The Annuaire Electronique project to replace the manual with an on-line telephone directory enquiry system.

- Stimulation of the on-line database market by means of Transpac, Euronet, the Big Four and numerous government and public sector bodies.

- Annuaire Electronique - is an ambitious experiment carried out by the French Government through the D.G.T., whose immediate object is to replace the printed Telephone Directory of a specific department in Brittany, Ille-et-Vilaine, by an on-line enquiry service.

- The strategic long-term objective of the exercise is to accustom the man-in-the-street to the presence and use of computer equipment as an everyday tool. The plan calls for a full-scale experiment in the Department by 1982, and its extension to the whole of France in a ten-year period.

- The Velizy Experiment is the second element in the French programme of educating the public in the use of videotex systems. It consists of the Teletel service in Velizy, a suburb of Paris.

  - Between 2,000 and 2,500 households in this area will be provided, free of charge, with a terminal connection to the videotex system for an 18-month period.

  - The interactive service will offer private database applications provided by some 200 suppliers using their own computers and a local database implemented and managed by the PTT through Videotel, the official Teletel serveur.

D. PROCESSING SERVICES

1. CONCLUSIONS

- Processing services are more accepted in the business community in France than in any other European country, with the exception of Scandinavia. Vendors are in a prime position to capitalise on this fact and establish themselves as major companies in the French economy.

- The major trend affecting RCS is the administration's determination to make a success of Transpac.

- The major trend affecting batch is the continued success of the mini and the micro in providing the base for cost-effective business systems to small companies. The 1980s, however, are going to see some disappointments as personal and microcomputer products are implemented with over-ambitious expectations.

2. RECOMMENDATIONS

- Processing services vendors should take the opportunity provided by the current government support for the industry to re-examine their basic market positions and develop strategies for the decade.

- Vendors should be selective about which opportunities to pursue. In view of the plethora of projects being funded by the PTT and government, there is a danger in pursuing the future to the detriment of the present. The administration will expect companies to look after their own viability.

E. SOFTWARE PRODUCTS

1. CONCLUSIONS

- France, as a market for software products, is very large. The MAS/Europe programme only deals with the sales of products to end users. These alone now account for 0.75 billion French francs and will grow at an AAGR of 37%.

- DP managers in France have a prejudice against bought-in application products on account of:

  - Their inherent inflexibility.

  - The need to maintain them through the vendors.

2. RECOMMENDATIONS

- Invest in comprehensive support, training and servicing facilities.

- Build user-programmable products, even if the programmability is at the level of parameter setting.

- Wherever possible, replace vendor-provided maintenance with vendor-provided in-house tuition in self-maintenance. This should be on a regular basis, perhaps quarterly or half-yearly.

- Sell advanced system products to the DP manager.

- Sell application products jointly to end user and DP manager.

F. PROFESSIONAL SERVICES

1. CONCLUSIONS

- The market for professional services will be subject to the greatest amount of distortion of any sector, during the next five years, because of the enormous injection of funding from government.

- Videotex, on-line databases and other aspects of telematique are being brought forward in time to a point where large-scale implementation can take place before the decade is half through. France is attempting to close the time-lag gap between itself and the U.S.A.

- Office automation applications will be implemented at the same time as Videotex and on-line databases.

2. RECOMMENDATIONS

- Leading suppliers must look to the day when all the funding has come to an end. It is all very well to have enormous, technically complex projects to develop. What is more important is to ensure a continuing revenue stream at a safe size of company with the correct organisational structure.

- Smaller concerns must seek or develop products to bring to market and must capitalise on their specialisations, whether these be geographic, functional or industry.

- Both large and small must strive to overcome the chronic shortage of professionals by:

  - Recourse to advanced software development systems.

- Use of cost-effective imported labour on a temporary basis, especially from U.K. software companies with good reputations, so taking advantage of the low wage structure of the U.K. industry.

G. TURNKEY SYSTEMS

1. CONCLUSIONS

- Like its U.K. counterpart, the French turnkey systems sector is actually split into two segments:
  - Major one-off systems for large organisations.
  - Small systems usually sold as a standard product, often for small businesses.
- The large French system houses such as Steria, Sema and TITN are concentrating on the first segment.
- The large, comprehensive processing services vendors are moving into, or planning to enter, the second segment.

2. RECOMMENDATIONS

- Pick a market segment; develop and market the skills that are appropriate to it.
- Expect contention from similar systems companies when operating in the large system sector.

- In the second sector, for small business systems, expect intense competition from the hardware vendors as they strive to retain market share in the face of the new entrants, the SSCIs.

III MARKET ANALYSIS, 1979-1984

III MARKET ANALYSIS, 1979-1984

A. COMPUTER SERVICES MARKET CHANGES

- The French computer services market was researched, compared to the findings of prior INPUT reports and then forecast for the five-year period 1980-1984:

  - Market development for the 1979-1980 timeframe was evaluated from the results of the INPUT database updates for 1980, which included all of the top ten service companies by French market share, as well as five leading computer manufacturers with substantial services revenues.

  - Market forecasts were built from the user and vendor expenditure returns, and cross-checked against each other and against the results of the annual survey of DIELI into 'Les Societes de Service et Conseil en Informatique'.

- The 1979 forecasts were developed using a 'bottom-up' philosophy. Wherever possible, two breakdowns of individual sectors were derived independently and used to cross-check each other:

- For instance, processing services were forecast both by functional area and by mode of delivery, and the two were adjusted to be mutually consistent.

- Besides the above breakdowns, remote computing services (RCS) were also forecast by submodes:

  - Interactive, remote batch, user site hardware services (USHS) and data-base enquiry.

- Software products were forecast by:

  - System and application packages.

  - Both independent suppliers and hardware vendors.

- Professional services were forecast by categories for:

  - Consultancy.

  - Software development.

  - Education and training.

  - Contract programming and other.

- Turnkey systems have been split off from the total computer services market and forecast separately. The forecasts were made by:

  - Hardware revenues.

  - Software and other charges.

- In addition, turnkey systems supplied by independent suppliers have been compared with those installed by hardware vendors in order to illustrate the way in which this sector is of equal revenue-earning potential to vendors from different trading backgrounds.

- The incremental revenue growth forecast by service sector over the five-year forward period is presented in Exhibit III-1.

  - 1979, a good year, showed a 25% growth over the 1978 revenues, when these had been adjusted to bring them more accurately into line with INPUT's U.S. procedures and definitions, and to effect the incorporation of hardware manufacturers' software products revenues.

  - 1980 is also expected to be a good, and even slightly better year, yielding overall growth of 26%.

  - The 1979-1984 growth rates are the average annual compounded rates (AAGR).

  - The rates between individual years do not necessarily show a straight line graph characteristic since the figures were built up from the more detailed forecasts which follow, and which take into account growths (and declines) in certain types and modes of service.

  - All figures are in current French francs. They include price increase factors which have been calculated according to the way in which individual sectors will be affected by inflation. These factors are shown in tabular form in Exhibit III-2. These price increases have been estimated from INPUT's knowledge of the quantity and timing of typical increases by leading vendors in the industry.

EXHIBIT III-1

INCREMENTAL REVENUE GROWTH, BY MODE AND TYPE OF SERVICE, 1979-1984

COMPUTER SERVICE BY MODE AND TYPE	AAGR 1979-1984 PERCENT	INCREMENTAL REVENUE GROWTH IN CURRENT FRANCS (Fr MILLIONS)
INDUSTRY SPECIALTY -BATCH	17%	Fr1,009
INDUSTRY SPECIALTY -RCS	65	976
GENERAL BUSINESS -RCS	31	736
GENERAL BUSINESS -BATCH	20	599
INDUSTRY SPECIALTY -FM	21	470
UTILITY - RCS	24	432
SCIENTIFIC AND ENGINEERING - RCS	18	412
SCIENTIFIC AND ENGINEERING - BATCH	22	262
UTILITY - FM	24	117
SCIENTIFIC AND ENGINEERING - FM	17	21
GENERAL BUSINESS -FM	0	0
UTILITY - BATCH	0	-2
TOTAL PROCESSING	21	5,032
SYSTEMS SOFTWARE	37	1,718
APPLICATIONS SOFTWARE	36	1,115
TOTAL SOFTWARE	37	2,833
PROFESSIONAL SERVICES	25	4,484
TURNKEY SYSTEMS	37	2,965

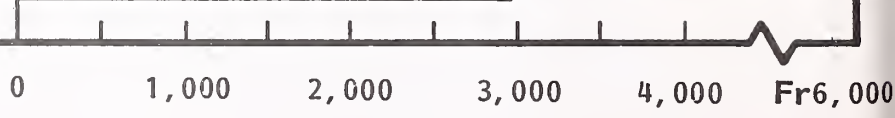


EXHIBIT III-2

ANTICIPATED PRICE RISES: FRANCE, 1979-1984

YEAR	CPI* INCREASE	PRICE INCREASES (PERCENT)			
		PROCESSING SERVICES	SOFTWARE PRODUCTS	PROFESSIONAL SERVICES	TURNKEY SYSTEMS
1978-1979	11%	10%	11%	10%	11%
1979-1980	12	10	5	12	13
1980-1981	12	5	7	8	12
1981-1982	11	6	7	7	10
1982-1983	10	7	8	6	9
1983-1984	10	8	8	6	9

*CONSUMER PRICE INDEX

SOURCE: INPUT FORECAST

B. MARKET DEVELOPMENT (1979-1980)

1. GROWTH IN THE PERIOD

- The total French market for computer services will grow in 1980 at 26%, as shown in Exhibit III-3.

- As 1980 draws to a close, there are signs that the French economy will start to experience recession in 1981-1982.

- Professional services are expected to grow faster than processing services, but not as fast as software products. The professional services sector is extremely buoyant at this time, due to the stimulus given to the industry by the latest French Government subvention programme.

- SSCIs are feeling a shortage of professional software staff and are looking to other European countries to fill a temporary manpower gap.

- Software products, continuing their growth from a relatively small base, have grown in 1980 to a size of over one billion francs. This has been fuelled by:

  - The increasing rate of software unbundling as large numbers of IBM 4300 installations come on-stream.

  - The introduction of IBM's chargeable software maintenance scheme for on-site service.

- Software products are predicted to take a 13% market share in 1980, having grown by 35% over 1979.

EXHIBIT III-3

THE FRENCH
COMPUTER SERVICES MARKET DEVELOPMENT,
1979-1980

MODE OF DELIVERY	REPORTED 1978 (MILLION FRANCS)	REVISED* 1978 (MILLION FRANCS)	1979 (MILLION FRANCS)	GROWTH (1978-1979 PERCENT)	1980 (MILLION FRANCS)	GROWTH (1979-1980 PERCENT)
REMOTE COMPUTING	Fr1,327	Fr 670	Fr 877	31%	Fr1,158	32%
FACILITIES MANAGEMENT	57	266	372	40	439	18
BATCH	2,934	1,600	1,887	18	2,246	19
SUBTOTAL - PROCESSING	Fr4,318	Fr2,536	Fr3,136	24%	Fr3,843	23%
SOFTWARE PRODUCTS	360	559	754	35	1,025	36
PROFESSIONAL SERVICES	1,322	1,718	2,148	25	2,728	27
TOTAL	Fr6,000	Fr4,813	Fr6,038	25%	Fr7,596	26%
TURNKEY SYSTEMS	NA**	560	762	36	1,059	39

*REVISED TO MATCH MAS/E 1980 CATEGORIES
N/A = NOT AVAILABLE

2. RECONCILIATION TO 1979 ANNUAL REPORT

- Other distortions of the figures as previously measured have now been removed in the revisions which have taken place to the 1978 market figures.

  - Professional services revenues previously associated with processing services companies have now all been correctly assigned to the professional services category.

  - Facilities management has been separated from batch services to be shown separately at 266 million francs.

  - Turnkey systems revenues have been extracted from professional services, to be shown outside the services market entirely.

  - The overall services market size, including turnkey systems for 1978, has decreased by 627 million francs (or 10%).

- This has been attributed to:

  - Captive revenues being researched more thoroughly, and therefore extracted.

  - Some pure hardware revenues also being isolated and excluded.

C. FORECASTS FOR COMPUTER SERVICES, 1980-1984

1. LONG-TERM GROWTH

- Computer services markets in France are forecast almost to triple from a 1979 base of 6,038 million francs to a total of 17 billion francs in 1984. This gives an average annual growth rate compounded of 24%.

- The outstanding features of the five-year period are going to be the growths in software products and turnkey systems, which will both grow at 37% compound.

- However, in spite of sharing a lower growth rate of 21% compound with professional services, processing services will emerge after five years as still the largest sector. It will possess the capability to expand faster for the rest of the decade on the back of the burgeoning database services market.

- The strength of the software products market is a compound of many driving forces:

  - Hardware vendors unbundling their offerings.

  - DP management wishing to conserve their in-house effort for implementation and tailoring tasks.

  - Turnkey system houses buying-in more and more software components, to improve control of delivery dates.

  - The opening of the personal computer market to both the home and business user.

  - The major videotex implementations which can be expected between now and 1983.

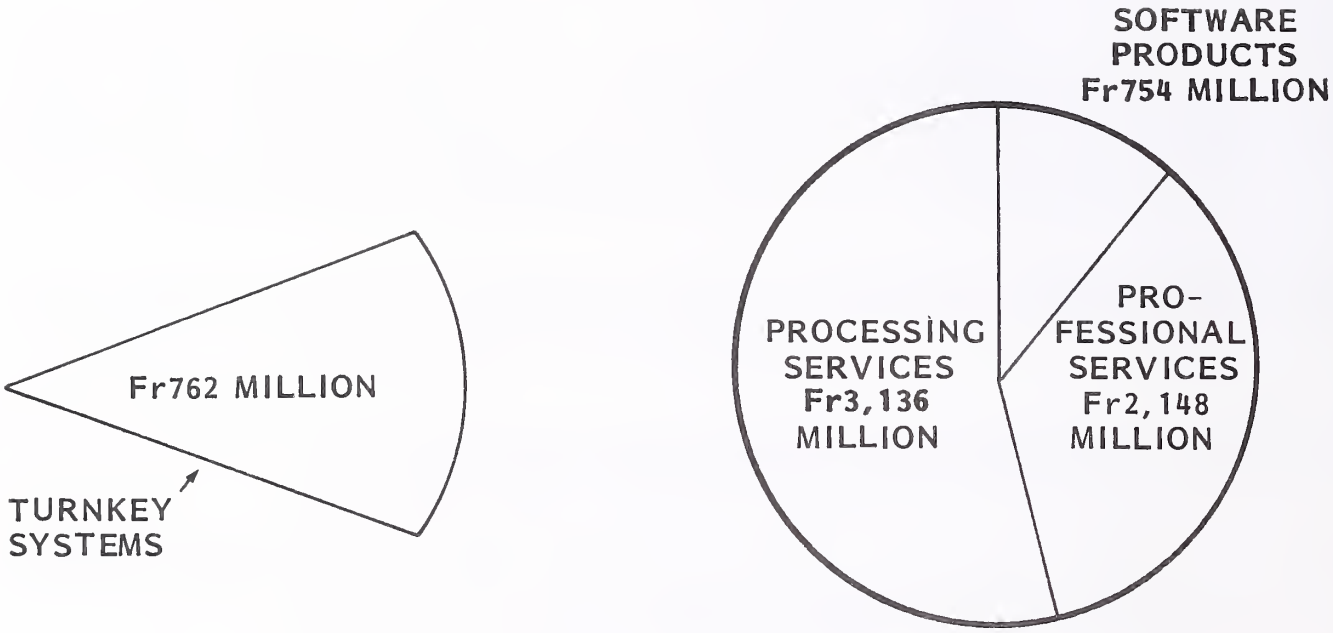
- Exhibit III-4 summarises the effect of all these changes in the relative importance of the sectors.

- Exhibit III-5 tabulates the annual growth rates used in forecasting the market growth, shown in detail in Exhibit III-6. The rates shown are actual forecast growth rates obtained by summing:

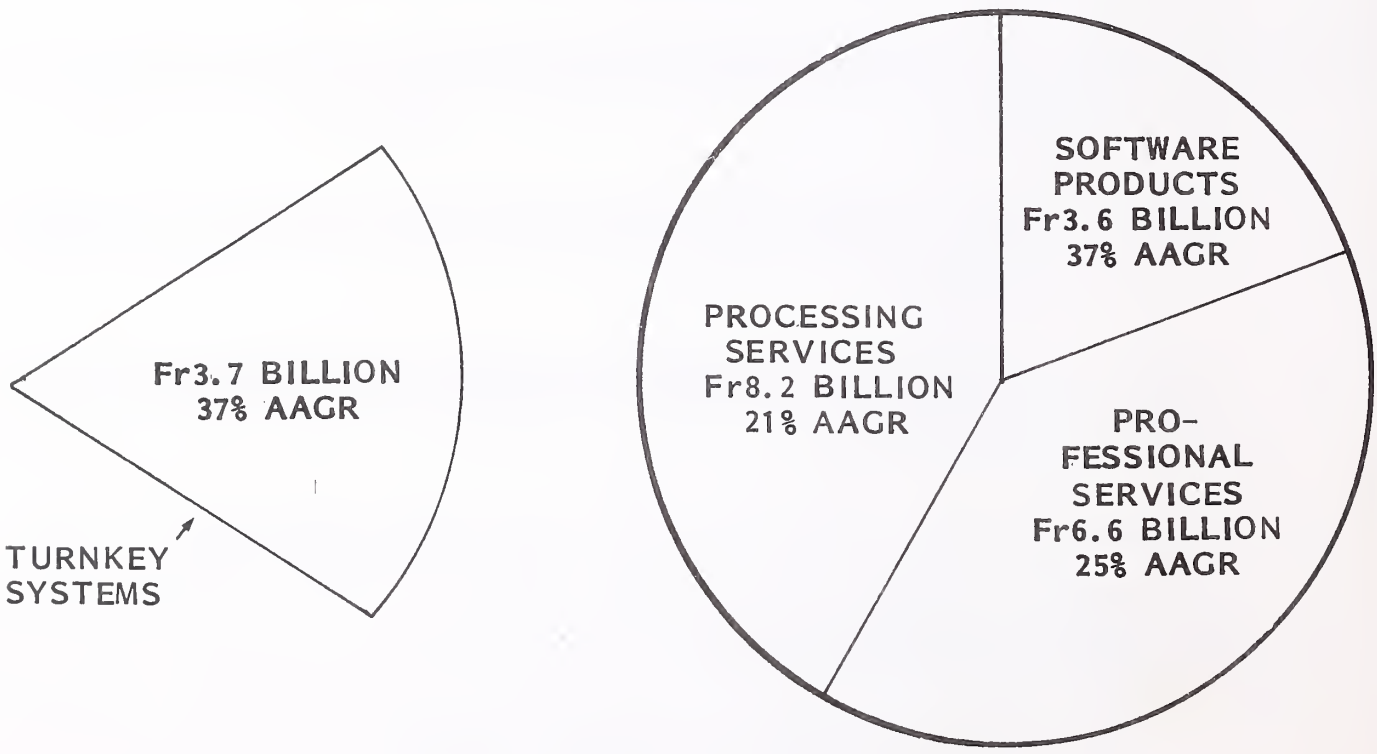
  - Anticipated price rises for each type of service.

EXHIBIT III-4

FRENCH COMPUTER SERVICES MARKET
(CURRENT FRENCH FRANCS)



Fr6.0 BILLION



1984 Fr18.4 BILLION, 25% AAGR

SOURCE: INPUT FORECAST

EXHIBIT III-5

COMPUTER SERVICES - GROWTH RATE FORECASTS, BY MODE AND TYPE OF SERVICE - TOTAL, 1979-1984

COMPUTER SERVICE		GROWTH RATES (PERCENT)						
MODE	TYPE	1978-1979	1979-1980	1980-1981	1981-1982	1982-1983	1983-1984	AAGR 1979-1984
REMOTE COMPUTING SERVICES	GEN. BUS.	29%	35%	33%	17%	37%	27%	31%
	SCI. & ENG.	28	20	22	18	13	20	18
	IND. SPEC.	63	98	64	38	56	74	65
	UTILITY	26	19	48	57	15	15	24
SUBTOTAL		31%	32%	33%	28%	30%	34%	31%
FACILITIES MANAGE-MENT	GEN. BUS.	-	-	-	-	-	-	-
	SCI. & ENG.	14	17	29	22	9	8	17
	IND. SPEC.	37	17	19	24	21	21	21
	UTILITY	71	22	25	13	33	29	24
SUBTOTAL		40%	18%	20%	22%	25%	22%	21%
BATCH	GEN. BUS.	30	25	23	25	17	10	20
	SCI. & ENG.	35	34	28	18	16	17	22
	IND. SPEC.	21	22	16	19	14	13	17
	UTILITY	0	4	8	-4	-4	-4	0
SUBTOTAL		18%	19%	18%	15%	12%	10%	15%
TOTAL PROCES-SING	GEN. BUS.	30	29	29	21	25	18	24
	SCI. & ENG.	25	29	24	18	14	18	21
	IND. SPEC.	26	26	22	23	23	27	24
	UTILITY	14	7	16	14	10	9	11
TOTAL		24%	23%	23%	20%	20%	20%	21%
SOFTWARE PRODUCTS	SYSTEMS	36	37	37	40	42	30	37
	APPLICATIONS	34	35	36	34	37	37	36
SUBTOTAL		35%	36%	36%	38%	40%	33%	37%
PROFESSIONAL SERVICES		25	27	27	27	23	23	25
GRAND TOTAL		25%	26%	26%	25%	24%	23%	25%
TURNKEY SYSTEMS		36	39	40	39	37	32	37

EXHIBIT III-6

COMPUTER SERVICES - MARKET FORECASTS, BY MODE AND TYPE OF SERVICE - TOTAL, 1979-1984

COMPUTER SERVICE		USER EXPENDITURES							
MODE	TYPE	1978 (FFM)	1979 (FFM)	GROWTH 1978-1979 (%)	1980 (FFM)	1981 (FFM)	1982 (FFM)	1983 (FFM)	1984 (FFM)	AAGR 1979-1984 (%)
REMOTE COMPUTING SERVICES	GEN. BUS.	Fr 201	Fr 260	29%	Fr 352	Fr 469	Fr 571	Fr 782	Fr 996	31%
	SCI. & ENG.	241	309	28	370	452	532	602	721	18
	IND. SPEC.	54	88	63	174	285	394	613	1,064	65
	UTILITY	174	220	26	262	334	473	565	652	24
SUBTOTAL		670	877	31%	1,158	1,540	1,970	2,562	3,433	31%
FACILITIES MANAGE-MENT	GEN. BUS.	-	-	-	-	-	-	-	-	-
	SCI. & ENG.	16	18	14	21	27	33	36	39	17
	IND. SPEC.	215	294	37	345	409	507	631	764	21
	UTILITY	35	60	71	73	91	103	137	177	24
SUBTOTAL		266	372	40%	439	527	643	804	980	21%
BATCH	GEN. BUS.	320	415	30	517	656	792	925	1,014	20
	SCI. & ENG.	112	151	35	202	259	305	354	413	22
	IND. SPEC.	720	868	21	1,055	1,226	1,463	1,665	1,877	17
	UTILITY	448	453	0	472	509	488	470	451	0
SUBTOTAL		1,600	1,887	18%	2,246	2,650	3,048	3,414	3,755	15%
TOTAL PROCES-SING	GEN. BUS.	521	675	30	869	1,125	1,363	1,707	2,010	24
	SCI. & ENG.	369	460	25	593	738	870	992	1,173	21
	IND. SPEC.	989	1,250	26	1,574	1,920	2,364	2,909	3,705	24
	UTILITY	657	751	14	807	934	1,064	1,172	1,280	11
TOTAL		2,536	3,136	24%	3,843	4,717	5,661	6,780	8,168	21%
SOFTWARE PRODUCTS	SYSTEMS	364	495	36	674	911	1,249	1,719	2,164	37
	APPLICA-TIONS	195	259	34	351	479	680	986	1,423	36
SUBTOTAL		559	754	35	1,025	1,390	1,929	2,705	3,587	37
PROFESSIONAL SERVICES		1,718	2,148	25	2,728	3,461	4,381	5,407	6,632	25
GRAND TOTAL		Fr4,813	Fr6,038	25%	Fr7,596	Fr9,568	Fr11,971	Fr14,892	Fr18,387	25%
TURNKEY SYSTEMS		560	762	36%	1,059	1,483	2,061	2,823	3,727	37%

- Real growth rates forecast in each cell of the matrix formed by type and mode of service and application area (in the case of processing services).

- In formulating these predictions, INPUT has had to take account of the twin effects of recession and inflation.

- In France, inflation has conditioned the market to expect price increases of between 5% and 10% on a moderately regular basis.

2. EFFECTS OF RECESSION

- Processing services must expect to be impacted by recession in 1981. Assuming an easing of recession in 1982, and a simultaneous slow-down of the inflation rate to nearly single figures, vendors will be carried along by the confident outlook engendered by the current government's support programme.

- The cumulative economic pressures from inflation and recession result in the real growth rates illustrated in Exhibit III-7. The main characteristic is the depressant effect which appears sometime in the 1981-1982 time period. The exact timing varies with the type of service because of such factors as:

  - Contract lengths.

  - Vulnerability of certain industry sectors.

D. COMPETITIVE ENVIRONMENT

- Detailed research and analysis of the published accounts of leading service companies has enabled INPUT to establish accurate rankings of these vendors by:

EXHIBIT III-7

IMPACT OF INFLATION ON COMPUTER SERVICES GROWTH - FRANCE, 1979-1984

MODE	USER EXPENDITURES						AAGR 1979-1984 (PERCENT)
	1979 (Fr MILLION)	1980 (Fr MILLION)	1981 (Fr MILLION)	1982 (Fr MILLION)	1983 (Fr MILLION)	1984 (Fr MILLION)	
PROCESSING SERVICES							
TOTAL MARKET FORECAST	Fr3,136	Fr3,843	Fr4,717	Fr 5,661	Fr 6,780	Fr 8,168	21%
GROWTH FROM INFLATION	314	384	236	340	475	653	N/A
REAL GROWTH	286	323	638	604	644	735	N/A
REAL GROWTH RATE	11%	10%	17%	13%	11%	11%	12%
SOFTWARE PRODUCTS							
TOTAL MARKET FORECAST	Fr 754	Fr1,025	Fr1,390	Fr 1,929	Fr 2,705	Fr 3,587	37%
GROWTH FROM INFLATION	83	51	97	135	216	287	N/A
REAL GROWTH	112	220	268	404	560	595	N/A
REAL GROWTH RATE	20%	29%	26%	29%	29%	22%	26%
PROFESSIONAL SERVICES							
TOTAL MARKET FORECAST	Fr2,148	Fr2,728	Fr3,274	Fr 3,994	Fr 4,832	Fr 5,654	21%
GROWTH FROM INFLATION	215	327	262	280	290	339	N/A
REAL GROWTH	215	253	284	440	548	483	N/A
REAL GROWTH RATE	13%	12%	10%	13%	14%	10%	12%
TOTAL COMPUTER SERVICES							
TOTAL MARKET FORECAST	Fr6,038	Fr7,596	Fr9,381	Fr11,584	Fr14,317	Fr17,409	24%
GROWTH FROM INFLATION	612	762	595	755	981	1,279	N/A
REAL GROWTH	613	796	1,191	1,448	1,752	1,813	N/A
REAL GROWTH RATE	13%	13%	16%	15%	15%	13%	14%
TURNKEY SYSTEMS							
TOTAL MARKET FORECAST	Fr 762	Fr1,059	Fr1,483	Fr 2,061	Fr 2,823	Fr 3,727	37%
GROWTH FROM INFLATION	84	138	178	206	254	335	N/A
REAL GROWTH	118	159	246	372	508	569	N/A
REAL GROWTH RATE	21%	21%	23%	25%	25%	20%	23%

*OVER PRECEDING YEAR
N/A = NOT APPLICABLE

- Overall revenues in calendar 1979.

- Revenues in major market sectors, again for 1979.

- A number of adjustments have been made to the leaders' stated revenues in order to normalise them for comparison and ranking purposes.

  - Captive revenues have been subtracted (see Appendix A for a definition of captive revenue).

  - Overseas and export revenues have been separated from domestic revenues.

  - Where reported results were for non-calendar financial years, an adjustment was made.

  - Hardware and hardware maintenance revenues were extracted, unless these were associated with turnkey systems.

- Exhibit III-8 shows the top ten French vendors as ranked by share of the domestic market for all computer services, not including turnkey systems.

- Exhibit III-9 shows the 1978 rankings as they stand after making them compatible with current definitions and after applying the results of 1980 research.

- In 1979 IBM did not occupy first place, as was the case for the 1978 ranking, because:

  - GSi expanded by over 70% in French domestic revenues to overtake them. This was achieved from both internal expansion and acquisition.

EXHIBIT III-8

THE TOP TEN COMPUTER SERVICES VENDORS, BY 1979 MARKET SHARE OF THE FRENCH COMPUTER SERVICES MARKET

RANK*	VENDOR	REVENUE IN MILLIONS OF FRENCH FRANCS				
		PROCESSING SERVICES	SOFTWARE PRODUCTS	PROFESSIONAL SERVICES	ALL SERVICES TOTAL	TURNKEY SYSTEMS
1	GSI	Fr433	Fr 6	Fr 26	Fr465	Fr15
2	IBM E	200	200	20	420	25
3	CAP/GEMINI/SOGETI	59	18	244	321+	-
4	CISI	233	13	34	280	30
5	SG2	160	24	88	272	15
6	CCMC	265	-	-	265	-
7	SLIGOS	190	8	52	250	15
8	SESA	-	23	125	148	8
9	TSIL** E	15	5	125	145	47
10	GFI	72	15	46	133	13

E = INPUT ESTIMATE

*RANKING IS BASED ON THE 'ALL SERVICES TOTAL', WHICH EXCLUDES CAPTIVE, OVERSEAS AND EXPORT, AND TURNKEY REVENUES ACCORDING TO THE MAS/E 1980 MARKET DEFINITION.

**EXCLUDING SOPRA

EXHIBIT III-9

THE TOP TEN COMPUTER SERVICES VENDORS BY IN TWO YEARS
1978 MARKET SHARE OF THE FRENCH COMPUTER SERVICES MARKET

RANK	VENDOR	REVENUE IN MILLIONS OF FRENCH FRANCS				
		PROCESSING SERVICES	SOFTWARE PRODUCTS	PROFESSIONAL SERVICES	ALL SERVICES TOTAL	TURNKEY SYSTEMS
1	IBM	Fr199	Fr130	Fr 28	Fr357	Fr18
2	GSI	240	5	25	270	7
3	CAP/GEMINI/ SOGETI	47	20	187	254	-
4	SG2	119	36	73	228	17
5	SLIGOS	150	13	46	209	9
6	CCMC	208	-	-	208	-
7	CISI	166	8	19	193	20
8	SESA	-	19	106	125	-
9	TSIL* (THOM-SON-CSF)	12	5	107	124	30
10	SEMA INFOR-MATIQUE	10	5	75	90	10

SOURCE: INPUT MAS/EUROPE DATABASE
*EXCLUDING SOPRA

- However, IBM's conversion from batch (DCS) to RCS centres has proceeded rapidly in France and, viewed from the standpoint of a timesharing competitor, this can appear like new growth at about 30% per annum.

- The other major vendor to improve its overall ranking considerably in 1979 was CISI:

  - Partly by acquisition of Franlab.

  - Partly by continuing with the policy of decreasing work done for its parent organisation, CEA.

- CISI has moved from seventh to fourth place as a result of these efforts.

- CAP/Gemini/Sogeti has maintained its position in third place after its revenues had been reworked to take account of its partial divestment of the Bossard group.

  - Groupe Bossard is no longer consolidated into its accounts, since the shareholding is now a minority one of 48%.

- CAP group has undergone a major management restructuring to streamline its diverse operations. It expects to get back onto its former growth curve and to exceed 600 million francs of revenue in 1980 from all sources.

- In the middle of the table, CCMC has now overtaken Sligos by retaining its sixth place. Sligos has to be content with seventh position.

- In tenth place, GFI (Groupe Francais d'Informatique) has climbed into the chart by achieving the formidable growth between 1978 and 1979 of 62%.

- A second form of ranking of the leading companies appears in Exhibit III-10. This chart ranks by total consolidated revenues from all sources.

THE TOP TEN COMPUTER SERVICES VENDORS, REVENUE IN MILLIONS OF FRENCH FRANCS

RANK	VENDOR	OVERSEAS AND EXPORT	REPORTED FRANCE CAPTIVE	FRANCE DOMESTIC (INCLUDES TURNKEY)	TOTAL REVENUE ALL SOURCES
1	GSI	Fr210	-	Fr480	Fr690
2	CISI	120	Fr190	310	620
3	SG2	99	120	296	515
4	CAP/GEMINI/ SOGETI	144	-	311+	455
5	IBM E	-	N.K.*	445	445
6	SEMA INFOR-MATIQUE	288	-	122	410
7	SLIGOS	47	-	265	312
8	CCMC	-	-	265	265
9	TELE-SYSTEMES	4	140	96	240
10	TSIL** E	20	-	192	212

*N.K. = NOT KNOWN
**EXCLUDING SOPRA
E = INPUT ESTIMATE
SOURCE: INPUT MAS/E DATABASE
+ DOES NOT AGREE WITH TOTAL IN EXHIBIT III-8 DUE TO ADJUSTMENTS IN CONSOLIDATION

- Companies which benefit by this method are those with large captive or overseas revenues:

  - CISI moves to second place.

  - SEMA moves in to take sixth place.

  - Telesystemes displaces SESA from the table altogether.

- Captive revenues shown are those reported to INPUT by respondents to MAS/Europe research. Caution should be exercised in comparing a captive revenue figure with an external services total because the former may have been calculated on the basis of an internal transfer rate which excludes or includes certain commercial factors:

  - Costs without application of full overheads.

