THE ITALIAN COMPUTER SERVICES INDUSTRY

1980

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needs. Clients rec
access to data on w
continuous consultir

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THE ITALIAN COMPUTER SERVICES INDUSTRY
1980

DECEMBER 1980

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ABSTRACT

The Italian computer services sector, the fourth largest in Europe, while still at an earlier stage of development than its counterparts in other major countries is well placed for rapid growth and modernisation without having to follow the traditional paths of those other countries which started their development at an earlier time.

Technological, vendor-impulsed and user-related factors will contribute to a 33% annual average growth of the computer services market between 1980 and 1984.

M-E05
December 1980

INPUT

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LIST OF EXHIBITS

1 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 to be read both as a self-contained report on the Italian 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 I-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.

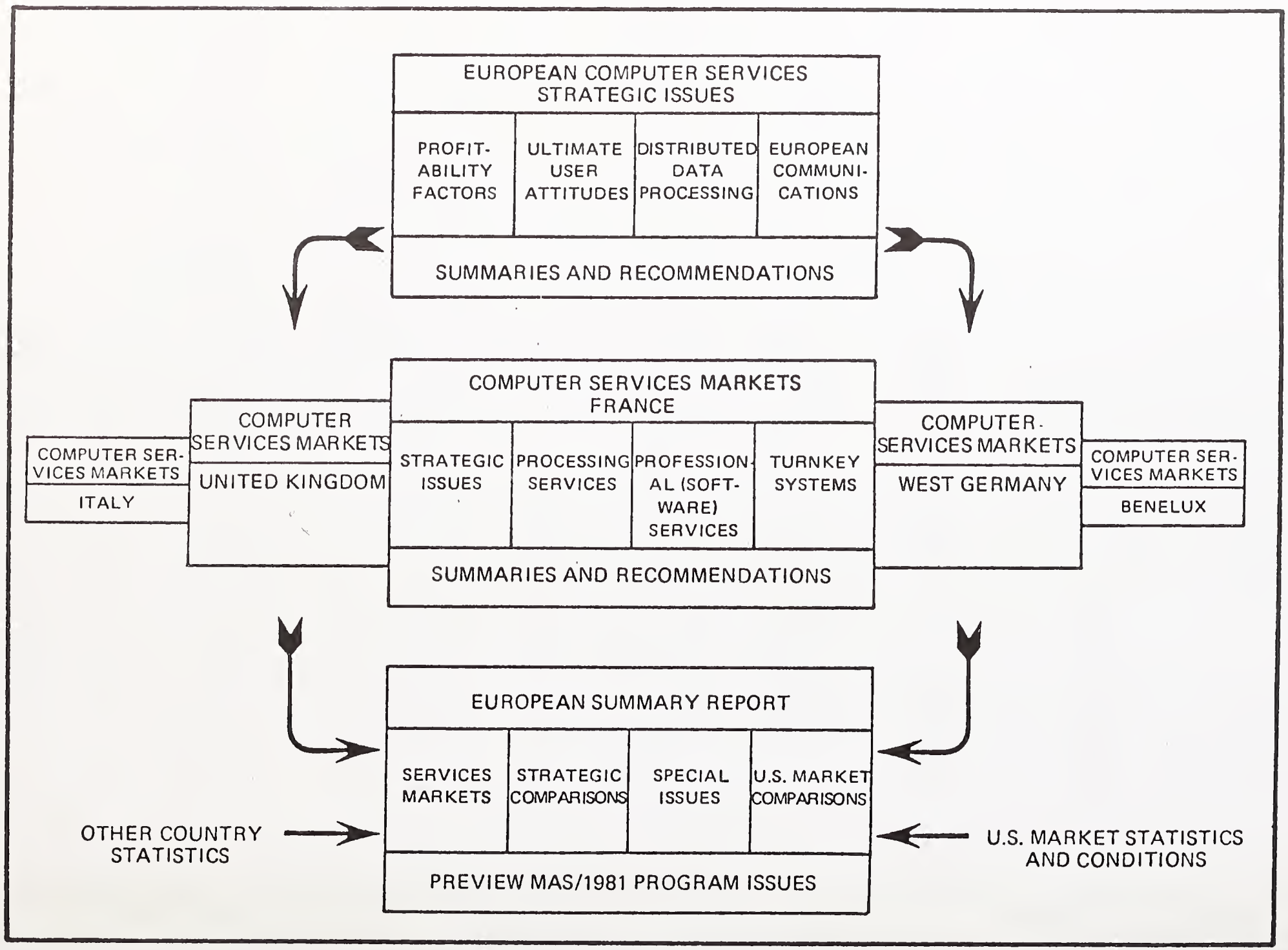
- The MAS/Europe Programme for 1980 has retained those traditional client-orientated elements which have done so much to ensure benefits to subscribers:

  - 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, with:
  - Multinational corporations, both those headquartered 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 Italian 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, taken either from its own policies, or from attitudes to the market as a whole.

- The user questionnaire is directed at:

  - EDP management and/or general 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 Italy.

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 submajor sectors is shown in Exhibit I-6.

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

EXHIBIT I-2

MAS/EUROPE 1980: USER ATTITUDE RESEARCH, TARGETTED SAMPLES

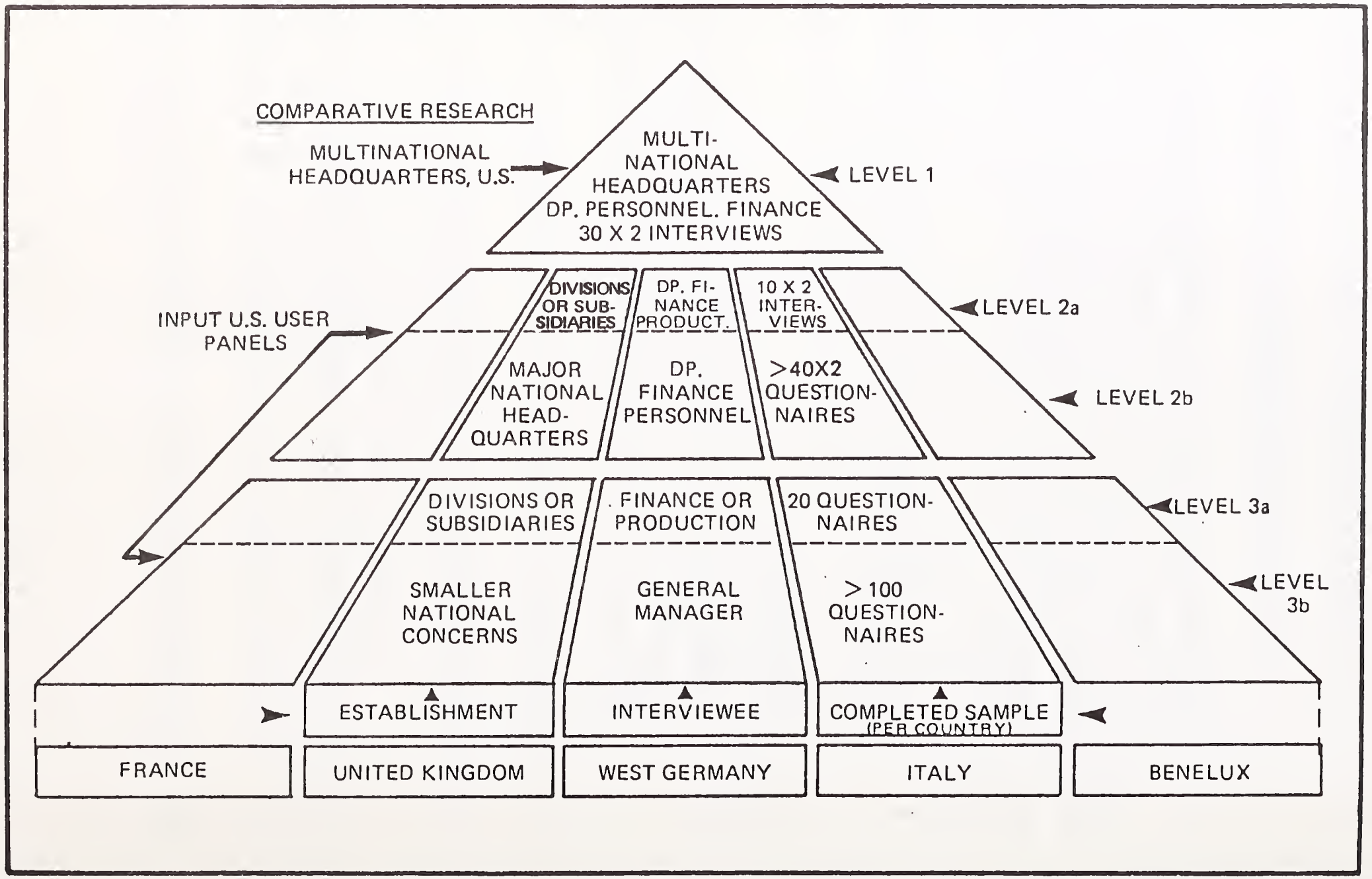


EXHIBIT I-3

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 WITH DATA ON OVER 4,000 COMPANIES

EXHIBIT I-4

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

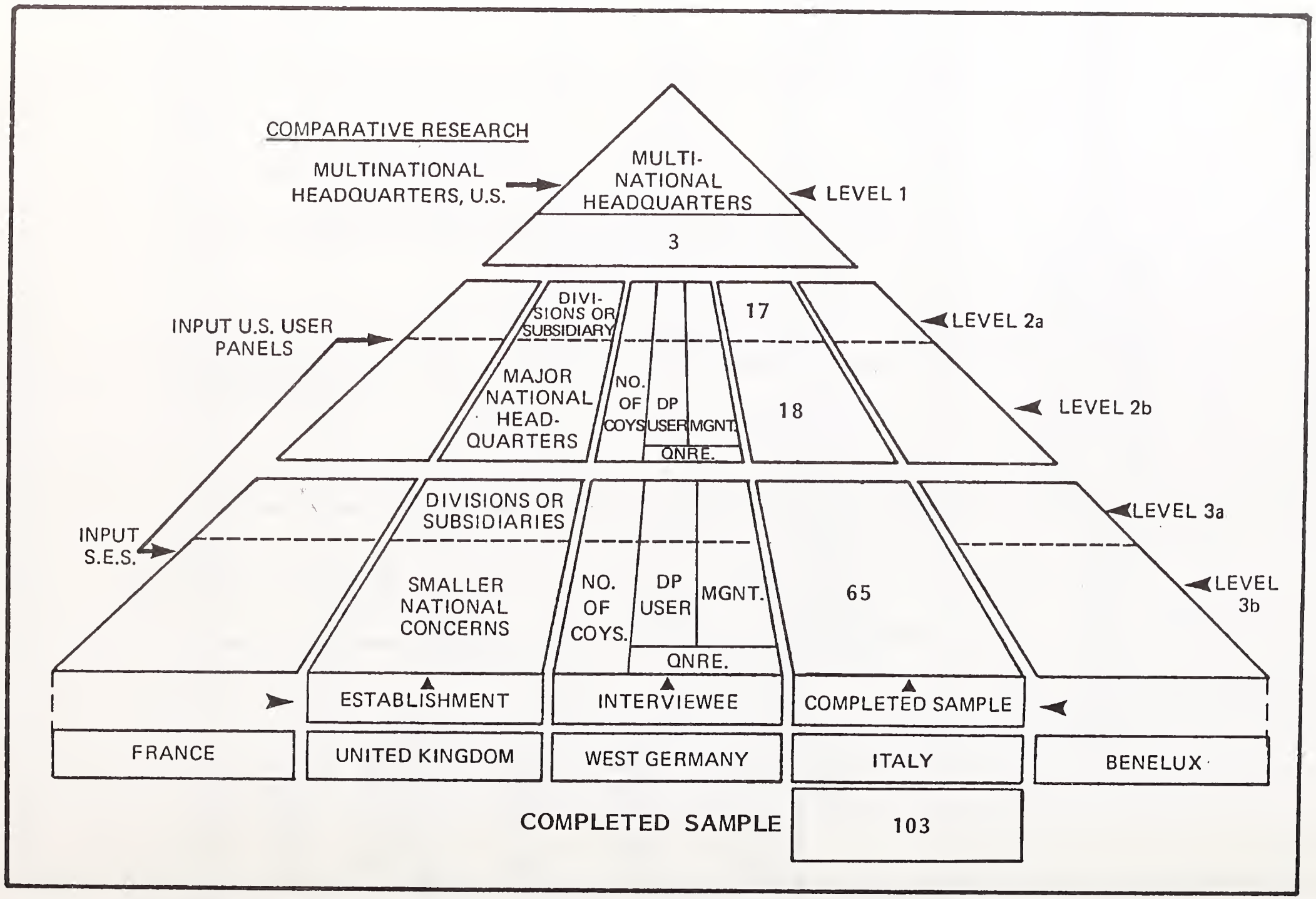


EXHIBIT I-5

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

TYPE OF VENDOR	ACTUAL NUMBER OF INTERVIEWS BY COUNTRY/MARKET					
	MULTI-NATIONAL	BENELUX	FRANCE	ITALY	UNITED KINGDOM	WEST GERMANY
COMPUTER MANUFACTURER	12	-	-	-	-	-
PROCESSING SERVICES	13	10	8	13	11	6
SOFTWARE PRODUCTS	5	6	-	5	4	9
PROFESSIONAL (SOFTWARE) SERVICES	8	11	6	7	2	13
TURNKEY SYSTEMS	3	6	4	4	4	4

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

EXHIBIT I-6

MAS/EUROPE 1980: COMPUTER SERVICES MARKET SIZES

COUNTRY MARKET ANALYSIS AND FORECASTS			
PROCESSING SERVICES	PROFESSIONAL (SOFTWARE) SERVICES	SOFTWARE PRODUCTS	TURNKEY SYSTEMS
• BATCH • REMOTE COMPUTING - INTERACTIVE - REMOTE BATCH • FM • 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 PRICING COMPARISONS COUNTRY COMPARISONS	◀	▶	MARKET SIZES GROWTH FORECASTS COMPARATIVE ISSUES
KEY COMPETITION			

B. SCOPE OF THE REPORT

- The aims of this report are twofold:

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

  - To highlight and discuss the strategic issues for vendors operating in Italy. 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 deal with the details of the market for each of the four major types of service:

    . Processing services.

    . Software products.

    . Professional services.

  - Turnkey systems.

- The detail in Chapter VI through IX includes:

  - Development of the market sector during the last two calendar years (1978-1979) for which published results exist in the main.

  - Sector 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 used, while Appendix D gives similar data on the user research.

II EXECUTIVE SUMMARY

II EXECUTIVE SUMMARY

A. THE ITALIAN COMPUTER SERVICES MARKET

- The Italian computer services market is the fourth largest in Europe. Services companies active in the industry are, on the whole, up-to-date in terms of technology and on a par with their European counterparts as far as managerial skills are concerned.

- Nevertheless these computer services companies are seriously constrained in their operations at both ends of the spectrum.

  - They are held back by users with outdated data processing concepts and old-fashioned and unwieldy management techniques.

  - At the same time they are left behind by hardware manufacturers who dominate the market, dictate the pace of technological developments, are powerful in economic terms, have a close relationship with the users and are encroaching rapidly upon territories occupied hitherto by the services companies with sophisticated marketing techniques.

- Two further constraints conspire against the full realisation of the potential existing in Italy.

  - Lack of capital investment.

- Lack of official support.

- From within this framework the services companies will have to evolve their strategies for future development by:

  - Finding the weaknesses they can exploit.

  - Creating new or better relationships with users and with competitors or colleagues.

  - Defining objectives and markets.

  - Finding investment capital.

  - Defining viable strategies.

B. MARKET GROWTH, 1979-1984

- The Italian computer services market is in the process of being restructured and substantial changes will occur by 1984.

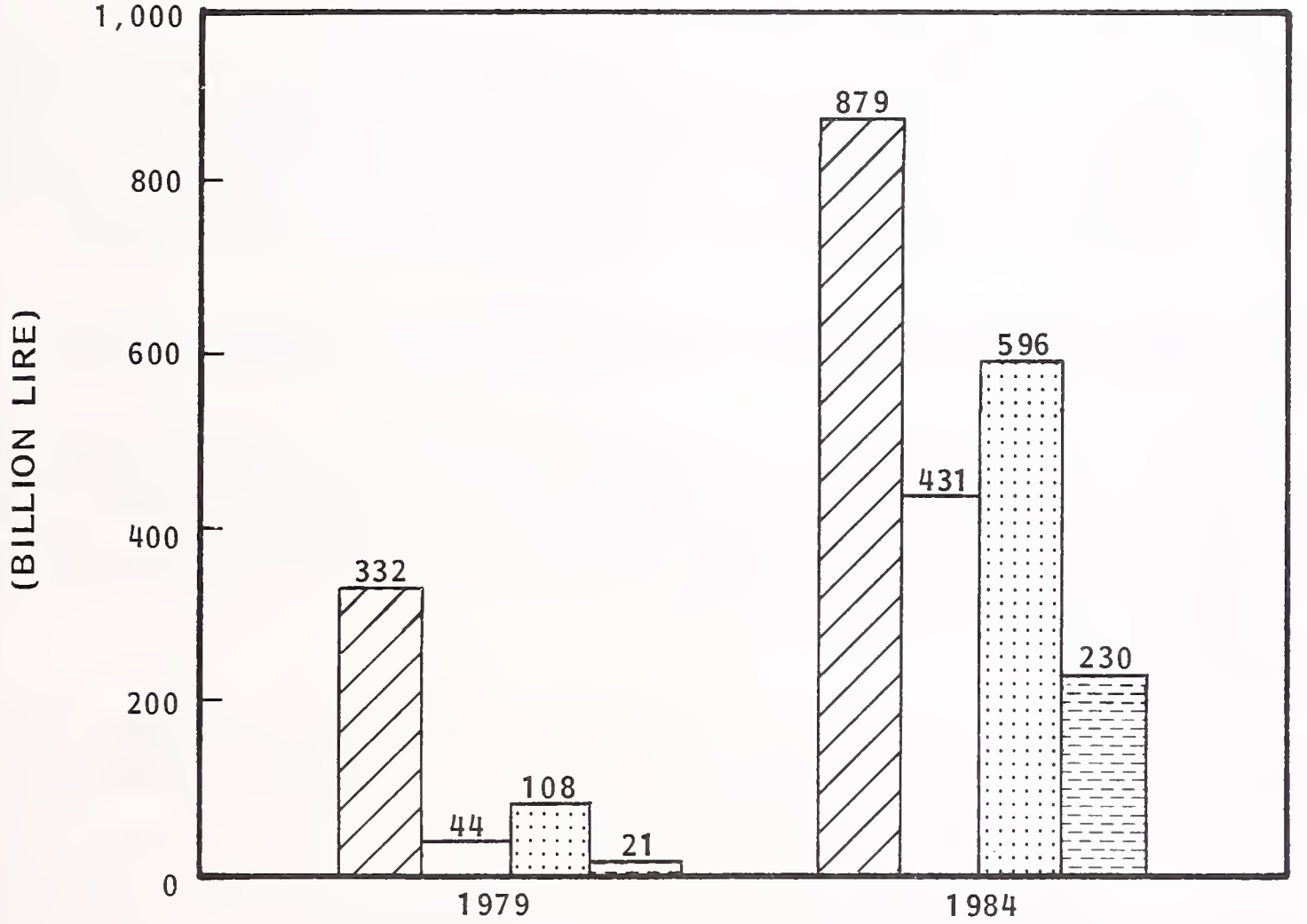
- The total value of the services market, including turnkey systems supplied by computer services companies, was 505 billion lire in 1979 and rose by 27% to 642 billion in 1980.

- The average annual growth rate, up to 1984, is forecast at 33%, taking the market to 2,136 billion lire. These figures take into account anticipated price rises as well as the real growth of the market.

- Exhibit II-1 shows the growth of the sectors of the computer services industry between 1979 and 1984.

EXHIBIT II-1

GROWTH OF THE ITALIAN COMPUTER SERVICES
MARKET SECTORS, 1979-1984



- The highest growth will be achieved by the turnkey sector which will increase 11 times, followed by software products which will grow 10 times in value.

- Professional services is forecast to grow 5.5 times while the lowest growth will be in the processing services sector which, despite a sixfold growth of the remote computing services (RCS) subsector will grow only 2.6 times overall.

C. TRENDS AND OPPORTUNITIES

- One of the reasons for the entry of hardware manufacturers into the computer services area is the progressive drop in hardware revenues. This has been brought about by the continuing fall in costs of increasingly sophisticated equipment, resulting in the need to obtain revenues from other sources.

- This situation presents several opportunities for the services companies.

  - The cheapness and availability of mini/micro based equipment gives them the possibility of supplying hardware to small or first-time users, or, through the provision of USHS, allows them to keep intact their large-user customer base.

  - The low cost of the equipment, if installed by traditional hardware suppliers, will cause the suppliers to lower the standards of service and maintenance and to provide only the minimum amount of software, thus allowing the services companies to compete successfully on the basis of local availability, service and 'user-friendliness'.

  - The latter will also apply when competing for the computer services business of established clients.

- Services companies will have to educate the DP manager to see them as reliable and friendly alternatives to both the in-house solution and the manufacturer.

  - The DP manager can be a strong ally and in the extreme, if the services company goes for hardware integration or hardware supply, he could become an internal 'stockist' or 'agent' for the vendor.

- The end user also requires education regarding the possibilities and advantages offered by services companies and the latter have to create a market image for themselves to compete with that of the hardware manufacturers.

- Services companies will have to grow and consolidate very quickly to be able to compete with hardware vendors with some chance of success for the control of distribution channels.

- For this they will need investment and up-to-date technologies to develop new, competitive applications.

  - Should this investment not be available internally or nationally, foreign assistance might be required, and this trend can already be observed in Italy.

D. USER ATTITUDES

- The DP manager spends only 45% of all user expenditure on computer services while the end user spends 55%.

- Personnel is the largest item on the DP manager's budget but the highest growth areas in the next year will be communications hardware and software which will increase their part of the budget by more than 40%.

- Eighty-nine percent of all new applications are planned to be developed in-house. Of the 11% purchased outside the largest proportion will be spent on financial applications and personnel management systems.

- The Italian DP manager sees the installation of on-line applications as his main objective between 1980 and 1982 while the most significant problems he faces relate to personnel recruitment and training and the need for an improvement in operations.

- With regard to his satisfaction with services purchased outside, the user is most satisfied with turnkey systems and facilities management and least satisfied with batch services.

- The highest growth in usage between 1980 and 1982 will be for system software.

- The highest absolute growth between 1980 and 1985 in the area of telecommunications and office automation facilities will be shown by word processing equipment.

E. PROCESSING SERVICES

1. CONCLUSIONS

- While the overall annual growth rate for the total sector will be 21% up to 1984 the RCS sector will grow at 43% per year.

- Batch services will be slowly replaced by other offerings, either in-house installation, remote batch or other external sources. The annual growth rate for this subsector will be 13% taking the market from 176 billion lire in 1979 to 331 billion lire in 1984.

- Data entry is stagnating, with a growth rate, over the forecast period, of only 9% per annum. It is largely maintained by government contracts but as technologies for data entry change, part of its revenues will go to other areas of the processing sector.

- While USHS and data base enquiry are expected to grow at well over 200% per year the actual values only become significant towards the end of the forecast period.

- The highest growth in RCS, 48% per year, will be for interactive RCS while remote batch will grow at 33%.

2. RECOMMENDATIONS

- Despite the obvious attractions of the interactive RCS market and remote batch services, processing services vendors should examine carefully the potential of USHS and an eventual vertical hardware/software integration.

- Database enquiry services, Videotex and similar technologies will be key services towards the latter part of the decade. This is another area for serious consideration.

F. SOFTWARE PRODUCTS

1. CONCLUSIONS

- This is one of the fastest growing areas of computer services and at 58% per year it will reach 431 billion lire by 1984.

- This growth is due to several causes:
  - Hardware vendors' unbundling.
  - Growing end user requirements for new applications.
  - Increasing penetration of personal computer and minisystems.
  - The impact of IBM's new generation of hardware.
- Hardware manufacturers have 65% of the market and this value will change only slightly, to 63%, by 1984.
- While in 1979, application packages represented only 24% of the market, their share will grow to 51% in 1984 overtaking system packages.
- The weak lira will have a dampening effect on imported software.

2. RECOMMENDATIONS

- Although care must be taken not to accept commissions unsuitable for treatment by packaged products the willingness to adapt the software to the client's requirements is crucial.
- This will require correct pricing strategies to take into account:
  - Maintenance.
  - Support services.
  - Increased cost of personnel.

- Companies must commit front-end investments to the 'engineering' of multiple sale packages.

G. PROFESSIONAL SERVICES

1. CONCLUSIONS

- Professional services is the largest sector of the market behind processing services and at a 41% average annual growth rate between 1979 and 1984 it will maintain this position.

  - The market will rise from 108 billion lire to 596 billion lire during the above period.

- Education and training will have the highest growth rate, 66% per year, and, while low in value, it will present good opportunities. It is, after all, a service which is difficult to provide in-house and therefore is seen as the least threatening to the position of the DP manager.

- Dedicated software will grow at 49% per year from 50 billion lire in 1979 to 362 billion in 1984. It will overtake consultancy services in 1981 to 1982 as this sector will grow at the slower rate of 30%, reaching 204 billion in 1984.

  - This project-oriented, personnel intensive sector is best equipped to cope with inflation as prices can be set individually and independently for each contract.

- The changing patterns of management with consequent restructuring of organisations will call for an increase in new application software. The national characteristic calling for individually tailored, nonstandard applications will be one of the factors contributing to the growth of this sector.

- Considering the chronic shortage of staff, education and training services will be very much in demand.

- The growth in consultancy services will be hindered by the same shortage of qualified personnel, as the latter will be transferred to more profitable projects.

2. RECOMMENDATIONS

- Salary levels should be made sufficiently attractive to counterbalance the paying power of end users. The boredom of reinventing software and spending their working life maintaining it may not be enough to make programmers and analysts relinquish a better paid job with the enduser.

- Smaller companies should productise their past project and software experience and seek opportunities in specific application and industry sectors.

- An effort should be made to create a proper marketing structure within the professional service company and every attempt must be made to create a public image for the firm and the sector.

H. TURNKEY SYSTEMS

1. CONCLUSIONS

- The sector has been defined as containing only those turnkey systems provided by computer services companies.

- Even so it is the field with the highest growth rate, 61% per year, taking its value from 21 billion lire in 1979 to 230 billion in 1984.

- Every services company in Italy is considering the possibility of entering the turnkey sector but this requires careful planning and a large investment in:

  - Hardware.

  - Software.

  - Support.

  - Maintenance.

- Italy's physical shape presents added problems to the successful participant in a high-volume sales turnkey operation, stretching his resources and forcing him to provide poor service.

- The market is dominated by processing services companies who have ventured boldly into hardware integration.

  - Their original marketing experience, exposure to end users and competition with the hardware vendors gives processing companies an edge over other services companies.

- The products offered are mainly directed at specific industries.

2. RECOMMENDATIONS

- The main asset a turnkey operator has is his reputaton and professionalism, especially as his main competitor will be the hardware vendor.

- The safest way to approach the market is by specialising in an industry or sector well known to the vendor or with a specific cross-industry product.

- A control of cash flow and production management are essential.

- The clear definition of limits on the contractual responsibility for hardware or software maintenance may be crucial to the survival of the vendor.

III MARKET ANALYSIS, 1979-1984

III MARKET ANALYSIS, 1979-1984

A. GENERAL OVERVIEW

- This chapter deals with the overall Italian computer services market, its place within the European context, its recent history and INPUT's view of its development over the next five years.

- This Italian market is the fourth largest in Europe behind France, West Germany and the United Kingdom and presents, as is only natural, some characteristics that are peculiar to Italy reflecting the structure of the country's economy as a whole.

- Exhibits III-1 and III-2 compare, in tabular form and graphically, the four major European markets for the year 1979. They show that the largest market, France, is nearly three times the size of Italy and that the U.K. which Italy follows in ranking is nearly double its size.

- One of the peculiarities of the Italian market is the existence of a large data entry sector, larger in 1979 than the RCS market, at $97.4 million. This subsector has been quantified separately in our analysis because of its importance in Italy.

- It is interesting to compare the European markets relative to each country's corresponding GDPs as is done in Exhibit III-3.