  - Discounts for assured levels of business.

- Exhibit III-11 shows the breakdown of the top ten companies' French domestic market revenues in the two years 1978 and 1979.

- Though there are no dramatic changes in the pattern of the top ten's business, it is interesting to note that:

  - Facilities management (FM) has risen 5%, indicating that longer-term bureau contracts are now being considered and that vendors are more able to provide evidence of administration of complete systems.

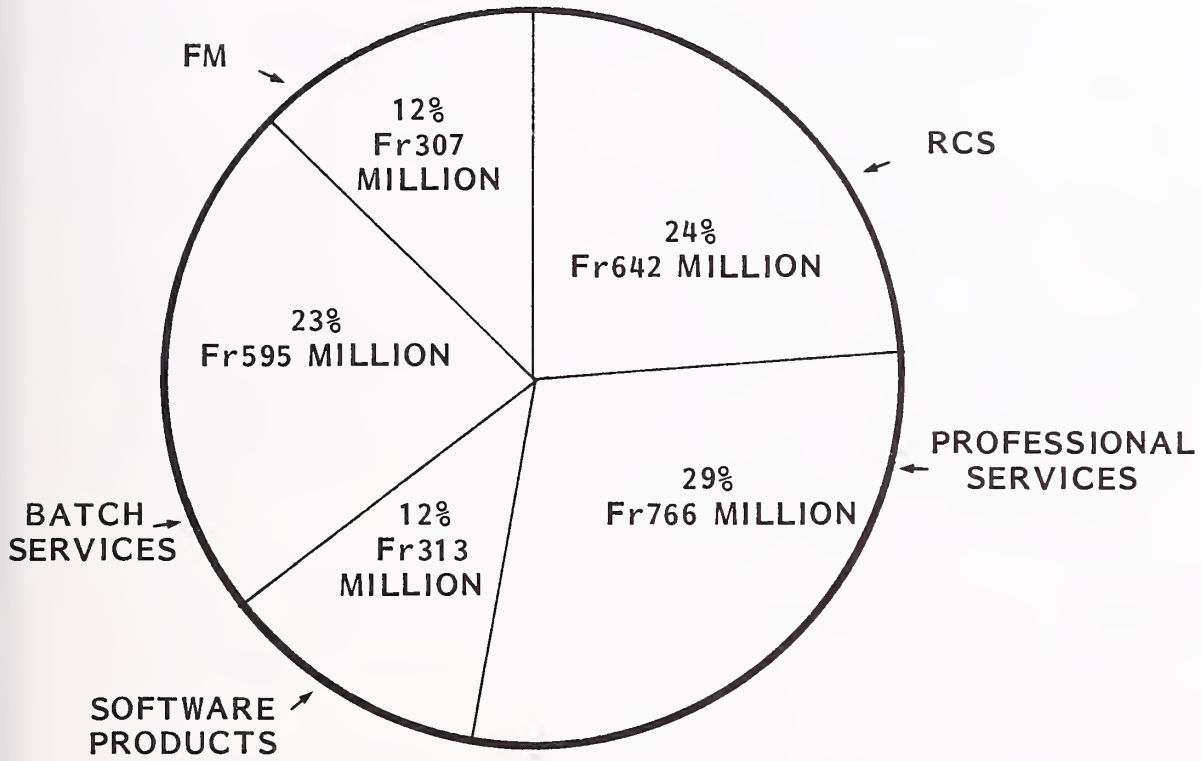
  - Professional services has experienced a drop of 6%, but this is largely accounted for by two non-recurring items:

    . GSi's extraordinarily large growth over 1978.

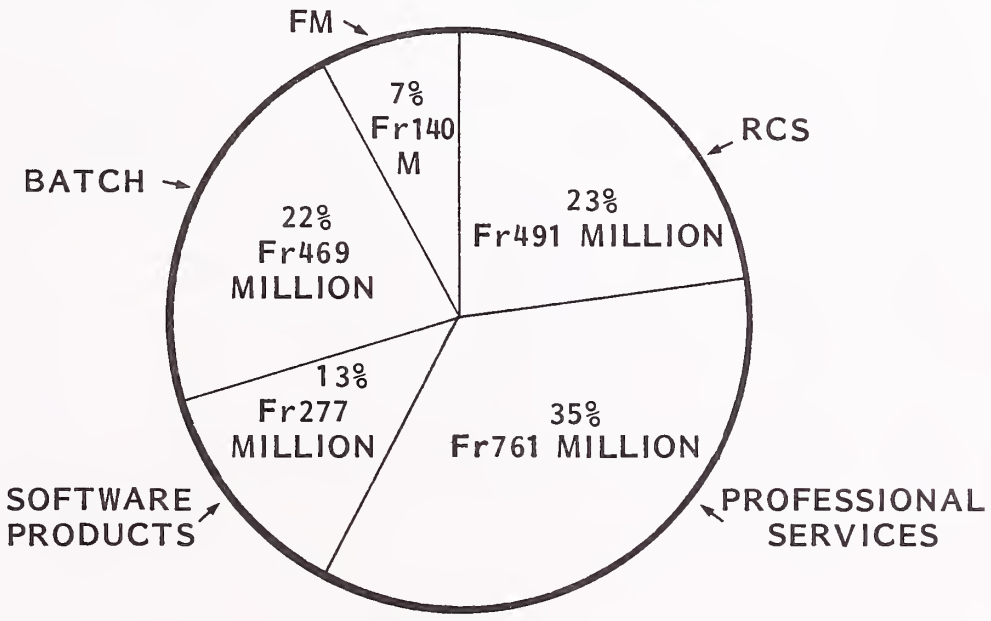
EXHIBIT III-11

THE FRENCH COMPUTER SERVICES MARKET, 1978-1979

THE TOP TEN 1979 (Fr2,624 M = 43% OF MARKET)



THE TOP TEN 1978 (Fr2,148 M = 45%)



. CAP's change of accounting practice relating to the Bossard group.

- Nonetheless, the top ten have grown more slowly than the market as a whole, 22% as against the market's 25%. They have thus seen their market share shrink from 45% to 43%. In the current buoyant state of the industry, this trend is expected to continue. Acquisition will remain as a tool for combatting this factor.

- Exhibit III-12 shows the ranking of the companies operating in each of the three main market sectors.

  - The software products column has been in this instance reserved for the independent suppliers in order to avoid them being swamped by the hardware manufacturers. In a later chapter, the comparison between the two vendor types is made and illustrated.

EXHIBIT III-12

TOP SUPPLIER RANKING AND SECTOR MARKET SHARES, BY SERVICE TYPE - FRANCE, 1979

RANK \ TYPE	PROCESSING SERVICES Fr3,136 MILLION		SOFTWARE PRODUCTS Fr754 MILLION		PROFESSIONAL SERVICES Fr2,148 MILLION	
	SUPPLIER NAME	PER-CENT SHARE	SUPPLIER NAME (INDEPEN-DENT SSCIs)	PER-CENT SHARE	SUPPLIER NAME	PER-CENT SHARE
1	GSI	13.8%	SG2	3.2%	CAP/GEMINI/ SOGETI	11.4%
2	CCMC	8.5	SESA	3.1	SESA	5.8
3	CISI	7.4	CAP/GEMINI/ SOGETI	2.4	TSIL	5.4
4	IBM	6.4	GFI	2.0	SEMA INFOR-MATIQUE	4.3
5	SLIGOS	6.1	TSIL	2.0	SG2	4.1
6	SG2	5.1	CISI	1.7	CERCI	3.8
7	TELESYSTEMES	2.6	SLIGOS	1.1	SLIGOS	2.4
8	GFI	2.3	SEMA INFOR-MATIQUE	0.9	ORDINA	2.3
9	GEIS S.A.	2.1	GSI	0.8	STERIA	2.2
10	CAP/GEMINI/ SOGETI	1.9	STERIA	0.8	GFI	2.1
11	G-CAM	1.5	SOPRA	0.7	SOPRA	1.6
12	CEGI-TYMSHARE	1.2			CISI	1.6
13	SOPRA GROUP	0.7			GSI	1.2
14	SEMA INFOR-ATIQUE	0.5			IBM	0.9
15	TSIL	0.5				

IV COMPUTER SERVICES MARKET ISSUES IN FRANCE

IV COMPUTER SERVICES MARKET ISSUES IN FRANCE

A. INTRODUCTION

- This chapter sets out to review the vendor and user data which INPUT has gathered to study the market issues current to the French computer services industry.

- The aggressive and buoyant confidence of the leading French services vendors is the hallmark of their leadership status among all the countries of Europe. The chief characteristic of this leadership is the speed with which new developments are being brought to the market. Research in the 1980 MAS/Europe program has targetted particularly on those issues which relate to the ability to continue with constant enhancement of services and product ranges:

  - Profitability and investment potential.

  - Encroachment by the hardware manufacturers.

  - Shortage of key professional staff.

B. ANALYSIS OF VENDOR ISSUE DATA

1. SAMPLE STATISTICS

- The MAS/Europe 1980 Vendor Issue Questionnaire was designed in a modular format to allow selective completion by different types of vendor or by vendors with differing portfolios of products.

- Copies of the English and French language versions of this questionnaire are given in Appendix C.

- The questionnaire was completed by eleven companies whose combined revenues in 1979 on the French domestic market amounted to 1,928 million French francs. The sample, among which were six of the top ten vendors, therefore represents 32% of the 1979 sales value of the French market.

- Exhibit IV-1 shows the breakdown (by modules completed) of the sample interviewed in depth on the issues.

- In addition, these respondents completed an INPUT/CAMP database update questionnaire designed to cater for the basic company financial and product data.

- A number of other leading French vendors were interviewed during 1980 by INPUT on a variety of projects. Though not susceptible to the present detailed analysis, the details stemming from these other interviews have been taken into account in:

  - General evaluation of the sample's findings.

  - The market and sector forecasts found in other chapters of this report.

- The profile of these other companies is:

EXHIBIT IV-1

PROFILE OF RESPONDENTS[1]
COMPLETION OF ISSUE QUESTIONNAIRE

DESCRIPTION	MODULE NUMBERS	RESPONSE (PERCENT)
SINGLE MODULES		
COMMON	0	100%
PROCESSING SERVICES	1	82
PROFESSIONAL SERVICES	3	45
HARDWARE SERVICES	5	55
SOFTWARE PRODUCTS	6	27
COMMUNICATIONS	7	100
COMBINATIONS OF MODULES		
PROCESSING AND TURNKEY	1,5	9
PROCESSING, PROFESSIONAL SERVICES, TURNKEY, (SOFTWARE)	1,3,5,(6)	27
PROFESSIONAL SERVICES, TURNKEY, (SOFTWARE)	3,5,(6)	18

- Two hardware manufacturers.

- Three processing vendors.

- Five SSCIs.

- The analysis in this chapter is concerned with those issues which are common to all types of vendor. This means the questions in modules 0 and 7 of the questionnaire.

- Issues specific to vendor types are analysed later in the chapters which bear the titles appropriate to each type, Chapters VI through IX.

2. SECTOR-SPECIFIC MARKETING

- Respondent vendors were asked whether their present position with regard to product development was biased towards cross-industry or industry-specific products:

  - Sixty-four percent regarded themselves as favouring cross-industry products.

  - Twenty-seven percent favoured industry-specific.

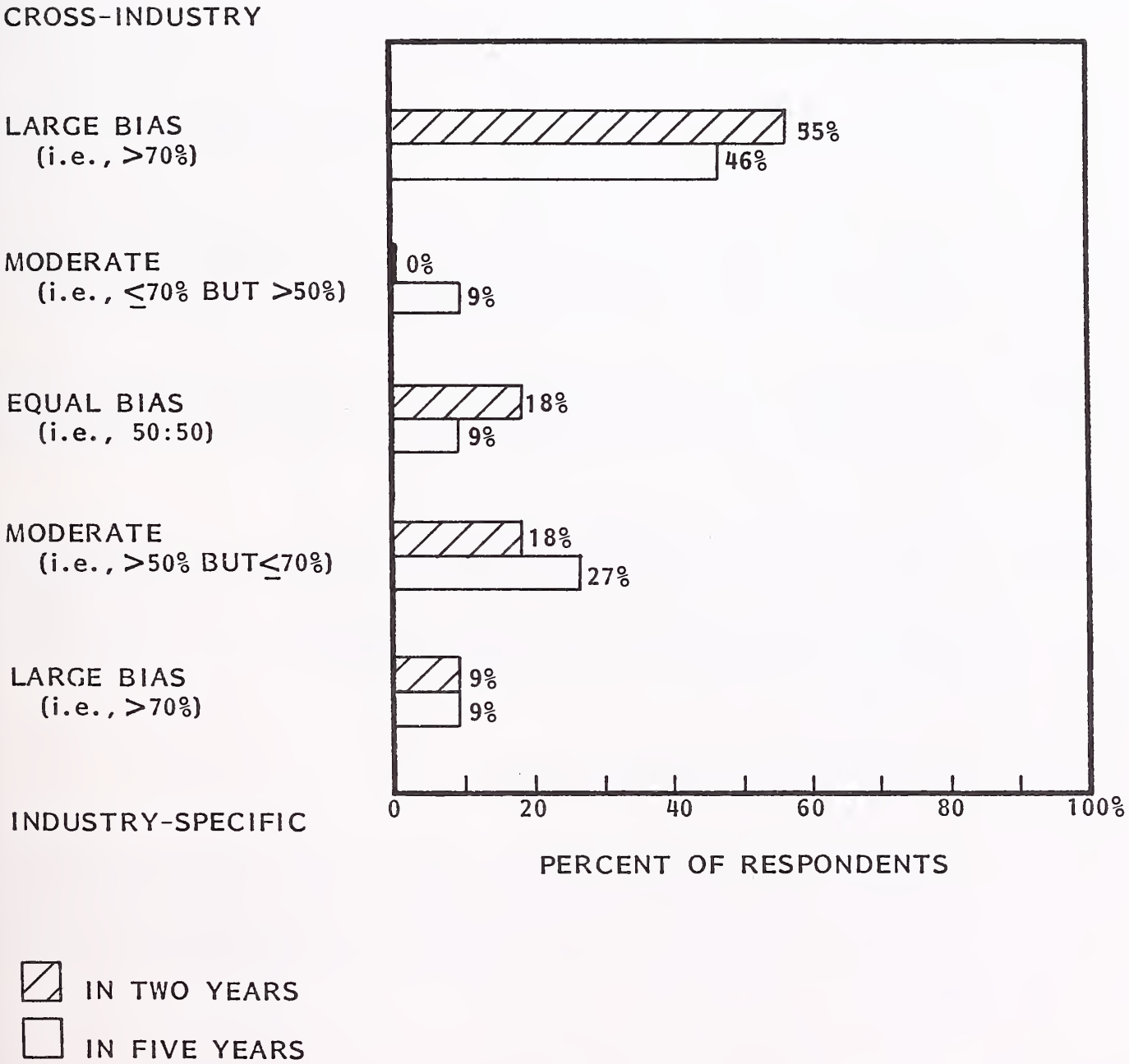
  - Nine percent had no particular bias.

- In Exhibit IV-2, the replies of all respondents on the likely split of development effort in two and five years' time were graded and plotted in bar chart form. The result shows a large bias in favour of developing functional products.

- There is a minor move towards industry-specific marketing over a five-year period.

EXHIBIT IV-2

DISTRIBUTIONS OF RESPONDENTS' PRODUCT DEVELOPMENT BIASES IN TWO AND FIVE YEARS' TIME



- It should be noted that the answers related to new product development in companies that were in several cases very heavily biased at the present time towards specific industries. The analysis shows an attempt on the part of some of these major vendors who are currently suffering relatively low growth rates (15% or 16% only), to break out of their established, in some cases virtually monopolistic, positions.

- When responses are analysed by type of company, initial bias position and two- and five-year timeframes, the results confirm the move towards industry-specific.

- In Exhibit IV-3, of the four groups isolated, three showed a diminution in cross-industry functional product development and a corresponding increase in industry-specific products. However, in two cases the decrease was minimal.

- A very large batch services vendor using a network for remote data entry, though highly industry-specific, had very little ongoing industry-specific developments, merely a small system for pharmacists.

- Another very large comprehensive processing company attributed its cross-industry bias to the historical momentum which its traditional systems, such as payroll, had acquired.

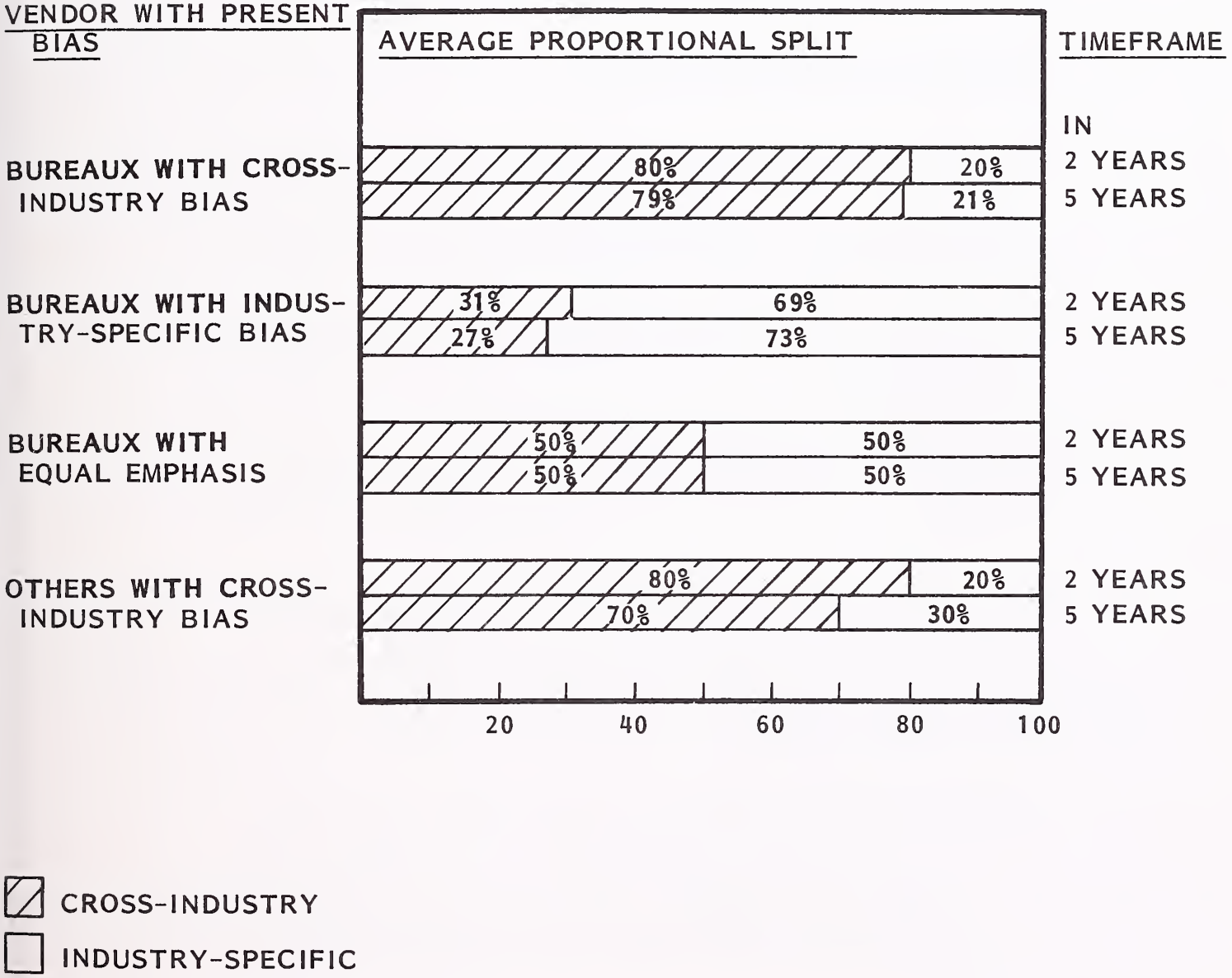
- One of the smaller processing companies had a policy of targetting top companies only. This strategy required it to have a good range of general-purpose functional products to maximise revenue from this type of account selling.

3. DECLINE IN CUSTOMER REVENUES

- The question on the size of average customer revenue sought to determine the strength of the impetus away from direct selling and towards indirect methods, as a result of sales costs forming an increasing percentage of total costs.

EXHIBIT IV-3

PROPORTION OF RESPONDENTS' PRODUCT DEVELOPMENT
AS SPLIT BETWEEN CROSS-INDUSTRY AND
INDUSTRY-SPECIFIC PRODUCTS



- Interview results revealed a 5:1 ratio of responses showing non-declining average revenues. INPUT concludes that there is still a lot of growth potential in the current end users who are purchasing from processing vendors. The same applies to professional services. Of the two firms that reported a decline:

  - One respondent attributed the decline to the size of the new customer accounts.

  - The other respondent reported only a small decline.

4. EFFECT OF ECONOMIC CLIMATE

- The effect of inflation on pricing policy was clearly reported. Only one vendor out of eleven failed to take account of inflation. Of the six who quoted a percentage price rise, the average was 10.5%.

- The vendor with the highest price increase saw this coming down to 10% in 1981 and beyond.

- The SSCIs reported that their staff salaries are increasing faster than inflation.

- By way of contrast, only one vendor took account of recession. The majority seemed unconcerned, and in three cases recession was seen as a benefit to services companies and a disadvantage to one of their main rivals, the minicomputer suppliers.

- In this latter category, a number of replies were illuminating:

  - 'There is an underlying trend towards the service approach; for example, it's economic to subcontract one's transport to an outside haulier.'

  - 'Clients are feeling the recession but the SSCIs not so much.'

5. STAFF SHORTAGES

- Nine of eleven replies indicated a shortage of staff in one or more grades as a real obstacle to company growth, while only one saw it as a perceived obstacle, or no obstacle at all.

- Exhibit IV-4 illustrates the force of the impact of staff shortages in the different job functions. This is shown according to the percentages of responses marking each category of impact. An overall weighted rating is added to allow inter-grade comparisons.

- On this method, the highest-scoring staff grades were, in sequence:

  - Software professionals.

  - Sales executives.

  - Technical support and engineers.

- The results showed that overall staff shortages were a major problem impeding company growth. In recent months, French vendors have mounted significant recruitment campaigns abroad.

6. MOST SERIOUS COMPETITION

- Exhibit IV-5 lists the competitors or solutions most frequently mentioned by respondents. Only fifteen competitors were named, of whom one was 'in-house DP solution.'

- The highest number of mentions for any one rival was five.

- IBM only rated two mentions.

EXHIBIT IV-4

IMPACT OF STAFF SHORTAGES
IN DIFFERENT GRADES
ON VENDORS' GROWTH PROSPECTS

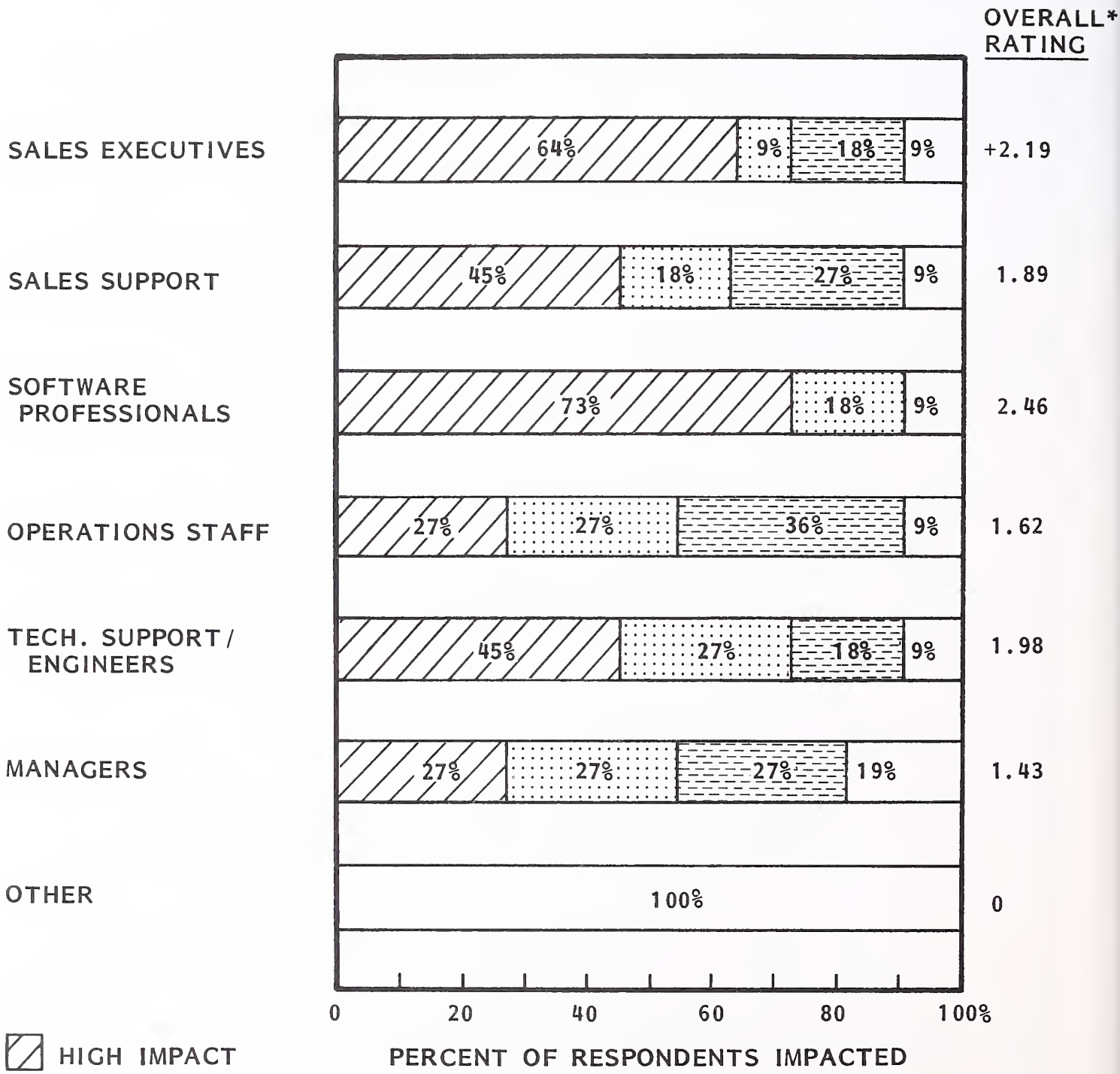


EXHIBIT IV-5

MOST FREQUENTLY MENTIONED COMPETITORS

MENTION RANKING	TYPE
CISI	S
SLIGOS	S
STERIA	S
CAP/GEMINI/SOGETI	S
GEIS	S
IN-HOUSE DATA PROCESSING+	M
SG2	S
SESA	S
IBM	M
CCMC	S
CERCI	S
GSI	S
SEMA	S
OTHER LOCAL COMPANY	S
AMYS	S

*S = SERVICES COMPETITOR
M = IN-HOUSE/MANUFACTURER SOLUTION
+INDICATES EQUAL RANKING WITH THE PREVIOUS ENTRY

7. COMMUNICATIONS ENVIRONMENT

- Of the eleven vendors completing module 7 of the questionnaire, only two saw their growth prospects being harmed (impacted positively) by the PTT monopoly position over the next two years. Over the five-year period, these two vendors were joined by two others. In all four cases, the vendors were principally processing services companies.

- All except one respondent rated their perceived impacts from the listed factors in question 7 with some degree of positive effect. INPUT is left with the following impressions of underlying unease:

  - The fear of the DGT as a possible competitor must be cautiously expressed at a time when the authority is awarding large development contracts, as much to the large services groups as to its traditional hardware suppliers - CGE, Thomson, CIT-Alcatel.

- The analysis of the factors which impact the services business is shown in Exhibit IV-6. The highest ratings for impact on vendor growth (in order of decreasing severity) were given to:

  - Obstruction to transborder data flow.

  - Tariff increases.

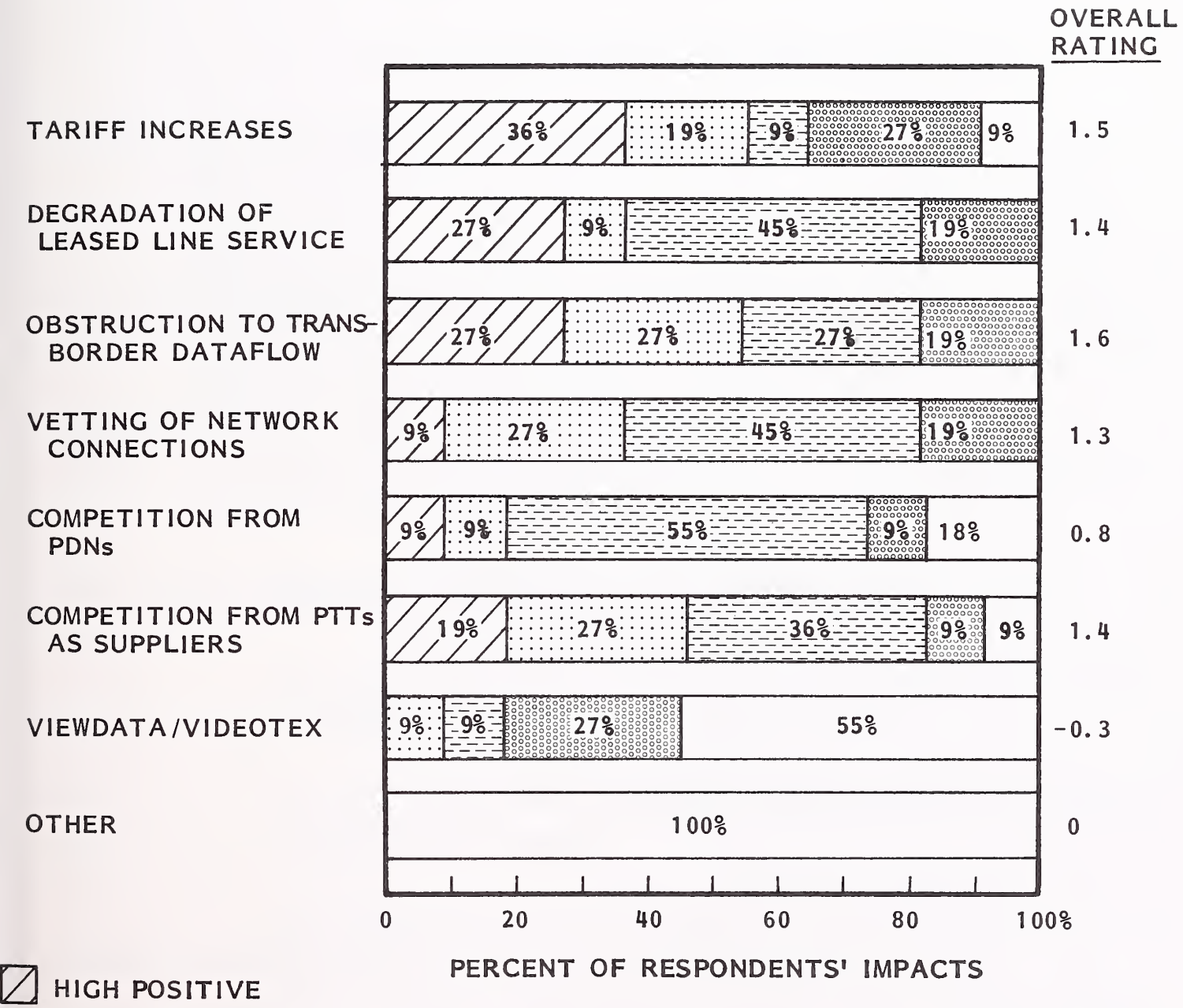
  - Competition from the PTT as a services supplier.

  - Degradation of leased line service.

- The highest severity rating on a scale from 3 (severe) to -1 (beneficial impact) was 1.6 for the transborder dataflow issue. This compares very well with the 1.66 rating which was the highest in the U.K. to degradation of leased line service. This is taken as confirmatory evidence of the polite, but nervous, attitude of the French vendors toward the DGT.

EXHIBIT IV-6

PERCEIVED IMPACT OF PTT
MONOPOLY POSITION ON VENDORS' GROWTH



- Viewdata/videotex is seen as an overall benefit by the vendors.

- The few vendor comments on the PTT monopoly question were:

  - 'The DGT monopoly is watched carefully by the members of SYNTEC.'

  - 'The PTT says it won't compete; it has got to make a great effort over the next two years to improve the service.'

  - 'The German PTT is a major customer.'

  - 'We have a generally good feeling towards the DGT.'

8. RESPONSE TO THE IMPACT OF THE PTT

- Of the four respondents who perceived an impact to their growth in either of the timeframes:

  - One would diversify into other areas. Its parent groups would expect it to be one of the leaders, if not the leader, of the market. If it couldn't achieve this, it would quit.

  - Another would improve its competitive edge, which, being an international company, it felt capable of doing.

  - The other two would combine the two strategies.

- No further options were quoted.

9. FUTURE OFFERINGS

- The future offerings of the leading vendors in the sample are characterised by:

  - A lack of regard for traditional bureau networks.

- A moderate desire to make use of Transpac and the PDNs in other countries as they become available.

- A strong push to embrace database services in one form or another:

  . Videotex.

  . Euronet.

  . Other standard means of delivering access to proprietary data.

- All but one respondent (a microprocessor specialist SSCI) expected to be in at least one database delivery service method within two years, and this position was not improved on in the five-year timeframe. Thus, it can be seen that proprietary database services are a major future enhancement at the top end of the French market. The rationale for this large and fast move into a new market sector is considered in detail in INPUT's multiclient study, 'Market Opportunities for International On-Line Database Services'.

- The position is illustrated graphically in Exhibit IV-7. This slide shows a marked contrast with its counterpart from the U.K.:

  - France is less penetrated by the classic bureau network philosophy.

  - France has higher usage at the prospect time of its public data network, Transpac.