EXHIBIT III-1

EUROPEAN COMPUTER SERVICES MARKETS: COMPARISONS FOR 1979

SERVICE TYPE	$ MILLION			
	ITALY	UNITED KINGDOM	WEST GERMANY	FRANCE
RCS	$ 74.8	$ 220.0	$ 160.5	$ 204.0
BATCH	295.9*	260.0	268.0	439.0
FM	-	18.0	20.0	86.5
PROFESSIONAL SERVICES	121.5	280.0	573.0	500.0
SOFTWARE PRODUCTS	49.1	140.0	217.5	175.0
TURNKEY SYSTEMS	23.6	98.0	21.0	177.0
TOTAL SERVICES MARKETS	$564.9	$1,016.0	$1,260.0	$1,581.5

*OF WHICH DATA ENTRY WAS $97.4 MILLION

EXHIBIT III-2

EUROPEAN COMPUTER SERVICES MARKETS: COMPARISONS FOR 1979 - GRAPHICAL REPRESENTATION

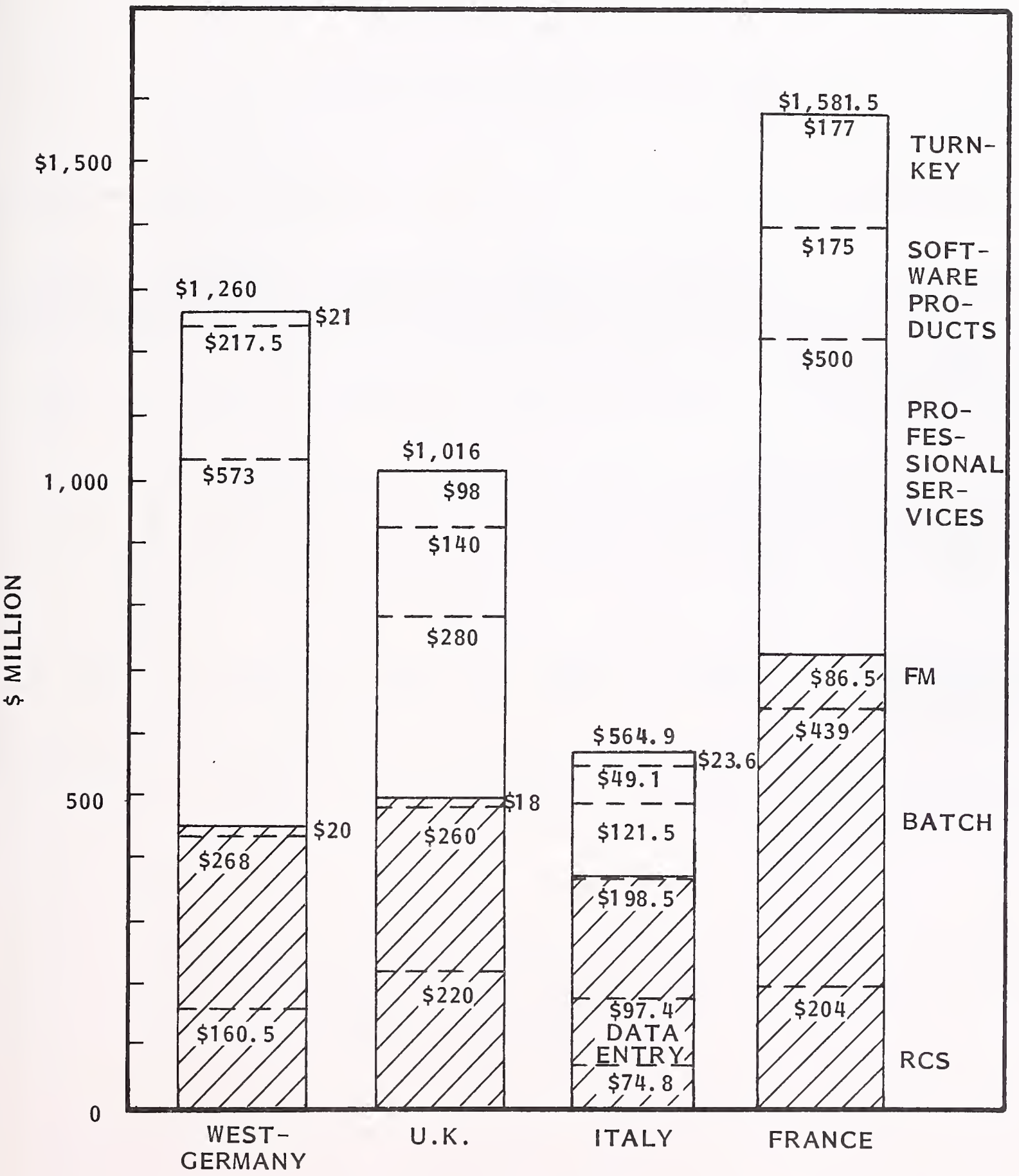


EXHIBIT III-3

KEY COMPARATIVE INDICATORS

INDICATOR	UNITED STATES	UNITED KINGDOM	FRANCE	WEST GERMANY	ITALY
COMPUTER SERVICES MARKET RELATIVE TO GDP (PERCENT)	0.5%	0.41%	0.39%	0.23%	0.18%
PERCENT OF MARKET CAPTURED BY THE TOP TEN VENDORS	25%	32%	41%	24%	24%
ANNUAL REVENUE PER EMPLOYEE ($ THOUSAND)	$44	$35	$50	$60	$35

- The U.S. market, at 0.5% of the GDP, has the largest relative size while Italy at 0.18% has the smallest.

- This ratio is a reasonable measure of the degree of maturity of the computer services business in each country.

- In the same way as the Italian economy is composed of some large conglomerates, some medium sized companies and a very large number of small firms, the computer services sector contains some 1,200 participants showing a similar distribution.

- Even so, the largest companies are small in relation to their European colleagues. The Italian companies with the largest external national markets are one-tenth of the size of the largest French company, and one fifth of the largest German or British firms, as is shown in Exhibit III-4.

- The fragmentation of the market in Italy is shown by the fact, indicated in Exhibit III-3, that the top 10 companies represent only 24% of the total computer services market while France is at the opposite extreme with a 41% share for its top 10 companies.

- The last comparison in Exhibit III-3 shows the annual revenues per employee active in the computer services sector.

  - Germany leads with $60,000 in revenues per employee while Italy and the U.K. are lowest, behind France and the U.S., at $35,000 per person per year.

- Finally, Exhibit III-5 shows a comparison of 1980 annual salaries for personnel in the computer services sector in Italy and the U.K. as well as the average daily charge-out rates for personnel on contract.

EXHIBIT III-4

NATIONAL MARKET LEADERS:

TOTAL EXTERNAL MARKETS, 1979

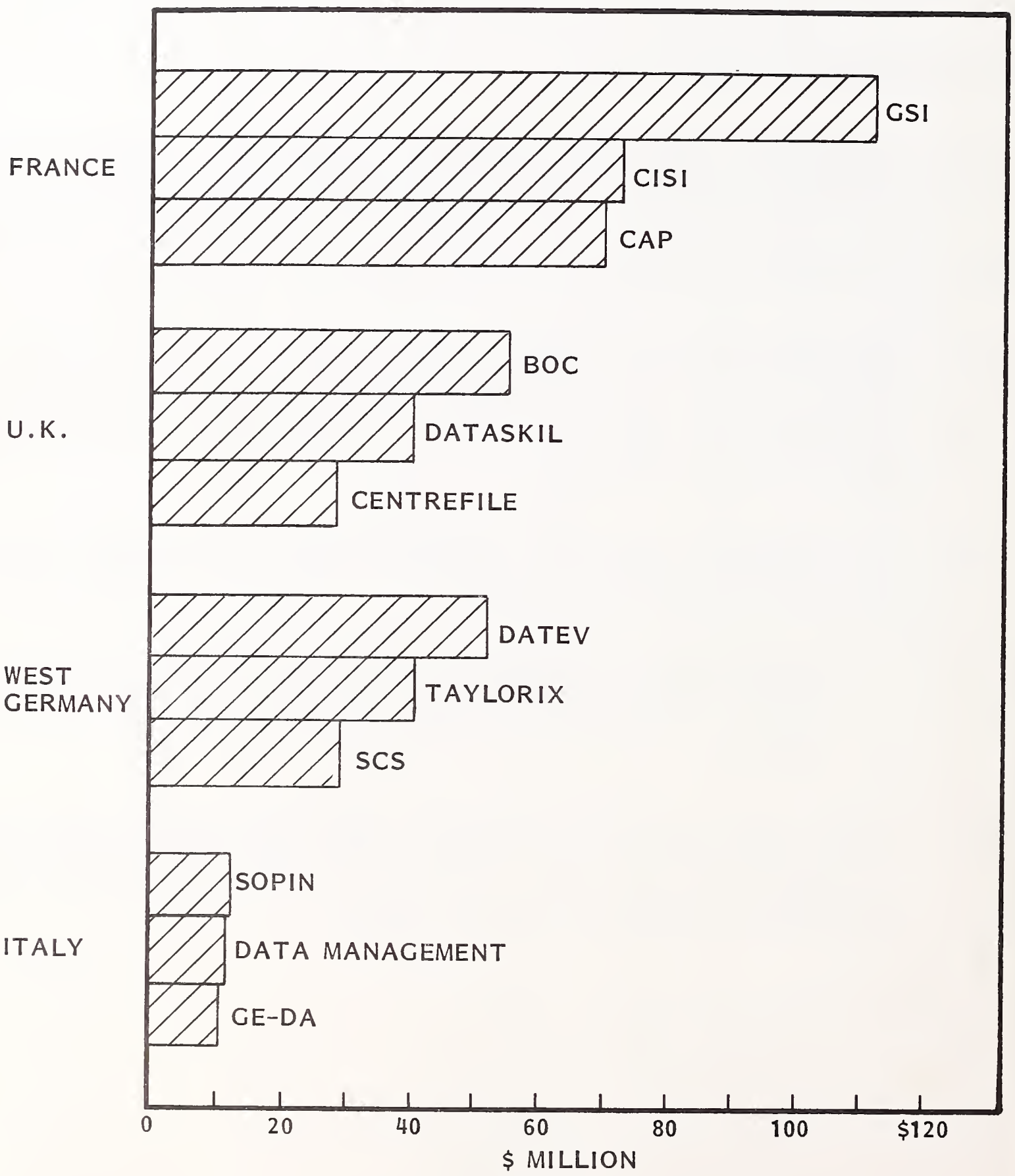


EXHIBIT III-5

COMPUTER SERVICES SECTOR
COMPARATIVE INDICATORS,
1980

- ANNUAL SALARY ($ THOUSAND)

	ITALY	U.K.
- PROJECT MANAGER	OVER $22.0	OVER $23.0
- ANALYST	18.5-23.0	18.0-25.0
- ANALYST/PROGRAMMER	13.0-16.5	17.0-19.5
- PROGRAMMER	9.5-13.0	11.5-17.5
- OPERATOR	8.5-11.0	8.0-14.0

- AVERAGE CHARGE-OUT RATES ($ PER DAY)

	ITALY	U.K.*	U.K.**
- PROJECT MANAGER	$319	$312	$560
- CONSULTANT	301	265	485
- ANALYST	241	215	358
- SENIOR PROGRAMMER	189	170	259
- JUNIOR PROGRAMMER	170	145	259

*U.K. LONG-TERM CONTRACTS
**U.K. SHORT-TERM CONTRACTS

- There is very little difference between equal grades in the two countries and, while U.K. salaries are slightly higher than Italian ones, the charge-out rates are slightly lower for long-term contracts.

- The main difference lies in the fact that, while in the U.K. rates charged by software houses are higher on average than those of manufacturers, the situation in Italy is the reverse as the manufacturers still have a much better public image than software houses and are able to command higher prices.

B. COMPUTER SERVICES MARKET DEFINITION

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

  - Market development for the 1978-1980 timeframe was evaluated from the results of the INPUT database updates for 1980, which included 80% of the top 20 service companies by Italian market share, as well as other, smaller, specialised companies.

  - Market forecasts were built from the user and vendor expenditure returns, and cross-checked against each other.

- 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 consistent.

- Besides the above breakdowns, remote computing services were forecast also by submodes, including interactive, remote batch, database enquiry and USHS.

- 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.

- Turnkey systems have been split off from the total computer services market and forecast separately. Only turnkey systems supplied by computer service companies have been taken into account. Those systems supplied by hardware vendors or other electronic companies were not included.

- The incremental growths of the different subsectors of the market between 1979 and 1984 are represented graphically in Exhibit III-6.

  - Growth rates indicated are the average annual growth rates (AAGR) for the period.

  - The growth between individual years is not constant, 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.

EXHIBIT III-6

INCREMENTAL REVENUE GROWTH BY

MODE AND TYPE OF SERVICE: ITALY, 1979-1984

COMPUTER SERVICE BY MODE AND TYPE*	AAGR** 1979-1984 (PERCENT)	INCREMENTAL REVENUE GROWTH IN CURRENT LIRE (BILLION LIRE)
RCS	43%	336.2
BATCH	13	154.2
DATA ENTRY	9	49.0
FM	39	7.5
TOTAL PROCESSING	21%	546.9
SYSTEMS SOFTWARE	45%	176.1
APPLICATIONS SOFTWARE	83	211.3
TOTAL SOFTWARE	58%	387.4
CONSULTANCY	30%	148.1
DEDICATED SOFTWARE	49	312.5
EDUCATION AND TRAINING	66	27.8
TOTAL PROFESSIONAL SERVICES	41%	488.4
TOTAL SERVICES	32%	1,423
TURNKEY INDUSTRY SPECIFIC	59%	176.3
TURNKEY CROSS INDUSTRY	77	32.4
TOTAL TURNKEY	61%	208.7

0 100 200 300 400 500

*RCS = REMOTE COMPUTING SERVICE
FM = FACILITIES MANAGEMENT
**AAGR = AVERAGE ANNUAL GROWTH RATE

- All figures are in current Italian lire. They include price increase factors which were calculated according to the way in which individual sectors will be affected by inflation.

- These price increases, shown in tabular form in Exhibit III-7, have been estimated from INPUT's knowledge of the quantity and timing of typical increases by leading vendors in the industry and by environmental market conditions prevalent in Italy.

- The figures alongside the price increases in each subsector are the overall yearly growth factors which include the net market growths and price increases.

C. MARKET DEVELOPMENT, 1978-1980

- The total computer services sector in Italy grew from 1978 to 1979 at an overall rate of 23%, some 6% over the average rate of inflation for that year.

  - The increase expected for 1980 over 1979 is 27%, about 7% over the average inflation rate.

  - Short-term development of the computer services market is shown in tabular form in Exhibit III-8 and graphically in Exhibit III-9.

- RCS and software products sectors increased in size at a greater than average rate in 1979 and even improved on those performances during 1980. This was due to increased efforts by vendors in those areas through investments, reassignment of manpower and a shift from less productive or obsolescent services and technologies as well as the effects, in the case of software products, of hardware vendor unbundling.