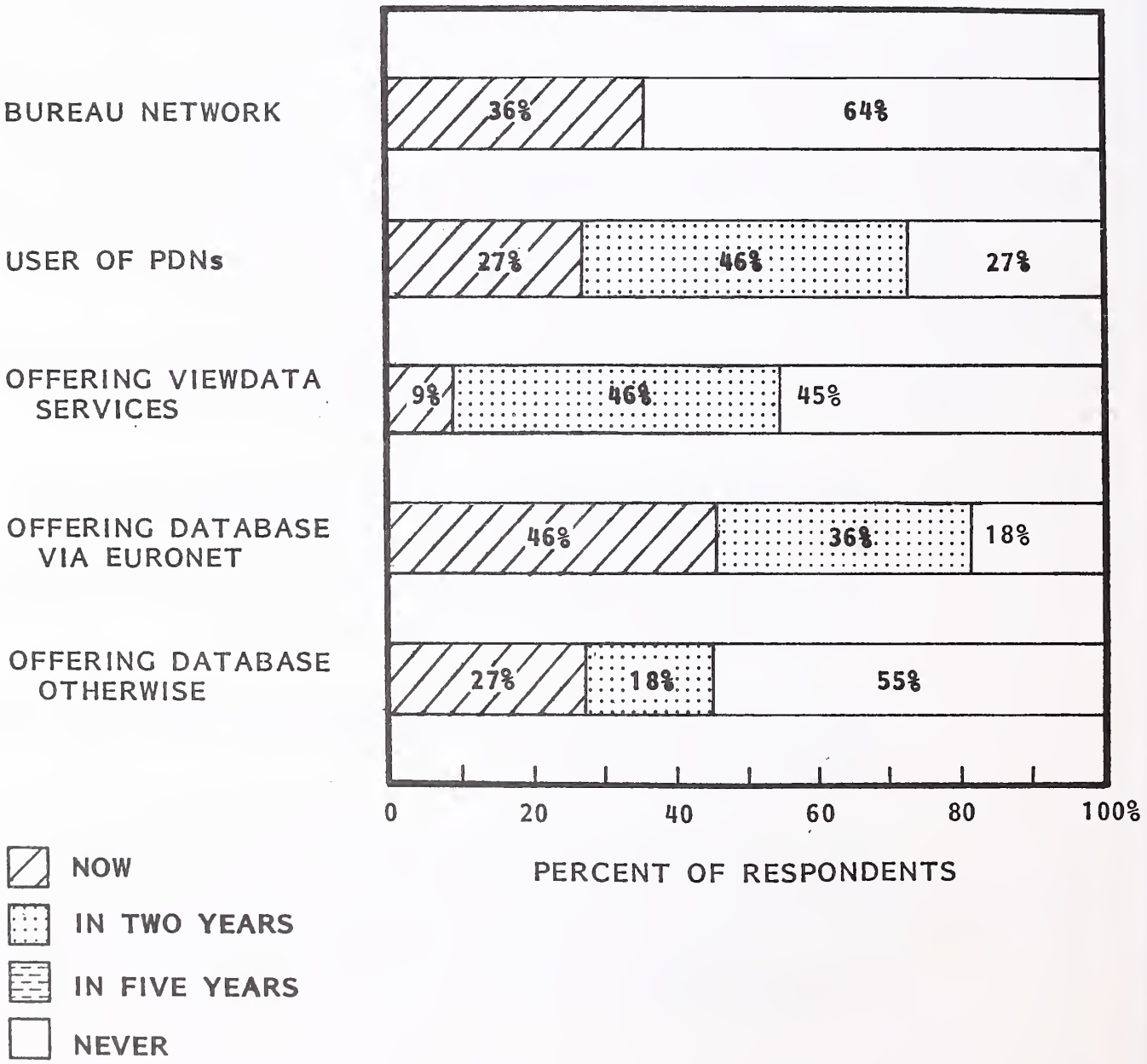
  - Within two years, France will have caught up with the U.K. in other database delivery methods.

  - In two years, France will be offering more videotex services.

  - From an already larger base of Euronet usage, France will have increased its lead.

EXHIBIT IV-7

ANTICIPATED ENHANCEMENTS
TO VENDORS' PRODUCT RANGES



- Among the 'office-of-the-future' areas which have business potential for services companies, vendors rank as follows:

  - User-site word processing.

  - Electronic mail.

  - Image processing systems/graphics.

- Fax and multifunction equipment are less favoured as business areas. Exhibit IV-8 illustrates the vendors' perceptions of their future business volume associated with the new office concepts. A comparison with the U.K. shows a remarkably similar profile of opportunity.

C. ANALYSIS OF USER DP DATA

1. INTRODUCTION

- This section analyses the findings from the User Questionnaire, which was completed by 117 user companies, 103 of which included details of their budgets for 1980-1981.

- Only those aspects which are common to all services are analysed here, the remainder being held over until the chapters dealing with specific types of vendors.

2. EDP PLANS

- Exhibit IV-9 shows the importance ascribed to each of the primary objectives listed in question 11, as it will develop from 1980 to 1982. The priorities given

EXHIBIT IV-8

PERCEIVED OPPORTUNITIES FOR
COMPUTER SERVICES VENDORS IN ASSOCIATION
WITH 'OFFICE-OF-THE-FUTURE' APPLICATIONS

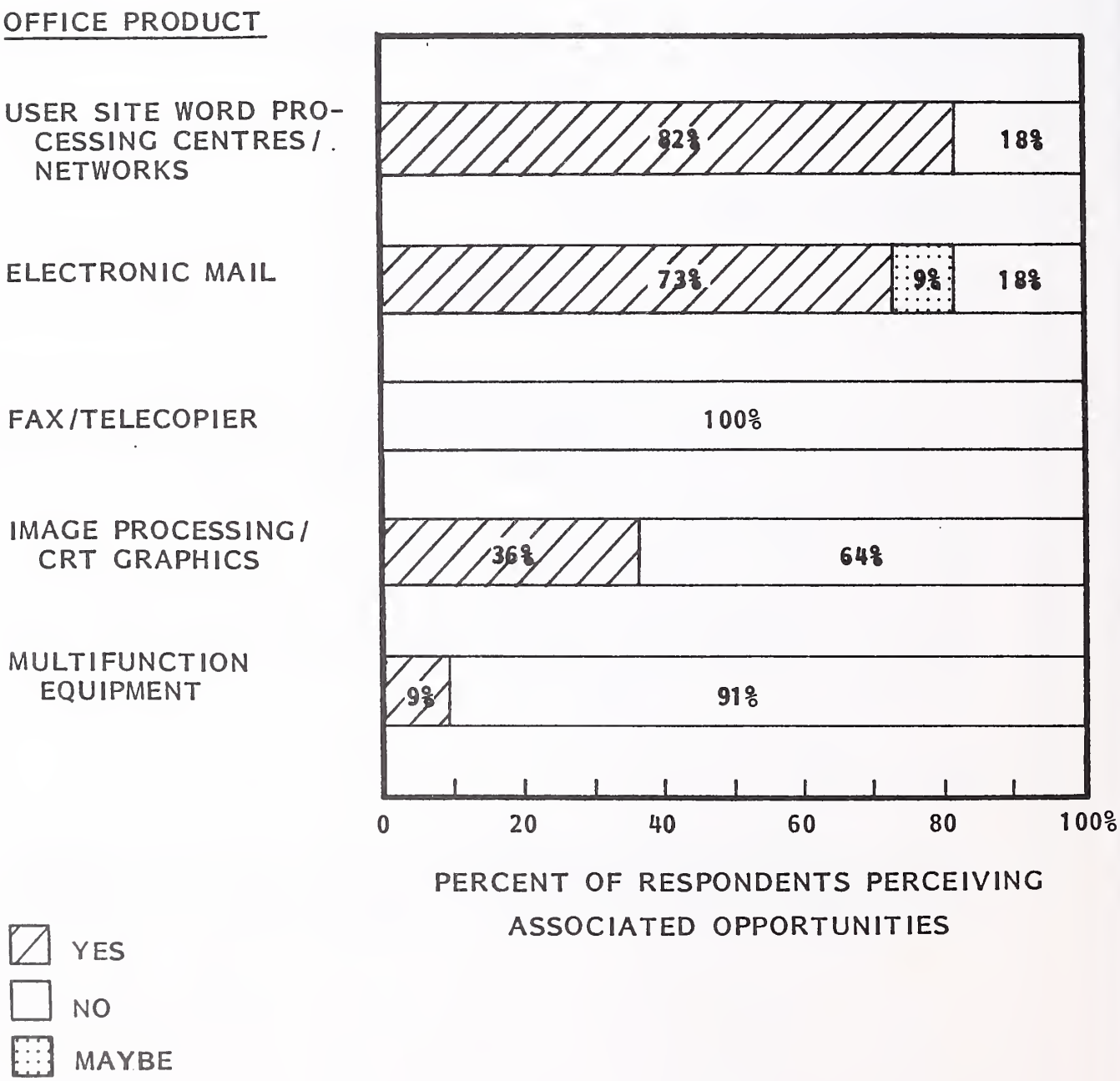
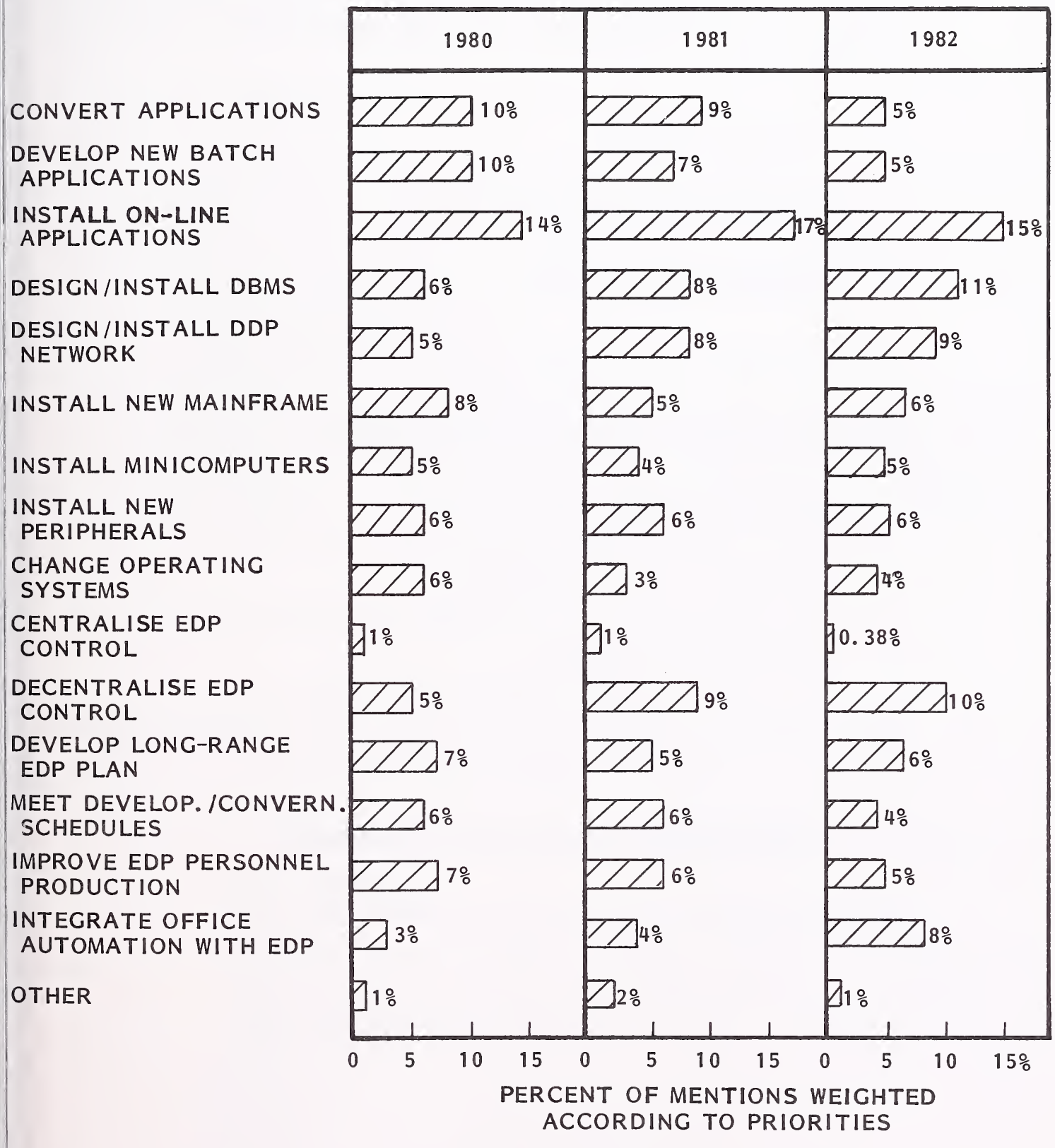


EXHIBIT IV-9

EDP PLANS - PRIMARY OBJECTIVES IN 1980, 1981 AND 1982,
WEIGHTED ACCORDING TO THE NUMBER OF MENTIONS IN EACH PRIORITY



by respondents to each objective have been weighted according to the priority numbers attributed to them and the results summed and averaged over all responses.

- As in the U.K., the installation of on-line applications is the most important priority in 1980, and for the following two years. The next three objectives in importance are:

  - Installation of DBMS.
  - Decentralisation of EDP control.
  - Design/install DDP network.

  All three of these are on a curve of increasing priority with time.

- The more traditional activities are on a declining curve:

  - Conversion of applications.
  - Developing new batch applications.
  - Installing new mainframes.

- Over the period, the objective with the greatest relative change in importance is:

  - Integration of 'la bureautique' with 'l'informatique'.

  However, this activity starts from the low base of 3% in 1980.

- The picture that emerges is that of a conventional IBM-led progression through on-line applications to DBMS and thereafter to:

  - Decentralisation.

  - DDP networking.

  - Office automation.

- A recent EEC-sponsored seminar on the progress of DBMS in Europe publicised the poor state of its implementation. Speakers were heard to say that no true thorough-going implementations existed where both end users and DP personnel and management were at one in designing and backing the new system and its far-reaching implications.

- Taking French users as an example, it is easy to see why. Users are too involved in installation of their initial on-line applications. Come the day when they turn to DBMS, it will have become too difficult to dismantle the file-orientated structures already set up. Hence, European DBMS systems are tending to be superficial in their approach and limited in scope.

- There are many opportunities here for services companies:

  - To educate companies in the importance of DBMS.

  - To help with the design and implementation.

  - To offer test bed evaluations to companies that don't know which DBMS to choose.

  - To act as short-term suppliers of DBMS processing to companies who want to try it on a bureau machine before making the total commitment of switching their in-house systems over to database.

3. EDP PROBLEMS

- Examination of Exhibit IV-10 shows how computer users rank their current problems. 'Excessive application development time' is equal first with 'lack of user involvement in system development'. Other major problems are:

  - Need for improvement in operations.
  - Need for better planning and control.
  - Personnel training.
  - Personnel recruiting.

- Except for the operations problem, perhaps, these are all people-orientated problems. This finding is in common with other countries in Europe and with the U.S. In particular, it agrees with the interest shown in the issue of programmer productivity in the U.S.A., as evinced by the welcome given to INPUT's U.S. multiclient study on this subject, 'Improving Productivity in the EDP Department'.

4. APPLICATION AREAS

- The status of respondents' existing applications and the weighted importance of the new developments they are undertaking in 1980 are both shown in Exhibit IV-11. The profile shows that accounting/finance and personnel/-payroll are the leading applications implemented at present, but that they are both less favoured in importance for 1980 development.

- Traditional areas of order processing and production/inventory control are maintaining their attraction for users, and industrial/manufacturing control and engineering/design/R&D are increasing in popularity.

EXHIBIT IV-10

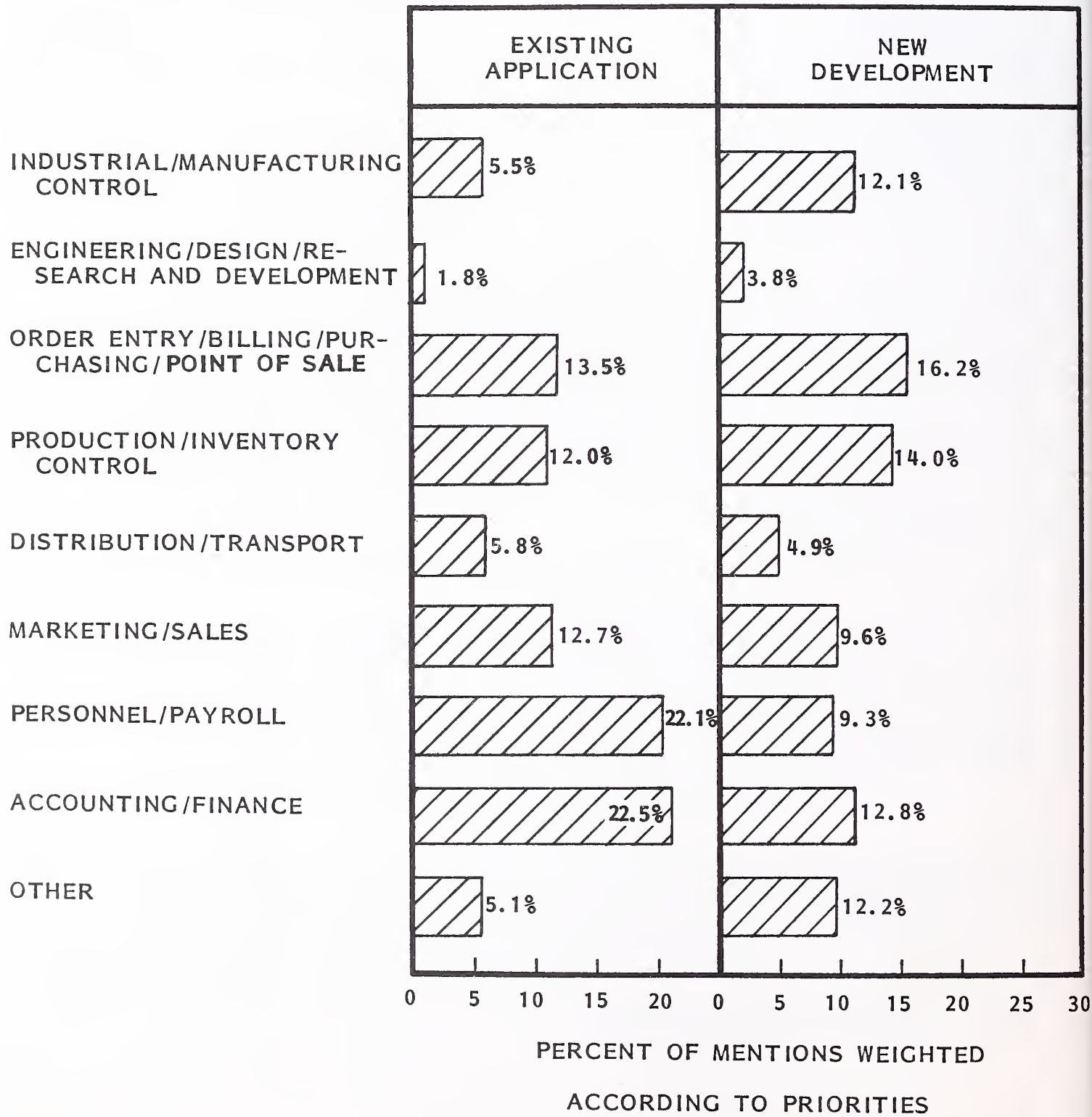
MOST SIGNIFICANT PROBLEMS FACED BY EDP MANAGERS IN 1980 - RANKED BY NUMBER OF MENTIONS, WEIGHTED BY THEIR PRIORITIES

PROBLEM	PERCENT OF MENTIONS IN EACH PRIORITY					
	PRIORITY 1	PRIORITY 2	PRIORITY 3	PRIORITY 4	PRIORITY 5	ALL PRIORITIES
EXCESSIVE APPLICATION DEVELOPMENT TIME	17%	13%	17%	17%	10%	16%
LACK OF USER INVOLVEMENT IN SYSTEM DEVELOPMENT	14	20	19	10	4	16
NEED FOR IMPROVEMENT IN OPERATIONS	12	16	18	10	17	14
NEED FOR BETTER PLANNING & CONTROL	12	10	10	18	15	12
PERSONNEL TRAINING	8	11	13	16	11	11
PERSONNEL RECRUITING	13	9	8	4	5	10
LACK OF GENERAL MANAGEMENT UNDERSTANDING	5	5	3	4	10	5
INADEQUATE SYSTEMS SOFTWARE	4	4	6	5	10	5
NEED TO IMPROVE DATA COMMUNICATIONS	6	5	1	8	6	5
INADEQUATE EDP FUNDING (BUDGETS)	4	3	2	4	6	3
OTHERS	4	0	1	1	2	2
UNSATISFACTORY HARDWARE MAINTENANCE	1	2	1	1	4	1
PERCENT TOTAL	100%	100%	100%	100%	100%	100%

N.B.: MAY NOT TOTAL EXACTLY DUE TO ROUNDING

EXHIBIT IV-11

COMPARISON OF RESPONDENTS'
EXISTING APPLICATION
AREAS WITH THEIR 1980 DEVELOPMENTS



- Turning to the topic of the distribution of new developments in 1980 between central or remote sites, Exhibit IV-12 shows that the new engineering/design/R&D applications are most frequently implemented remotely. Personnel/payroll is at the other end of the scale.

- The overall split between central and remote sites, at 2:1, is indicative of a large degree of interest in distributed processing, though this has yet to be translated into complex networking systems with distributed databases.

- The picture given in Exhibit IV-13 puts the overall split in software development between in-house and outside purchase at roughly 80:20.

5. BUDGET

- One hundred and three companies responded to the budget category questions.

- Exhibit IV-14 shows how budgets break out between central and remote sites.

- Exhibits IV-15 and IV-16 give INPUT's estimates of how the total market is moving in relation to:

  - All categories of budget spent through DP departments; i.e., for those companies with an identifiable DP function.

  - Major categories of computer services expenditure as split between:

    . DP departments.

    . End users (including companies without an identifiable DP department).

- Twenty-nine users reported an impact on their budget due to recession, amounting to an average 17% decrease.

EXHIBIT IV-12

PRIMARY MODES OF OPERATION FOR NEW DEVELOPMENT: CENTRAL VERSUS REMOTE SITES

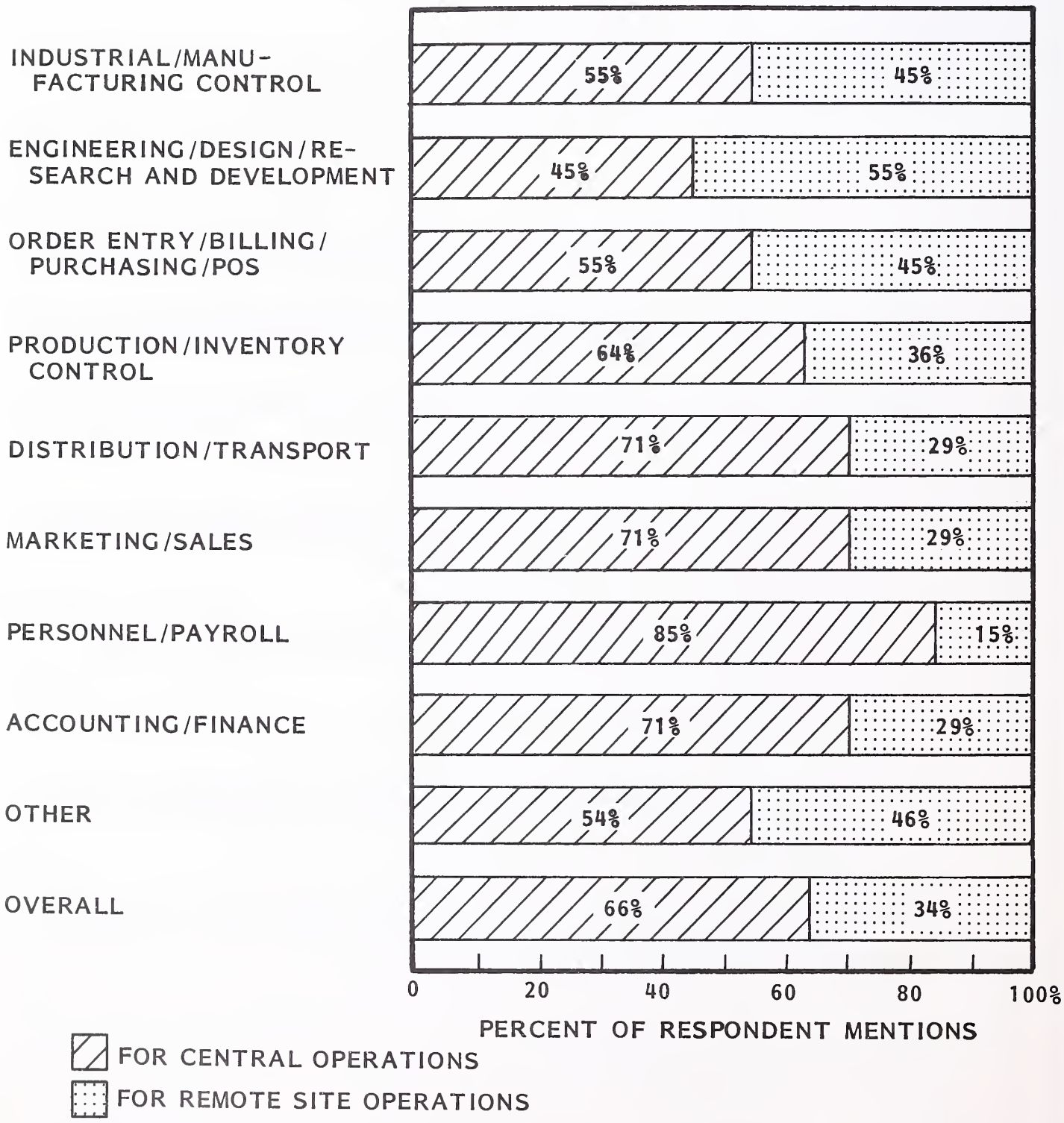


EXHIBIT IV-13

SOURCES OF NEW APPLICATION DEVELOPMENTS:
IN-HOUSE VERSUS OUTSIDE PURCHASE

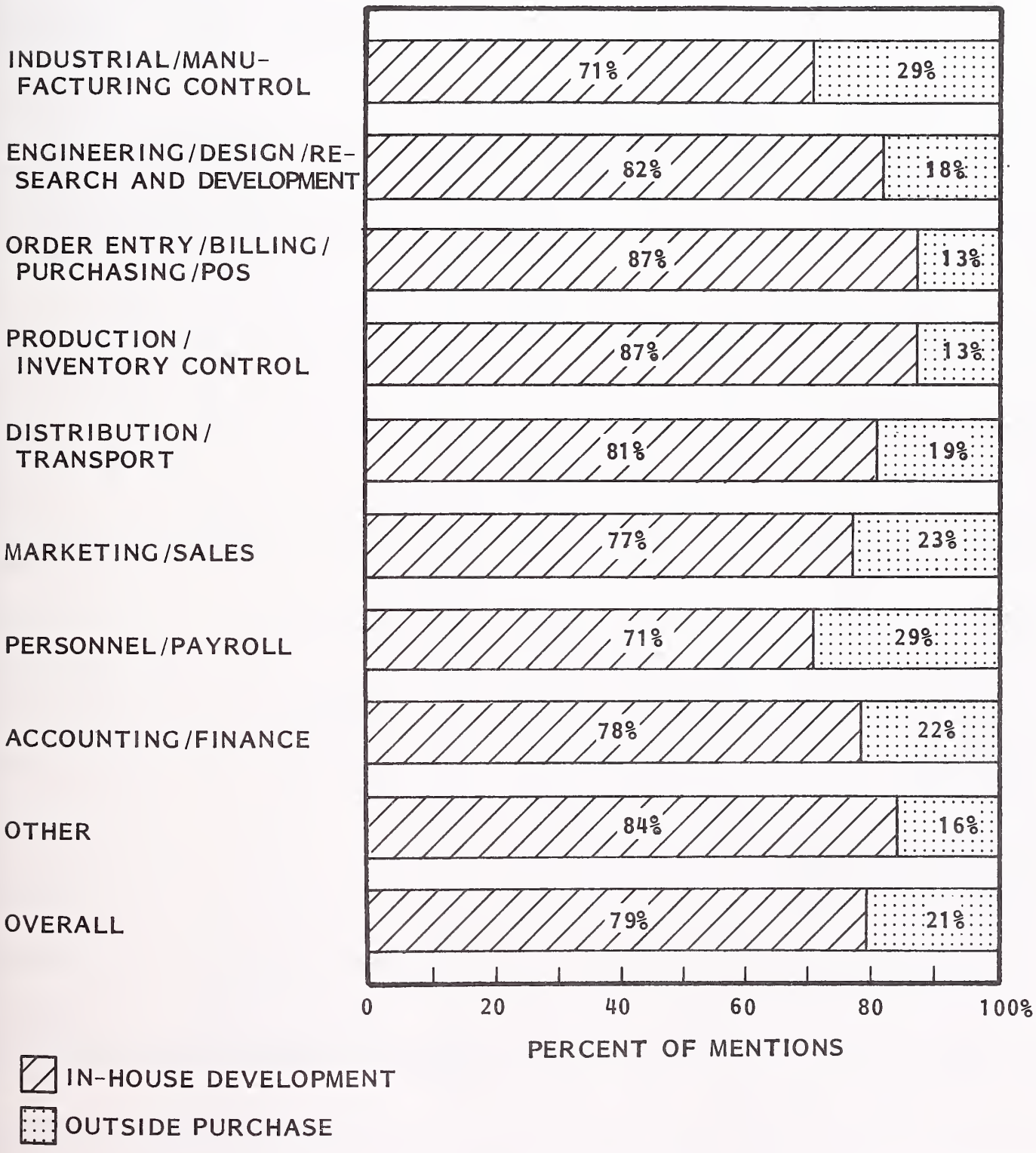


EXHIBIT IV-14

RESPONDENTS' BUDGET CATEGORIES:
BREAKDOWN BETWEEN CENTRAL
AND REMOTE SITES, ANTICIPATED
GROWTHS IN 1980-1981

BUDGET CATEGORY	1980 BUDGET		PERCENT SPLIT BETWEEN SITES		PERCENT CHANGE ANTI-CIPATED 1980-1981
	Fr MILLION	PERCENT OF TOTAL	CENTRAL	REMOTE	
PERSONNEL	Fr182	40%	97%	3%	13
MAINFRAMES	95	21	97	3	-1
PERIPHERALS	69	15	96	4	5
MINICOMPUTERS	8	2	57	43	25
TERMINALS	25	5	52	48	30
COMMUNICATIONS	9	2	70	30	29
SOFTWARE	17	4	99	1	13
MAINTENANCE	16	4	93	7	16
PROCESSING SERVICES	8	2	89	11	4
SUPPLIES AND OTHER, INCLUDING PROFES-SIONAL SERVICES	23	5	93	7	10
TOTAL	Fr452	100%	93%	7%	+10.1%

EXHIBIT IV-15

EDP EXPENDITURES BY DATA PROCESSING MANAGERS FOR TOTAL FRENCH MARKET

BUDGET CATEGORY	EXPENDITURES				ANTICIPATED GROWTH PERCENT
	1980		1981		
	Fr MILLION	PERCENT	Fr MILLION	PERCENT	
PERSONNEL, INCLUDING RECRUITMENT AND TRAINING	Fr38,000	58%	Fr43,700	59%	15%
MAINFRAMES	9,092	14	9,000	12	-1
PERIPHERALS	6,604	10	7,330	10	11
MINIS AND SBS	1,065	2	1,363	2	28
TERMINALS AND DATA ENTRY	1,592	2	2,054	3	29
COMMUNICATIONS HARDWARE	961	1	1,260	2	31
SOFTWARE, INCLUDING SOFTWARE MAINTENANCE	1,000	2	1,365	2	36
HARDWARE MAINTENANCE	3,143	5	3,646	5	16
PROCESSING SERVICES	600	1	630	1	5
PROFESSIONAL SERVICES	2,153	3	2,691	4	25
OTHER; e.g., SUPPLIES, ETC.	943	1	1,037	1	10
TOTAL	Fr65,153	100%	Fr74,076	100%	14%

*INCLUDES RECRUITMENT AND TRAINING

EXHIBIT IV-16

COMPARISON OF SOURCES OF USER EXPENDITURES IN 1980,
BY MAJOR CATEGORY OF COMPUTER SERVICE

TYPE OF COMPUTER SERVICE	VIA DATA PROCESSING MANAGER		VIA END USER		BOTH SOURCES
	Fr MILLION	PERCENT SPLIT	Fr MILLION	PERCENT SPLIT	
PROCESSING SERVICES	Fr 600	16%	Fr3,243	84%	Fr3,843
SOFTWARE PRODUCTS	1,000	98	25	2	1,025
PROFESSIONAL SERVICES	2,153	79	575	21	2,728
TOTAL	Fr3,753	49%	Fr3,843	51%	Fr7,596
TURNKEY	232	22	827	78	1,059

- Forty-eight users reported an impact from inflation of a 13% increase. Combined with the effect of recession, this means that budget increases for 1980 are 4% lower on average than they would be without the pressures of the economic climate.

6. OUTSIDE COMPUTER SERVICES AND SOFTWARE

- Twenty-two of the 117 respondents reported use of non-DP controlled expenditures in their organisations. The average expenditure in 1979 had been 97,000 francs.

- Increases in this budget were expected:

  - Of 7.5% in 1980.

  - Of 21% in 1981.

- Exhibit IV-17 gives a ranking of expenditures from different end user departments. It shows that, of the named departments, finance had the highest number of mentions, but marketing/sales had the highest expenditure (18%). The right-hand column gives INPUT's breakdown of the total external services expenditures (including turnkey systems) incurred in 1980 through end users.

7. USER SATISFACTION

- Questions were posed to DP management on:

  - Their satisfaction with external services used.

  - Growth rates expected between 1980 and 1982.

EXHIBIT IV-17

OUTSIDE COMPUTER SERVICES AND SOFTWARE: 1980 EXPENDITURES, INCLUDING TURNKEY SYSTEMS

DEPARTMENT	NUMBER OF MENTIONS	PERCENT OF ALL OUTSIDE PURCHASES	PERCENT OF ALL RESPON-DENTS	AVERAGE PERCENT SPENT	END USER MARKET (Fr MILLION)
OPERATIONS/ MANUFACTURING	2	9%	2%	13%	Fr 607
RESEARCH AND DEVELOPMENT ENGINEERING	4	18	3	12	560
CORPORATE	4	18	3	14	654
MARKETING/SALES	3	14	3	18	841
PERSONNEL	5	23	4	6	280
FINANCE	6	27	5	7	327
OTHER	8	36	7	30	1,401
TOTAL	32	145%	27%	100%	Fr4,670

- Satisfaction mentions were weighted by a points system (3 for high satisfaction, 1 for medium, -1 for low) to establish a comparative satisfaction rating. Exhibit IV-18 illustrates this analysis.

- The best ratings, in order, were:

  - Hardware maintenance.
  - Systems software.
  - RCS.
  - Applications software.

- Worst ratings were given to:

  - Tailored software.
  - Turnkey systems.
  - Facilities management (FM).

- The analysis of the growth rates is shown in Exhibit IV-19. Together with the growth rates given in the budget category replies, these rates have been used as the evidence from which INPUT has derived overall market growth applied in the formal forecasts in Chapter III.

- There is a lack of consistency between respondents' satisfaction with software derived from a tailored or a package source, and their predictions of growth rates for these two:

EXHIBIT IV-18

USERS' SATISFACTION WITH SERVICES

TYPE OF SERVICE	NON-USERS' MENTIONS	USERS' SATISFACTION				
		ALL MENTIONS	MENTIONS			OVERALL* RATING
			HIGH	MEDIUM	LOW	
RCS - INTERACTIVE	84	24	7	17	0	1.6
RCS - REMOTE BATCH	93	14	6	6	2	1.6
BATCH SERVICES	82	25	8	15	2	1.5
FM	99	9	1	8	0	1.2
SUBTOTAL PROCESSING SERVICES	358	72	22	46	4	1.5
TURNKEY SYSTEMS	88	20	5	12	3	1.2
HARDWARE MAINTENANCE	7	101	59	36	6	2.0
SUBTOTAL HARDWARE SERVICES	95	121	64	48	9	1.9
SYSTEMS SOFTWARE	19	90	39	49	2	1.8
APPLICATIONS SOFTWARE	30	78	32	38	8	1.6
SUBTOTAL SOFTWARE PRODUCTS	49	168	71	87	10	1.7
CONSULTANCY	94	14	3	10	1	1.3
TAILORED SOFTWARE	81	27	3	20	4	0.9
EDUCATION/TRAINING	46	62	15	42	5	1.3
SUBTOTAL PROFESSIONAL SERVICES	221	103	21	72	10	1.2
TOTAL FOR ALL SERVICES	723	464	178	253	33	1.4

*WEIGHTED ACCORDING TO GRADE OF SATISFACTION

EXHIBIT IV-19

USERS' ESTIMATE OF THE
LIKELY GROWTH IN USAGE OVER 1980-1982

TYPE OF SERVICE	NUMBER OF MENTIONS FOR:				AVERAGE OF GROWTH RATES (AAGR %)
	DECLINE	NO CHANGE	GROWTH	ALL	
RCS - INTERACTIVE	4	9	15	28	10%
RCS - REMOTE BATCH	2	5	9	16	3
BATCH SERVICES	6	10	15	31	5
FM	3	7	1	11	-14
SUBTOTAL PROCESSING SERVICES	15	31	40	86	4%
TURNKEY SYSTEMS	1	11	12	24	14
HARDWARE MAINTENANCE	4	42	53	99	11
SUBTOTAL HARDWARE SERVICES	5	53	65	123	12%
SYSTEMS SOFTWARE	3	34	57	94	12
APPLICATIONS SOFTWARE	6	41	40	87	5
SUBTOTAL SOFTWARE PRODUCTS	9	75	97	181	9%
CONSULTANCY	1	16	9	26	20
TAILORED SOFTWARE	3	17	22	42	23
EDUCATION/TRAINING	3	39	25	67	8
SUBTOTAL PROFESSIONAL SERVICES	7	72	56	135	15%
TOTAL FOR ALL SERVICES	36	231	258	525	10%

	Satisfaction	Anticipated Growth 1980-1982
Tailored software	0.9	23% AAGR
Software products	1.7	9% AAGR

This will be discussed in more detail in Chapter VII.

- The different versions of the AAGRs of services purchased through DP management for the major sectors of the computer services market are:

	Budget Category 1980-1981	Associated with Satisfaction 1980/81 and 1981/82
Processing services	4%	4%
Software products	13%	9%
Professional services	10%	15%
Turnkey systems	N/A	14%

8. 'OFFICE-OF-THE-FUTURE' (BUREAUTIQUE) ISSUES

- In Exhibit IV-20, there is a summary of the findings on present and future usage of data communications, database and office automation facilities.

- The most used services are:

  - Telex.

  - Dial-up and leased line data transmission.

  - In-house viewdata (videotex).

  - Telecopier/facsimile.

- The least used are:

EXHIBIT IV-20

PRESENT AND FUTURE USAGE
OF TELECOMMUNICATIONS
AND OFFICE AUTOMATION FACILITIES

CATEGORY OF SERVICE	NUMBER OF MENTIONS OF USE				
	NOW	1980-1982	1983-1985	NO PLANS	DON'T KNOW
DIAL-UP	45	15	10	34	8
LEASED LINE	43	15	8	33	11
PACKET NETWORK	2	21	15	62	8
TELEX/TWX	87	2	1	19	3
PRESTEL	1	-	3	96	8
EURONET	2	3	7	88	8
IN-HOUSE VIEWDATA	40	21	13	28	7
OTHER DATABASE	6	3	-	67	6
ELECTRONIC MAIL	4	10	17	63	14
WORD PROCESSING	20	34	10	39	7
IMAGE PROCESSING	3	3	4	90	9
TELECOPIER/ FACSIMILE	32	10	8	51	9
CRT GRAPHICS	5	7	8	81	10

- Prestel (Teletel).

- Euronet.

- Packet network (Transpac).

- Image processing.

- In most types of services, the 'don't knows' and those with 'no plans' outweigh the definite plans to implement a facility sometime within the five-year forecast period.

- The two exceptions are:

  - In-house viewdata.

  - Word processing.

- High growth from a very small base is anticipated for:

  - Packet network (Transpac).

  - Electronic mail.

- When and whether these services are going to be integrated into the responsibilities of the DP department is illustrated in Exhibit IV-21.

  - Though high in usage, Telex is not normally under the DP function.

- In most cases, responsibility for future implementations is assumed to rest with the DP management.

EXHIBIT IV-21

RESPONSIBILITY AND PLANS FOR THE
DATA PROCESSING DEPARTMENT IN CONNECTION WITH
TELECOMMUNICATIONS AND OFFICE AUTOMATION

CATEGORY OF SERVICE	EDP RESPONSIBILITY FOR SERVICES (NUMBER OF MENTIONS)				
	NOW	1980-1982	1983-1985	NO PLANS	DON'T KNOW
DIAL-UP	37	14	10	33	8
LEASED LINE	38	14	8	31	11
PACKET NETWORK	2	21	15	55	8
TELEX/TWX	11	2	1	86	4
PRESTEL	2	0	3	83	9
EURONET	2	3	7	76	9
IN-HOUSE VIEWDATA	32	21	11	24	8
OTHER DATABASE	4	3	0	58	8
ELECTRONIC MAIL	4	10	18	49	13
WORD PROCESSING	10	31	9	38	7
IMAGE PROCESSING	3	3	4	75	8
TELECOPIER/ FACSIMILE	12	9	7	60	10
CRT GRAPHICS	4	5	5	70	11

V STRATEGIC ISSUES

V STRATEGIC ISSUES

A. THE FRENCH ECONOMY

- The French economy is weathering the storm caused by the escalation of oil prices rather better than expected.

- The international economic climate has deteriorated in the past 18 months to such an extent that the simultaneous achievement of high growth, balance of payments equilibrium, single-digit inflation and reduction in unemployment has become a dream for a major oil importer like France.

- Although a downturn is expected in the second half of 1980, there have not yet been indications that France (unlike the United Kingdom or the U.S.A.) is facing a real recession.

- An increase in GNP of 2.5% is expected for 1980, and although it is one percent lower than that of 1979, it is still a satisfactory performance in the present international context.

- The slow-down in industrial production due to manifest itself by the second half of this year will first hit the consumer industry, followed by the production of semi-finished goods. This is mainly due to weak foreign demand. Exports are going to experience only a very moderate increase, as opposed to the 20% jump in value in 1979 that gave a substantial boost to the economy.

- The new investment cycle, which started late in 1978, sharply accelerated in 1979 and is expected to be the main 'motor' of the French economy in the current year.

- The French rate of inflation is expected to increase to at least 12.5% and is forecast to head for a downturn afterwards, provided it is not hit by a new wave of oil price increases.

- Needless to say, the sharp rise in the price of imported oil over the past nine months has also played havoc with France's balance of payments, though the damage has been limited by three important factors:

  - The country's exceptionally good export performance in 1979.

  - A substantial services surplus.

  - The strength of the franc on the foreign exchange markets.

- But the present picture may change. The further increases in OPEC oil since the autumn of 1979 will send the oil bill soaring and inevitably push the balance of payments into deficit this year; and with disposable incomes growing much less quickly than the 3-4% annual rate to which French workers have become accustomed, it looks as if France is on the verge of a modest fall in living standards. These problems present the French government with a real dilemma if present policies are not relaxed.

- On the other hand, it seems that a fundamental modification of the government's restrictive policies appears to be out of the question so long as inflation and the balance of payments are not under control.

- Exhibit V-1 shows the current French economic indicators.

EXHIBIT V-1

BASIC ECONOMIC STATISTICS: FRANCE

INDICATOR		YEAR		
		1979	1980	1981
GDP	FrB[1]	Fr1,735.3	Fr1,798.2	Fr1,863.4
	$B[2]	$417.1	$432.2	$447.9
POPULATION (MILLIONS)				
- TOTAL		53.88	54.20	54.53
- TOTAL WORKING		21.11	21.21	21.32
. AGRICULTURE, ETC.		2.00	1.92	1.85
. MANUFACTURING		8.11	8.14	8.16
. SERVICE INDUSTRIES		11.00	11.15	11.31
NUMBER OF ORGANISATIONS[3]		-	895,500	867,286
NUMBER OF ESTABLISHMENTS[3]		-	2,301,000	N/A

NOTES: 1. AT MARKET PRICE
2. AT $1 = Fr4.16
3. THESE FIGURES INCLUDE THE NUMBERS ENGAGED IN AGRICULTURE, FORESTRY AND FISHING, BUT EXCLUDE BUSINESSES RUN FROM HOME PREMISES

SOURCES: INSEE AND INPUT ESTIMATES

B. TELECOMMUNICATIONS POLICY AND 'LA TELEMATIQUE'

- The French word for data processing, 'l'informatique', is instructive in what it tells one of the French approach to computing, and in what it indicates of the French market growth.

  - The emphasis is put onto the information circulating in a mechanised or automated system, rather than onto the channels or machinery that support the process.

  - The logical supremacy of the system requirements is understood and the hardware and software are viewed as constraints to their realisation.

- This non-empirical approach to the subject lifts it above the purely commercial plane, and it is not surprising to find the French in the forefront of nations which have adopted a comprehensive national policy on the whole matter; though it has taken the French some decades to arrive at such a policy, with failures such as the original Plan Calcul to point to on the way.

- Since the middle of the 1970s, the convergence between data processing and telecommunications has been understood and foreseen. The French language has lent itself once more to the coining of a happy phrase to describe this conjunction - 'la telematique'. This is at the same time:

  - More elegant than a buzz-word.

  - Less academic than a technical term.

- The ability to find such appropriate phrases and to get their usage so quickly current:

  - Helps to identify a new industry and a new profession.

- Gives status to both.

- Does justice to the revolutionary nature of the stored program machine.

- The decision to upgrade the French telephone network, long overdue for modernisation, has coincided with the desire on the part of the French government to establish viable native equipment industries, independent of foreign domination. This has resulted in large-scale investment programmes in a number of areas:

  - Mainframes.

  - Minicomputers and peri-informatique.

  - Integrated circuits.

  - Office equipment.

  - CAD.

- After the relatively quiet investment period of 1975-1976, the level of investment funding from central government has now reached an estimated eight billion francs spread over the seven years, 1977-1983. This expenditure is roughly three times that of the period 1967-1975, when some 2.5 billion francs were spent - mainly within the hardware sector.

- The key to sustaining the improved French performance in European computing terms lies with the implementation of networking concepts. In this context, some initial reactions to Transpac have been less than satisfactory. INPUT notices a keen desire to proceed quickly to more sophisticated networking, and an anticipation of the DGT's more advanced plans for:

  - Teleconferencing (audiographic centres are already installed).

- Teletext (communicating word processing terminals).

- Teletel (and the Annuaire Electronique).

- Transfax.

- Telecom I satellite.

- The French PTT's budget for 1981 has been set at the level of 100 billion francs, of which 26 billion are for investments in telecommunications. This is at an increased level over 1980, in which investment amounted to 20.4 billion francs. Comparison with the sums invested by central government in one year for computer research, emphasises the sheer momentum of the French move into 'telematique'.

C. MANUFACTURERS, SSCIs AND THE MAINLINE VENDOR ROLE

- The concept of the 'mainline role' was introduced in the European Strategy Report, issued as the first product of the 1980 MAS/Europe programme. It was developed further in relation to the U.K. computer services market in the U.K. Country Report.

- Two prerequisites have come to light as essential to enable a vendor to establish itself in a leading or 'mainline' position:

- Ability to control the distribution channels to the ultimate users of the product or service being offered.

- Product line management, involving the capability to integrate product components into a viable catalogue and to produce fresh products on a life-cycle basis to maintain presence in chosen market areas.

- Computer services companies worldwide are now grappling with this requirement. Since, with the dispersal of intelligence into smaller units, the strength which hardware manufacturers have wielded through their direct sales forces appears to be weakening, the mantle of the 'mainline' player can now pass to the services vendor. Circumstances must be right, however, if it is to be worn with success.

- French computer services companies are in an improving position when they evaluate their chances of success in this role. Their circumstances in the French and in the European contexts assist this:

  - The indigenous hardware vendors have had to struggle for profitability and survival.

  - The centralisation of French commercial life on the capital city.

  - The concentration of the French services markets.

  - The leading positions held by French companies in the European vendors' league.

  - Their links with government and big banks.

- Exhibit V-2 illustrates the relationship between different types of vendor in the computer industry, and shows how they form a network of channels supplying the end user.

- Candidates who could fulfill a mainline role can be picked from the ranks of the present-day vendors:

  - Manufacturers.

  - Processing services bureaux.

  - Software companies.

- Companies that have gone a good distance toward achieving a lead in their chosen sectors are:

  - GSi, by using FM-type contracts to establish themselves in certain industries - transport, cars, wholesaling.

  - CISI, by its recent moves into on-line databases and its expertise in CAD systems.

  - Sligos, with its current accent on PME services.

  - Telesystemes, Steria and CCMC, to a lesser extent.

- Companies that have not yet formed a coherent leading role to identify them with are:

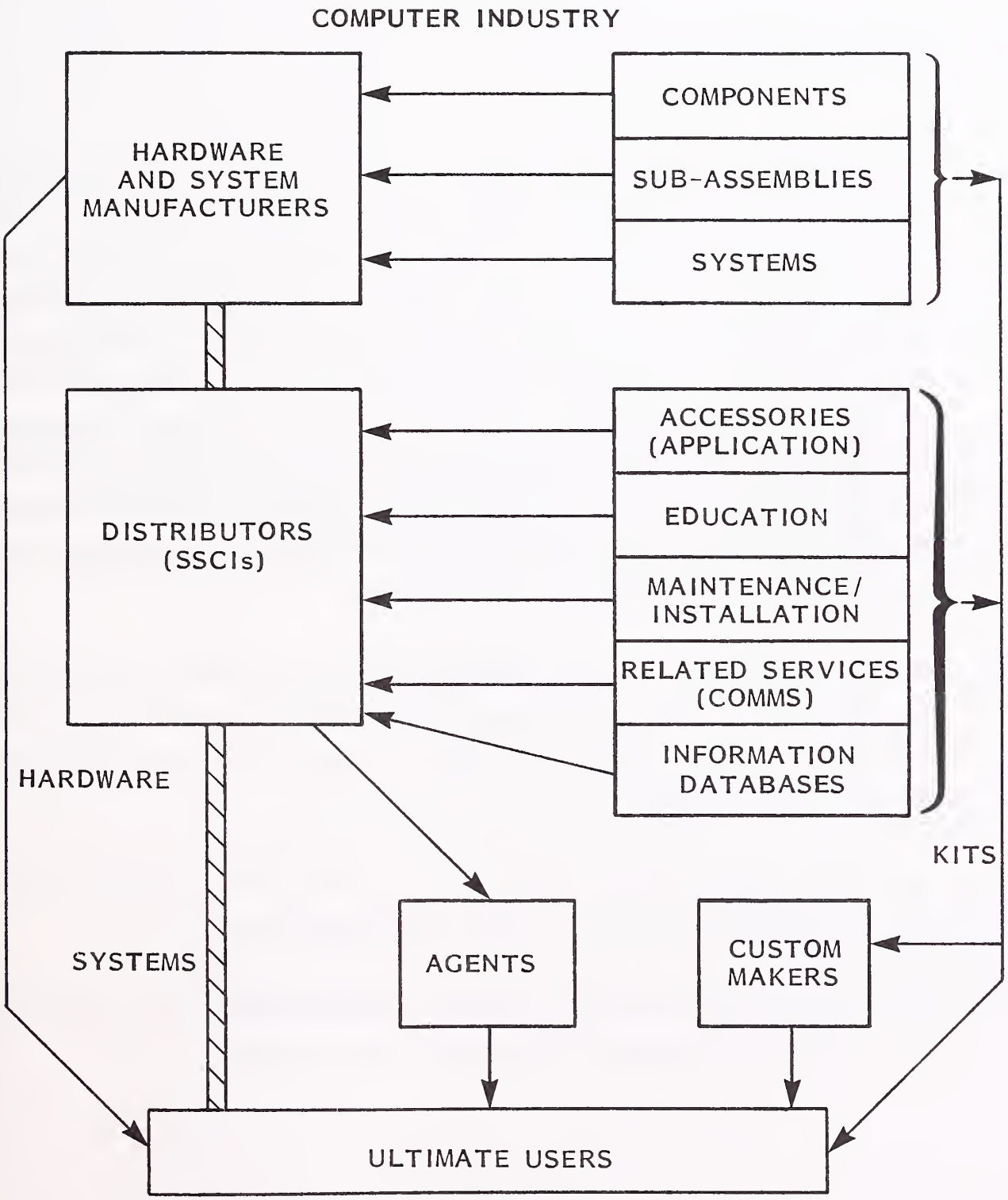
  - SEMS in the minicomputer field.

  - CAP/Gemini/Sogeti.

  - SG2.

EXHIBIT V-2

EVOLUTION OF THE MAINLINE ROLE



- SESA.

- Companies with a consulting background will find it particularly difficult to make the type of product line choices that cut across their traditional generalist approach.

D. DATABASE SERVICES

- The European database service industry has been emerging from its academic cocoon over the last two years. With the public launch of the Euronet service in February 1980, a milestone has been passed in providing an access channel to information databases all over Europe. France has been particularly concerned about the social and political consequences of over-reliance on information which originated in North America. The overwhelming preponderance of databases available in Europe up to this time has been transatlantic in origin, and this has been especially true of source databases or data banks (databases which hold the retrievable data required, as opposed to reference databases, which merely contain a pointer or reference to an external source of a document or other piece of information).

- The French database scene is presently in a state of ferment, with a number of key players all jockeying for position in an attempt to ensure that they don't lose out in the early stage of the historic changes which they can see taking place in French society:

  - The Administration, uppermost in its mind national security and the safety of democracy in a highly centralised country.

  - The PTT/DGT, acting as agent for the government in the relandscaping of the social scene, 'l'informatisation de la societe'.

- The SSCIs, who see the whole market for provision of information as rightly their own.

- The newspaper and publishing industries, who see themselves tied to a medium which has had its day.

- Exhibit V-3 shows how the last two of these are on a potential collision course, with each having equivalent functions for:

  - Selection and marketing.

  - Formatting.

  - Packaging.

  - Compilation and editing.

- The situation is having to be resolved by the evolution of a number of different methods of putting together an integrated service. The government agencies, who have an interest in fostering the early formation of a settled industry pattern, are taking views with differing emphases.

  - MIDIST favour the establishment of a strong editorial database creator function, as is certainly necessary for scientific and technical data.

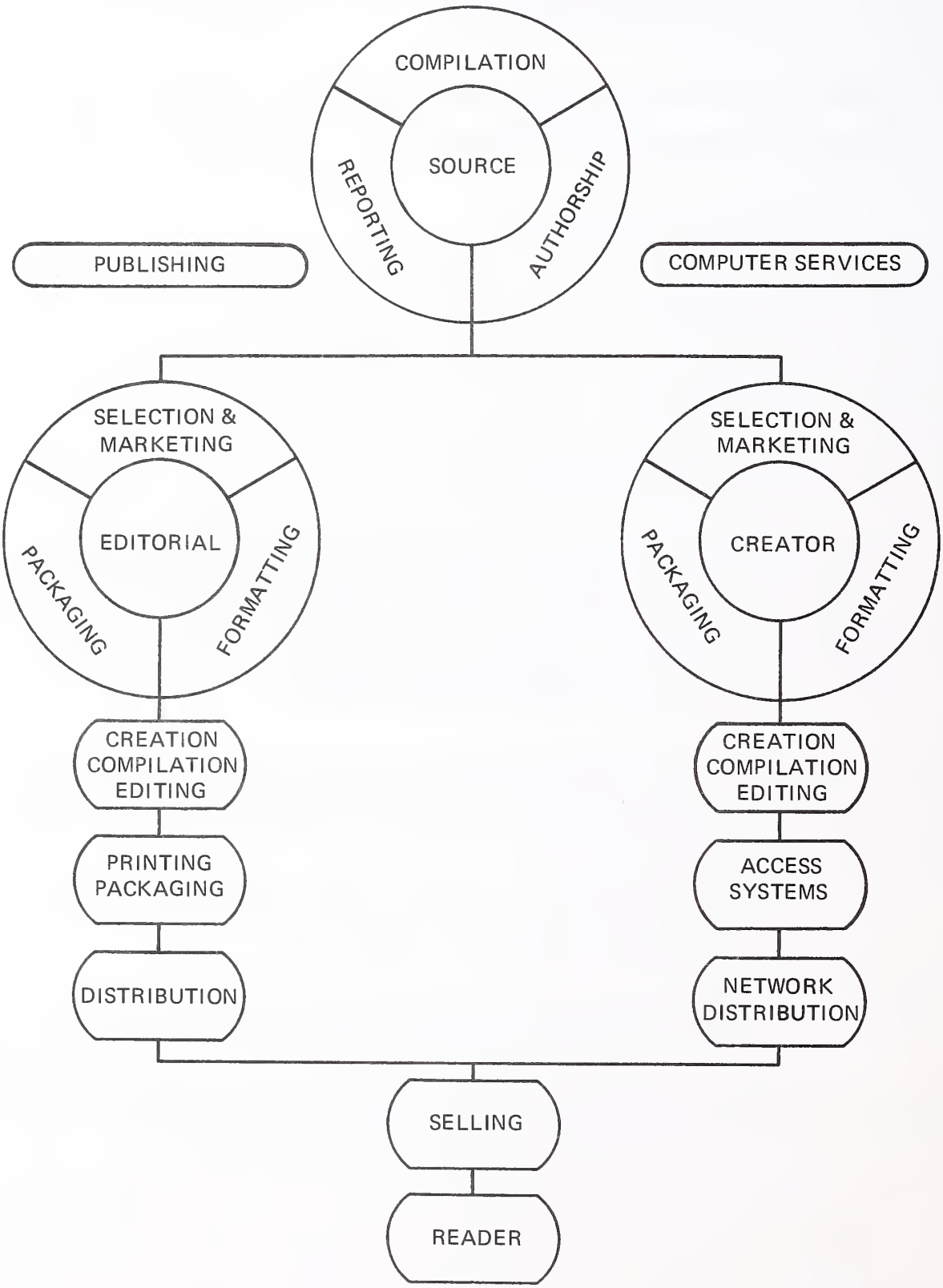
  - DIELI are not keen on exclusivity deals between creator and serveur; they favour joint-venture and consortia deals.

  - DGT, as the mover with the most funds to invest, is pushing the market as fast as it can go. In particular, DGT needs to fuel the demand for consumer videotex in order to 'crash the sound barrier' of public inertia.

EXHIBIT V-3

THE DISTRIBUTION OF INFORMATION:

PUBLISHER VERSUS COMPUTER SERVICES



To this end, the automation of all information away from the paper medium can do nothing but good.

- Further detail on the current intense activity in the embryonic French database market (revenues were approximately 60 million francs in 1979, including database enquiry and related revenues from all types of delivery mode, but are expected to reach to 1 billion francs by 1983) can be obtained from INPUT's multiclient study, 'International Market Opportunities for On-Line Database Services', which is underway at this time.

E. OFFICE AUTOMATION

- The advent of office automation in France has been somewhat overshadowed by the whole clamour which has arisen over 'la telematique'.

- Since so many of the benefits of installing more intelligent office products can only be reaped in conjunction with good business communications facilities, it is not surprising that the one improvement should be to the rear of the other.

- The concept of 'la telematique' embraces many of the functions of the future office, and consequently DGT policy includes certain of these areas:

  - Electronic mail.

  - Telecopier/facsimile.

  - Teleconferencing.

  - Communicating word processors.

- The strong monopoly attitude of the DGT will deter smaller private networks from developing to a great extent. The incentive will be there to wait for the

provision of a public facility before trying to go it alone. Larger concerns, on the other hand, such as the banks, will find themselves being actively encouraged by DGT to develop sophisticated networks in order to add to the sum total of experience and expertise available in the country.

- Electronic mail - in the form of a new cheap teletex terminal (costing Fr. 10,000) - will be promoted to groups of users such as doctors and lawyers by about 1983. Equipment is being produced by Thomson, SAGEM and Matra.

- The CGE Group has set itself the task of being number one in Europe on the office automation side. Its largest telecommunications company, CIT-Alcatel, has this year purchased the International Machines Division of the U.K.'s Roneo Vickers Office Equipment Group. The business acquired included:

  - Offset litho printing.

  - Mailroom equipment.

  - Sales and distribution outlets in Europe and worldwide.

- GSi, as a member of the CGE group, could experience some minor involvement in supporting its parent in moves into the future office market.

- Other companies that are likely to make an impact in this market are:

  - Philips.

  - SESA.

  - CAP.

  - Sema Informatique.

F. OVERSEAS SUBSIDIARIES AND EXPORT BUSINESS

- Revenues gathered from overseas markets can be classified into two groups:
  - Consolidated revenues from overseas subsidiaries or affiliates.
  - Export revenues for work performed in France for overseas customers.
- The aggregate of both types of revenue has been increasing steadily in recent years. Since 1976, DIELI estimates that the percentage of total revenues which it represents has risen from 16% to a figure of 21% in 1979.
- Exhibit V-4 shows the breakdown of the revenues between:
  - The major country blocs.
  - The two types of revenue source.
- Continuing acquisition activity overseas has meant an increase in the percentage earned through 'filiales'. This currently stands at 63% of the whole.
- Europe contributes 67% of French overseas revenue; Japan less than 1%. North America and the rest of world contribute 16% and 17% respectively.
- Japanese growth from a small base does not indicate a trend.
- Growth from the rest of the world is gathered in:
  - Central and South America.
  - Africa.
  - The Middle East.

EXHIBIT V-4

FRANCE'S INTERNATIONAL MARKETS FOR COMPUTER SERVICES

COUNTRY OR BLOC	GROWTH RATE 1978 1979	EXPORT REVENUES 1979			FORECAST GROWTH RATE 1979-1980
		Fr MILLION	$* MILLION	PERCENT	
EUROPE	27%	958	222	67%	+32%
U.S.A. AND CANADA	22	223	52	16	16
JAPAN	40	3	<1	<1	56
OTHER	48	239	55	17	53
SUBSIDIARIES OVERSEAS	36	897	208	63	35
EXPORT	20	526	122	37	29
TOTAL	29%	Fr1,423	$330	100%	33%

SOURCE: MAS/EUROPE DATABASE AND INPUT ESTIMATES

*$1 = Fr4.31

- Eastern Europe.

- France's relations with developing countries include plans to assist, in particular, ex-colonial territories to get to grips with data processing.

- The growth rate of the revenue earned in the U.S.A. is slowing up in 1980. However, these revenues can be easily influenced by the winning of large contracts; but while this does not indicate a trend, INPUT does expect French companies to meet stiffer opposition in North America than elsewhere.

VI PROCESSING SERVICES

VI PROCESSING SERVICES

A. INTRODUCTION

- The processing services sector of the French computer services industry is currently the largest sector within the computer services field and is forecast to maintain this lead for the next five years.

- The major French processing services vendors tend to specialise in processing services. The six which rank in the top ten earn 76% of their revenues in France from processing.

- Although the major processing vendors are already well established, a most important stage of the development of this sector will take place during the next five years. During this time, public services such as Teletel and other videotex and database services will be developed and marketed to an extent and at a pace which will put the processing services solution into a permanent niche within the industry.

- The years 1983-1984 will be the watershed of the development of an information society in Europe - led by France and the U.K.

- The economics of Electronic Information Services will, in these years, become generally accepted.

- Vendors who reinforce their position within the sector in this critical time will emerge as the market leaders in the second half of the eighties. The environment, as it will be at that time, is described in more detail in a companion INPUT report, 'Strategies for the Computer Services Industry in Western Europe, 1980-1989'.

B. MARKET DEVELOPMENT (1979-1984)

1. OVERVIEW

- Processing services achieved a market of Fr 3,136 million in 1979. This measure of size is taken in terms of end user expenditures made within the calendar year.

- The sector is forecast to grow at an average annual rate of 21%, to reach a 1984 total of Fr 8,168 million.

- The breakdown of the sector by mode of service is shown in Exhibit VI-1. During 1979, the split between modes was:

  - Remote computing services (RCS), 28%.

  - Facilities management (FM), 12%.

  - Batch services, 60%.

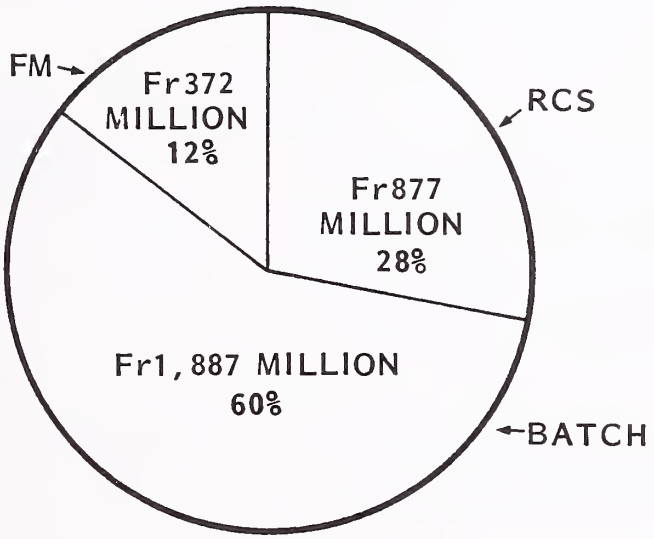
- By 1984, this breakdown will have become:

  - RCS, 42%.

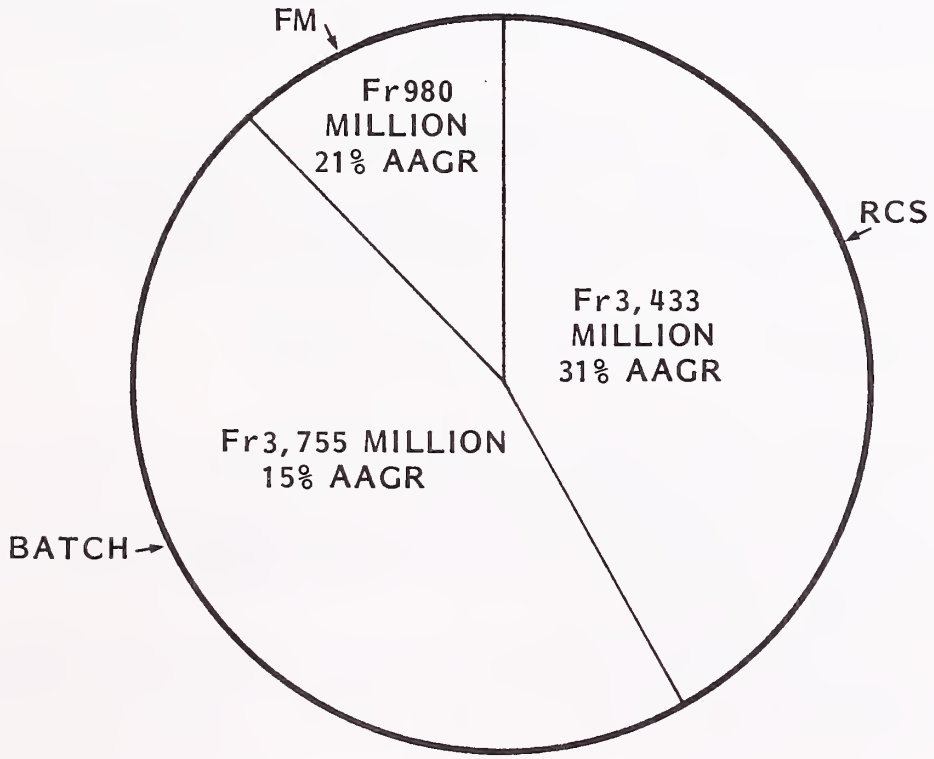
  - FM, 12%.