EXHIBIT III-7

ANTICIPATED PRICE RISES 1979-1985:

FORECAST TOTAL SECTOR GROWTH: ITALY,

1980-1985

YEAR	(PERCENTAGES)														
	INFLATION RATE	BATCH		RCS		DATA ENTRY		FM		SOFTWARE PRODUCTS		PROFESSIONAL SERVICES		TURNKEY	
	PRICE INDEX	PRICE INCREASE	TOTAL GROWTH	PRICE INCREASE	TOTAL GROWTH	PRICE INCREASE	TOTAL GROWTH	PRICE INCREASE	TOTAL GROWTH	PRICE INCREASE	TOTAL GROWTH	PRICE INCREASE	TOTAL GROWTH	PRICE INCREASE	TOTAL GROWTH
1979/ 1978	17%	6%	-	6%	-	12%	-	8%	-	3%	-	15%	-	7%	-
1980/ 1979	20	6	-	6	-	12	-	8	-	5	-	15	-	8	-
1981/ 1980	22	7	12%	7	39%	14	10%	8	38%	6	59%	16	41%	8	93%
1982/ 1981	21	8	13	8	46	14	10	10	40	6	69	16	41	9	54
1983/ 1982	19	8	14	8	45	14	9	10	35	8	74	20	45	9	49
1984/ 1983	17	6	11	6	42	13	7	9	33	8	51	20	45	8	43
1985/ 1984	15	6	6	6	37	12	2	9	31	7	42	19	44	8	38

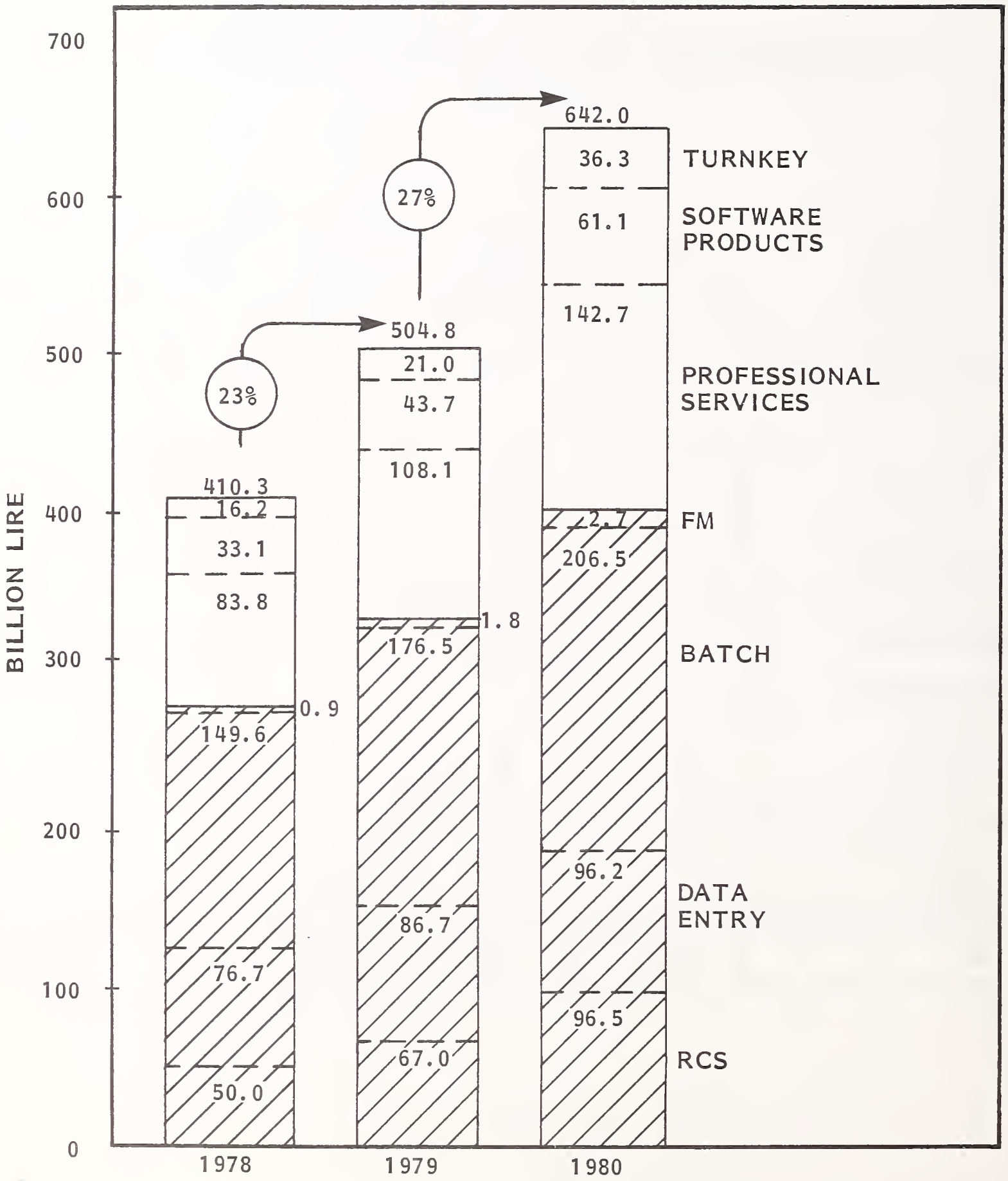
EXHIBIT III-8

ITALIAN COMPUTER SERVICES MARKET DEVELOPMENT,
1978-1980

MODE OF DELIVERY	1978 (BILLION LIRE)	GROWTH 1978-1979 (PERCENT)	1979 (BILLION LIRE)	GROWTH 1979-1980 (PERCENT)	1980 (BILLION LIRE)
REMOTE COMPUTING	50.0	34%	67.0	45%	96.5
BATCH	149.6	18	176.5	17	206.5
DATA ENTRY	76.7	13	86.7	11	96.2
FACILITIES MANAGEMENT	0.9	100	1.8	50	2.7
SUBTOTAL PROCESSING	277.2	20%	332.0	21%	401.9
PROFESSIONAL SERVICES	83.8	28	108.1	32	142.7
SOFTWARE PRODUCTS	33.1	32	43.7	40	61.1
SUBTOTAL SERVICES	394.1	23%	483.8	25%	605.7
TURNKEY SYSTEMS	16.2	30	21.0	73	36.3
TOTAL	410.3	23%	504.8	27%	642.0

EXHIBIT III-9

COMPUTER SERVICES MARKET:
ITALY, 1978-1980



- The turnkey sector, which is attracting much attention by large and small services companies alike, will almost double in market size. This sector will continue to grow at high levels for the forecast period.

- The growth of the more traditional sectors has slowed. Batch services and data entry are losing ground to the benefit of some of the other services mentioned previously.

- Exhibit III-10 shows the changes in the relative sizes of each of the sectors over the period 1978-1980. The decrease in importance of batch and data entry can be seen quite clearly.

- It is also clear that the processing sector as a whole is slowly losing share, from 67.5% of the total market in 1978 to 62.6% in 1980. This will continue at an ever increasing rate with the growing use of small systems by new users and with the rising requirements by overwhelmed DP managers for outside assistance for the development of new applications.

D. COMPUTER SERVICES FORECASTS, 1980-1984

1. LONG-TERM GROWTH

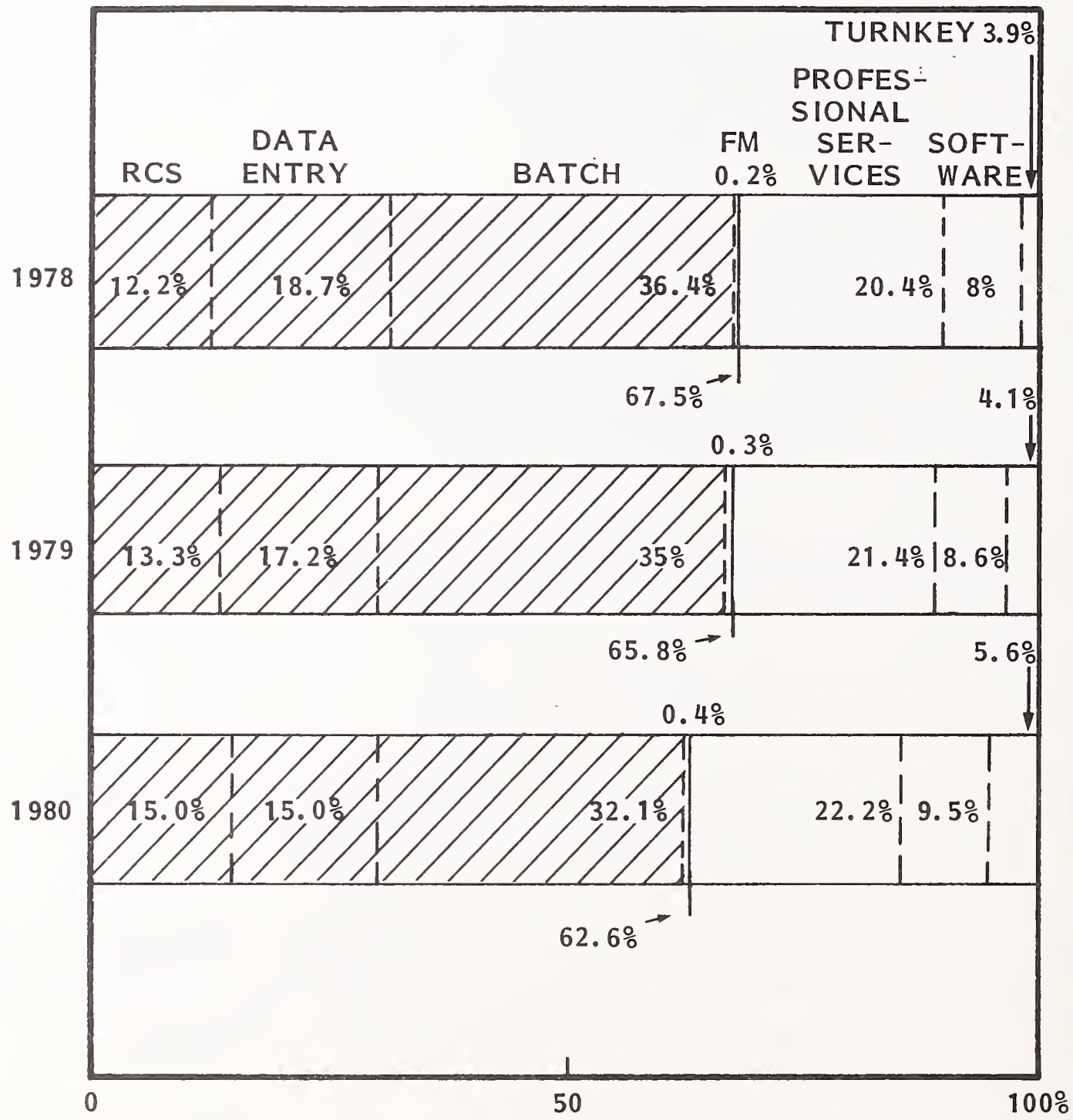
- The Italian computer services market is forecast to grow faster than the French and British markets over the next five years.

- It will increase by four times from 505 billion lire in 1979 to 2,136 billion lire in 1984 at an average annual rate of 33%, as is shown in Exhibit III-11 which tabulates the development of each sector and its constituents.

- The French and U.K. markets will have respective average annual increases of 24% and 26%.

EXHIBIT III-10

PROPORTIONAL COMPUTER SERVICES MARKET VALUES:
ITALY, 1978-1980



PROCESSING SERVICES

ALL OTHER SERVICES

EXHIBIT III-11

ITALIAN COMPUTER SERVICES MARKET FORECAST BY MODE AND TYPE OF SERVICE: TOTAL, 1979-1984

COMPUTER SERVICE		USER EXPENDITURES							
MODE	TYPE	1979 (BL)**	GROWTH 1979-1980 (%)	1980 (BL)	1981 (BL)	1982 (BL)	1983 (BL)	1984 (BL)	AAGR 1979-1984 (%)
REMOTE COMPUTING SERVICES (RCS)	INTERACTIVE	16.8	55%	26.0	38.7	58.2	85	117.3	48%
	REMOTE BATCH	50.0	40	70.1	93.4	125.5	164.8	208.4	33
	USHS*	0.11	70	0.2	1.2	8.1	22.4	34.8	216
	DATABASE ENQUIRY	0.15	35	0.2	0.8	4.0	11.7	42.7	210
SUBTOTAL RCS		67.0	45%	96.5	134.1	195.8	283.9	403.2	43%
OTHER PROCESSING SERVICES	BATCH	176.5	17	206.5	231.3	261.3	298.0	330.7	13
	DATA ENTRY	86.7	11	96.2	105.8	116.4	126.9	135.7	9
	FACILITIES MANAGEMENT	1.8	50	2.7	3.7	5.2	7.0	9.3	39
TOTAL PROCESSING		332.0	21%	401.9	475.0	578.7	715.8	878.9	21%
SOFTWARE PRODUCTS	SYSTEMS	33.0	35	44.5	64.3	93.4	152.6	209.1	45
	APPLICATIONS	10.7	55	16.6	32.8	70.7	132.9	222.0	83
TOTAL SOFTWARE PRODUCTS		43.7	40%	61.1	97.1	164.1	285.5	431.1	58%
PROFESSIONAL SERVICES	CONSULTING	56.0	29	72.2	97.1	124.7	160.4	204.1	30%
	DEDICATED SOFTWARE	49.7	35	67.1	98.6	149.7	234.2	362.2	49
	EDUCATION AND TRAINING	2.4	40	3.4	5.5	9.3	16.7	30.2	66
TOTAL PROFESSIONAL SERVICES		108.1	32%	142.7	201.2	283.7	411.3	596.5	41%
TOTAL SERVICES		483.8	25%	605.7	773.3	1,026.5	1,412.8	1,906.8	32%
TURNKEY SYSTEMS	INDUSTRY-SPECIFIC	19.0	69	32.1	60.8	92.7	136.5	195.3	59
	CROSS-INDUSTRY	2.0	110	4.2	9.2	15.1	24.1	34.4	77
TOTAL TURNKEY		21.0	73%	36.3	70.0	107.8	160.6	229.7	61%
GRAND TOTAL		504.8	27%	642.0	843.3	1,134.3	1,573.4	2,136.5	33%

*USHS = USER SITE HARDWARE SERVICES

**BL = BILLION LIRE

NOTE: MAY NOT TOTAL EXACTLY DUE TO ROUNDING

- The Italian market is not only smaller than those of the other countries mentioned but its structure corresponds to an earlier stage of development of the computer processing and services sectors, with the user still relying on large-scale centralised processing and on substantial programmes of in-house software development.

- An increasing change in management methods and a growing requirement for new applications will influence the fast expansion of the RCS market and the even faster growth of the software products sector acompanied by the provision of professional services, mainly in the form of dedicated software.

- The appearance on the marketplace of low-cost computing power, in its many forms, will provide a perfect match for computer services vendors looking for new areas of diversification and for the myriad small businesses, characteristic of the Italian market, which will experience the benefits of automating their administrative and business processes or of enhancing their current systems.

  - This will provide the driving force behind another expanding sector, the provision of turnkey systems, which is expected to grow 11 times, at an annual growth rate of 61% from a low base of 21 billion lire in 1979 to 230 billion in 1984.

- The growth of the software products market, a 58% per year average, is due to several factors:

  - Hardware vendors unbundling their products.

  - DP management finding the self-imposed task of developing most applications in-house too demanding.

  - The growing installed base of small computers requiring low-cost standard software.

- The increasing activities of turnkey software houses buying software packages to improve control of delivery dates.

- The growing awareness of general management to the availability of outside services and, in the case of existing users, the pressures on the DP manager which may prevent him from delivering the required services will be reflected in a 41% yearly growth of the professional services sector.

  - Consulting services, and even more so sales of dedicated software will contribute to this growth.

- The market for batch services with a growth of 13% per annum is increasing slower than the level of inflation but, in 1984, will still be one of the largest market sectors, with a revenue of 330 billion lire.

- The data entry market will undergo a substantial decline in real terms over the five-year period with the lowest growth rate of all, 9% annually.

- On-line database services, an activity that shows great market potential in both France and the U.K., is missing in Italy as a major force during the period up to 1984. Although the annual growth rate is forecast to be 210% the values involved are very small.

- The above is also true for USHS which will grow at a 216% annual rate.

2. INFLATIONARY EFFECTS

- Exhibit III-12 shows the annual growth rates used in forecasting the markets tabulated in Exhibit III-11. The rates are actual growth rates obtained by summing:

  - The anticipated price rises for each type of service shown in Exhibit III-7.

EXHIBIT III-12

GROWTH RATES ASSOCIATED WITH ITALIAN COMPUTER SERVICES MARKET FORECAST, 1979-1984

COMPUTER SERVICE		GROWTH RATES (PERCENT)							
MODE	TYPE	1978-1979	1979-1980	1980-1981	1981-1982	1982-1983	1983-1984	AAGR 1979-1984	1984-1985
REMOTE COMPUTING SERVICES (RCS)	INTERACTIVE	–	55%	49%	50%	46%	38%	48%	31%
	REMOTE BATCH	–	40	33	34	31	26	33	25
	USHS*	–	70	500	575	76	55	216	41
	DATABASE ENQUIRY	–	35	300	400	192	265	210	108
SUBTOTAL RCS		34%	45%	39%	46%	45%	42%	43%	37%
OTHER PROCESSING SERVICES	BATCH	18	17	12	13	14	11	13	6
	DATA ENTRY	13	11	10	10	9	7	9	2
	FACILITIES MANAGEMENT	100	50	38	40	35	33	39	31
TOTAL PROCESSING		20%	21%	18%	21.8%	23.7%	22.8%	21%	20%
SOFTWARE PRODUCTS	SYSTEMS	–	35	44	45	63	37	45	38
	APPLICATIONS	–	55	97	115	88	67	83	45
TOTAL SOFTWARE PRODUCTS		32%	40%	59%	69%	74%	51%	58%	42%
PROFESSIONAL SERVICES	CONSULTING	–	29	34	28	29	27	30	26
	DEDICATED SOFTWARE	–	35	47	52	56	55	49	53
	EDUCATION AND TRAINING	–	40	62	69	79	81	66	58
TOTAL PROFESSIONAL SERVICES		28%	32%	41%	41%	45%	45%	41%	44%
TOTAL SERVICES		23	25	28	33	38	35	32	32
TURNKEY SYSTEMS	INDUSTRY-SPECIFIC	–	69	90	52	47	43	59	36
	CROSS-INDUSTRY	–	110	119	64	59	43	77	47
TOTAL TURNKEY		30%	73%	93%	54%	49%	43%	61%	38%
GRAND TOTAL		23%	27%	30%	34%	39%	36%	33%	33%

*USHS = USER SITE HARDWARE SERVICES

- The real growth rates forecast for the individual sectors.

- When predicting the individual sector price rises, account had to be taken of inflationary forces and the competitive environment.

- The processing services sector, with the exception of the labour-intensive data entry subsector, has been forced to keep prices fairly steady in the last few years and will probably have to continue this policy in the future.

- Competition is very fierce, due to a slowing in the batch sector growth and to increasing foreign and local competition in the supply of RCS.

  - The annual price rises are not expected to go above 8% in any one year, a figure well below the rate of inflation predicted for the same period.

- Conversely the data entry sector, although a decreasing market, has had to raise its prices at about the value of inflation as the salaries it pays to its employees are index-linked and based on the officially set Minimum Movable Annual Salary.

- As the largest clients for data entry are the government and its ministries these increases can be passed on more easily.

- The price of software products has stayed constant in the last two years, with only 3% to 5% average increases. Competition here too will force prices to increase very slowly although packages imported from overseas will feel the effects of a weak lira.

- The professional services sector is one where price increases are accepted more readily or are more easily disguised.

- Currently this sector suffers from a lack of exposure to the end user who is still going through his own educational cycle.

- Therefore prices charged by services vendors are still well below those charged by hardware manufacturers.

  - It is expected that the necessary confidence in the ability of the sector will develop over the next two to three year period allowing the more reputable houses to raise their prices.

- One strong competitive element in the Italian professional services market is the free-lance consultant and the small consulting firm, of which there are very many, who tend to force restrained pricing policies on the whole sector.

3. MARKET SHARES

- The resulting market values, tabulated in Exhibit III-11, are shown in graphical form in Exhibit III-13 where the overall annual growths can easily be seen.

- The relative sizes of the individual sectors are tabulated on a year-by-year basis in Exhibit III-14 where the relative shrinking of the processing services sector becomes evident. Despite an increase of the RCS sector from 15% to 18.9%, the overall share of the processing market drops from 62.6% in 1980 to 41.1% in 1984.

- The largest increases are experienced by the software products sector, which grows from 9.5% to 20.2% of the total market, and the turnkey sector, with a growth of from 5.6% to 10.7% of the total market.

- Data entry dwindles from 15% to 6.3% by 1984 while batch services halve their share of the market, dropping from 32.1% to a mere 15.5%.

- Professional services improve their share of the market, growing from 22.2% in 1980 to 27.9% in 1984.

EXHIBIT III-13

COMPUTER SERVICES MARKET FORECAST:
ITALY, 1980-1984

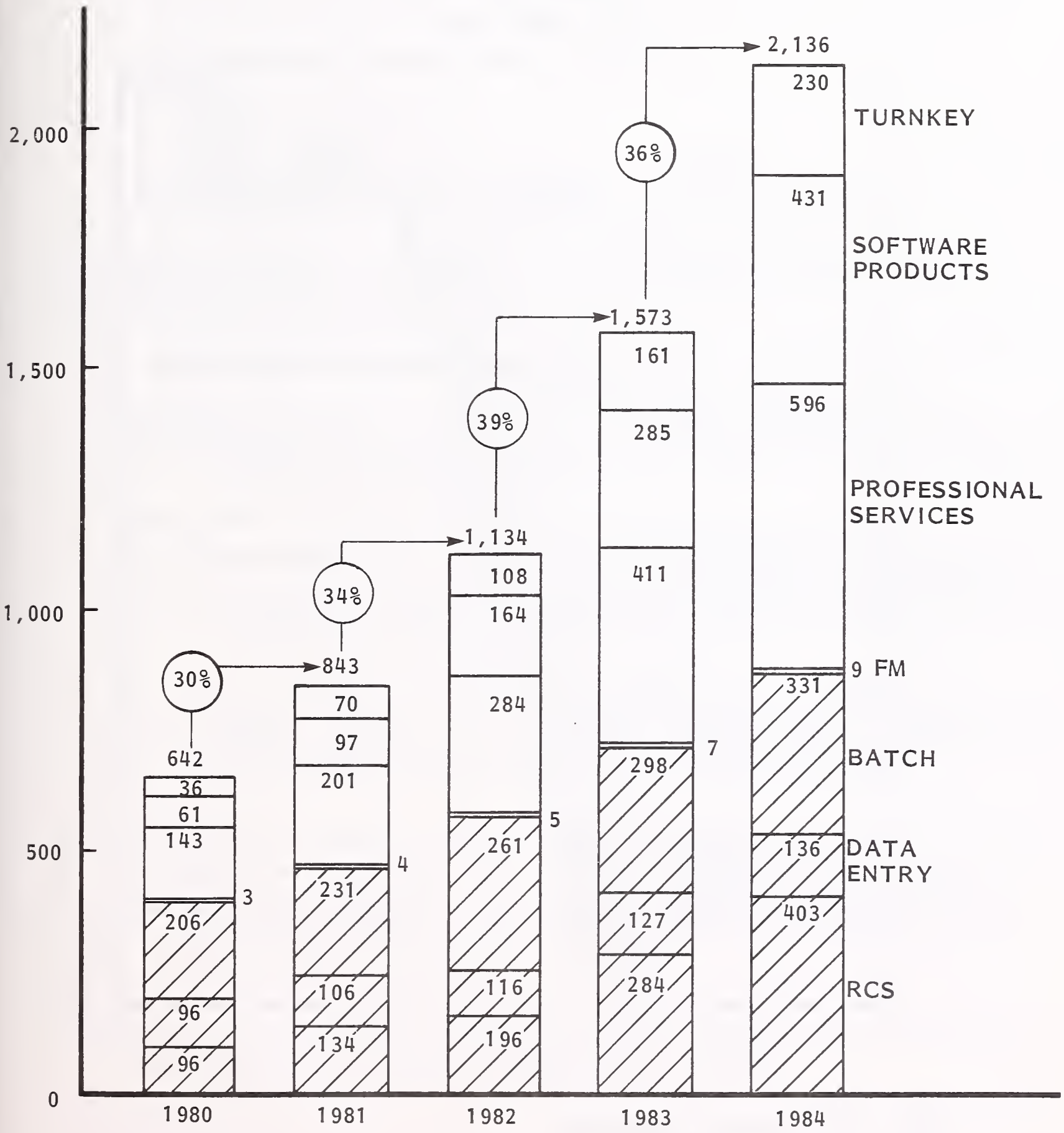
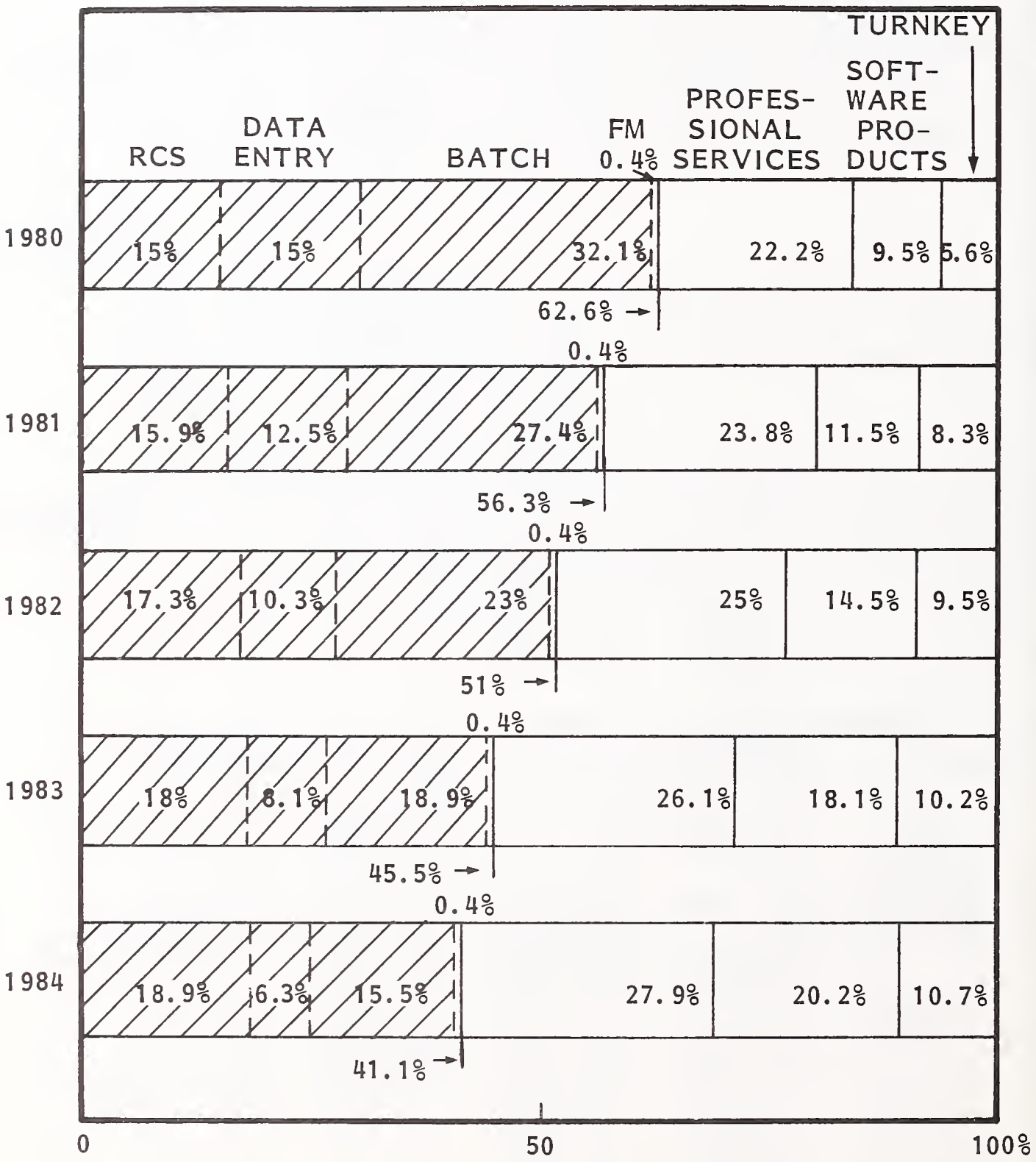


EXHIBIT III-14

PROPORTIONAL COMPUTER SERVICES MARKET
FORECAST:
ITALY, 1980-1984



PROCESSING SERVICES

ALL OTHER SERVICES

E. COMPETITIVE ENVIRONMENT

- Detailed research, including an analysis of published accounts, vendor interviews and the use of INPUT's database, has resulted in an accurate ranking of the leading service companies in 1979.

- Rankings have been made by:

  - Overall revenues in the calendar year 1979.

  - Revenue in major market sectors for the same year.

- Certain adjustments were made to the revenues thus obtained to normalise them for comparison and ranking purposes.

  - Captive revenues have been subtracted. Appendix A contains a definition of captive revenue.

  - Where applicable, export revenues have been separated from domestic revenues, even though the activities of Italian companies outside the borders of their country are still at a very low level.

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

- The INPUT definition of total national external revenue, that is total consolidated revenue from which the captive and export revenues have been deducted, gives a profile of the market in which several companies occupy unexpected positions in the overall classification.

- Exhibit III-15, shows the ranking of the top 10 computer services companies on the basis of total consolidated revenues from all sources.

EXHIBIT III-15

THE TOP TEN COMPUTER SERVICES VENDORS BY TOTAL REVENUES: ITALY, 1979

RANK	VENDOR	REVENUE (BILLION LIRE)		
		EXTERNAL REVENUES (INC. TURNKEY)	REPORTED CAPTIVE	TOTAL REVENUE ALL SOURCES
1	ITALSIEL	7.6*	64.5*	72.1
2	IBM (SERVICES)*	46.3	-	46.3
3	DATAMONT	1.1	15.0	16.1
4	DATA MANAGEMENT	11.0	4.6	15.6
5	SOPIN	12.1	-	12.1
6	SIPE OPTIMATION	7.5	4.0	11.5
7	GE-DA	10.5	-	10.5
8	SYNTAX	6.2	1.9	8.1
9	CDS ITALIA	7.4	-	7.4
10	GEISCO	6.7	-	6.7

*INPUT ESTIMATE

- Captive revenues shown are those reported to INPUT by respondents. 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 may exclude or include such commercial factors as:

  - Costs without application of full overheads.

  - Discounts for assured levels of business.

  - Revenues from products routed through the parent company to the eventual end user.

- Exhibit III-16 ranks the top 10 Italian computer services companies on the basis of the total external revenue according to the INPUT definition.

  - The two companies most affected by excluding captive revenues are Datamont, which disappears from the table, and Italsiel, owned by the government, whose major activities are with governmental organisations mainly through the Societa Generale, one of Italsiel's member companies.