EXHIBIT VI-1

PROCESSING SERVICES MARKETS, BY MODE OF SERVICE



1979 - Fr3.1 BILLION



1984 - Fr8.2 BILLION
21% AAGR

- Batch, 46%.

- Exhibit VI-2 gives the breakdown by type of service, and the table below also shows changes from 1979 to 1984:

	1979	1984
General business	21%	25%
Scientific and engineering	15	14
Industry specialty	40	45
Utility	24	16
	100%	100%

2. GROWTH IN 1979-1980

- The growth in processing services between the last two years for which published financial returns exist indicates an increase from 1978 to 1979 of 24% overall. This rate of growth has not been matched in 1980 when, due to the general consolidation of the market, only 23% was achieved.

- Exhibit VI-3 summarises the manner in which the sector has grown between 1978 and 1980. In addition, it shows a reconciliation between the 1978 figures published in the 1979 Annual Report and those resulting from 1980 research.

  - FM has been separated from batch services.

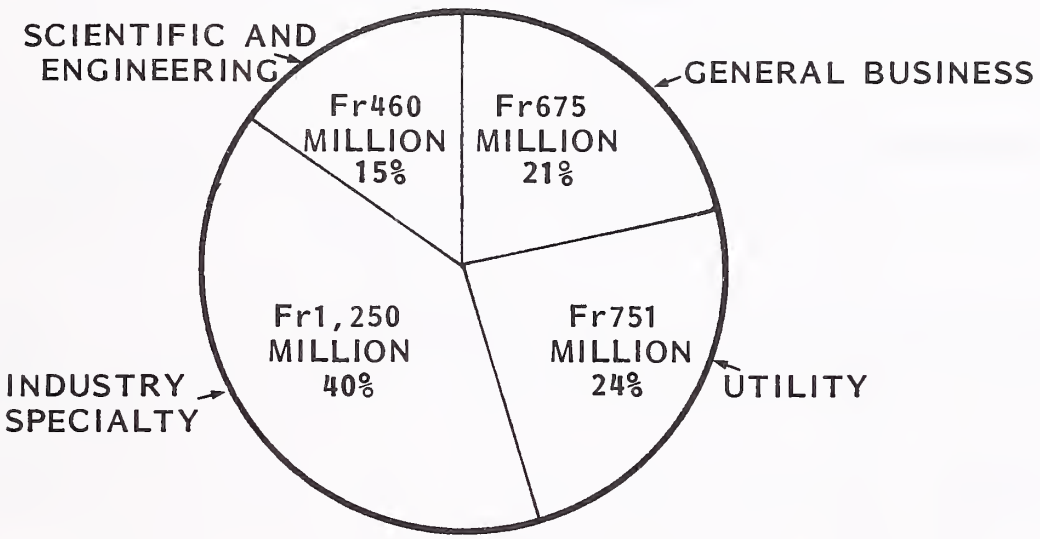
  - RCS and batch revenues have been decreased in favour of turnkey systems and professional services, as a result of a more accurate assessment of revenue breakdown in processing services vendors.

  - Turnkey is shown as a separate category outside the overall market. (See Exhibit III-3.)

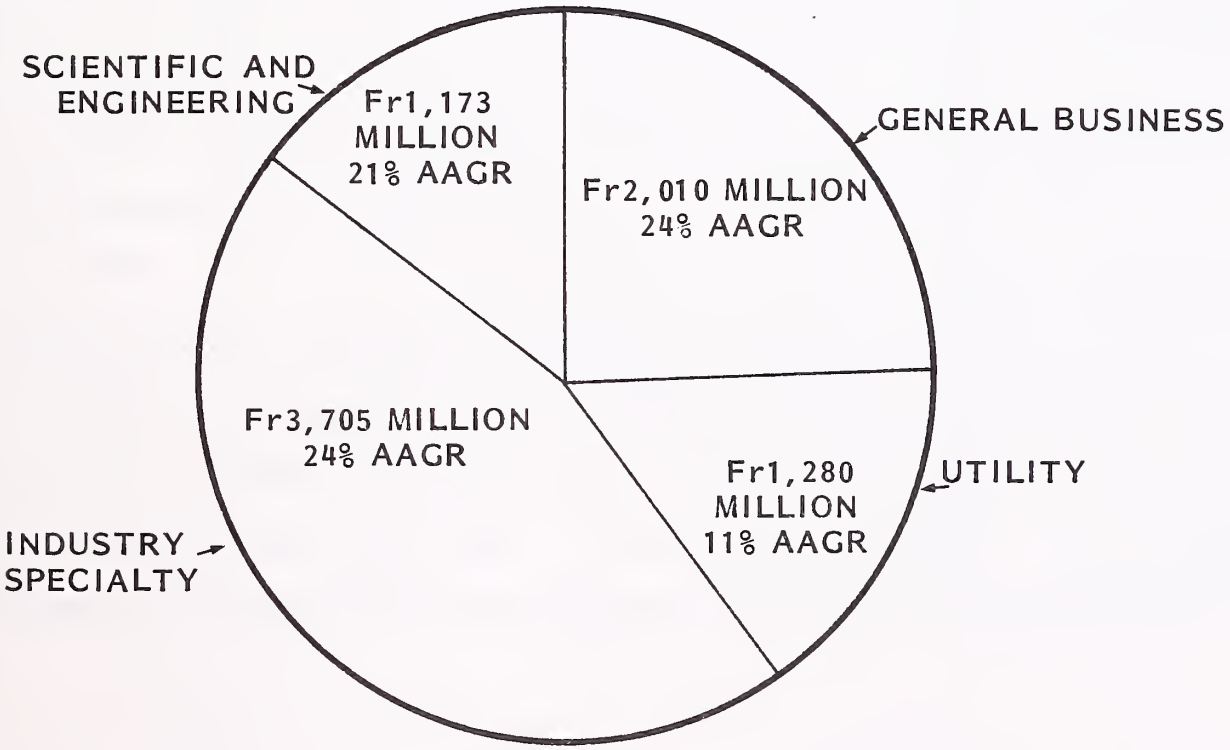
- Growth rates in 1980 have increased in all subsectors except facilities management:

EXHIBIT VI-2

PROCESSING SERVICES MARKETS, BY TYPE OF SERVICE



1979 - Fr3,136 MILLION



1984 - Fr8,168 MILLION

EXHIBIT VI-3

THE FRENCH PROCESSING SERVICES MARKET,
BY MODE OF SERVICE, 1978-1980

SUBSECTOR AND MODE OF SERVICE	REVENUE 1978 (Fr MILLION)		REVISED GROWTH RATE 1978-1979 (PERCENT)	REVENUES (Fr MILLION)		GROWTH RATE 1979-1980 (PERCENT)
	AS REPORTED	REVISED		1979	1980	
REMOTE COMPUTING (RCS)	Fr1,327	Fr 670	31%	Fr 877	Fr1,158	32%
- INTERACTIVE	524	202	22	246	301	22
- REMOTE BATCH	803	372	30	484	620	28
- DATABASE ENQUIRY	NA	16	150	40	96	140
- USER SITE HARDWARE SERVICES (USHS)	NA	80	34	107	141	32
FACILITIES MANAGEMENT (FM)	57	266	40	372	439	18
BATCH SERVICES	2,934	1,600	18	1,887	2,246	19
TOTAL PROCESSING	Fr4,318	Fr2,536	24%	Fr3,136	Fr3,843	23%

- RCS up from 31% to 32%.

- Batch up from 18% to 19%.

- FM down from 40% to 18%, to resume a more normal growth after an explosive increase in long-term contracts between 1977 and 1978.

- Growth rates reported by some leading companies in 1980 indicate that they are lower than the national average. Market share is being lost in these cases due to faster growth coming from companies outside the top ten but in the top fifty.

- In remote computing, two new subsectors are now being studied and measured:

  - Database enquiry.

  - User site hardware services (USHS).

- Both of these are growing very fast (particularly database enquiry services, at over 100%). By 1983, France is expected to have overtaken the U.K. database market, and to stand above $110 million in revenues against the U.K.'s $100 million. Total expenditures generated by database enquiries for RCS companies are typically 2.5 times those of the enquiry on its own. On-line database-related revenues in France will exceed $250 million by 1983.

- Facilities management received a boost in 1979 due to certain long-term contracts being negotiated. This level of expansion, which involved reallocation of considerable amounts of revenue to the FM category, has not continued in 1980.

- Batch services have continued to expand (at 19%) during 1980. This sector's enormous momentum is sustained by a handful of large companies, notably CCMC. Though these services are being accessed more often through terminals with a remote data entry capability, INPUT classifies them in the batch category because the service being bought is essentially a batch one.

3. FORECASTS FOR 1980-1984

- Exhibit VI-4 gives the detailed long-range projections for each mode of service. These forecasts are made in current French francs and include the variable factor shown in Exhibit III-2, which represents the predicted price increases for processing services resulting from inflationary pressures.

- A major feature of the chart is that RCS will still not overtake batch as the largest revenue sector by 1984, in spite of its having a growth rate twice the size of the other's, 31% against 15%. It will, however, have reached 91% of the size of batch.

- The main contributors to the RCS performance are:

  - Remote batch.

  - Database enquiry.

- The breakdown between the submodes of RCS delivery will develop as follows:

	1979	1984
Interactive	28%	19%
Remote batch	55	43
Database enquiry	5	21
USHS	12	17
	100%	100%

EXHIBIT VI-4

THE FRENCH PROCESSING SERVICES
MARKET FORECASTS, BY MODE OF DELIVERY - 1979-1984

MODE OR SUBMODE	MARKET FORECAST IN Fr MILLIONS								
	1978	1979	GROWTH 1978-79 PERCENT	1980	1981	1982	1983	1984	AAGR 1979-84 PERCENT
INTERACTIVE	Fr 202	Fr 246	22%	Fr 301	Fr 370	Fr 438	Fr 534	Fr 660	22%
REMOTE BATCH	372	484	30	620	748	887	1,106	1,465	25
DATABASE	16	40	150	96	224	384	504	717	78
USHS	80	107	34	141	198	261	418	591	41
RCS TOTAL	Fr 670	Fr 877	31%	Fr1,158	Fr1,540	Fr1,970	Fr2,562	Fr3,433	31%
FM	266	372	40	439	527	643	804	980	21
BATCH	1,600	1,887	18	2,246	2,650	3,048	3,414	3,755	15
ALL PROCESSING	Fr2,536	Fr3,136	24%	Fr3,843	Fr4,717	Fr5,661	Fr6,780	Fr8,168	21%

- Remote batch will remain predominant because of the nature of the communications facilities and:

  - The necessity to achieve success with the Transpac network in the eyes of the Administration.

  - The dominance of IBM equipment in the large processing centres.

- Database enquiry has the highest growth rate because of the very high interest being shown by all interested parties and because of the large investment they are making:

  - DGT.

  - Banks.

  - Industry.

  - SSCIs.

- USHS has the second-highest growth rate and will be the upgrade mechanism for many current batch customers.

- In Exhibit VI-5, processing services are forecast by type of service provided. The general trend is to move away from utility services by 7% between 1979 and 1984, and toward general business and industry specialty by 2% and 5% respectively. Scientific and engineering remains steady at a 14% market share.

- This trend varies from one mode of delivery to another. The pattern is reflected more accurately in batch than in RCS (see Exhibit III-5 for forecast details), with FM having a highly industry-specialised profile. Within RCS, each submode has its own change in the pattern of business:

EXHIBIT VI-5

THE FRENCH PROCESSING SERVICES MARKET
FORECASTS, BY TYPE OF SERVICE - 1979-1984

TYPE OF SERVICE	MARKET FORECASTS IN Fr MILLIONS								
	1978	1979	GROWTH 1978-1979 (PERCENT)	1980	1981	1982	1983	1984	AAGR PERCENT
GENERAL BUSINESS	Fr 521	Fr 675	30%	Fr 869	Fr1,125	Fr1,363	Fr1,707	Fr2,010	24%
SCIENTIFIC AND ENGINEERING	369	460	25	593	738	870	992	1,173	21
INDUSTRY SPECIALTY	989	1,250	26	1,574	1,920	2,364	2,909	3,705	24
UTILITY	657	751	14	807	934	1,064	1,172	1,280	11
ALL TYPES	Fr2,536	Fr3,136	24%	Fr3,843	Fr4,717	Fr5,661	Fr6,780	Fr8,168	21%

- Interactive will increase most in the general business sector with the increasing use of products like GSi's OUTLOOK for business planning, especially in association with the pull-through revenues generated by database enquiry.

- Remote batch will be typical of the whole.

- Database enquiry will experience greatest growth in the use of general business and utility databases at the expense of the scientific and engineering share:

  . Utility database type is reserved for credit and consumer databases as well as for miscellaneous revenues associated with management and maintenance of the data by the providers, or for advertising revenues paid by them, to the RCS vendor.

- USHS will grow initially in general business, and scientific and engineering (e.g., CAD) systems, but these will be overtaken in share during the 1983-1984 period by industry specialty services, as intense competition forces vendors to adopt vertical marketing strategies.

C. USERS' ATTITUDES AND THE DISPERSAL OF INTELLIGENCE

1. INTRODUCTION

- This section describes the users' attitudes toward processing services, as gleaned from:

  - Comments recorded from part 1 of question 31 in the EDP User Questionnaire.

- Other comments relating to planning and control of minicomputers, microcomputers and terminals.

- Other relevant analyses from all of the questionnaires.

2. ATTITUDES TOWARD PROCESSING SERVICES

- Satisfaction with processing services, as shown in Exhibit IV-18, is higher than with professional services, but lower than for hardware services or software products.

- RCS (both interactive and remote batch) had highest ratings among processing services, followed by batch services.

- Of the 65 respondents who commented on vendor services from their own experience (present or past), 36 incorporated some words rating their satisfaction. Fifteen had an adverse comment, while 14 were neutral and often not informative.

- IBM was the only name appearing in a comment. Of the three mentions, only one was complimentary.

- Six respondents mentioned the expense of the service bureau approach.

- Forty-five users (out of a subsample of approximately 50 actually using a processing service at the moment) quoted one or more preferred suppliers.

  - Hardware manufacturers rated 52 mentions.

  - Independent suppliers rated 28.

- Ratings were, for the hardware suppliers:

  - IBM, 33 mentions.

- CII-HB, ten mentions.

- Burroughs, Hewlett-Packard, Olivetti, two mentions each.

- Data General, ICL, SEMS, one mention each.

- Independents mentioned were:

  - CAP/Gemini/Sogeti, eight mentions.

  - CCMC, CISI, SG2, one mention each.

  - No other company in the top twenty was mentioned. Those that were received only one mention each.

- The indication is that processing services bought by DP managers go more often to their hardware manufacturer.

D. VENDOR ISSUES AND THE IMPACTS ON PROFITABILITY

1. INTRODUCTION

- Nine of the companies interviewed completed the processing services module of the vendor issue questionnaire, which is included in Appendix C.

2. GROWTH IN REAL NEW BUSINESS

- Only two companies reported a slow-down in the rate of growth of real new business. One of these specialised in facilities management with strong timesharing and database services; the other specialised exclusively in time-sharing.

- One large RCS vendor reported new business up by 15%, particularly on new interactive services. Another large vendor was getting tens of new customers every week.

- In two years' time, all vendors save one thought that they would be getting growth in new business. The one exception just didn't know what the situation would be.

- INPUT concludes that, apart from some immediate recessionary pressures which have increased in recent weeks, processing services will in the medium-term (two to three years) be able to maintain real positive growth in new business, though that business may come from different quarters.

3. IN-HOUSE DDP

- Seven respondents indicated an increase in the number of large accounts lost due to the impact of DDP. The average number of accounts lost is 5%. The destinations of these lost accounts are estimated as follows:

Standalone minicomputer equipment	52%
In-house networks	9
Batch processing on in-house mainframe	39
	100%

- Minicomputers came in for most comment on this topic.

4. NEW TYPES OF USER

- Respondents were fairly evenly split between those who found that new types of user preferred a minicomputer or microcomputer solution (5) and those who didn't (4). The split of the new account prospect losses across the five who did, was:

Other processing bureaux, claimed	15%
In-house minicomputer or microcomputer equipment	67
In-house mainframe	18
	100%

- Two of those who did not encounter this impact, had comments:

  - 'We have our own mini capability and expect to sell scores of HP 1000 series systems. We can offer the user any type of solution he wants.'

  - 'We are not interested in small users. We are sticking to large companies.'

5. USHS

- When asked about the usefulness of USHS as a means of ensuring growth, respondents indicated that they favoured this in the medium and longer term, but were less sure of its immediate impact.

- Exhibit VI-6 analyses the ratings given and shows that the picture is one of steadily increasing importance.

- Some comments on this topic were:

  - 'The development of communications will reduce the need for USHS.'

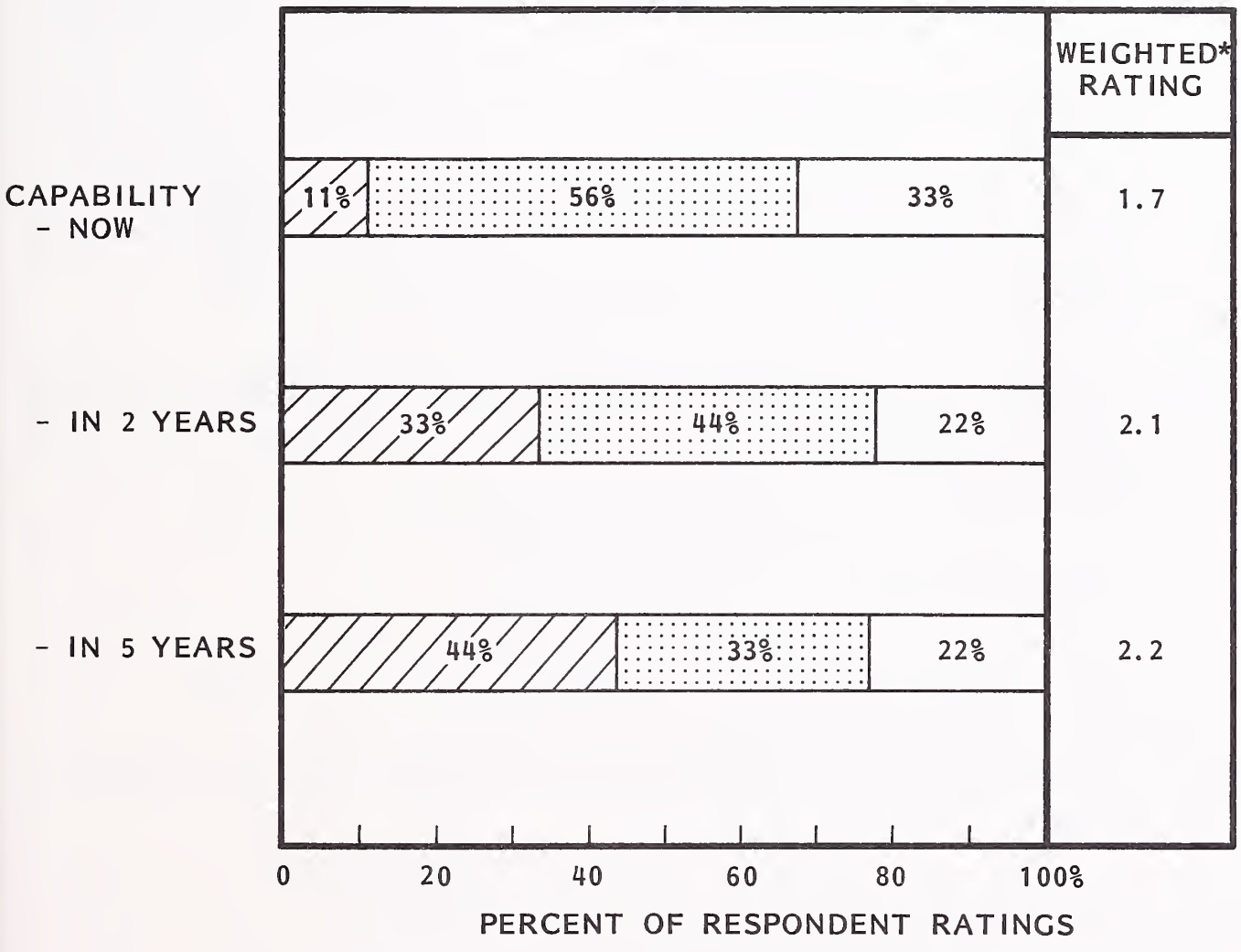
  - 'This is a defensive solution which is sometimes inevitable.'

  - 'It is one of our important plans.'

  - 'We don't use USHS as a means of growth. We could grow at 30% per annum on old-fashioned batch.'

EXHIBIT VI-6

RESPONDENTS' RATINGS OF THE CAPABILITY
OF USHS AS A MARKETING TOOL



*OUT OF A MAXIMUM SCORE OF 3.0

HIGH RATING

MEDIUM

LOW

6. FACILITIES MANAGEMENT

- Vendors in France did not show any great enthusiasm for the FM concept. Answers were split 5:4 in all three timeframes.

- Comments included:

  - 'There is no real demand for such contracts.'

  - 'GSi took the market; we could not really get in now in any big way.'

7. THIRD-PARTY DISTRIBUTION

- In only one case did a respondent report that business is more costly to obtain than previously, but he could not quote a percentage increase in unit sales cost.

- At present only one respondent is retailing through a third party. In two years, however, four companies expect to be doing so to an average level of 5% of annual turnover.

8. PRICING ELEMENTS

- Five companies used all the pricing elements listed in the question.

- Two companies with industry-specific orientation used only transaction pricing.

- Two companies used only some of the elements listed.

- INPUT concludes that the lack of industry-specific marketing, except in certain major vendors, means that most suppliers use traditional pricing methods for their cross-industry product sales.

- Fixed-capacity pricing was used by:

  - A large network service vendor, but only to a 3% level.

  - A medium-sized cross-industry vendor that aims to fill 70% of its capacity in this way.

- Methods for setting prices were used by respondents as follows:

  - Historical cost plus (one vendor).

  - Market value (three vendors).

  - Combination of both (five vendors).

  This set of responses indicates how competitive the French market now is.

9. SOFTWARE PROCUREMENT/DEVELOPMENT

- Exhibit VI-7 illustrates the amounts of software bought or developed by vendors from one or other of three sources:

  - Using a hardware manufacturers'.

  - Buying-in software from an outside source (including software used on a royalty basis to a third party).

  - Building software with an in-house team.

- The first option is the largest in two out of the three types of software. Only in applications software is it beaten into third place by the other two. Weighting the options in the ratio of 27:15:58, an overall figure is obtained showing that less than half of the hardware execution time is spent in in-house developed code, and more than half in licensed or procured code.

EXHIBIT VI-7

COMPARISON OF SOFTWARE PROCUREMENT SOURCES

TYPE OF SOFTWARE	PERCENT USAGE OF METHOD			TIME OCCUPANCY FACTOR
	USE OF MANU-FACTURER'S	BUY-IN OUTSIDE	BUILD OWN	
SYSTEMS	58%	15%	27%	27%
UTILITIES	39	31	30	15
APPLICATIONS	2	39	59	58
OVERALL*	23%	31%	46%	-

*CALCULATED BY WEIGHTING ACCORDING TO TIME OCCUPANCY IN EXECUTION HARDWARE.

- The question was asked as to how many accounts/sales were used as a rough guide to recovery of software costs. Only two respondents could give an answer in these terms:

  - Over a two- to three-year period of sales.

  - Over ten to twenty systems.

- For a large RCS vendor, the methods used were extremely variable.

10. PROFITABILITY

- Out of eight responses on the effect of external factors on profits, six registered some effect from one or another of the three factors named in the question.

- On the basis of a weighted rating to measure this effect, the ranking of factors was as follows:

	Score out of 24
Depreciation on equipment	10
Increase in prices matching inflation	9
Falling hardware costs	7

- One vendor mentioned that his profits had been adversely affected by a new accounting decision to reduce the period over which equipment was depreciated, from five down to three years.

- Four vendors felt that too little time was spent on medium-term planning, while only three said the same for long-term planning.

- Two commented that they had new managements who were correcting their lack of forward planning. One vendor added that the criticism had, until recently, been true, but that now the reverse was true.

E. COMPETITIVE ANALYSIS

- Exhibit VI-8 ranks the leading vendors by market share of all processing services in 1979.

- IBM and GEIS are the only non-French companies in this list of the top fifteen. The group accounts for 59% of all processing in the French domestic market.

- Exhibit VI-9 ranks the top companies for each of the three subsector modes of processing.

  - RCS is headed by CISI, seven percentage points clear of GSi.

  - Facilities management is led by GSi with 57% of that submarket; Sligos is the only other vendor with a double figure market share.

  - CCMC heads the less consolidated batch services sector with a 12% share, followed by GSi, IBM and Sligos.

- IBM ranks third in both RCS and batch.

- SG2, though the fourth-largest vendor overall, has its highest processing services ranking in RCS, where it takes fourth place with a 13% share.

- Batch services still have considerable growth potential from acquisition. By contrast, the top 15 companies in RCS take over 95% of all domestic RCS revenues.

EXHIBIT VI-8

TOP SUPPLIER RANKING AND
SECTOR MARKET SHARE - FRENCH PROCESSING SERVICES, 1979

RANK	SUPPLIER NAME	MARKET SHARE (PERCENT OF Fr3,136 M)
1	GSI	13.8%
2	CCMC	8.5
3	CISI	7.4
4	IBM	6.4
5	SLIGOS	6.1
6	SG2	5.1
7	TELESYSTEMES	2.6
8	GFI	2.3
9	GEIS	2.1
10	CAP/GEMINI/SOGETI	1.9
11	G-CAM	1.5
12	CEGI-TYMSHARE	1.2
13	SOPRA GROUP	0.7
14	SEMA INFORMATIQUE	0.5
15	TSIL (THOMSON-CSF)	0.5

EXHIBIT VI-9

TOP SUPPLIER RANKING AND SECTOR MARKET SHARES,
BY SERVICE MODE: PROCESSING SERVICES, FRANCE - 1979

TYPE / RANK	RCS (Fr877 MILLION)		FM (Fr372 MILLION)		BATCH (Fr1,887 MILLION)	
	SUPPLIER NAME	% SHARE	SUPPLIER NAME	% SHARE	SUPPLIER NAME	% SHARE
1	CISI	21.9%	GSI	57.3%	CCMC	12.2%
2	GSI	14.5	SLIGOS	16.7	GSI	4.9
3	IBM	13.7	CISI	6.7	IBM	4.2
4	SG2	13.3	TELESYSTEMES	6.5	SLIGOS	3.6
5	GEIS	7.5	G-CAM	6.2	CAP/GEMINI/ SOGETI	3.1
6	SLIGOS	5.7	CCMC	3.5	SG2	2.3
7	CEGI-TYMSHARE	4.3	GFI	1.9	GFI	2.1
8	TELESYSTEMES	3.5	SEMA	1.9	TELESYSTEMES	1.4
9	GFI	3.0	SOPRA	0.5	CISI	0.8
10	CCMC	2.4			SOFRAGEM-ORDISOR	0.7
11	SOPRA	1.9			G-CAM	0.6
12	G-CAM	1.5			ORDINA	0.5
13	SEMA	1.1			TSIL	0.5
14					SOPRA	0.2

VII SOFTWARE PRODUCTS

VII SOFTWARE PRODUCTS

A. INTRODUCTION

- The French software products market is reckoned to be the largest in Europe. However, many of the sales made by software products vendors are made to or through processing services or turnkey systems vendors. For this reason they may turn up at the end user disguised as one of the other types of service.

- This phenomenon is analogous to the sale of OEM hardware to a systems or software house. In that case, the hardware revenue is lost from the end user equipment market, to reappear in some other form as part of the computer services market. Similarly, a software product sold to another party in the computer services industry may:

  - Earn royalties on a bureau machine.

  - Be used as a development tool within a software company.

  - Become part of a software system implemented on the site of a third party's client.

- INPUT's measurement of the software market excludes these types of situations and the revenues they earn for the original product's vendor within the industry's infrastructure. The MAS/Europe programme is concerned to meas-

ure only expenditures at the end user interface. However, because of their size in France, some measurement and mention of them is included in this chapter for the sake of completeness.

B. MARKET DEVELOPMENT (1979-1984)

1. GROWTH IN 1979-1980

- Software products achieved a market of Fr 754 million in 1979, which was up 35% over 1978.

- Growth at this rate is expected to continue, with an increased rate being recorded in 1980, forecast to gross Fr 1,025 million, up 36% on 1979.

- Over the next five-year period, the sector is predicted to grow at an average annual rate of 37%, to reach Fr 3,587 million by 1984, as shown in Exhibit VII-1. These measurements include:

  - Both systems and applications products.

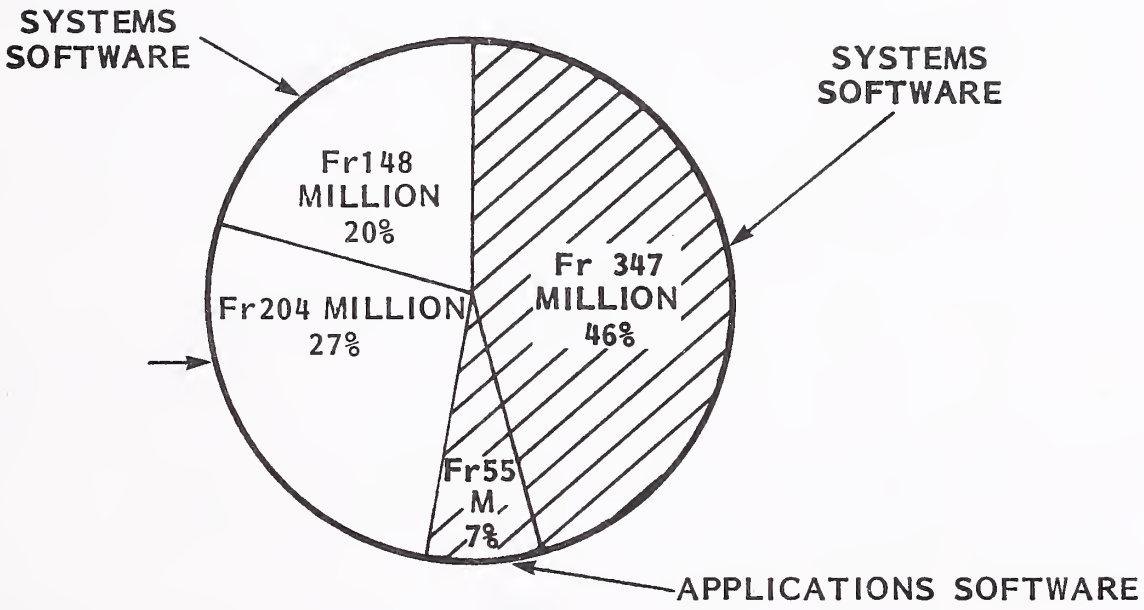
  - Products from hardware manufacturers and from independent suppliers.

- Exhibit VII-1 also shows how the growth rates affect the breakdown between system and applications software, and between hardware vendors and independents:

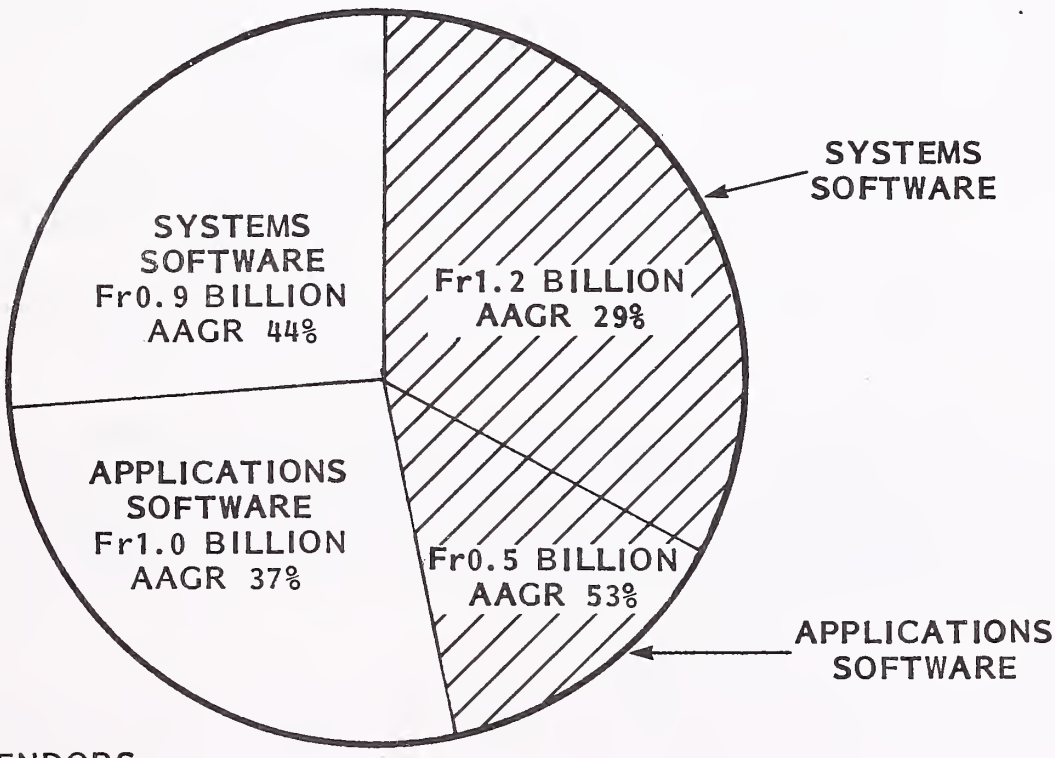
	1979	1984
Systems software	66%	60%
Applications products	34	40
	100%	100%

EXHIBIT VII-1

SOFTWARE PRODUCTS MARKETS



1979 - Fr 0.8 BILLION



= HARDWARE VENDORS

= INDEPENDENTS

1984 - Fr3.6 BILLION
AAGR 37%

SOURCE: INPUT FORECAST

Hardware suppliers	53	47
Independents	47	53
	100%	100%

- The trends are in favour of applications software to the extent of a 1% per annum change, and in favour of the independents to the extent of taking an additional 6% of market share from the hardware manufacturers.