  - As a matter of interest it should be pointed out that ENIDATA, a 100% owned subsidiary of ENI (Ente Nazionale Idrocarburi), has a turnover of some 26 billion lire which would place the company in third position in the total revenues table. It is not in the tabulation as all its revenue is derived from the parent company.

  - Although, in all but name, ENIDATA is the internal data processing department of ENI, it is in a position to enter the open market as a company in its own right whenever the decision to do so is taken. Should this happen it would provide substantial competition to those already in the market.

EXHIBIT III-16

THE TOP TEN COMPUTER SERVICES VENDORS BY TOTAL EXTERNAL REVENUES: ITALY, 1979

RANK	VENDOR	VALUES (BILLION LIRE)	
		TOTAL EXTERNAL REVENUE (INC. TURNKEY)	MARKET SHARE
1	IBM (SERVICES)*	46.3	9.2%
2	SOPIN	12.1	2.4
3	DATA MANAGEMENT	11.0	2.2
4	GE-DA	10.5	2.1
5	ITALSIEL*	7.6	1.5
6	SIPE	7.5	1.5
7	CDS ITALIA	7.4	1.4
8	GEISCO	6.7	1.3
9	SYNTAX	6.2	1.2
10	SICIT	5.0	1.0
TOTAL		120.3	24.0%

TOTAL EXTERNAL MARKET: 504.4 BILLION LIRE
*INPUT ESTIMATE

- The structure of the French market is markedly different from the Italian since the top 10 French computer services companies achieve well over 40% of the total revenue.

  - In comparison Italy has an extremely fragmented market with over 1,200 companies of which the top 10 companies command only 24% of the total market and even the top 20 achieve no more than 31%.

- Exhibits III-17 and III-18 show how the top 10 and top 20 computer service companies derive their income. It can be seen that about 74% of 1979 revenue came from processing services (heavily influenced by IBM's share) with the proportion falling slightly when the contribution of the next 10 companies is taken into account.

- Data entry represents a significant proportion of these companies' activities and within the first 20 companies in the country it is nearly as large a sector as either batch or RCS.

- Exhibit III-19 shows which are the major companies involved in each subsector of the processing service segment and gives the respective market shares.

  - At a 1.5 billion lire turnover level there are many companies present and it is possible that some may have been left out inadvertently in one or other of the classifications.

  - IBM is dominant in the batch services subsector with 7.1% of the market, while Data Management, its closest rival, takes 3% followed by GE-DA with 2.3%.

  - In the RCS subsector, which includes interactive and remote batch activities, the dominance of IBM is total with 38.7% of a 66.6 billion lire market.

EXHIBIT III-17

THE TOP TEN COMPUTER SERVICES VENDORS BY EXTERNAL MARKET SHARE:
ITALY, 1979

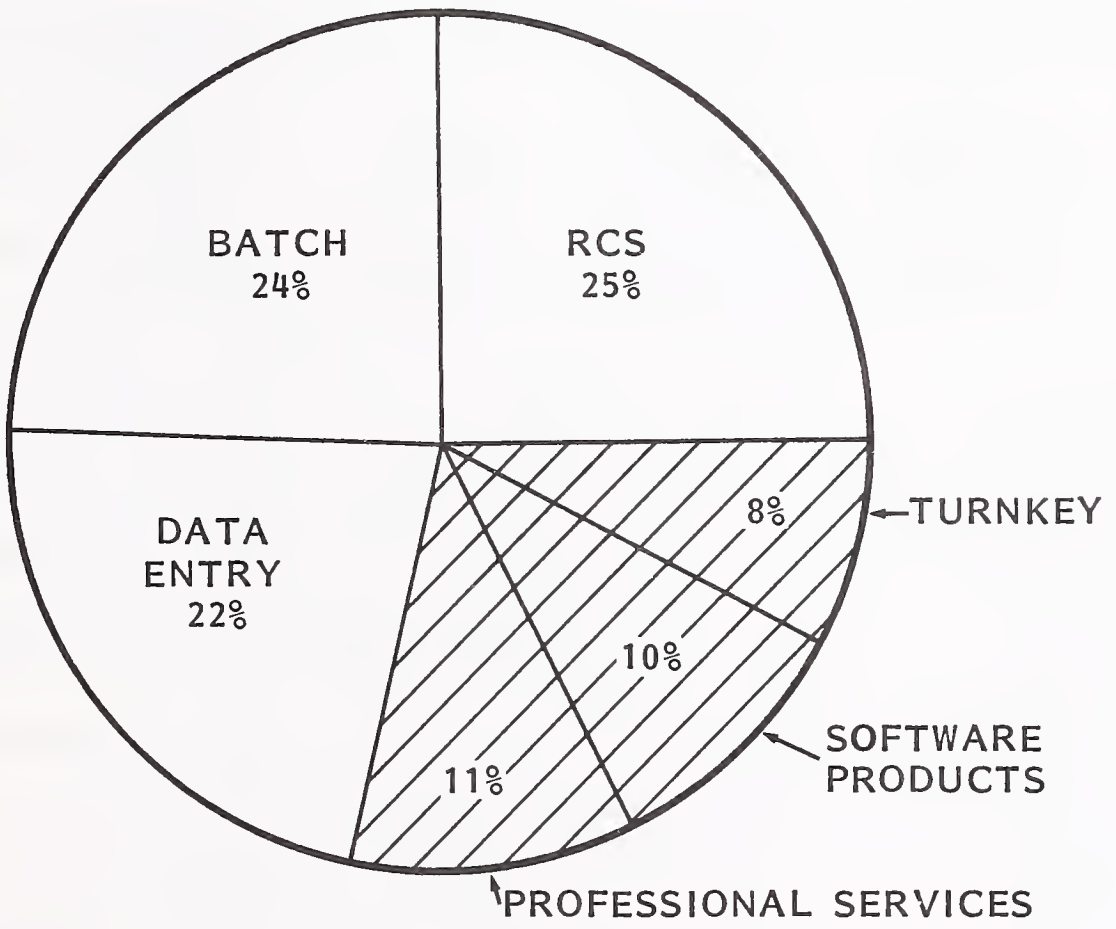
RANK	VENDOR	REVENUE (BILLION LIRE)				
		PROCESSING SERVICES (INC. DATA ENTRY)	SOFTWARE PRODUCTS	PROFESSIONAL SERVICES	ALL SERVICES TOTAL	TURNKEY SYSTEMS
1	IBM (SERVICES)*	38.3	8.0	-	46.3	-
2	SOPIN	11.2	0.9	-	12.1	-
3	GE-DA	8.1	0.2	2.2	10.5	-
4	DATA-MANAGEMENT	6.8	2.7	-	9.5	1.5
5	ITALSIEL*	1.7	0.6	5.2	7.5	-
6	SIPE	7.4	-	-	7.4	-
7	CDS ITALIA	6.4	-	0.9	7.3	-
8	GEISCO	6.3	-	0.4	6.7	-
9	SYNTAX	-	1.7	4.1	5.8	0.4
10	ITALSPED	4.5	-	-	4.5	-

*INPUT ESTIMATE

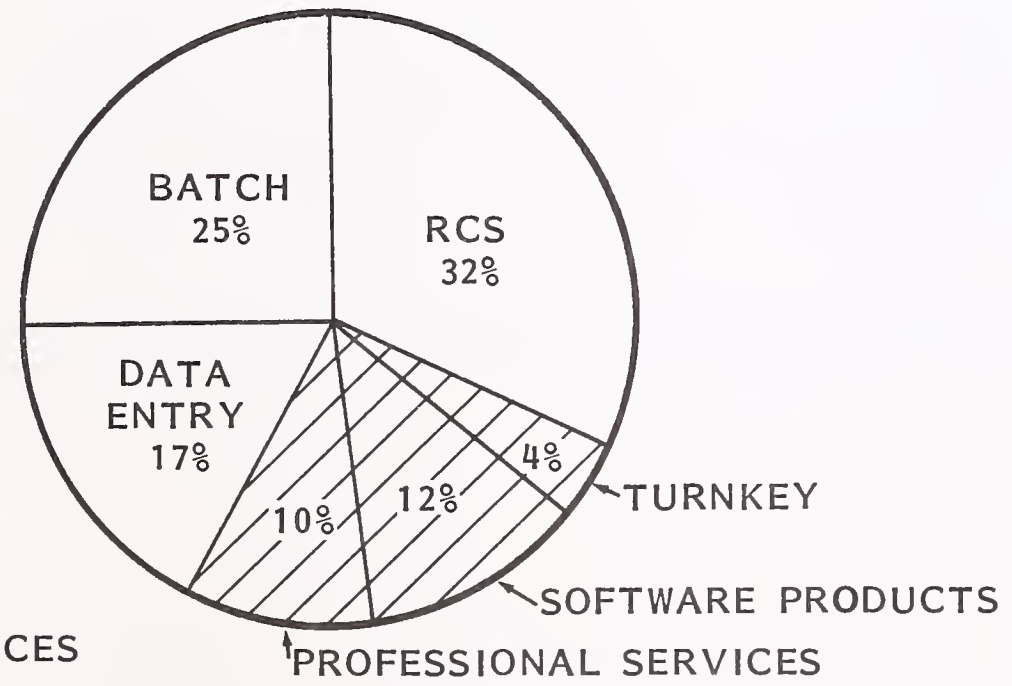
EXHIBIT III-18

MAJOR ITALIAN COMPUTER SERVICES COMPANIES
DISTRIBUTION OF ACTIVITIES, 1979

THE TOP TWENTY (156BL = 31% OF MARKET)



THE TOP TEN (120BL = 24% OF MARKET)



PROCESSING SERVICES

ALL OTHER SERVICES

EXHIBIT III-19

TOP SUPPLIER RANKING AND SECTOR MARKET SHARES BY SERVICE TYPE,
ITALY, 1979,
PROCESSING SERVICES

TYPE / RANK	BATCH SERVICES	MARKET 176.5 BILLION LIRE	RCS	MARKET 66.6 BILLION LIRE	DATA ENTRY SERVICES	MARKET 86.7 BILLION LIRE
	SUPPLIER NAME	PER-CENT SHARE	SUPPLIER NAME	PER-CENT SHARE	SUPPLIER NAME	PER-CENT SHARE
1	IBM	7.1%	IBM	38.7%	SOPIN	8.8%
2	DATA MANAGEMENT	3.0	GEISCO	9.5	SIPE	7.1
3	GE-DA	2.3	GE-DA	3.3	CDS	6.1
4	SOPIN	1.5	DATA MANAGEMENT	2.4	ITALSPED	5.2
5	SYSTEM PRINTING	1.2	ADP	2.2	SELDAC	3.9
6	SICIT	1.1	ITALSIEL	2.0	CER	3.5
7	SEDA	1.0	CERVED	1.8	AUS. EL. DA	2.8
8	SIPE	0.7	SOPIN	1.3	SYSTEM PRINTING	1.4
9	CDS	0.6	CDC	1.0	SEDA	1.0
10	SELE	0.6	SEDA	0.6	GE-DA	0.5
11	AUS. EL. DA	0.5	SELE	0.6	SICIT	0.5
12	DATAMONT	0.4	DATAMONT	0.3		
13	ITALSIEL	0.2				
14	SELDAC	0.2				

- Foreign involvement in the RCS subsector and the influence of international networks are very marked, with GEISCO in second place with 9.5% followed by GE-DA with 3.3%, most of which relates to Infonet. ADP and CDC are respectively in fifth and ninth positions, adding to a total RCS market share of 54.4%.

- Data entry companies are mainly Rome-based and work to a large extent for government organisations. SOPIN with 8.8% of the market, SIPE with 7.1% and CDS with 6.1% are the market leaders.

- The professional services sector is subdivided into software products, professional services and turnkey systems, as shown in Exhibit III-20.

  - The software products sector is again dominated by IBM with 18.3% of the market. Data Management follows with about a third of this value at 6.2% and another Italian company, Syntax, a subsidiary of Olivetti, is in third place with 3.9%.

  - Italsiel, the government owned services company exercises its most substantial external activity in the professional services sector and is top of the ranking with 4.8% of a market valued at 108.1 billion lire. Syntax is in second place with 3.8% followed by G.S. General Systems at 2.5%.

- The turnkey market, defined for our study as systems sold by computer service companies only, is still at a low level of value, 21 billion lire, but it is growing rapidly and changes can be expected in the ranking of the top companies.

  - In 1979 the market leader was Datamat with 19% of the market, followed by SICIT and Data Management with 11.9% and 7.1% respectively.

EXHIBIT III-20

TOP SUPPLIER RANKING AND SECTOR MARKET SHARES BY SERVICE TYPE,
ITALY, 1979,
PROFESSIONAL SERVICES

RANK \ TYPE	SOFTWARE PRODUCTS	MARKET 43.7 BILLION LIRE	PROFESSIONAL SERVICES	MARKET 108.1 BILLION LIRE	TURNKEY SYSTEMS	MARKET 21.0 BILLION LIRE
	SUPPLIER NAME	PER-CENT SHARE	SUPPLIER NAME	PER-CENT SHARE	SUPPLIER NAME	PER-CENT SHARE
1	IBM	18.3%	ITALSIEL	4.8%	DATAMAT	19.0%
2	DATA MANAGEMENT	6.2	SYNTAX	3.8	SICIT	11.9
3	SYNTAX	3.9	G.S. GENERAL SYSTEMS	2.5	DATA MANAGEMENT	7.1
4	SELESTA	2.7	GE-DA	2.0	SELE	5.2
5	SOPIN	2.0	METRA	1.8	SEDA	4.8
6	G.S. GENERAL SYSTEMS	2.0	SYSTEMS AND MANAGEMENT	1.3	SYSTEMS AND MANAGEMENT	3.8
7	ITALSIEL	1.4	CDS	0.8	SELDAC	2.8
8	PRAXIS	1.4	TEKNOCONSULT	0.8	SYNTAX	1.9
9	TEKNOCONSULT	0.9	SYSDAT	0.5	SYSDAT	1.4
10	FORMULA	0.9	PRAXIS	0.5	TEKNOCONSULT	0.9
11	SYSDAT	0.7	FORMULA	0.5		
12	GE-DA	0.4	GEISCO	0.4		
13	SELDAC	0.4	CER	0.4		
14			SELE	0.4		
15			SELESTA	0.3		

- Exhibit III-21, prepared on the basis of the companies classified in Exhibit III-16 and Exhibit III-18, indicates the percentage of the market in each subsector taken by the top 10 and top 20 companies.

- The highlights of this chart are:

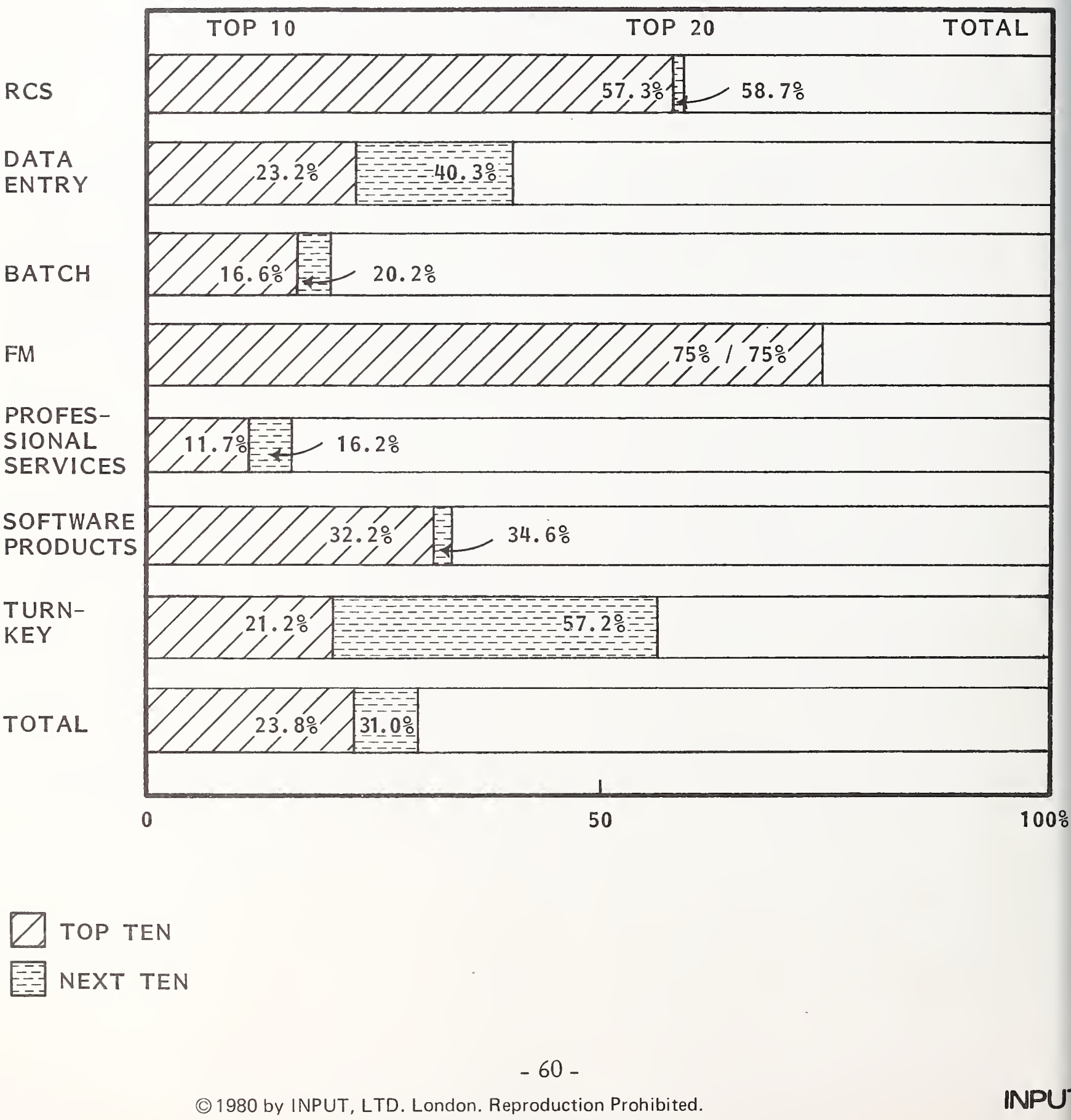
  - RCS where, as one would expect, the top 20 companies represent nearly 60% of the market.

  - Professional services where the great fragmentation of the market is mirrored in the fact that only 16.2% of the market belongs to the top 20 companies.

  - Facilities management where only one company within the top 20, GE-DA, has been identified as having activities in this sector. Italsiel does a large amount of FM for the government but this market is considered captive, while HIS has an exclusive FM contact with the Ministry of Transport for the management of the driving licence administration.

EXHIBIT III-21

COMPUTER SERVICES SECTOR
MARKET SHARES: ITALY, 1979



IV COMPUTER SERVICES MARKET ISSUES IN ITALY

IV COMPUTER SERVICES MARKET ISSUES IN ITALY

A. INTRODUCTION

- This chapter reviews the vendor and user data which INPUT has gathered to study market issues in the Italian computer services industry.

- The main characteristics of the market in Italy are best exemplified by the large gaps that exist between the technical capabilities and awareness of the computer service suppliers and the end user.

- While there is an awakening on the part of services vendors to the need for a definition of the problems facing the industry as a whole and their position in the market with regard to future activities in particular, there seems to be no parallel activity on the part of the DP user.

- The main issues affecting supplier and user alike are:

  - Oppressive dominance by the hardware manufacturers.

  - Low level of investment and profitability.

  - Shortage of qualified staff.

  - Unsatisfactory support by the PTT.

- Lack of direction by the government.

- These issues and their effects will be seen very clearly in the responses given by vendors and users to the INPUT questionnaires which are analysed in this section.

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 Italian language versions of the questionnaire are in Appendix C.

- The questionnaire was completed by 19 companies whose combined 1979 Italian external revenues were 93.2 billion Italian lire, or 18.5% of that year's value of the Italian market.

- Seven of the respondent companies are in the top 10 classification, seven more are in the next 10 by ranking and the others are in the top 10 of their respective subsector classification.

- Exhibit IV-1 shows the breakdown by modules completed of the sample interviewed.

- In addition, these respondents completed an INPUT/CAMP data base update questionnaire which is designed to collect basic company financial and product data. Copies of the English and Italian versions are in Appendix B.

EXHIBIT IV-1

PROFILE OF RESPONDENTS'
COMPLETION OF ISSUE QUESTIONNAIRE FOR
ITALY

MODULE DESCRIPTION	RESPONSES (AS PER-CENTAGES)	MODULE NUMBER
COMMON	100%	0
PROCESSING SERVICES	79	1
PROFESSIONAL SERVICES	63	3
HARDWARE SERVICES	53	5
SOFTWARE PRODUCTS	63	6
COMMUNICATIONS	47	7
COMBINATION OF MODULES	-	-
PROCESSING AND PROFESSIONAL	47%	1 AND 3
PROFESSIONAL AND HARDWARE	37	3 AND 5
PROFESSIONAL, HARDWARE AND SOFTWARE PRODUCTS	37	3, 5 AND 6

- A number of other leading Italian vendors were interviewed during 1980 by INPUT on a variety of projects. The information from these interviews has 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 analysis in this chapter is concerned with those issues which are common to all types of vendor. These are the questions in modules 0 and 7 of the questionnaire.

- Issues relating to specific vendor types are analysed in Chapters VI through IX.

2. SECTOR SPECIFIC MARKETING

- The present attitudes of those vendors interviewed with regard to whether their product development was biased towards cross-industry or industry-specific products was that:

  - Forty-two percent regarded themselves as favouring cross-industry products.

  - Forty-two percent favoured industry-specific products.

  - Sixteen percent had no particular bias.

- An analysis of vendors' future activities shows a slight trend, over the coming five-year period, towards the development of functional cross-industry products.

- By 1985 the situation will be as follows:

- Fifty-seven percent of interviewed vendors will favour cross-industry products.

- Thirty-one percent will favour industry-specific products.

- Twelve percent will have no particular bias.

- The swing towards cross-industry activities will be most noticeable for processing services companies (bureaux) and mixed activity (bureaux/software services) companies which currently have an industry-specific bias.

- This movement away from industry-specific products is opposite to the trend found in other European countries.

3. CHANGES IN CUSTOMER REVENUES

- In response to the question on the trend in average customer revenue, 68% of respondents indicated emphatically that the average revenue per customer is not declining.

- Of the remainder:

  - Two professional services companies stated that turnover per client was dropping for software packages but not for professional services.

  - Three companies specialise in data entry services.

  - One company specialises in turnkey offerings.

4. EFFECTS OF THE ECONOMIC CLIMATE

- The effect of inflation on pricing policy was clearly obvious from the replies received. The only company unconcerned with inflation was one whose main business is with its parent company.

- This was to be expected in a country with an unstable economy and a rising rate of inflation which has now reached about 21%.

- An important factor in pricing policy is that salaries are index-linked to inflation, although in many cases, as can be seen in Chapter III, the price increases do not reach by far the rate of inflation.

- Nevertheless all companies review their prices at regular intervals. Some do so on a continuous basis and others at three or six month intervals.

- The second part of this question refers to the companies' awareness of recession, and only two interviewees admitted to feeling these effects.

- As in other countries, it seems that the computer services sector is much more resistant than the rest of the economy to the effects of a downturn and in some cases may even profit from a recession.

5. STAFF SHORTAGES

- The problem of shortage of qualified personnel in the computer services sector is universal and has resulted in official plans in several countries for support of the education of 'informaticians'.

- Italy is no exception as far as staff shortages are concerned and, of the 19 vendors interviewed, only four indicated that they do not face this problem.

  - Of these companies, three are mainly involved in data entry where the required calibre of staff is low and candidates are plentiful.

  - A peculiarity of the data entry sector is that substantial volumes of work are given to people working at home or hired on a temporary basis. The social laws are such that in companies with more than 15 employees, personnel cannot be dismissed. Companies are therefore reluctant to employ more people than strictly necessary.

- The other company not affected by staff shortages, although in a different sector, claims that its staff requirements are satisfied by employing new graduates and training them in-house.

- An analysis of the responses is tabulated in Exhibit IV-2 by function and degree of need. A weight was assigned to the various degrees of impact of staff shortages and the responses were graded on the basis of these weights.

- The resulting grades show the largest shortages in the following categories:

  - Technical support/engineers.

  - Software professionals.

  - Sales executives.

- The lowest need is for:

  - Operations staff.

- These results and further interviews indicate that overall staff shortage is a major problem impeding company growth, in particular in the professional services and turnkey sectors.

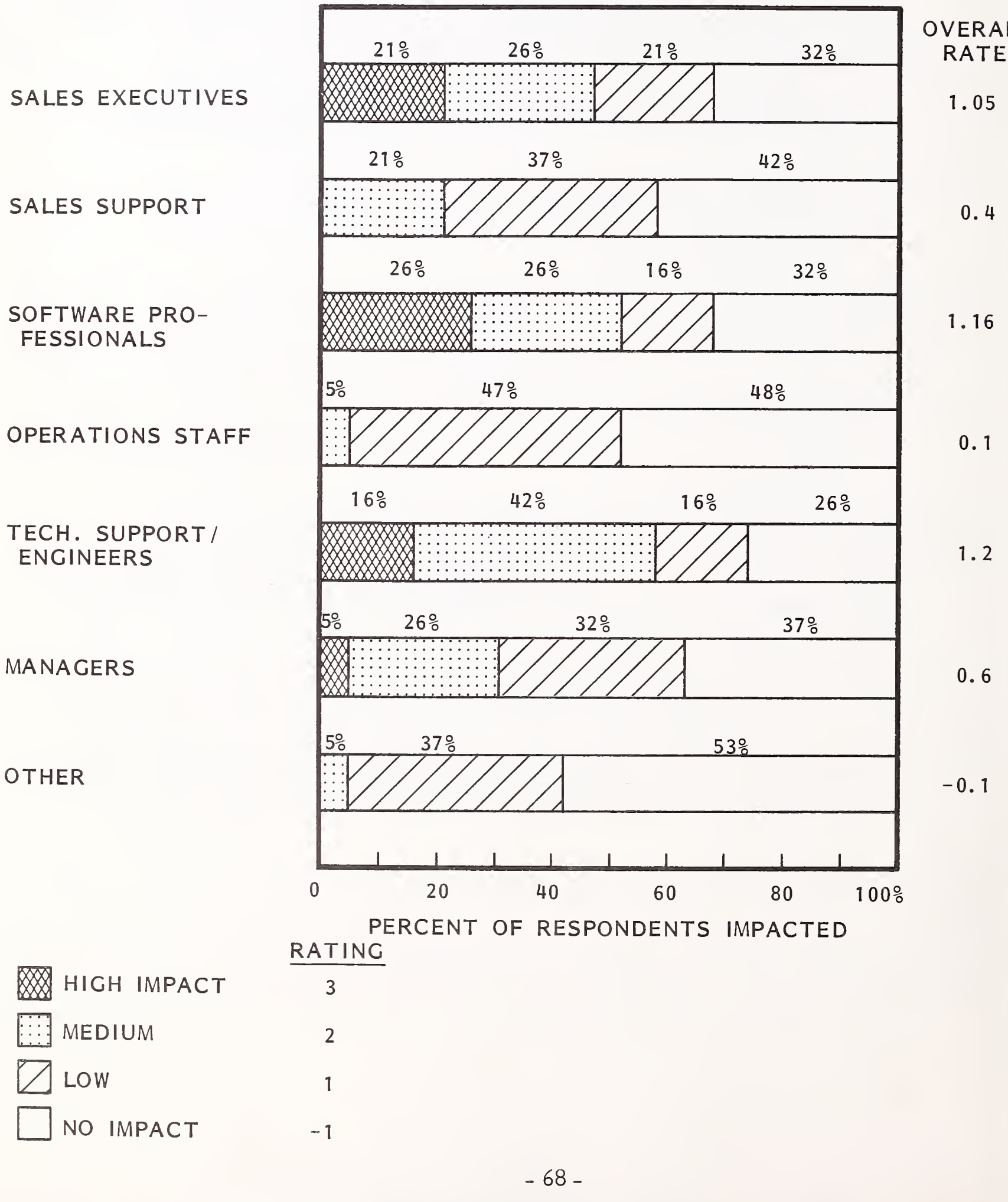
- A factor currently aggravating the staff shortage problem is the paying power of the user who is also suffering from staff problems and who can easily tempt staff trained at great expense by the services companies with substantially better salaries.

6. MOST SERIOUS COMPETITION

- Only 12 companies were willing to list their major competitors.

EXHIBIT IV-2

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



- Sixteen competitors were named and a weighted ranking is tabulated in Exhibit IV-3.

- No company was mentioned more than four times, and interestingly, in only a few cases if company A mentioned company B, B would quote A as being a major competitor.

- The only area where this was not the case was the RCS sector where cross-references were common.

7. COMMUNICATIONS ENVIRONMENT

- This module in the questionnaire elicited the least response, with only nine interviewees providing answers. Most of those who did not reply are in the data entry sector.

- Of the nine respondees, five felt that over the next five years their activities will be adversely affected by the monopolistic stance of the PTTs while four companies felt that this factor will be favourable to their development.

- On the whole, those unconcerned by the activities of the PTT are companies offering consultancy and professional services.

- Those who saw a negative effect on their business are mainly mixed activity companies or RCS suppliers.

- The factors which impact the services business and the degree to which they do so are quantified and tabulated in Exhibit IV-4.