- IBM gave a strong impetus to the marketplace in 1979 with the announcement of the 4300 processors and:

  - Further unbundling of systems software products, so that the licensed portion of the SCP's was moved closer to the hardware interface.

  - Rebundling of systems software into System IPO/Es.

  - Notice of intent to charge for on-site software maintenance from January 1, 1980.

- The impact of these attendant software changes has been summarised succinctly in INPUT's Vendor Watch reports for 1979.

- The traditional reluctance of DP management to consider 'not-developed-here' products has been further eroded in 1980 under the continual pressure from end users for more and better systems, and under the perennial inability of the in-house solution to come up with satisfactory time-scales.

- Software products still largely consist of systems software (over 65% by value and more in number of installed units) and though this bias is being steadily modified, the trend is only very slowly in favour of applications. The reasons for this are not hard to find:

  - Systems software can be more readily defined and therefore developed and marketed with less risk than applications software.

- Hand in hand with the trend for more end user programming goes the need for newer and more usable software implementation tools, such as DBMS modules, data dictionaries, table processors, text editors, etc.

- Standardisation of requirements for application products is still difficult enough to make the market for any product easily identifiable and targettable, though some of the obstacles to this (e.g., different accounting practices, the language barriers, etc.) are in the course of being dismantled.

  . The EEC commission hopes to rationalise European accounting practices by 1983 or 1984.

  . Language translators and dictionary look-up routines are now more commonly some of the system modules offered for implementation and configuration of complex application packages.

2. FORECASTS FOR 1980-1984

- The detailed forecasts for the sector are shown in Exhibit VII-2, where a market of Fr 1,025 million is predicted for the current year. Growth between 1979 and 1980 has increased by 1% from that of the previous year, to reach 36%. After a pause in 1981, the rate is predicted to increase to 38% in 1982 and to 40% in 1983 before falling back to 33% in 1984.

- These overall rates have been obtained by considering the growth of the sectors and the two types of vendors.

  - Systems software from the hardware suppliers is expected to maintain its present unbundling impetus and to gain additional growth in 1983 from the next generation of equipment to be announced in the 1981-1982 timeframe.

EXHIBIT VII-2

THE FRENCH SOFTWARE PRODUCTS

MARKET FORECASTS, BY SUBSECTOR - 1979-1984

SUBSECTOR	MARKET FORECAST IN Fr MILLIONS								
	1978	1979	GROWTH 1978-1979 PERCENT	1980	1981	1982	1983	1984	AAGR 1979-1984 PERCENT
SYSTEMS SOFTWARE									
HARDWARE VENDORS	Fr258	Fr347	34%	Fr 464	Fr 611	Fr 814	Fr 988	Fr1,233	29%
INDEPENDENTS	106	148	40	210	300	435	731	931	44
SUBTOTAL	Fr364	Fr495	36%	Fr 674	Fr 911	Fr1,249	Fr1,719	Fr2,164	34%
APPLICATIONS SOFTWARE									
HARDWARE VENDORS	40	55	38	77	116	185	298	455	53
INDEPENDENTS	155	204	32	274	363	495	688	968	37
SUBTOTAL	Fr195	Fr259	34%	Fr 351	Fr 479	Fr 680	Fr 986	Fr1,423	41%
ALL PRODUCTS									
HARDWARE VENDORS	298	402	35	541	727	999	1,286	1,688	33
INDEPENDENTS	261	352	35	484	663	930	1,419	1,899	40
TOTAL	Fr559	Fr754	35%	Fr1,025	Fr1,390	Fr1,929	Fr2,705	Fr3,587	37%

- Systems software from the independents is currently growing at 40% per annum, and this rate is expected to increase steadily throughout the five-year period to reach 48% in 1984.

- Applications software will increase its overall market share in the period by 6%, exiting with 40% of the market. This will be caused by a number of factors:

  - The large SSCIs are turning to full product marketing as a means of controlling their destinies.

  - The hardware vendors, especially in the small business machine (SBC) sector, are clearly unbundling and charging more competitively.

  - Personal computers will experience fast expansion, thus diluting the amount of systems software installed.

- The trend in favour of applications software is aided by the fast growth of personal computers as this is a sector in which systems software takes only 30% of software sales.

- The trend against the manufacturers is fuelled by the increasing need to use third-party distribution channels as a means to sell the growing volume of unit sales. As micro-based personal and mini systems increase in market share, this need starts to take effect, since the sales price will not cover the traditional first-time user support and sales costs. Many manufacturers will take cover during this period by moving up market. Witness the present competition between the 4300 and the 32-bit minicomputer. This move will leave the small systems market increasingly available to the services vendors, who have the resources and finances to operate in it.

C. USERS' ATTITUDES AND THE DISPERSAL OF INTELLIGENCE

1. ATTITUDES TOWARD SYSTEMS SOFTWARE

- Ten suppliers received three or more mentions as preferred suppliers in answer to question 32 of the EDP User Questionnaire (see Appendix D). Of these:
  - Five were hardware manufacturers.
  - Two were international system product vendors.
- The ranking, by number of mentions, was:
  - Hardware vendors: 111 mentions, 79 first preference.
  - Independents: 98 mentions, 19 first preference.
- This was from a total of 98 users.
- Individual vendor ranking among hardware vendors was:
  - IBM - 54 mentions (40 for first preference).
  - CII-HB - 24 mentions (18 first preference).
  - ICL - 12 mentions (11 first preference).
  - Univac - 6 mentions.
  - Burroughs - 4 mentions.
  - Hewlett-Packard, Logabax, NCR and SEMS - two mentions each.

- DEC, CDC, CMC and SAGEM - one each.

- Of those users whose first preference is for a manufacturer's software:

  - IBM takes 51%.

  - CII-HB takes 23%.

  - ICL takes 14%.

  - The others take the remaining 12%.

2. ATTITUDES TOWARD APPLICATIONS SOFTWARE

- Though only 13 manufacturers were mentioned, 25 services vendors obtained at least one mention. The majority of these were small software companies. The names of the multinational software products vendors and their ratings were:

  - Westinghouse - 7 mentions, but only one first preference.

  - Carus - 3 mentions.

  - SPI - 2 mentions.

  - CINCOM - 1 mention.

- The national vendors with more than two mentions were:

  - Sligos - 9 mentions.

  - CAP/Gemini/Sogeti - 5 mentions.

  - Steria - 5 mentions.

- Other well-known companies mentioned were:

  - SEMA and SOPRA.

- The 99 comments given in answer to question 31 of the questionnaire revealed:

  - 57 satisfied users.

  - 19 dissatisfied.

  - 23 neutral or speaking from past, not present, experience.

- As percentages of the 117 users sampled, this gives:

Satisfied	49%
Dissatisfied	16
Non-users, etc.	35
	100%

- Ten respondents said they were happy with the software systems produced in-house.

- The most frequently mentioned reason for purchasing outside was the usefulness of packaged products in coping with standard business system requirements.

- The most frequently quoted reason for dissatisfaction was the inadequacy of maintenance and after-sales support. The next most frequently given was the inflexibility of products to match their individual needs.

- Only three people mentioned cost as an adverse factor.

- Samples of the more instructive comments, both favourable and adverse, are given in Exhibits VII-3 and VII-4 respectively.

EXHIBIT VII-3

RESPONDENTS' COMMENTS FAVOURABLE TO SOFTWARE PRODUCTS

- 'We test software before purchasing; hence we get satisfaction.'
- 'It is quite adaptable, but some effort is required.'
- 'We use products mainly for standard work, and they are not bad.'
- 'Software products on the market are good for business applications.'
- 'The results are very satisfactory if you stick to standard jobs and simple applications.'
- 'Some good products are offered by IBM.'
- 'It is practical to use packaged products; obviously you're not going to be 100% satisfied.'
- 'We go in for a lot of evaluation to get favourable results.'

EXHIBIT VII-4

RESPONDENTS' COMMENTS ADVERSE TO SOFTWARE PRODUCTS

- 'We experience great maintenance problems.'
- 'Most products are conventional in their treatment of an application. This sort is insufficient for our needs.'
- 'Maintenance is lacking and there are problems with support.'
- 'They are not adaptable and this creates maintenance problems.'
- 'Large products require constant maintenance.'
- 'We have previously used them and they were too expensive a solution.'
- 'We were not happy so we moved to a service bureau.'
- 'We've found it hard to get assistance from the original builders of the product.'
- 'The post-sales service is insufficent.'

D. VENDOR ISSUES AND THE IMPACTS ON PROFITABILITY

1 INTRODUCTION

- The visibility of the software products vendors in France is low compared to that of the other kinds of services vendors. This is not so much due to any failings on the part of these vendors to utilise the appropriate marketing tools, as to the already well-established images representing other solutions to other problems, which processing and professional services companies have already obtained, not to mention the all-pervading presence of IBM and CII-HB in the services as well as the equipment sectors.

- In addition to those vendors who specialise in software products, other types of vendors have diversified into software products for different reasons:

  - Desire to dilute the service element of their business.

  - Desire to be in the vanguard of any newly expanding sector.

  - Unbundling as a form of switching revenue from one part of a configuration to another.

- The vendors who responded fully to module 6 of the MAS/Europe Vendor Issue Questionnaire comprised:

  - Two leading comprehensive services vendors.

  - The systems house arm of a large electronics company.

2. MOST HEAVILY USED PRODUCTS

- Database management systems were the most heavily used products of two of the vendors.

3. GROWTH RATES

- All three companies envisaged no decrease in their present high growth within the five-year timeframe, though a peak was envisaged in two years.

- Averages of the growths quoted were:

  - In two years' time, 67%.

  - In five years' time, 43%.

4. PROFITABILITY

- All three vendors spoke of their profitability being improved by the current fast expansion rates.

5. SOFTWARE DEVELOPMENT PLANNING

- One general service vendor expects to recover development costs over a three- to five-year sales programme.

- In the case of the systems house, the cost recovery period was variable in that it depended on the market pricing set by its competitors, which determined the volume of sales over which the cost was actually recovered. This ambiguous reply, which begs the question, is typical of some system houses' inability to understand product, as opposed to project, marketing.

6. COST OF SALES

- Replies to this question were unambiguous:

  - Three unqualified 'Nos' were received.

- Respondents believe that this is due to the increased sales volumes being obtained by sales persons.

7. COMPARISON WITH HARDWARE MANUFACTURERS

- The three companies all operated by setting their prices at market value, irrespective of what hardware vendors were doing.

- Increased competition was envisaged from the manufacturers. It would be countered by selecting tightly defined areas.

- The systems house offering DBMS expected to be higher in price than IBM.

8. SUPPORT AND SERVICING

- Only the systems house was using phone-in centres, and planning to cooperate with the hardware supplier on remote diagnosis.

9. IMPACT OF POLICIES ON PROFITABILITY

- The principal factors affecting the profits of software vendors in the short-term follow:

  - Recession will impact first hardware and then software sales. If expansion plans have been based on higher unit sales than recession permits, the cash flow to achieve early recovery of development and launch costs will not be achieved.

  - Margins will be cut by inflationary pressures.

- In the longer term, the key issue for software products vendors is:

  - How to handle the implementation and servicing costs once a substantial (in the several thousands) user base of major applications products

has been established. At present, support is very much an informal thing, handled by telephone calls and on-site visits. In time, rigorous software maintenance will be required.

- Pricing will not be an important question in the short term with mainframe software products, since the hardware vendors need increasingly to gain their revenue targets through sources other than central processors, which leaves them open to price competition in the software field. In the longer term, economies of scale will start to play a more critical role.

E. COMPETITIVE ANALYSIS

- Exhibit VII-5 ranks the leading suppliers by market share of the French domestic markets for software products and for its subsectors.

- IBM leads the overall as well as the two subsector rankings, and CII-HB is in second place.

- Besides the leading international vendors, most of the large SSCIs have flourishing software products sections. The work of the internationals is concentrated in systems software, that of the national companies has a tendency to be split between systems and applications products.

- In total, manufacturers take 53% of the market.

- IBM is attempting to control its user base through use of hardware/software synergy by:

  - Making new software releases non-supportive of older hardware.

  - Making new hardware modules unsupported by older software versions.

- In each case, the user requires a system upgrade of one type or another.

EXHIBIT VII-5

TOP SUPPLIER RANKING AND SECTOR MARKET SHARES, BY SERVICE TYPE:

SOFTWARE PRODUCTS, FRANCE - 1979

RANK \ TYPE	ALL SOFTWARE PRODUCTS (Fr754 MILLION)		SYSTEM SOFTWARE PRODUCTS (Fr495 MILLION)		APPLICATION SOFTWARE PRODUCTS (Fr259 MILLION)	
	SUPPLIER NAME	PERCENT SHARE	SUPPLIER NAME	PERCENT SHARE	SUPPLIER NAME	PERCENT SHARE
1	IBM	26.5%	IBM	33.3%	IBM	13.5%
2	CII-HB	12.6	CII-HB	12.3	CII-HB	13.1
3	ICL	6.8	ICL	10.3	HEWLETT-PACKARD	10.8
4	BURROUGHS	4.3	BURROUGHS	6.1	PHILIPS	8.9
5	HEWLETT-PACKARD	4.1	WESTINGHOUSE	5.3	SG2	8.5
6	WESTINGHOUSE	3.4	CAP/GEMINI/SOGETI	2.0	SESA	6.6
7	PHILIPS	3.3	UNIVAC	2.0	GFI	5.8
8	SG2	3.2	DEC	1.9	CISI	3.9
9	SESA	3.1	NCR	1.8	UNIVAC	3.8
10	UNIVAC	2.6	TSIL	1.6	CAP/GEMINI/SOGETI	3.1
11	CAP/GEMINI/SOGETI	2.4	SLIGOS	1.6	GSI	2.7
12	GFI	2.0	STERIA	1.4	TSIL	2.7
13	TSIL	2.0	SESA	1.	SEMA	2.0
14	CISI	1.7	CINCOM	1.2	SOPRA	1.9
15	DEC	1.4	CARUS	1.0		
16	NCR	1.3	INFORMATICS	0.9		
17	SLIGOS	1.1	MATHEMATICA	0.8		
18	SEMA INFORMATIQUE	0.9	PANSOPHIC	0.7		
19	GSI	0.8	CISI	0.7		
20	STERIA	0.8				
21	LOGABAX	0.7				
22	SOPRA	0.6				

VIII PROFESSIONAL SERVICES

VIII PROFESSIONAL SERVICES

A. INTRODUCTION

- Professional services currently form the second largest French market sector after processing services. Disregarding the turnkey systems sector, which in MAS/Europe 1980 is being treated as separate from the computer services market, professional services were in 1979 over twice the size of software products.

- Professional services consist of:

  - Education and training.

  - Consultancy.

  - Tailored software development.

  - Other, including contract programming.

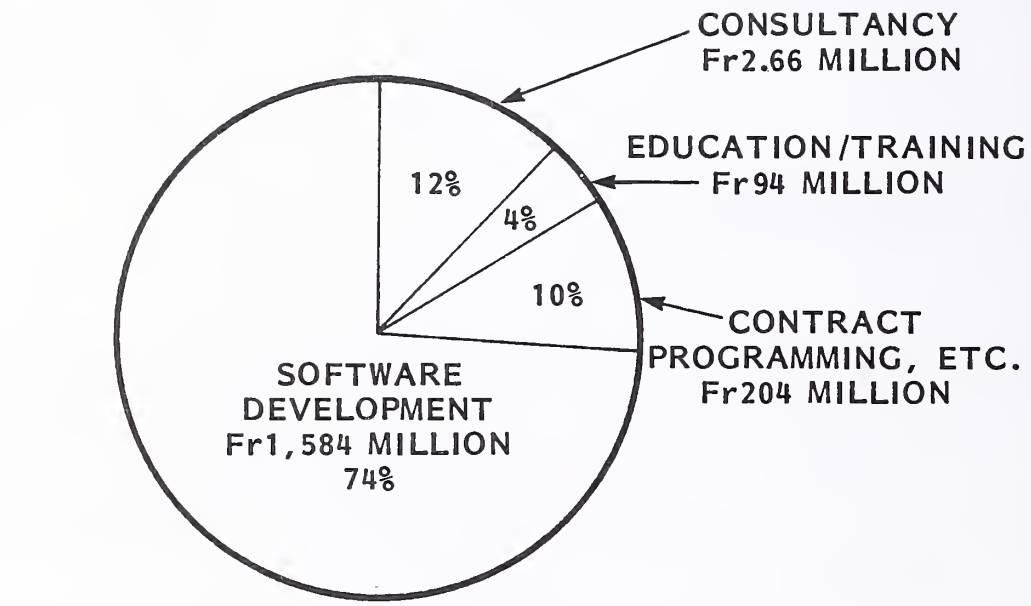
B. MARKET DEVELOPMENT (1979-1984)

1. GROWTH IN 1979-1980

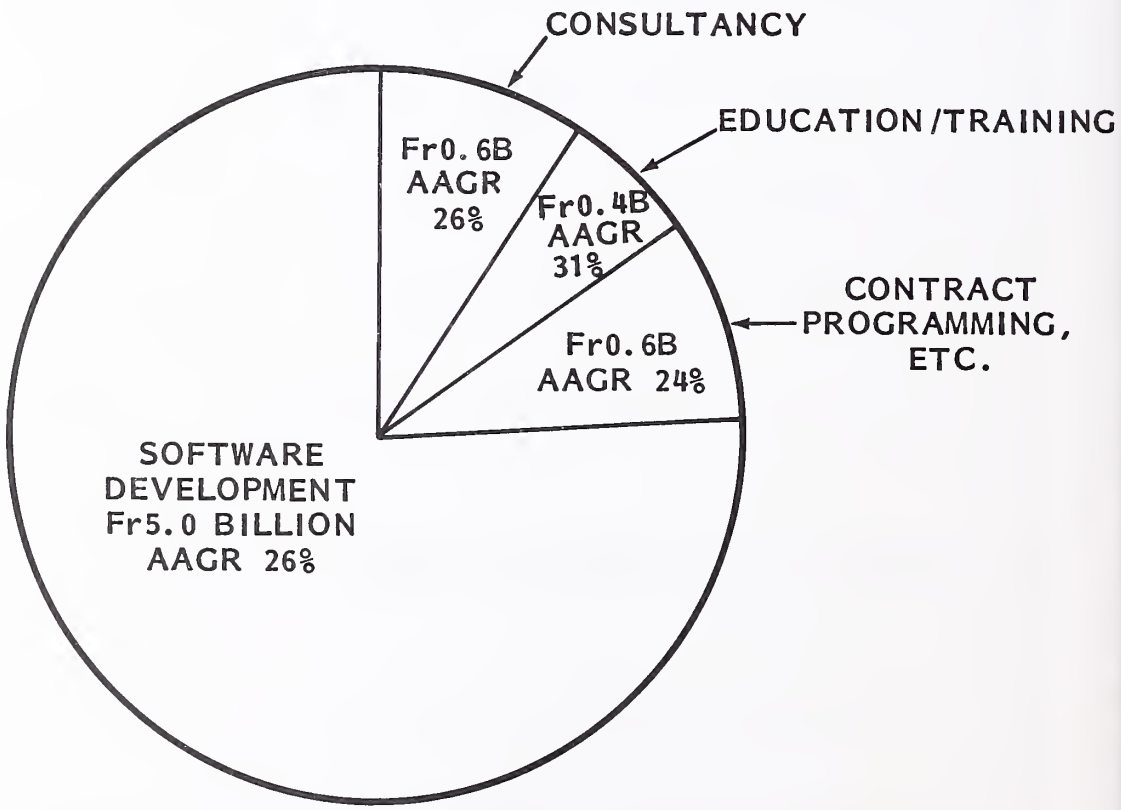
- Presently standing at Fr 2,148 million, the sector is set to grow at an annual rate of 25% for the five-year forward period to reach Fr 6,632 million by the end of 1984, as shown in Exhibit VIII-1.

EXHIBIT VIII-1

PROFESSIONAL SERVICES MARKETS



1979 = Fr2.1 BILLION



1984 = Fr6.6 BILLION

AAGR 25%

SOURCE: INPUT FORECAST

- In 1979, the sector grew 25% over 1978, at current values, this at a time of increasing inflation and consequent price increases. The project orientation of this sector has allowed (and will continue to allow) vendors to hide price rises more easily because of the difficulty in comparing one project with another. This applies particularly to fixed price contracts in the tailored software services area.

- Following the publication of the Nora/Minc report 'L'Informatisation de la Societe' in 1978, the professional services sector has been boosted by the amount and variety of government funding which has become available. The three most influential sources of project funding ('subvention') are:

  - DGT (Direction Generale des Telecommunications).

  - DIELI (Direction des Industries Electoniques et de l'Informatique).

  - MIDIST (Mission Interministerielle de l'Information Scientifique et Technique).

- Exhibit VIII-2 shows the market development during the past two years. Appendix E gives a reconciliation to INPUT's previously published figures:

  - The restated 1978 market shows an increase caused by the addition of some revenues previously attributed to processing services because earned by processing services vendors.

- The breakdown of the sector in 1979 highlights immediately the rapid (27%) increase in education and training caused by:

EXHIBIT VIII-2

THE FRENCH PROFESSIONAL SERVICES
MARKET FORECASTS, BY TYPE OF SERVICE - 1979-1984

TYPE OF SERVICE	MARKET FORECASTS IN Fr MILLIONS								
	1978	1979	GROWTH 1979-1979 (PERCENT)	1980	1981	1982	1983	1984	AAGR 1979-1984 (PERCENT)
CONSULTANCY	Fr 225	Fr 266	18%	Fr 338	Fr 412	Fr 487	Fr 555	Fr 649	20%
SOFTWARE DEVELOPMENT	1,257	1,584	26	2,006	2,548	3,235	4,044	5,015	26
CONTRACT PROGRAMMING AND OTHER	162	204	26	261	337	438	516	604	24
EDUCATION AND TRAINING	74	94	27	123	164	221	292	364	31
TOTAL	Fr1,718	Fr2,148	25%	Fr2,728	Fr3,461	Fr4,381	Fr 5,407	Fr6,632	25%

- Manufacturers, who are either unbundling their training courses or lessening the amount and number of free courses offered.

- The importance placed on this aspect by the central government.

- The tailored software and contract programming markets were the next fastest growing subsectors, at 26%. In the 1979-1980 period they have also been fuelled by:

  - Continued activity in the minicomputer field.

  - An upswing in government spending on telematique, database and office automation contracts with a significant software or project management content.

- Consultancy is experiencing good growths - 18% in 1979 and 27% in 1980. However, a large portion of this is inflationary and is due to increases in the charge-out rates being quoted.

- Miscellaneous professional services, among which contract programming is the largest element, have stood up with reasonable real growth rates. A major factor in this has been the shortage of skilled professional staff ('informaticiens'), a problem which the French government is attempting to rectify.

- Vendors in the French professional services field are among Europe's leading exporters. Names such as Sema and CAP/Gemini/Sogeti are responsible for France's being the leading European country for overseas and export revenues.

2. FORECASTS FOR 1980-1984

- Forecasts for 1981 are expected to be largely influenced by the momentum generated by the government's latest plans for 'informatisation'. This momentum is expected to carry through to 1984 and to mask any recessional effects which will occur in the 1982-1983 period.

- The sector growths for 1981 will be:
  - Consultancy - 27% actual, 19% real.
  - Software - 27% actual, 19% real.
  - Other - 28% actual, 20% real.
  - Education and training - 31% actual, 23% real.
- By 1983, recessionary forces are predicted to be weakening. Price rises will be less of an important issue, assuming the inflation rate has been maintained within single figures.
- During the 1983-1984 timeframe:
  - Growth in education and training will have declined to a rate of 25%.
  - Growths in the other three sectors will be not more than 12%, except for tailored software development, which will continue with real growth of 16%, driven by the introduction of office technology.
- The long-term forecasts are detailed in Exhibit VIII-2.

C. USERS' ATTITUDES AND THE DISPERSAL OF INTELLIGENCE

1. ATTITUDES TOWARD PROFESSIONAL SERVICES

- In the eyes of the DP manager, professional services suffer from the handicap of appearing to overlap considerably with the role played by the DP department.

- DP departments offer computer consulting to their end users.

- Software development is still mainly an in-house activity.

- This somewhat defensive attitude comes through in some of the comments made in answer to question 31, part 4 in the EDP User Questionnaire.

- Analysis of the comments on professional services yields:

  - Twenty-six users, 25 of which were prepared to comment.

  - Eight cases giving a 'don't-use-now' comment, of which:

    . Four stated they did not use these services now, but planned to in future.

- Of the 26 users:

  - Twelve made a favourable mention of satisfaction.

  - Thirteen made an adverse comment.

- This measurement of something less than 50% satisfaction is in line with the overall satisfaction rating given to the graded answers to question 30, as shown in Exhibit IV-8. Professional services are lower in rating than either hardware services, software products or processing services.

- Only five comments instanced the question of the cost of professional services:

  - Of these, four coupled the high price with a comment of dissatisfaction.

- No individual supplier was mentioned in the comments.

- Two comments mentioned that the services were good if selected within a definite scope.

- A selection of users' comments is given in Exhibit VIII-3.

2. PREFERRED SUPPLIERS

- Five suppliers were mentioned two or more times, not always as first choice.

  - IBM - five times, of which four were first choice.

  - CII-HB - two times, of which one was first choice.

  - CAP, Sogeti or Bossard - three times.

  - Sligos and GFI - twice each.

- Other companies mentioned once were ICL, Univac and Burroughs, among the manufacturers; and CDC, Steria and ICIA among the services vendors.

3. DISPERSED COMPUTING

- Education and training is greatly affected by the spread of computing into smaller work units. This fuels the requirement for courses and with the forecast sales of videotex products in the next five years, there is every sign of this continuing to be an increasingly buoyant subsector.

- Tailored software development is being fuelled by two driving forces:

  - Large-scale projects deriving from 'telematique'.

  - The need to develop French software products to lessen dependence on products imported from the U.S.

EXHIBIT VIII-3

RESPONDENTS' COMMENTS ON PROFESSIONAL SERVICES

- 'The conclusions in their reports are very simplistic.'
- 'We think they are all far too expensive.'
- 'When used for a definite task, you can get satisfaction.'
- 'We have found that they have good technical competence, though we've only had little usage.'
- 'Yes, they are expensive, but the quality is good.'
- 'What they offer in the way of advice is very theoretical.'

- In leading-edge companies, where office automation systems will be implemented, the services which only highly respected system houses and consultancies can provide will be in increasing demand as the 1980s progress.

- Contract programming has by this stage reached a degree of respectability and the majority of the 'cowboys' have been weeded out. However, staff shortage in France is now so bad that the only short-term expedient remaining to many firms is to import contract staff from abroad.

D. VENDOR ISSUES AND THE IMPACTS ON PROFITABILITY

1. INTRODUCTION

- Five vendors completed the professional services module of the Vendor Issue Questionnaire.

  - Two were major system houses, both with considerable export market capability.

  - Three were mixed services vendors, who in all cases had larger turnover in the processing services sector.

2. NEW TYPES OF BUSINESS

- Question 30 examines the growth of the hardware component of traditional software house business. The answers ranged from 0% through 5%, 10%, 33% to 100%.

- Over the five vendors interviewed, the average hardware component of revenue growth is 30%.

- All five respondents anticipated future markets for computer services in advanced microprocessor-based applications.

- The directions from which the business would come were estimated as follows:

From new first-time users	35%
From new experienced users	19
From existing accounts	46
	100%

- With 65% of business expected to come from the type of users with which professional services companies are used to dealing, there is very little impetus to change from their familiar direct-selling policy. Direct versus indirect selling is not an issue with French professional services, except in their software products and export divisions.

3. TYPES OF CONTRACT

- The three main types of contract were used to the following extent:

  - Fixed price - four of five vendors sometimes traded under this type.

  - Time and materials - all used it.

  - Body hire - 60% of the sample did.

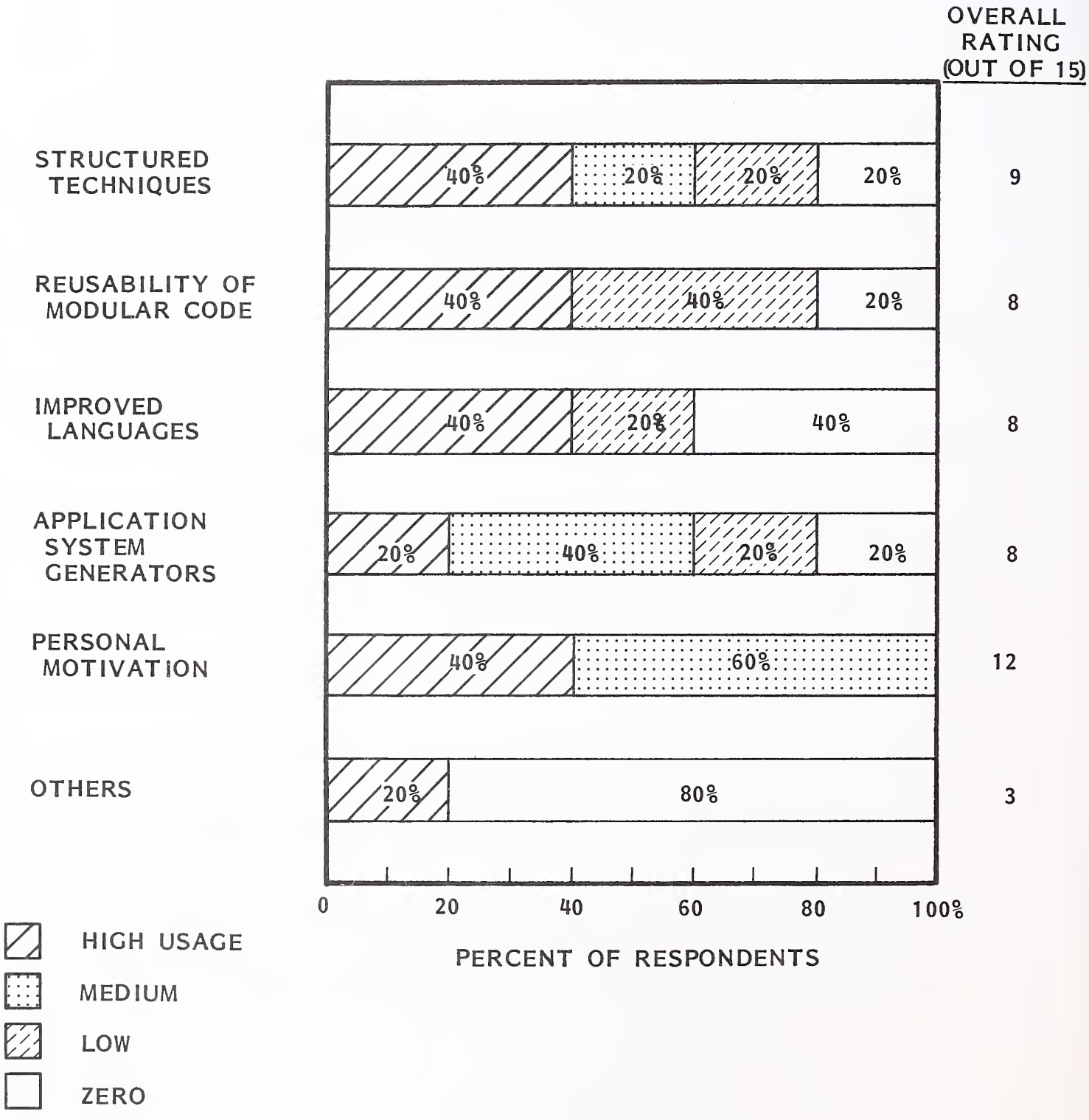
- Fixed price was twice mentioned as applying only to turnkey systems.

4. PRODUCTIVITY, PROFITABILITY AND PRODUCT ORIENTATION

- Exhibit VIII-4 illustrates the different emphases put by the respondents on the selection of productivity techniques. Techniques have been weighted according to the grade of usage in order to arrive at an importance rating.

EXHIBIT VIII-4

RESPONDENTS' USAGE
OF PRODUCTIVITY TECHNIQUES



- The highest rating goes to personal motivation, followed in second place by structured techniques.

- 'Other' techniques quoted were:

  - Proprietary output programmes for attaching to a system framework.

  - Formalised project management.

- Over the seven companies who answered question 34, the average split between factors contributing to profits was:

Software productivity techniques	19%
Project management methods	28
Calibre of staff	53
Other	0
	100%

- Calibre of staff rates highly in one vendor's eyes, since 67% of its staff are graduates.

- This analysis highlights in an unmistakable way:

  - What the key management criteria are for running a people-orientated company such as the average professional services organisation - quality and motivation of staff.

  - How vendors, far from applying true production engineering principles to this type of work, judge that these principles do not strictly apply to their type of work.

- The ways in which vendors perceive themselves as becoming either more or less product-orientated vary between the limits of 5% and 40% of turnover. The average maximum of productisation was 25%.

- All vendors were against the concept of trading off end user orientation against productisation.

- The conclusion from this set of responses is that professional services vendors are sceptical of the benefits of becoming software product factories. That role will need to be fostered very strongly against their natural inclinations, if they are to be able to discover continuing revenue streams.

- On the other hand, there is a growing realisation, exemplified by CAP, Steria and TITN, of the need to diversify into product-orientated fields. Software products are the natural first choice for this strategy.

5. LANGUAGES

- The breakdown of software development under the different language categories was analysed as follows:

Assembler	14%
Traditional high-level; e.g. COBOL	58
Newer high-level; e.g., CORAL, PASCAL	17
Non-procedural	11
	100%

- The percentage use of Assembler is not predicted to fall below 10%. The traditional languages will lose their following slowly; but it is apparent that the software companies have an inclination to use the new real-time languages. Professional service houses will quite justifiably not go the same way as end users.

6. ACCEPTANCE TESTING

- All stages of acceptance testing were well supported. Weakest areas were in the formalisation of agreement on test data and test procedures.

- INPUT concludes that in France, as in the U.K., formalising, agreeing and controlling a specification is at a more advanced stage of acceptability than the hard practice of formalising project sign-off.

7. STAFF, SKILLS AND TRAINING

- Skills now being required by respondents are:

  - Data communications.

  - Experience in DDP.

- Use of freelance staff was reported to be slight: largest (three mentions) in the analyst and programmer category, but also getting one mention in each of the consultant and operator grades.

- Respondents use the different training methods in the following amounts:

Own in-house courses	43%
Manufacturers' courses	20
Courses from independents	19
'On-the-job' training	18
	100%

8. CONSULTANCY TRENDS

- Specialist consultancy assignments got first place among types of assignment, with four mentions. General implementation advice and equipment were less favoured. There is a clear need for performance measurement tools to assist specialist assignments.

- One vendor reported having a generalised method for mounting general consulting assignments for large companies.

9. IMPACTS ON PROFITABILITY

- Professional services, for those vendors that specialise in it, are still very much the traditional skilled craft they have always been. The only exceptions are in the education and training subsector, where a great deal of packaging and productisation is going on, and in the general trend towards turnkey systems, with their increased hardware content.

- The factors which affect profitability are well covered in the responses to the issue questionnaire:

  - Strict project management.

  - Calibre of staff.

  - Acceptance testing.

- There is no sign of a turnover to a production-line/factory approach to the services and software provided, and thus the profit problems of capital-intensive business do not arise.

- Only CAP/Gemini/Sogeti, with its SIP software development project, appears to have noticed the convergence between office automation and its own production requirements.

E. COMPETITIVE ANALYSIS

- Exhibits VIII-5 ranks the leading companies offering professional services by market share in France in 1979.

- CAP/Gemini/Sogeti is the leading supplier, with over 10% of the sector revenues.

EXHIBIT VIII-5

TOP SUPPLIER RANKING AND SECTOR MARKET SHARES:
PROFESSIONAL SERVICES, FRANCE - 1979

RANK \ TYPE	ALL PROFESSIONAL SERVICES (Fr2,148 MILLION)		CONSULTANCY (Fr266 MILLION)		SOFTWARE DEVELOPMENT (Fr1,584 MILLION)	
	SUPPLIER NAME	% SHARE	SUPPLIER NAME	% SHARE	SUPPLIER NAME	% SHARE
1	CAP/GEMINI/ SOGETI	11.4%	CAP/GEMINI/ SOGETI	12.4%	CAP/GEMINI/ SOGETI	10.5%
2	SESA	5.8	SESA	9.4	SESA	5.9
3	TSIL	5.4	GFI	9.2	TSIL	5.7
4	SEMA INFORMATIQUE	4.3	TSIL	7.5	CERCI	4.0
5	SG2	4.1	SEMA INFORMATIQUE	6.8	SEMA INFORMATIQUE	3.7
6	CERCI	3.8	CISI	6.0	SG2	3.7
7	SLIGOS	2.4	GSI	5.6	SLIGOS	2.8
8	ORDINA	2.3	CERCI	5.3	STERIA	2.0
9	STERIA	2.2	SG2	4.5	SOPRA	1.5
10	GFI	2.1	IBM	4.5	ORDINA	1.4
11	SOPRA	1.6	STERIA	4.1	CISI	0.9
12	CISI	1.6	ORDINA	3.4	GFI	0.9
13	GSI	1.2	SLIGOS	3.0	GSI	0.3
14	IBM	0.9				
15						

EXHIBIT VIII-5 (CONT.)

TOP SUPPLIER RANKING AND SECTOR MARKET SHARES:
PROFESSIONAL SERVICES, FRANCE - 1979

RANK \ TYPE	CONTRACT PROGRAMMING AND OTHER (Fr204 MILLION)		EDUCATION AND TRAINING (Fr94 MILLION)	
	SUPPLIER NAME	% SHARE	SUPPLIER NAME	% SHARE
1	CAP/GEMINI/ SOGETI	15.6%	CAP/GEMINI/ SOGETI	13.1%
2	SG2	8.3	CIE IBM	8.5
3	ORDINA	7.4	CII-HB	7.4
4	SEMA INFORMATIQUE	4.9	SEMA INFORMATIQUE	6.4
5	GSI	2.5	SESA	5.3
6	SOPRA	2.4	CERCI	5.3
7	GFI	0.7	STERIA	5.3
8			ICL	5.3
9			GFI	5.1
10			ORDINA	4.3
11			BURROUGHS	3.3
12			CISI	3.2
13			TSIL	3.1
14				
15				

- Except for TSIL at number three and IBM at number fourteen, all the other top companies are independent SSCIs.

- CAP leads in all four subsectors.

- Processing services are represented in this list by the larger companies:

  - CISI.

  - SG2.

  - GSi.

- Together with these three comprehensive service vendors, CAP is one of the 'Big Four' who have been identified by the Ministry of Industry, and will consequently receive every encouragement and aid to develop their operations both in France and overseas.

- With backing from the PTT, CAP is in partnership with Telesystemes in SERVITEL, a joint-venture company created to install, manage and maintain the STT Electronic Tourist Information Service, based on Univac equipment and disseminating information through Transpac and eventually also Euronet.

- CAP is also active in the various PTT-sponsored projects related to the Videotex/Teletel experiments.

- Steria is the main system contractor for the Velizy Teletel centre on behalf of the PTT and is therefore the market leader in French videotex technology. Telesystemes is the contractor for managing the Velizy centre.

- Steria is developing a range of videotex terminal products under the series name of Videopac.

- Sema Informatique, part of the Metra Consulting Group, is looking to the French domestic market to further its short-term growth. Particular areas of interest are:

  - Office automation studies; it has a pilot project underway for INRIA (Institut National de Recherche en Informatique et Automatique).

  - Databases, both from the DBMS software angle and that of a service company for on-line data access; SEMA has recently acquired a service bureau called Heurte.

- Telesystemes, though not principally in the professional services sector, is involved in one way or another with most of the important telematique projects ongoing in France at this time. For this reason its influence on the sector is substantial. It acts in many ways unknowingly as a PTT catalyst on the other key participants.

IX TURNKEY SYSTEMS

IX TURNKEY SYSTEMS

A. MARKET DEVELOPMENT (1979-1984)

1. INTRODUCTION

- The primary issue surrounding the operation of the SSCIs in the turnkey systems market is that of hardware maintenance. This capability, or rather the lack of it, is the chief obstacle to system houses' abilities to provide a credible image in this sector. The issue does not affect the large services companies in France, but seriously hampers the smaller provincial software houses. INPUT found very great reluctance on the part of these organisations to undertake the burden of risk involved in turnkey.

- As in the U.K., turnkey systems can be divided into two types:

  - Large one-off projects with special or complex features.

  - Repeat systems in the small to medium price range, usually for the small business systems market.

- One of the key problems concerns the marketability of systems developed for an individual client and their transformation into generalised systems with a range of applicability, whether in horizontal (functional) or vertical (industry) market sectors.

- In this treatment of the French turnkey systems sector, INPUT has included both SSCI and hardware manufacturer turnkey revenues. A system installed by a hardware vendor is deemed to be on a turnkey basis if both hardware and software are provided by the same hardware vendor for one or more applications, and the total contract price is at least Fr 50,000.

2. GROWTH IN 1979-1980

- The market for turnkey systems grew in 1979, and is growing in 1980, faster than any other services sector.

- Growth between 1978 and 1979 was 36% and is expected to reach 39% in 1980.

- Total revenues earned in 1979 were:

	Fr million	Percent
Independents	655	86%
Hardware vendors	107	14
	762	100%

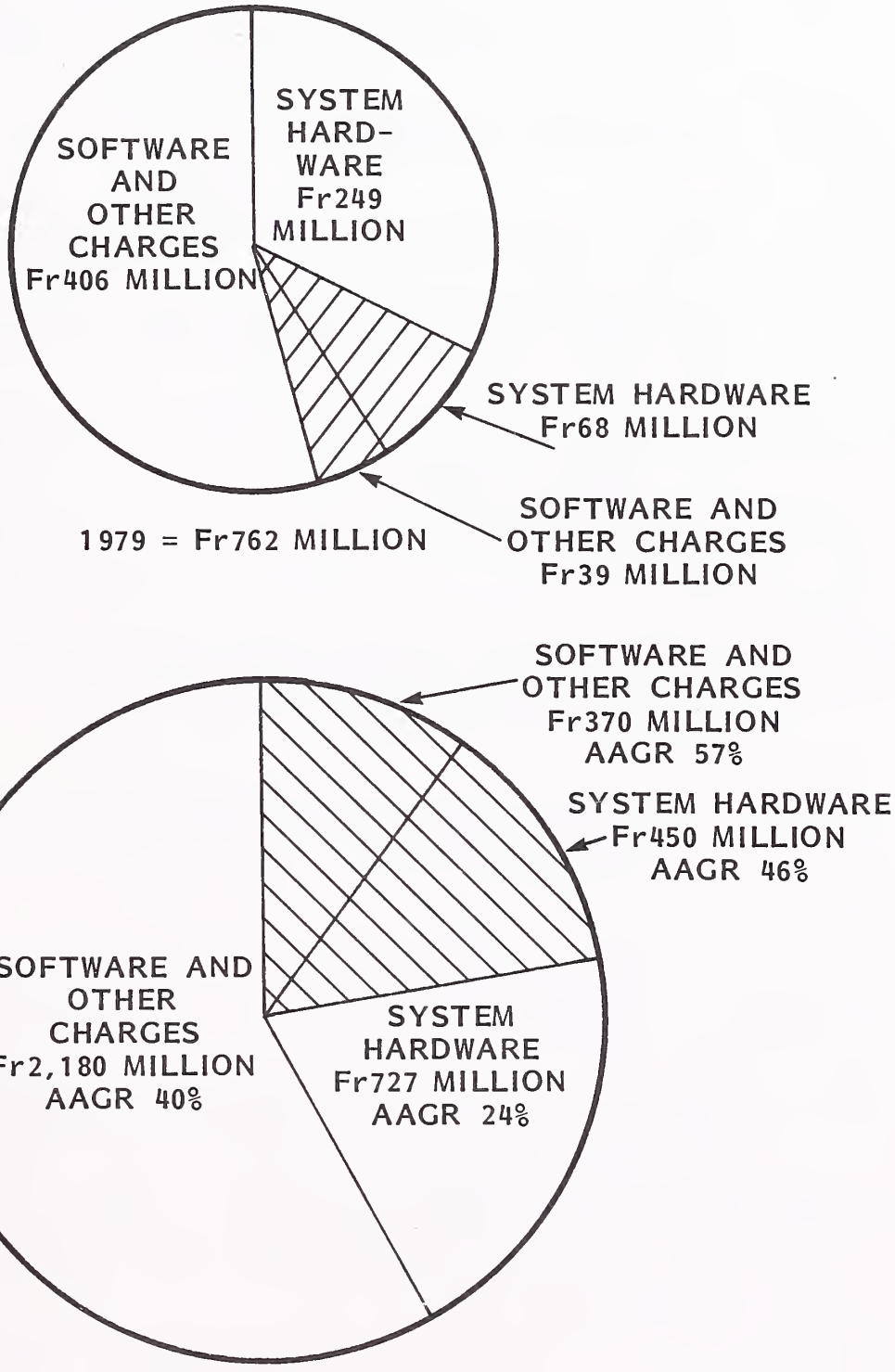
- This gives a total market of Fr 762 million. As shown in Exhibit IX-1, this figure is forecast to rise in 1984 to Fr 3.7 billion.

- The split between hardware, and software and other charges shows a 10% percentage movement in favour of software during the period.

	1979	1984
Hardware	42%	32%
Software and other charges	58	68
	100%	100%

EXHIBIT IX-1

TURNKEY SYSTEMS MARKETS



SOURCE: INPUT FORECAST

- This movement in favour of the software content of project charges is not a true indicator in that the two elements are necessarily included in the same contract. Rather, it is an indication of the way market perceptions will influence the way charges need to be presented to the users.

- In France, the strength of the large services vendors is such that users will accept the principle of the added value which results from dealing with them.

3. FORECASTS FOR 1980-1984

- Exhibit IX-2 shows the detailed forecasts for the forward period.

- The market split between hardware vendors and independents in 1984 will be:

	Fr million	Percentage
Hardware vendors	820	22%
Independents	2,907	78
	3,727	100%

- The manufacturers will have pulled eight percentage points of market share away from the SSCIs, due to:

  - Increasing interest from small business systems users in dealing solely with one supplier.

  - Intelligent office automation applications, particularly in the 1983-1984 timeframe.

- The strength of the turnkey market and the amount of impetus it will receive from central government in its desire to foster 'l'informatique' for the smaller enterprise (the PME), will be such as to carry the vendors through any mild recessionary period in the next two years without any perceptible check in revenue growth.

EXHIBIT IX-2

THE FRENCH TURNKEY SYSTEMS
MARKET FORECASTS: 1979-1984

SUBSECTOR	MARKET FORECAST IN Fr MILLION								
	1978	1979	GROWTH 1978-1979 %	1980	1981	1982	1983	1984	AAGR 1979-1984 %
SYSTEM HARDWARE									
HARDWARE VENDORS	Fr58	Fr68	17%	Fr88	Fr111	Fr192	Fr295	Fr450	46%
INDEPENDENTS	188	249	32	330	454	571	686	727	24
SUBTOTAL	246	Fr317	29%	Fr418	Fr565	Fr763	Fr981	Fr1,177	30%
SOFTWARE AND OTHER CHARGES									
HARDWARE VENDORS	31	39	26	54	74	138	241	370	57
INDEPENDENTS	283	406	43	587	844	1,160	1,601	2,180	40
SUBTOTAL	Fr314	Fr445	42%	Fr641	Fr918	Fr1,298	Fr1,842	Fr2,550	42%
COMPLETE CONTRACT									
HARDWARE VENDORS	89	107	20	142	185	330	536	820	50
INDEPENDENTS	471	655	39	917	1,298	1,731	2,287	2,907	35
TOTAL	Fr560	Fr762	36%	Fr1,059	Fr1,483	Fr2,061	Fr2,823	Fr3,727	37%

- Exhibit IX-2 also shows the forecast breakdown between hardware, and software and other charges.

B. USERS' ATTITUDES AND THE DISPERSAL OF INTELLIGENCE

1. ATTITUDES TOWARD TURNKEY SYSTEMS

- In Exhibit IV-18, turnkey systems received the second lowest rating of any subsector (-1.2). It shared this rating with FM, and with professional services as a whole.

- There were 35 comments in answer to question 31 of the EDP User Questionnaire of which:

  - Thirteen were favourable.

  - Eleven were adverse.

  - Eleven stated that it was either too soon to evaluate the performance of their system, or were neutral or noncommitted in some other way.

- No respondents were sufficiently satisfied to mention the name of their supplier.

- Six comments mentioned the expense of the system, four of them in an unfavourable way and only two excusing the price because the system had proved beneficial or good value for money.

- The most frequently mentioned adverse factor was the inflexibility inherent in buying a 'black box' system from an outside party. This concern was expressed in a number of ways, but it was always essentially the same worry:

- 'The systems are not always adaptable.'

- 'Its rigid but so far so good.'

- 'Software maintenance and ongoing development are difficult.'

- INPUT believes that there is a barrier to 'user-friendliness' which needs to be overcome in this matter, if market resistance to turnkey is not to become too strong to deter the average DP manager or departmental end user from accepting a system.

- Exhibit IX-3 gives a representative sample of respondents' comments.

- Of the preferred suppliers mentioned, the leader was IBM with ten mentions, followed by CAP/Gemini/Sogeti and Burroughs with two each. Five other hardware suppliers rated one mention, as did 16 other SSCIs, including PRC, Telesystemes, SG2, Ordina, GSi and Cegos.

- First preference was shared fairly evenly between hardware vendors (12) and independents (10).

- Out of 35 mentions in all, 22 were first-preference suppliers. Assuming one supplier was not mentioned and 23 respondents have systems installed, 20% of the sample have attempted turnkey projects and something under 60% of these are satisfied.

- The chief reason for dissatisfaction is the difficulty the supplier has in getting users to identify with the system as <u>their</u> system once the supplier is off the site. It is imperative for French turnkey vendors to make their installations capable of being user-programmed, even to a low level.

2. THE ISSUE OF DISPERSAL

- The number of small businesses that will get or use their first computer in the

EXHIBIT IX-3

RESPONDENTS' COMMENTS ON TURNKEY SYSTEMS

- 'Turnkey is a feasible solution, but the system requires attention.'
- 'We have experienced long delays in our deliveries.'
- 'More development is needed, but it is a robust solution.'
- 'It's a useful way of small firms getting the correct software.'
- 'It is practical as a method, but you need qualified staff to look after the user end.'
- 'Ours is useful, but software maintenance is a difficulty.'
- 'Maintenance could cause problems, so we don't use them.'
- 'It is not adaptable; training our staff on the system is a problem.'
- 'It lacks the ability to be developed on-site.'
- 'We use them for our industrial processing systems.'
- 'It looked expensive and had no consideration for the environment our system would have to go into.'

next five years is expected to run into the hundreds of thousands. There would appear to be a market driving force pushing towards a bundled, well-defined turnkey offering pitched at an acceptable price to capture this market segment

- The hardware suppliers, especially those in the small business machine market, are well prepared to meet the challenge of this need. However, there are difficulties to face:

  - First-time systems need software, and the range of the software is a major selling tool.

  - First-time users need support and training.

  - The number of systems required to be sold just cannot be installed using the traditional selling/installation cycle of three-plus months; a new method involving more effort from the user and less from the vendor is needed.

- Put together, these three facts mean that the suppliers leading the market, particularly IBM, have to move with caution in introducing a new 'slim-line' sales cycle. Too much speed of change would expose them to the charge from their competitors (themselves) that they were letting the users down by not providing software and support.

- The independents, on the other hand, face two problems not shared with their hardware rivals:

  - Working capital, in amounts not usually granted to or found in system houses, is needed to fund the sales volume envisaged to make any impact against the hardware vendors.

- The tradition of service and support, which is engrained in their approach to business, makes it difficult for them to strike the right balance between:

  . Productisation of the offering.

  . Overcommitment to the user.

- Companies wishing to compete seriously in this sector will be well advised to understand:

  - The cost of getting in at this juncture.

  - The even greater cost of staying in once success has been achieved.

C. VENDOR ISSUES AND THE IMPACTS ON PROFITABILITY

1. INTRODUCTION

- Six companies answered the hardware services module of the Vendor Issue Questionnaire. They were:

  - A hardware manufacturer's systems house.

  - An international systems house.

  - Four large mixed-services vendors, best known for their processing services activities.

- Two are engaged in large-scale turnkey projects but are also looking with interest at the large-volume, small-system value end of the commercial turnkey market, which will be opened up by the advent of Transpac and videotex.

2. ENGINEERING FACILITIES AND MANUFACTURING POLICY

- Only two respondents used their own manufacturing facility. The four mixed-services vendors have factory premises, but they are only used for integration, commissioning or maintenance.

- There was one mixed services vendor with a policy of vertical integration.

- The average split of costs across the sample was:

  - Made in-house, 38%.

  - Bought-in, 62%.

- The highest percentage of 'bought-in' was 100% for the systems house which was a subsidiary of a hardware manufacturer.

3. INVESTMENT

- Only one of the mixed services vendors differentiated between working and investment capital. The manufacturer's systems house operated under a corporate policy in which all R&D expenditure is expensed.

- Three mixed-services vendors provide no investment for purchasing system components. Of the other three who do:

  - Three provide it for systems software.

  - Two for applications software.

- Three for pre-sale hardware stock.

- Two for spares stock.

- All six vendors are known to be in receipt of DIELI development contracts, in which the government puts up a proportion of the necessary funds. These loans are repayable only if the project is a failure, thus providing an incentive for success. This is in marked contrast to typical U.K. policy, such as that practiced by the National Research Development Corporation (NRDC), in which loans are repayable with a commission which is a function of the number of successfully implemented systems.

- One of the mixed services vendors is taking an initially defensive posture with regard to turnkey.

  - Offering the capability is important for their standing as one of the country's best-known names.

  - It is a counter to the losses to DDP systems in-house, which their bureaux are experiencing.

4. ACCEPTANCE AND WARRANTY

- All types of acceptance test were claimed to be enforced by all but one of the six respondents. As noted in Chapter VIII, this commendable situation is more a desired objective than a rigidly enforced, formalised set of procedures.

- All but two vendors offered a hardware warranty, while only two offered a software warranty. One systems house sometimes manages the installed system for six or twelve months on a short-term facilities management contract.

5. PROFITABILITY

- Whether profitability or cash flow is going to be the major factor motivating a turnkey systems house depends on which type of approach is taken to the turnkey systems field.

  - The traditional one-off project approach, displayed quite largely by the present sample of French vendor respondents, puts the accent on profitability.

  - The volume sales approach being taken by GSi makes cash flow the first priority.

- In either case, the importance of clean acceptance and relatively trouble-free warranty periods is paramount:

  - For the one-off project, delay on any stage payment in a large contract can prove embarassing to the annual results of even a leading supplier.

  - For the volume repeat sales approach to the commercial market, being able to collect cash at the appropriate time is a matter of survival. This was the problem for the ill-fated BCL in the U.K. in the early 1970s.

- The reputation of the hardware vendor, which allows it to forego warranty on software in a standard turnkey contract, is another advantage which the large has over the small. On the other hand, the systems house is the professional that knows its software intimately. It will certainly be asked to provide warranty on a large defence, telecommunications or industrial control system.

- In practice, therefore, there are two distinct marketplaces for the turnkey approach. Success hitherto in the one does not constitute a guarantee of success in the very different volume sales field, in which the hardware vendor is much better adapted to survive.

- Other aspects of project management, as was seen in the discussion on professional services, apply to the turnkey sector too. Moreover, project management for turnkey needs to encompass:

  - Financial management of cash flow.

  - Management of subcontractors.

D. COMPETITIVE ANALYSIS

- Exhibit IX-4 shows the leading independent vendors of turnkey systems ranked according to their share of:

  - The total turnkey sector.

  - Hardware vendors' share.

  - Independent SSCIs' market share.

- Steria and TSIL (the 'informatique' division of the Thomson-CSF Group) are the two leading suppliers. TSIL has been classified as a hardware vendor for the purposes of the subsector rankings.

- The leading 16 suppliers accounted for 38% of the market in 1979. With the expansion plans of some of the major processing companies, such as GSi, this percentage is expected to increase in 1980.

- Steria is expected to maintain its lead as the prime independent in this field. It has set up a subsidiary, SITINTEL, to handle the manufacturing of videotex terminals and communications interface equipment.

- Companies whose growth rates in this sector are expected to bring them into contention for one of the top three positions by 1982, are:

EXHIBIT IX-4

TOP SUPPLIER RANKING AND SECTOR MARKET SHARES:
TURNKEY SYSTEMS, FRANCE - 1979

RANK \ TYPE	ALL SUPPLIERS (Fr762 MILLION)		HARDWARE VENDORS (Fr107 MILLION)		INDEPENDENTS (Fr655 MILLION)	
	SUPPLIER NAME	% SHARE	SUPPLIER NAME	% SHARE	SUPPLIER NAME	% SHARE
1	STERIA	8.7%	TSIL	44.2%	STERIA	10.1%
2	TSIL	6.2	CIE IBM	23.5	CISI	4.5
3	CISI	3.9	CII-HB	9.3	SG2	2.3
4	IBM	3.3	ICL	7.1	SLIGOS	2.3
5	SG2	2.0	BURROUGHS	2.8	GSI	2.2
6	SLIGOS	2.0	DEC	1.9	GFI	2.0
7	GSI	1.9	PHILIPS	1.9	TELESYSTEMES	1.4
8	GFI	1.7	HP	1.8	CERCI	1.4
9	CII-HB	1.3			SESA	1.2
10	TELESYSTEMES	1.2			SOPRA	1.1
11	CERCI	1.2			SEMA	0.9
12	SESA	1.0			G-CAM	0.8
13	ICL	1.0				
14	SOPRA	0.9				
15	SEMA	0.8				
16	G-CAM	0.7				

- Sligos.

- GSi.

- Sema.

- These three companies have access to potentially large numbers of business users - the repeat turnkey system market. They have the necessary commercial and marketing skills to make a success of this type of product. They are ahead of CAP and the other traditionally orientated SSCIs in their preparedness to face this marketplace.

- Besides this, they will not need to be dependent on the DGT's telecommunications facilities to provide PME first-time users with the free-standing systems they need.

- TSIL is not expected, however, to be easy to dislodge from its present ranking position. This group has the technical and financial resources to succeed.

APPENDIX A: DEFINITIONS

APPENDIX A: DEFINITIONS

1. GENERAL

- **Available Market** is the sum of all revenues except captive and export.

- **Captive Revenue** is taken as revenue from services sold to parent companies (in a private sector organisation) or to parent bodies/organisations (in the public sector). It is excluded from available market revenues. Revenue from associate companies in a group, or from subsidiaries on the same or lower level in a group, is not classed as captive revenue because it is usually gained in competition with other vendors.

- **Computer Services** are services provided by vendors that perform data processing using a vendor's computers or assist users to perform such functions on their own computers.

- **Distributed Data Processing (DDP)** 'Distributed processing is the deployment of programmable intelligence in order to perform data processing functions where they can be accomplished most effectively, through the electronic interconnection of computers and terminals, arranged in a telecommunications network adapted to the user's characteristics.'

- A **Distributor** purchases small business computers on an OEM basis from the manufacturer and markets them to end users. It may or may not provide turnkey systems.

- **End Users** may buy a system from the hardware supplier(s) and do their own programming, interfacing and installation. Alternately, they may buy a turnkey system from a manufacturer, systems house or hardware integrator.

- **Export Revenue** is revenue earned in one country (the 'destination') by a vendor based in another (the 'source'). Export revenues form part of the available market in the destination country, but are excluded from that of the source.

- A **Hardware Integrator** develops system interface electronics and controllers for the CPU, sensors, peripherals and other ancillary hardware components. It may also develop control systems software in addition to installing the entire system at the end users site.

- A **Minicomputer** is usually a 12-, 16- or 18-bit computer which is provided with limited applications software and support and may represent a portion of a complete larger system or network.

  - The larger minicomputers (often with 24- or 32-bit architecture) are sometimes call midicomputers or megaminis; they have the power of a small mainframe and are often used standalone for specialist applications.

- **Peripherals** include all input, output and storage devices (other than main memory) which are locally connected to the main processor and are not generally included in other categories, such as terminals.

- **Processing Modes** are of three types: facilities management, remote computing services and batch services.

  - Batch Services include data processing performed at vendors' sites on user data which has been physically transported (as opposed to electronically, by communications lines) to those sites. Data entry and data output services, such as OCR and COM processing, are also included.

- Facilities Management (FM) is the management of all or part of a user's data processing functions under a long-term (not less than one year) contract. To qualify, the contractor must directly plan and control, as well as operate, the data processing facility provided to the user on-site through communications lines, free-standing or in mixed mode. Simply providing resources, even though under a long-term contract and/or for all of a user's processing needs, does not qualify as FM.

- Remote Computing Services (RCS) are the provision of data processing to a user by means of terminals at the user's site(s) connected by a data communications network to the vendor's central computer. The three sub-modes of RCS are:

  . Data Base Enquiry, characterized by the retrieval of information from a vendor-maintained database which may be owned by the vendor or a third party.

  . Interactive (Timesharing), characterized by the interaction of the user with the system, primarily for problem solving-time-sharing, but also for data entry and transaction processing -the user is on-line to the program/files.

  . Remote Batch, where the user hands over control of a job to the vendor's computer, which schedules job execution according to priorities and resource requirements.

- **Processing Services** encompass FM, RCS and batch services. They are categorised by type of service (as distinguished from mode of delivery) bought by users, as follows:

  - General Business services are processing services for applications that are common to users across industry categories. Software is provided by the vendor; this can be a complete package, such as a payroll package, or an application 'tool', such as a budgeting model, where a

user provides much of the customising of the finished product it uses. General business processing is often repetitive and transaction-orientated.

- Scientific and Engineering services are the processing of scientific and engineering problems for users across industries. The problems usually involve the solution of mathematical equations. Processing is generally problem solving and is non-repetitive, except in the sense that the same packages or 'tools' are used to address different, but similar, problems.

- Specialty Applications services provide processing for particular functions or problems unique to an industry or industry group. The software is provided by the vendor either as a complete package or as an application 'tool' that the user employs to produce its unique solution. Specialty applications can be either business or scientific in orientation; database services, where the vendor supplies the database and controls access to it (although it may be owned by a third party), are also included under this category. Examples of specialty applications are: seismic data processing, numerically controlled machine tool software development and demand deposit accounting.

- Utility services are those where the vendor provides access to a computer and/or communications network with basic software that enables any user to develop its own problem solution or processing system. These basic tools include terminal-handling software, sorts, language compilers, database management systems, information retrieval software, scientific library routines and other systems software.

- **Professional Services** include management consulting related to EDP, systems consulting, systems design and programming, and other professional services; e.g., education and training. Services can be provided on a basis of 'time and materials', whereby the user pays for the time used of an individual on a daily or other fixed rate, or 'fixed price', where the user pays a fixed fee for a specific task or series of tasks.

- **Small Business Computer**, for the purposes of this study, is a system that is built around a Central Processing Unit (CPU), and that has the ability to utilise at least 20M bytes of disc capacity, provides multiple CRT work-stations, and offers business-orientated systems software support.

- A **Small Business Computer Manufacturer** builds its systems around a proprietary CPU and provides systems software. It may make or buy peripheral equipment and semiconductor devices. Distribution to the end user may be through its company field sales offices, a network of distributors, or both.

- **Software Products** are systems and applications packages that are sold to computer users by equipment manufacturers, independent vendors and others. They include fees for work performed by the vendor to implement a package at the user's site.

- A **Systems House** integrates hardware and software into a total turnkey system to satisfy the data processing requirements of the end user. It may also develop systems software products for license to end users.

- A **Turnkey System** is composed of hardware and software integrated into a total system designed to fulfill completely the processing requirements of one or more applications.

- **User Site Hardware Services (USHS)** is a service which consists of offering a mixed solution to a user's requirements, comprising:

  - Installation of On-Site Hardware - usually comprising a minicomputer or small mainframe at the user's site for local processing of applications best performed on a local machine.

  - Remote Computing on a vendor's mainframe for applications best suited to mainframe power.

2. PARTICULAR TO FRANCE

- **Annuaire Electronique (Electronic Telephone Directory)** - This is an ambitious experiment carried out by the French Government through the DGT whose immediate object is to replace the printed telephone directory of a specific department in the North of France, Ille-et-Vilaine, by an on-line enquiry service.

- **The 'Big Four'** - The Ministry of Industry has identified four major services companies that will receive every encouragement and aid where needed to develop at home and internationally. They are CAP, CISI, GSi and SG2.

- **Creator** - This term is used to cover the function of defining and administering a database - specifically the bridge between data source and serveur.

- **Database/Data Bank** - In France there is a distinction between the two. A data bank is the repository of all data or text for a particular field. The database holds the codes, extracts and pointers to the data bank to aid in complex search processes.

- **Directly Related Processing Services** - Although not perfectly defined today, this covers revenues attributable to the serveurs for other services performed resulting from enquiries to an on-line database. These could include printing-out or otherwise distributed bulk extracts from the database, or the manipulation of private databases in direct relation to a public on-line database.

- **OLDB** - This is sometimes used as an abbreviation for the on-line database business.

- **Serveur** - This describes the company or organisation actually operating and maintaining the database. It specifically relates to the operational functions; i.e., the computer centre - as opposed to the marketing and production functions.

- **SSCI** - (Societes des Services et de Conseil en Informatique) 'Les SSCI' cover all computer service companies in France.

- **Telematique** - Another of the French 'buzz-names' coined to embrace the whole environment of computer networking. It covers data communications, Transpac, on-line data bases and videotex services. Other terms like 'bureautique' and 'informatique' have become accepted European standards.

- **Teletel** - The physical distribution medium for videotex services in France, the equivalent of Prestel in the U.K.

- **Videotex** - This is equivalent to the U.K.'s Viewdata, covering the technology and standards for access to, and distribution of, information - now a CCITT accepted standard.

- **Videotex - Teletel - The Velizy Experiment** - The second element in the French programme of educating the public in the use of videotex systems is the Teletel service in Velizy, a suburb of Paris.

  - Between 2,000 and 2,500 households in this area will be provided, free of charge, with a terminal connection to the videotex system for an 18-month period.

  - The interactive service will offer private database applications provided by some 200 suppliers using their own computers, and a local database implemented and managed by the PTT through Videotel, the official Teletel serveur.

APPENDIX B: CAMP UPDATE QUESTIONNAIRE

CATALOG NO. M E 0 2 ☐ ☐ ☐

INPUT / CAMP (UPDATE 1980)
Company Analysis And Monitoring Programme

Interviewer
Tele-phone ☐ Post ☐ Interview ☐
Date ☐☐ : ☐☐ : ☐☐
Respondant _____
Title _____

1. COMPANY BACKGROUND DATA

COMPANY NAME/MAIN LOCATION	BRANCHES/OTHER LOCATIONS
Co. Name _____	
Address _____	
Tel. No. _____ Telex: _____	

KEY EXECUTIVES

Chief Exec: Name ..... Title .....
Other Execs: Name ..... Title .....
Name ..... Title .....
Name ..... Title .....
Name ..... Title .....

OWNERSHIP AND SUBSIDIARIES

Date trading started ...../19.... Company Type: Private ☐ Public ☐ Subsidiary ☐

Major Shareholders:

Co/Name ..... ☐ %
Co/Name ..... ☐ %
Co/Name ..... ☐ %
Co/Name ..... ☐ %

Subsidiaries/Shareholdings:

Company ..... ☐ %
Company ..... ☐ %
Company ..... ☐ %
Company ..... ☐ %

STAFF NUMBERS

Total This Country ..... ☐ of which: Marketing/Sales ..... ☐
Analysts/Programmers ..... ☐ Operating ..... ☐
Engineering/Support ..... ☐ Total group ..... ☐
(approx./if known)

CATALOG NO. M E 0 2 _ _

2.(a) FINANCIAL DATA (LOCAL CURRENCY PLEASE)

OFFICE USE ONLY

TOTAL REVENUE, FINANCIAL YEAR ENDING ...../...../.....							GROWTH %	
European/ This Country	Year Before Last 1978		Last Year 1979		Current Year (Predicted) 1980		Last Year/ Previous Year	Current Year/ Last Year (Anticipated)
	Rev.	% Captive	Rev.	% Captive	Rev.	% Captive		
EXPORT EUROPE								
OUTSIDE EUROPE								
TOTAL GROUP								

2.(b) BREAKDOWN OF REVENUE

EUROPEAN / DOMESTIC REVENUE BREAKDOWN (LOCAL CURRENCY or PERCENT)			
TYPE OF SERVICE	Local Currency	% Last Year	% In 2 Years Time
RCS: Interactive ----------			
Remote Batch ----------			
BATCH SERVICES (including Data Preparation) ----------			
FACILITIES MANAGEMENT (FM) ----------			
U.S.H.S. (On-Site Computing) (including Terminal Rental) -------			
SOFTWARE PRODUCTS: Application			
Industry Specialised -------			
Cross Industry ----------			
System ----------			
PROFESSIONAL SERVICES: Consulting ----------			
Tailored s/w development -----			
Education/Training ----------			
TURNKEY SYSTEMS: Industry specialised ----------			
Cross industry ----------			
HARDWARE MAINTENANCE ----------			
OTHER (please specify)			

3. COMPUTER HARDWARE INSTALLED Please specify the hardware that you have installed by supplying the name, model, quantity and mode of use (prime function).

MODELS MAINFRAMES (usually for vendor's bureaux)	QTY. now installed	Mode of Use (✓)		
		PROD.	DEV.	COMMS.
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
TERMINALS				
		☐	☐	☐
		☐	☐	☐
Number of Terminal Sites				
MINIS/MICROS (usually on customer sites)	Qty installed during 1979	Average h/w price per system		

4. LANGUAGES Please list those languages which you use and in which your staff have substantial competence.

....

....

5. KEY PRODUCTS AND SERVICES ACTIVELY PROMOTED Please describe the name and function of products and/or services which form the most important part of current business.

6. INDUSTRY EXPERTISE Please indicate the percentage of your 1979 revenue obtained, and the marketing of industry-specific products if any (✓) in the following industry sectors:

INDUSTRIES	Rev. %	Prod. (✓)		Rev. %	Prod. (✓)
Agriculture/Fishing/Mining	☐	☐	Wholesale/Distribution	☐	☐
Food/Drinks/Tobacco Mfrs.	☐	☐	Retail Trade/Restaurants/Hotels	☐	☐
Textile/Clothing/Footwear	☐	☐	Transport and Storage	☐	☐
Wood Products/Furniture Mfg.	☐	☐	Communication/PTTs/Broadcasting	☐	☐
Paper Mfg./Printing/Publishing	☐	☐	Financial Institutions/Banks	☐	☐
Oil/Chem./Coal/Plastic Products	☐	☐	Insurance	☐	☐
Non Metallic Mineral Products	☐	☐	Real Estate/Business Services	☐	☐
Basic Metal Industries	☐	☐	National Govt./Defence	☐	☐
Fabricated Metal Products	☐	☐	Local Government/Community	☐	☐
Other Manufacturing	☐	☐	Education/Research Medical	☐	☐
Electricity/Gas/Water	☐	☐	International Bodies	☐	☐
Construction	☐	☐	Other e.g. Leisure	☐	☐

7. APPLICATION AREAS Please indicate the percentage of your 1979 revenue obtained, and the marketing of cross-industry software/system products (✓) in the following application areas.

APPLICATION AREA	Rev. %	Prod. (✓)		Rev. %	Prod. (✓)
Industrial/Milit. Control Systems	☐	☐	Accounting/Costing/Audit	☐	☐
Engineering/Tech./Design/R. & D.	☐	☐	Financial Analysis/Planning	☐	☐
Order Proc./Purchasing/Point of Sale	☐	☐	Portfolio/Asset/Cash Management	☐	☐
Production/Inventory Control/Manuf.	☐	☐	Office Autom./Admin./Comm.	☐	☐
Distribution/Transport	☐	☐	Database Services	☐	☐
Marketing/Sales	☐	☐	Data Communications	☐	☐
Payroll/Personnel	☐	☐	Other utility e.g. system devel.	☐	☐

Would you be interested in learning more about INPUT? Yes ☐ No ☐

May we be on your mailing list for brochures, announcements, annual reports? Yes ☐ No ☐

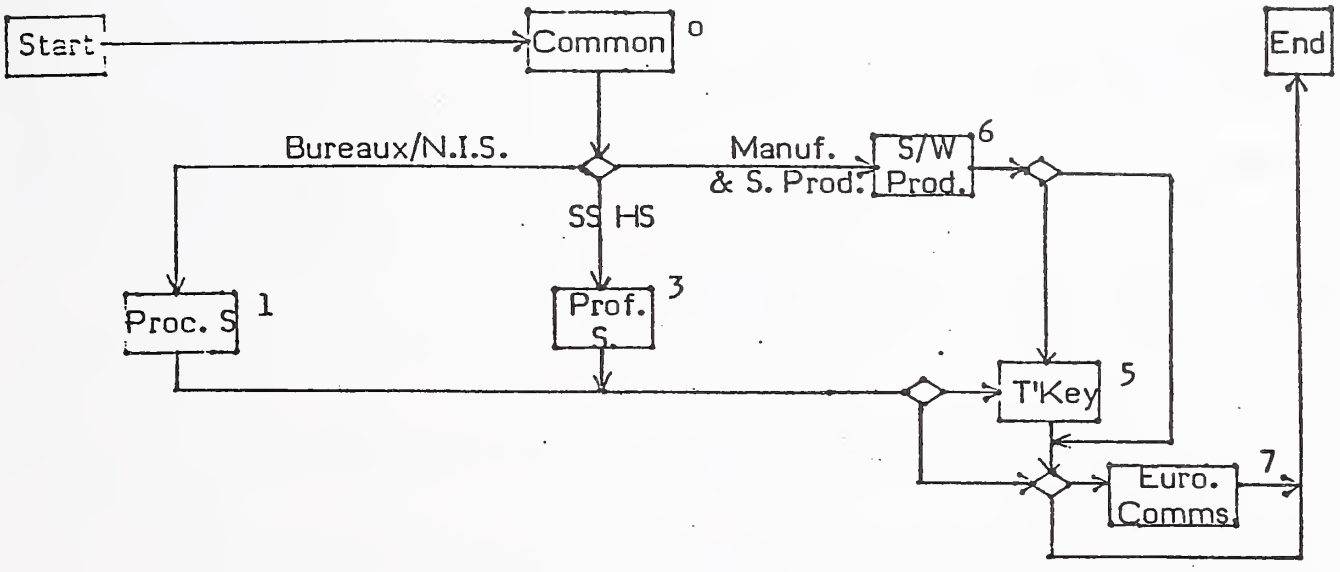
Thank you for completing this CAMP Update questionnaire.

APPENDIX C: VENDOR ATTITUDES QUESTIONNAIRE

MAS/EUROPE 1980 VENDOR QUESTIONNAIRE

QUESTIONNAIRE MODULE FLOW BY VENDOR TYPE

Q. 0. Please indicate (✓ box) modules applicable to your business:



M 0. COMMON ISSUES

Q. 1. Are you placing emphasis in product development (applications) more into cross-industry (X) products or industry speciality (IS) products or is it about equal?

	X	IS	=
What will %age split be in 2 yrs.			
What will %age split be in 5 yrs.			

Comments

Q. 2. Is your average revenue per customer declining (so leading to increased unit sales cost)? YES NO

Q. 3. Do your strategic plans take into account the possibilities of:

- continuing inflation (if so please specify how) YES NO
- continued recession (if so, specify impact) YES NO

Q. 4. Is staff shortage a real or perceived obstacle to your growth? Real Perc. No

If so, in which grades (please rate impact High, Medium, Low)

- Sales	H	M	L
- Sales support	H	M	L
- Software professionals	H	M	L
- Operations staff	H	M	L
- Tech. Support/Engineers	H	M	L
- Managerial	H	M	L
- Other	H	M	L

Q. 5. Which are your three most serious competitors?

a. ---------- b. ---------- c. ----------

M 1. PROCESSING SERVICES (Bureaux, Data Prep, COM & OCR Services)

Q. 10. Defining "real new business" as revenue from new accounts nett of price increases and lost accounts rev., is the rate of growth of your "real new business" slowing down? YES NO Est. %

- will it be doing so in 2 years time? YES NO Est. %

Comments

Q. 11. Is in-house DDP impacting your large coy. user-base? YES NO No. of Lost A/cs. %

If so, is it mostly migration to:

- Stand-alone mini equipment %
- Connection to in-house networks %
- Batch processing on central in-house mainframes %

Comments

Q. 12. Are you finding that new types of user e.g. small businessmen, professionals, dept. heads prefer a mini/micro-based solution YES NO

If so, in what %age of new account prospects do you estimate you lose to:

- another processing bureau Est. %
- in-house equipment - mini/micro Est. %
- in-house equipment - mainframe Est. %

Comments

Q. 13. U.S.H.S. (User Site Hardware Services) - is it the answer to the processing bureau's growth? - (please rate its capabilities High, Medium or Low) H,M,L

- now (i.e. is it happening)
- in 2 years time
- in 5 years time

Comments
(Check H/W. module)

Q. 14. F.M. (Facilities Management) - is/will there be a need for bureaux to offer complete packaged contracts including, hardware, operators, education, software etc.

- now YES NO
- in 2 years time YES NO
- in 5 years time YES NO

Comments

Q. 15. Is your business more costly to obtain than in the past? YES NO

If so, please, give an approximate annual %age increase per unit sale [ ] %

Q. 16. Are you considering retailing your services through 3rd-parties? (please also give %age annual rev. thus retailed)

- already do YES NO Est. [ ] %
- will in 2 years time YES NO Est. [ ] %

Comments

Q. 17. What pricing elements do you use?

- Computer Resource Unit (CRU) YES NO
- Filespace Unit YES NO
- Connect time YES NO
- Printer Usage YES NO
- Other (please specify) ..... YES NO

Comments

Q. 18. Do you use Fixed Capacity Pricing Techniques YES NO

	AIM	ACTUAL
If so, what %ages of C.P.U. do you aim to/actually load in this way	[ ] %	[ ] %

Q. 19. Which pricing method do you use?

- Historical Cost-plus YES NO
- Market value YES NO
- Other (please specify) ..... YES NO

Comments

Q. 20. Over how many accounts/sales do you normally expect to recover software procurement/development costs

- applications packages [ ]
- utilities [ ]

Q. 21. What %ages of your software do you obtain from the sources below:

	Use Manuf'er's	Buy	Build
- system software	[ ]	[ ]	[ ]
- applications	[ ]	[ ]	[ ]
- utilities	[ ]	[ ]	[ ]

Comments

Q. 22. To what extent have your recent profits been bolstered by external or temporary factors e.g. by:

- already depreciated equipment	High	Med	Low	effect
- falling hardware costs	H	M	L	
- price increases matching inflation	H	M	L	
- Other (please specify)	H	M	L	

Comments

Q. 23. As a team, do you feel you spend too much time on day-to-day profit management to the detriment of:

- medium term planning (next 2 years)	YES	NO
- longer-term planning (next 5 years)	YES	NO

Comments

Q. 24. May we have a copy of your current services tariff structure/price list. If YES, please send to INPUT's Piccadilly office. YES NO

M 3. PROFESSIONAL SERVICES

Q.30. To what extent has hardware revenue contributed to your recent growth? [ ] %

Comment

Q.31. Will the computer services sector get its fair share of new business/applications opened up by the microprocessor? YES NO

If so, will it be mainly from: (please also give estim. % of new business likely to be gained.

- new accounts (first-time users) YES NO Est. [ ] %
- new accounts (established users) YES NO Est. [ ] %
- existing accounts YES NO Est. [ ] %

Comments

Q.32. What types of contract do you offer:

- Fixed price YES NO
- Time and materials YES NO
- Body hire YES NO
- Other (please specify) ..... YES NO

Comments

Q.33. What productivity aids/methods do you employ: (Rate usage High, Medium, Low)

- Structured techniques e.g. M. Jackson H M L
- Reusability of modular code H M L
- Improved languages H M L
- Application system generators e.g. H M L
- Personal motivation H M L
- Other (please specify) ..... H M L

Comments

Q.34. What factors contribute to your profitability Cont. %

- Software productivity techniques [ ]
- Project management methods [ ]
- Calibre of your staff [ ]
- Other (specify) ..... [ ]

100%

Comment

Q.35. Do you see your company becoming fully product-orientated?

in 2yrs 5yrs Never

(Please also give estim. max. rev. % achievable from products Max. ___ %

If so, would you trade-off end-user orientation for productisation? YES NO

Comment

Q.36. What approximate %ages of your software is developed using the following languages:

- Assembler ___ %
- Traditional high-level - COBOL, FORTRAN, BASIC, ALGOL 60, RPG ___ %
- Newer high-level e.g. - PL1, CORAL 66, RTL2, PASCAL, APL, ___ %
- Non-Procedural e.g. Query languages, non-host DBMS ___ %
- Other (please specify) ..... ___ %

100%

Q.37. What types of system acceptance testing do you enforce?

- Agree spec. in writing with user YES NO
- Design acceptance tests jointly with user YES NO
- Get user to agree to a formal set of acceptance tests YES NO
- Undertake formal 'factory' tests on your site YES NO
- Undertake formal tests on user's site YES NO
- Enforce formal spec. modification procedure YES NO

Q.38. What changes in skill requirements are you noticing - particularly for the new decentralised applications - DBMS, DDP (Data Comms), Office Automation?

Q.39. Do you employ freelance staff (or subcontract work out) in any of the following grades?

	Sometimes	Often	Never
- Specialist consultants			
- Analysts & programmers			
- Operators			
- Other			

Q. 40. How do you train your staff - (please also give approx. %age usage of training method)

- Your own courses YES NO [ ] %
- Manufacturers' courses YES NO [ ] %
- Courses from Independent training companies YES NO [ ] %
- 'On the job' training YES NO [ ] %

Q. 41. What trends in consultancy assignments are you noticing? - towards:

- general implementation advice YES NO
- equipment selection YES NO
- specialist e.g. performance measurement YES NO
- Other ..... YES NO

Comments

M 5. HARDWARE SERVICES (Turnkey, Integrators, Distributors, TPM - Third Party Maintenance)

Q. 50. Do you provide your own hardware/engineering facilities? If so, are they used for:

	YES	NO
- Manufacture	YES	NO
- Integration	YES	NO
- Commissioning	YES	NO
- Maintenance	YES	NO
- Other	YES	NO

Q. 51. Do you have a policy of vertical integration of systems? (i.e. make as much as poss. yourself of a product line) YES NO

	In-house	Bought-in
What is %age breakdown of systems cost between 'made in-house' and 'bought in'?	☐	☐ %

Q. 52. Do you differentiate between working and investment capital? YES NO

Comments

Q. 53. Do you provide up-front investment for system cost components?

- Software products - system	YES	NO
- Software products - application	YES	NO
- Hardware systems, pre-sale stock of	YES	NO
- Spares stock	YES	NO
- Other	YES	NO

OMIT Q. 54 IF ANSWERED MODULE (PROF. SERVICES)

Q. 54. What types of system acceptance testing do you enforce?

- Agree spec. in writing with user	YES	NO
- Design acceptance tests jointly with user	YES	NO
- Get user to agree to a formal set of acceptance tests	YES	NO
- Undertake formal 'factory' tests on your site	YES	NO
- Undertake formal tests on user's site	YES	NO
- Enforce formal spec. modification procedure	YES	NO

Q. 55. Do you offer warranty? and for what period on:

			Mths	Days
- hardware	YES	NO	☐	☐
- software	YES	NO	☐	☐

M 6. SOFTWARE PRODUCTS

Q. 60. Which are your three most heavily used products?

Approx. No of installations

1 ..... [ ]

2 ..... [ ]

3 ..... [ ]

Q. 61. Do you expect to experience the same high annual growth rates for your products as at present (20 - 30%):

- in 2 years time? YES NO Est. [ ] %
- in 5 years time? YES NO Est. [ ] %

Q. 62. Is profitability impacted by this fast expansion? YES NO

Q. 63. Over how many systems/sales do you normally expect to recover software development costs?

- systems software [ ]
- applications packages [ ]
- utilities [ ]

Q. 64. Is your new business more costly to obtain than in the past? YES NO

If so, please, give an approximate annual %age increase per unit sale [ ] %

Q. 65.&66. INDEPENDENTS ONLY

Q. 65. Manufacturers software appears less expensive than independents.

Do you use their pricing as a guide to your own? YES NO

If so, what factor of difference between the two do you consider the market will tolerate? + [ ] %

Comments

Q. 66. Do you anticipate increased competition from IBM's and other manufacturers' products?

- Short-term i.e. next 2 years YES NO
- Long-term i.e. next 5 years YES NO

If so, how will you counter it. _____

Q. 67. May we have a copy of your current price list?
If YES, please send to INPUT's Piccadilly office. YES NO

Q. 68. Support/servicing activities are crucial to productivity? Do you use or are you planning to use:

- phone-in support centres Use Plan No
- remote diagnosis/fixing on-line Use Plan No

If neither, how else do you expect to contain escalating personnel costs

APPENDIX D: USER PANEL QUESTIONNAIRE

CATALOG NO. E U 8 0 1 (1)

QUESTIONNAIRE DESTINE AUX UTILISATEURS DE L'INFORMATIQUE

A. INFORMATIONS GENERALES

1. Activité principale _____
2. Code(s) industriel(s) - (si connu) _____ (2)
3. Nombre total d'employés _____ (3)
4. Combien sont employés par l'informatique? _____ (4) Capital social (en millions de F) _____ (5)
5. Chiffre d'affaires (en millions de F) _____ (6)
6. Biens mobiliers et immobiliers (en millions de F) _____ (7)
7. Si l'importance de la société est mesurée autrement, veuillez l'indiquer: _____ (8)
7 Est-ce que ces chiffres s'appliquent à: 8. ☐ Une division ou filiale? 9. ☐ Au groupe entier/maison mère? (9)
10. Dans le cas d'une division ou d'une filiale, quel est le capital social du groupe (en millions de F)? _____ (10)

B. PREVISIONS INFORMATIQUES

11. Parmi les sujets décrits ci-dessous, indiquer pour chacune des trois années prochaines (1980 - 1981 - 1982) vos cinq objectifs principaux (en les numerotant par ordre décroissant de 1 à 5 et en inscrivant ces chiffres dans le tableau ci-dessous).

CATEGORIE (11-37)	ORDRE DE PRIORITE 1980	1981	1982	CATEGORIE (CONT.) (38-61)	ORDRE DE PRIORITE 1980	1981	1982
Convertir des applications	(11)	(12)	(13)	Aller vers une informatique plus centralisée	(38)	(39)	(40)
Développer des nouvelles applications en traitement par lots	(14)	(15)	(16)	Aller vers une informatique moins centralisée	(41)	(42)	(43)
Installer des applications interactives	(17)	(18)	(19)	Développer un plan informatique à long terme	(44)	(45)	(46)
Concevoir/installer des bases de données pour la gestion de l'entreprise	(20)	(21)	(22)	Respecter les calendriers de développement et de conversion	(47)	(48)	(49)
Concevoir /installer un réseau d'informatique répartie	(23)	(24)	(25)	Améliorer la productivité du personnel informatique	(50)	(51)	(52)
Installer une nouvelle unité centrale de traitement	(26)	(27)	(28)	Intégrer l'automatisation des bureaux avec l'informatique	(53)	(54)	(55)
Installer des mini-ordinateurs	(29)	(30)	(31)	Autres (en spécifiant et en indiquant les priorités) _____	(56)	(57)	(58)
Installer de nouveaux équipements périphériques	(32)	(33)	(34)		(59)	(60)	(61)
Changer les systèmes d'exploitation	(35)	(36)	(37)				

12. Est-ce que votre budget a été affecté par les possibilités de récession? (1) Oui _____ (2) Non _____ (62)
13. Si oui, de quel pourcentage _____ % (63) et dans quelles domaines? _____ (64)

C. LES PROBLEMES INFORMATIQUES

14. Quels sont les cinq problèmes informatiques les plus significatifs auxquels vous devez faire face en 1980 (en les numérotant de 1 à 5 par ordre décroissant d'importance, 1 représentant le plus important).

CATEGORIE (65-78)	ORDRE DE PRIORITE 1980	CATEGORIE (CONT.)	ORDRE DE PRIORITE 1980
Recrutement du personnel	(65)	Temps excessif dans le développement des applications	(66)
Formation du personnel	(67)	Budgets informatiques inadéquats	(68)
Manque général de compréhension par la direction de l'entreprise	(69)	Nécessité d'améliorer les facilités télématiques	(70)
Manque de participation des utilisateurs dans le développement des systèmes et des applications	(71)	Entretien non-satisfaisant du matériel de traitement	(72)
Logiciels inadéquats	(73)	Autre (en spécifiant et en indiquant les priorités)	(74)
Nécessité d'amélioration dans les procédures de mise en place	(75)		(76)
Nécessité de meilleurs plans et d'un meilleur contrôle	(77)		(78)

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INPUT

CATALOG NO. EU801

D. LES APPLICATIONS INFORMATIQUES

15. Quelles nouvelles applications comptez-vous développer (ou acquérir) en 1980? Seront-elles utilisées localement ou à distance, et quelle sera leur importance dans votre effort total de développement? (Indiquez par 1 la plus importante, par 2 la suivante et ainsi de suite, en cochant également pour chacune, soit la colonne "Exploitation centrale", soit la colonne "Exploitation à distance".)

S'il existe, dans le tableau ci-dessous, des applications déjà existantes, cochez-les dans la colonne "Existantes", en indiquant aussi si leur exploitation est centrale ou à distance.

APPLICATIONS (91-122)	Développement Nouveau Ordre de Priorité	EXPLOITATION: Centrale	EXPLOITATION: A Distance	ORIGINE: Développement Propre	ORIGINE: Achat Extérieur	EXISTANTES
Systèmes de contrôle de fabrication/systèmes industriels	(79)		(80)		(81)	(82)
Ingénierie/étude/R & D	(82)		(84)		(85)	(86)
Entrée des commandes/fabrication/achat/point de ventes	(87)		(88)		(89)	(90)
Production/inventaire	(91)		(92)		(93)	(94)
Distribution/ transports	(95)		(96)		(97)	(98)
Marketing/ventes	(99)		(100)		(101)	(102)
Personnel/paie	(103)		(104)		(105)	(106)
Comptabilité/finance	(107)		(108)		(109)	(110)
Autre (a spécifier)_____	(111)		(112)		(113)	(114)
_____	(115)		(116)		(117)	(118)
_____	(119)		(120)		(121)	(122)

16. Quelles recherches ou informations vous aideraient le plus dans vos projets de développement? Votre réponse ici aidera INPUT à améliorer ses services.

_____

_____ (123)

E. BUDGET INFORMATIQUE

17. Quel est votre budget informatique total pour 1980 (en millions de F)?_____ (124)
18. Est-ce que votre budget comprend:
    a) l'acquisition des données? Oui_____ Non_____ c) la formation? Oui_____ Non_____
    b) les progiciels et la programmation? Oui_____ Non_____ d) les fournitures? Oui_____ Non_____ (125)
19. Y a-t-il d'autres rubriques de cette nature exclues de votre budget?

_____ (126)

20. Est-ce que votre budget a été affecté par l'inflation continue? Oui_____ Non_____ (127)
21. Si oui, de quel pourcentage_____ % (128) et dans quelles domaines?_____ (129)
22. Veuillez indiquer, par catégorie, la répartition de votre budget informatique en 1980. Comment se divise-t-il entre les applications centrales et à distance? Indiquez, également, pour l'année 1981, le pourcentage d'augmentation ou de diminution dans les catégories spécifiées.

CATEGORIES BUDGETAIRES (130-169)	Budget Total 1980 (F Million)	Site Central	Site(s) A Distance	Pourcentage d'Augmentation ou Diminution Prévu en 1981 Augmentation(1)	Diminution(2)
Personnel - (y compris les coûts de formation etc.)	F_____(130)	_____%(131)	_____%(132)	_____ %	_____%(133)
Unité centrale de traitement	F_____(134)	_____%(135)	_____%(136)	_____ %	_____%(137)
Les périphériques	F_____(138)	_____%(139)	_____%(140)	_____ %	_____%(141)
Les mini-ordinateurs	F_____(142)	_____%(143)	_____%(144)	_____ %	_____%(145)
Les terminaux	F_____(146)	_____%(147)	_____%(148)	_____ %	_____%(149)
Matériels et logiciels de transmissions/communications	F_____(150)	_____%(151)	_____%(152)	_____ %	_____%(153)
Logiciel (achat ou location)	F_____(154)	_____%(155)	_____%(156)	_____ %	_____%(157)
Maintenance par le vendeur (matériel et logiciel)	F_____(158)	_____%(159)	_____%(160)	_____ %	_____%(161)
Traitements à l'extérieur	F_____(162)	_____%(163)	_____%(164)	_____ %	_____%(165)
Fournitures et autres_____	F_____(166)	_____%(167)	_____%(168)	_____ %	_____%(169)

23. Dans votre budget, est-ce qu'une somme sera destinée à l'achat de systèmes clefs en main prêts a l'usage (systèmes qui combinent l'unité centrale et les applications de logiciel)? Oui_____ Non_____ (170)
    Si oui, de quelle ordre sera cette somme (en millions de F)?_____ (171)

CATALOG NO. EU801

F. MATERIEL INFORMATIQUE

24. Veuillez indiquer le nombre et le type de machines d'usage général, installées ou en commande pour le site central ou à distance.

VENDEUR	SERIE/MODELE	NB. INSTALLEES	NB. EN COMMANDE	NB. SITUEES: SITE CENTRALE	NB. SITUEES: A DISTANCE
IBM	303X; 370/158-168	(172)	(173)	(174)	(175)
	4300	(176)	(177)	(178)	(179)
	8100,3790	(180)	(181)	(182)	(183)
	Autre 370 et 360	(184)	(185)	(186)	(187)
	Système 3, 32, 34, 38	(188)	(189)	(190)	(191)
	Autre(Série 1, par exemple)	(192)	(193)	(194)	(195)

Si les machines ne sont pas celles d'IBM, indiquez:

NOM DU VENDEUR	MODELE	NB. INSTALLEES	NB. EN COMMANDE	NB. SITUEES: SITE CENTRALE	NB. SITUEES: A DISTANCE
(196)	(197)	(198)	(199)	(200)	(201)
(202)	(203)	(204)	(205)	(206)	(207)
(208)	(209)	(210)	(211)	(212)	(213)

25. Veuillez indiquer dans le tableau suivant le nombre d'appareils installés ou prévus.

AVEZ-VOUS INSTALLE:	NON PREVUS	PAS ENCORE, MAIS PREVUS	NOMBRE INSTALLE	POURCENTAGE D'AUGMENTATION PREVU 1980-1981
A) Des mini-ordinateurs ou des petits ordinateurs des bureaux	(214)	(215)	(216)	(217)
B) Des micro-ordinateurs ou des ordinateurs personnels	(218)	(219)	(220)	(221)
C) Des terminaux intelligents	(222)	(223)	(224)	(225)
D) Des terminaux non-intelligents	(226)	(227)	(228)	(229)

Comment le département informatique prévoit-il et contrôle-t-il l'acquisition et l'utilisation des matériels des catégories A et B:

25. A (230)

25. B (231)

G. DEPENSES POUR L'ACHAT DE LOGICIEL ET POUR L'USAGE DE SERVICES-BUREAUX EXTERIEURS

26. Est-ce que votre société achète des services informatiques qui ne sont pas sous la responsabilité du département informatique?
(1) Oui _____ (2) Non _____ (232)

27. Si oui, quelles furent approximativement les dépenses annuelles en 1979? F _____ (233)

28. Quel pourcentage d'augmentation ou diminution prévoyez-vous entre 1979-1980? _____ % (234) 1980-1981 _____ % (235)

29. Qui achète ces services extérieurs?

Le service financier	_____ % (236)	Opérations/fabrication	_____ % (240)
La direction	_____ % (237)	Marketing/ventes	_____ % (241)
Le service du personnel	_____ % (238)	Autre (à spécifier)	
R & D/l'ingénierie	_____ % (239)	_____	_____ % (242)

H. LA SATISFACTION QUE VOUS RETIREZ DES FOURNISSEURS DE SERVICES ET DE LOGICIELS: LEUR UTILISATION FUTURE

30. Veuillez indiquer: a) Votre niveau de satisfaction (élevé, moyen, bas) pour les différents types de services ou de logiciels.
b) L'augmentation ou la diminution probable d'utilisation pendant les deux années prochaines.

SERVICE/SYSTEME	NIVEAU DE SATISFACTION (cocher la case correspondante)				CHANGEMENT PREVU 1980-1982	
	(1) NON-UTILISES	ELEVE (2)	MOYEN (3)	BAS (4)	Augmentation (Pourcentage)	Diminution (Pourcentage)
Bureau—						
Services informatiques interactifs à distance	(243)	(244)	(245)	(246)	% (247)	% (248)
Traitement par lots à distance	(249)	(250)	(251)	(252)	% (253)	% (254)
Traitement par lots local (y compris sortie sur microfilms)	(255)	(256)	(257)	(258)	% (259)	% (260)
Prise en charge complète (facilities management)	(261)	(262)	(263)	(264)	% (265)	% (266)
Systèmes clefs en main	(267)	(268)	(269)	(270)	% (271)	% (272)
Entretien du matériel	(273)	(274)	(275)	(276)	% (277)	% (278)

H. LA SATISFACTION (SUITE)

30. Suite

SERVICES/LOGICIEL	NIVEAU DE SATISFACTION (cocher la case correspondante)				CHANGEMENT PREVU 1980-1982	
	(1) NON-UTILISES	ELEVE (2)	MOYEN (3)	BAS (4)	Augmentation (Pourcentage)	Diminution (Pourcentage)
Produits système	____ (279)	____ (280)	____ (281)	____ (282)	____%(283)	____%(284)
Produits programme (progiciel)	____ (285)	____ (286)	____ (287)	____ (288)	____%(289)	____%(290)
Services professionals:						
Expertise	____ (291)	____ (292)	____ (293)	____ (294)	____%(295)	____%(296)
Développement de logiciels sur mesure	____ (297)	____ (298)	____ (299)	____ (300)	____%(301)	____%(302)
Enseignement et formation	____ (303)	____ (304)	____ (305)	____ (306)	____%(307)	____%(308)

31. D'après votre expérience actuelle des fournisseurs, pouvez-vous évaluer, par un bref commentaire, les quatres catégories de services désignées ci-dessous . (Rayez les catégories non-utilisées.)
    1. Services bureaux _____ (309)
    2. Systèmes clefs en main _____ (310)
    3. Produits programme _____ (311)
    4. Expertise extérieure _____ (312)

32. Veuillez indiquer, pour chaque catégorie, vos trois fournisseurs préférés ("A" étant le meilleur). Rayer les catégories non-utilisées.
    1. Services bureaux A. _____ (313) B. _____ (314) C. _____ (315)
    2. Systèmes clefs en main A. _____ (316) B. _____ (317) C. _____ (318)
    3. Produits programme A. _____ (319) B. _____ (320) C. _____ (321)
    4. Expertise extérieure A. _____ (322) B. _____ (323) C. _____ (324)

I. LE SERVICE BUREAU DE L'AVENIR

33. Veuillez indiquer, parmi les systèmes ou les services suivants, ceux qui sont déjà en service ou qui sont prévus; indiquer, également, si le département informatique en a, ou en aura, la responsibilité.

CATEGORIE	EXISTANTS OU PREVUS					PROJETS/RESPONSABILITE DU DEPT. INF.				
	DEJA EN SERVICE	EN 1980-1982	EN 1983-1985	NON-PREVU	JE NE SAIS PAS	DEJA	EN 1980-1982	EN 1983-1985	NON-PREVU	JE NE SAIS PAS
Transmission de données										
• Réseau commuté					(325)					(326)
• Lignes louées					(327)					(328)
• Transmission de pacquets					(329)					(330)
• Telex					(331)					(332)
Service base de donnée										
• Prestel					(333)					(334)
• Euronet					(335)					(336)
• Réseau d'écran interne					(337)					(338)
• Autre					(339)					(340)
Bureautique										
• Courrier électronique					(341)					(342)
• Traitement de textes					(343)					(344)
• Traitement d'images					(345)					(346)
• Télécopieur/facsimile					(347)					(348)
• Ecrans graphiques					(349)					(350)

RESERVE AU BUREAU INPUT ☐ (351)

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INPUT