- The highest ratings for impact on vendor growth, in order of decreasing severity were for:

EXHIBIT IV-3

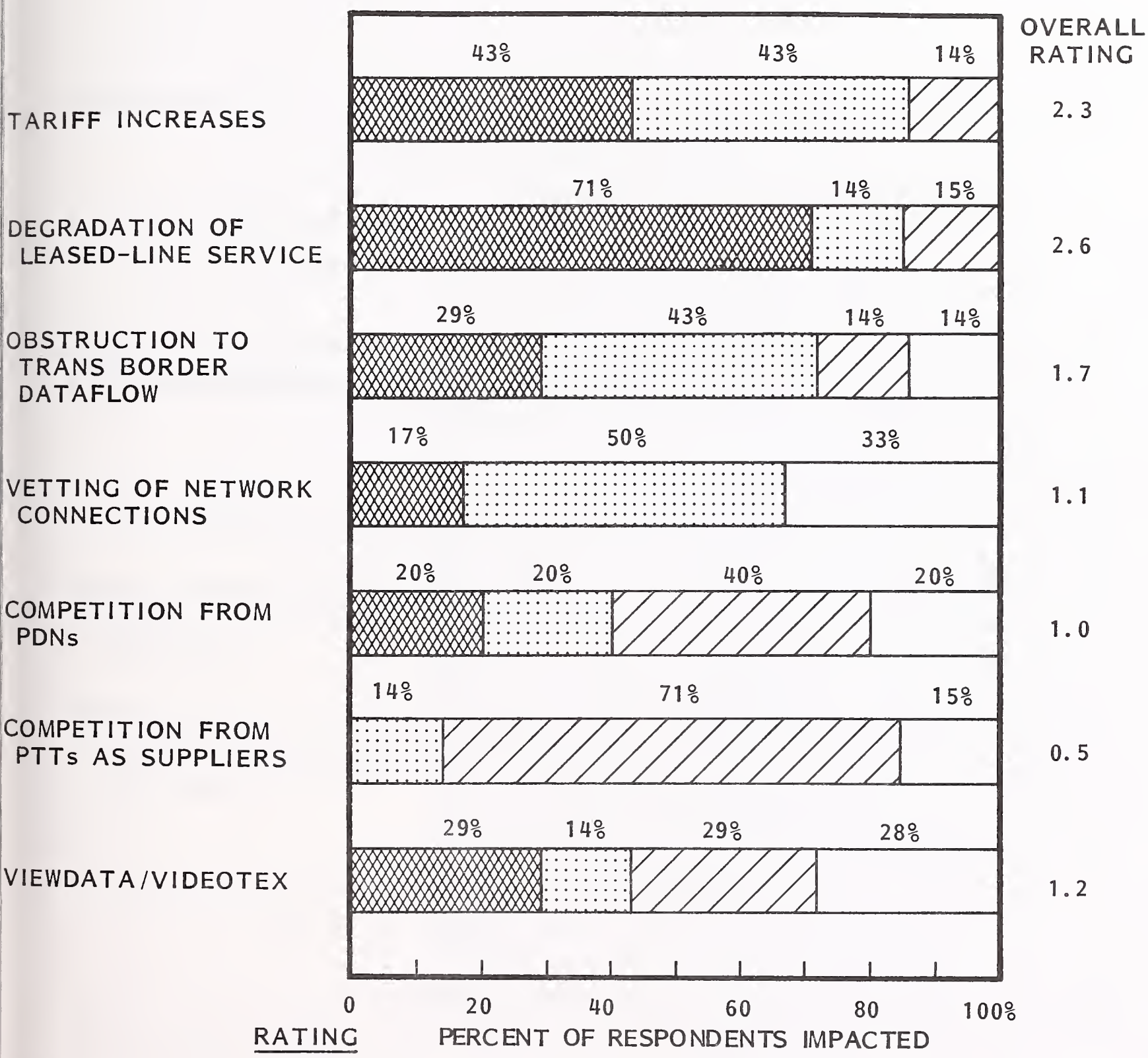
MOST FREQUENTLY MENTIONED COMPETITORS, ITALY

MENTION RANKING	TYPE*
IBM	M/S
DATA MANAGEMENT	S
GE-DA***	S
ITALSIEL	S
ADP	S
SOPIN***	S
GEISCO	S
HONEYWELL	M
SYNTAX	S
CDS	S
AUS. EL. DA	S
COMPUTER ASSOCIATES**	S
ITALSPED**	S
CONSED	S
INFONET**	S
SELE**	S

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

EXHIBIT IV-4

PERCEIVED IMPACT OF PTT MONOPOLY POSITION ON VENDORS' GROWTH, ITALY



- Degradation of leased lines 2.6

- Tariff increases 2.3

- Obstruction of transborder data flow 1.7

- Degradation of the leased lines services is certainly a major problem and the situation has deteriorated in the last few years.

- Another worry for the suppliers of RCS is the increase of PTT tariffs as is, surprisingly, the effect of possible obstructions to transborder data flow.

- The only ones to see competition from public data networks (PDN) are the network providers, while nobody expects a real threat from competition by the PTT as a service supplier.

8. RESPONSE TO THE IMPACT OF THE PTT

- Five respondents indicated their reaction to the impact of the PTT on their activities and growth.

  - Four companies will endeavour to both diversify and improve their competitive edge.

  - One company will only try to diversify.

  - One of the above will 'develop an autonomous network'.

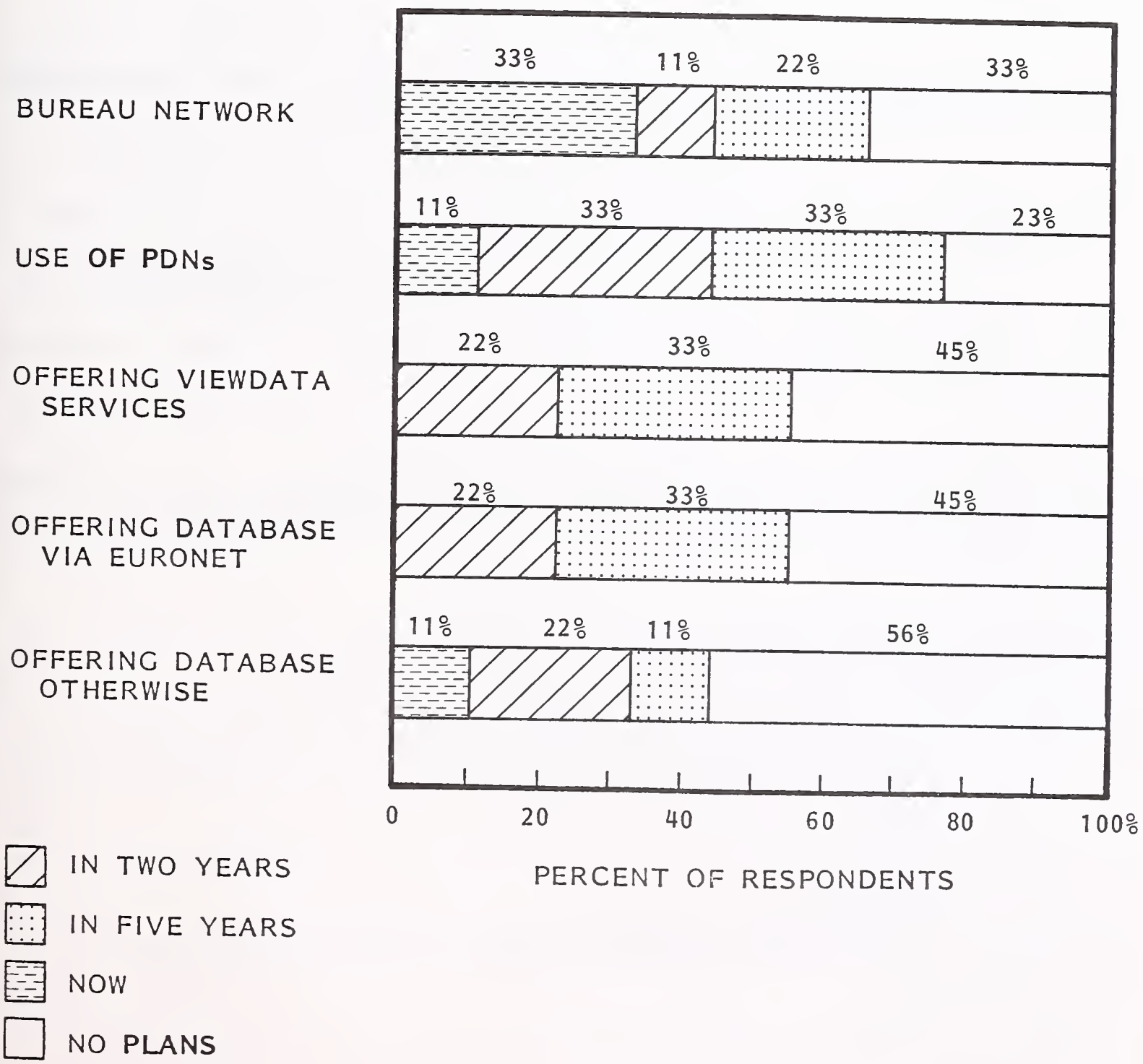
  - One of the above intends to 'supply steadily improving quality of their software, their support and the quality of their transmission services'.

9. FUTURE OFFERINGS

- Nine interviewees responded to the questions regarding future offerings and activities. Their replies are tabulated in Exhibit IV-5.

EXHIBIT IV-5

ANTICIPATED ENHANCEMENTS TO VENDORS' PRODUCT RANGES, ITALY



- Given the current state of the Italian public network for voice and data, it is not surprising that six of the nine companies interviewed either already offer their own network service or will do so within five years.

- It is interesting to note that several companies currently offering data entry services intend to either install their own networks or, within two to five years use the PDN to offer value added services.

- The use of the PDN would be a preferred solution and seven companies are interested in providing value added services on this medium between now and 1984.

- Viewdata services are not currently offered in Italy although several projects are underway at private companies and the PTT.

- Of the companies interviewed only two are considering providing such a service within two years and three more may offer one in five years' time.

- Exactly the same proportions result with regard to the supply of database services via Euronet.

- This situation is in complete contrast with the French market where all respondents but one expect to offer databases by at least one delivery method within two years.

- Databases will be offered through means other than Euronet.

  - One interviewee is already offering databases through his own network.

  - Two more expect to deliver databases within two years.

  - A fourth intends to use the services of Italcable by 1984.

- Vendors classified "Office of the Future" areas which have business potential for services companies as follows:

  - User-site processing.
  - Electronic mail.
  - Image processing systems/CRT graphics.
  - Multifunction equipment.
  - Facsimile/telecopier.

- The results are charted in Exhibit IV-6 and show a remarkable resemblance to the U.K. and French responses.

C. ANALYSIS OF USER DATA

1. INTRODUCTION

- This section analyses the EDP User Questionnaire, which was returned by 103 respondents.

- Exhibit I-4 gave a breakdown of replies, showing that responses were obtained from three multinational company headquarters, 17 Italian divisions or subsidiaries of multinationals, 18 major Italian company headquarters and 65 divisions or subsidiaries of major companies as well as national concerns.

2. USER PROFILE

- Exhibit IV-7 gives a further analysis of the respondents.

EXHIBIT IV-6

PERCEIVED OPPORTUNITIES FOR COMPUTER SERVICES VENDORS IN ASSOCATION WITH 'OFFICE-OF-THE-FUTURE' APPLICATIONS, ITALY

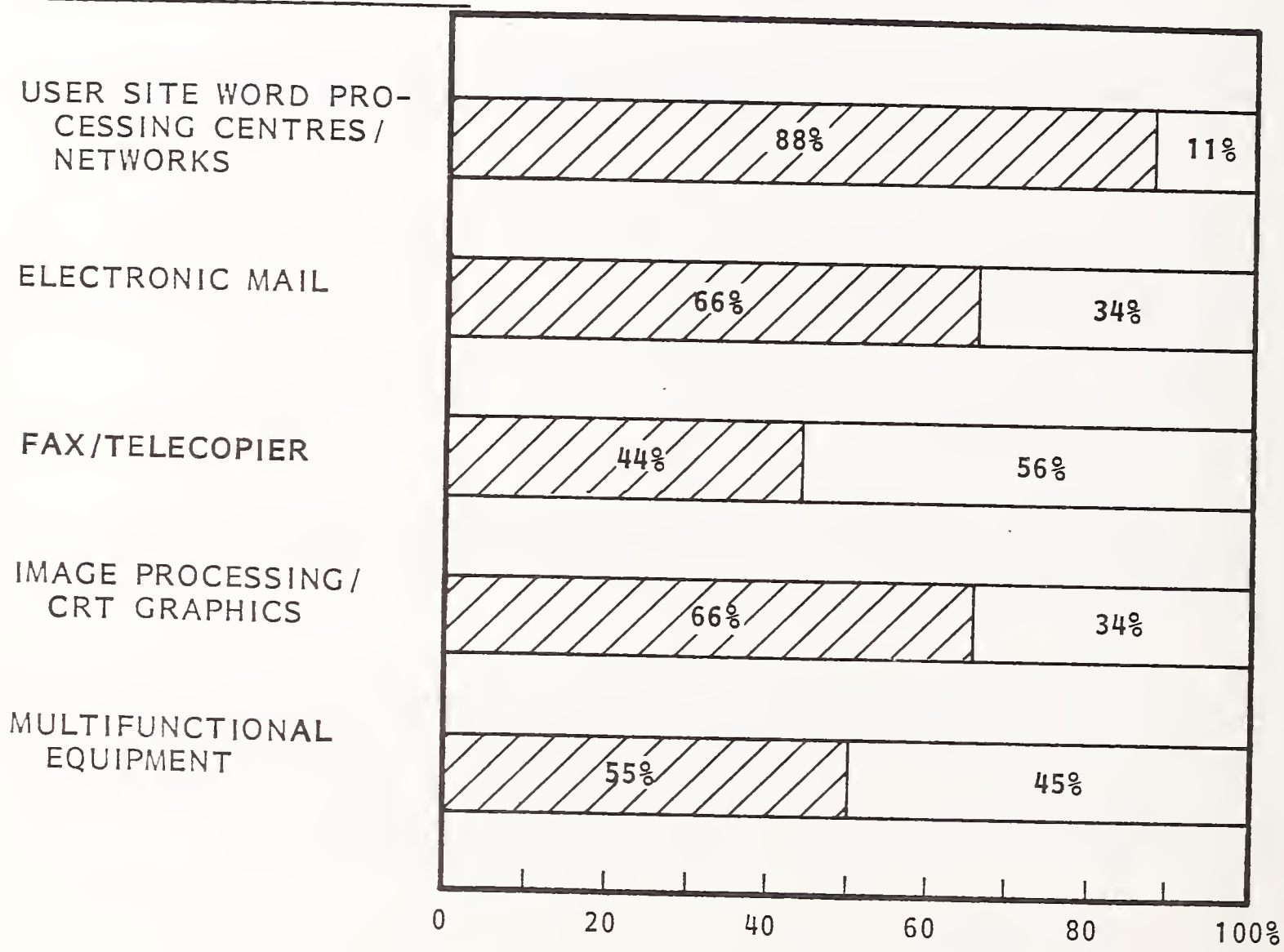
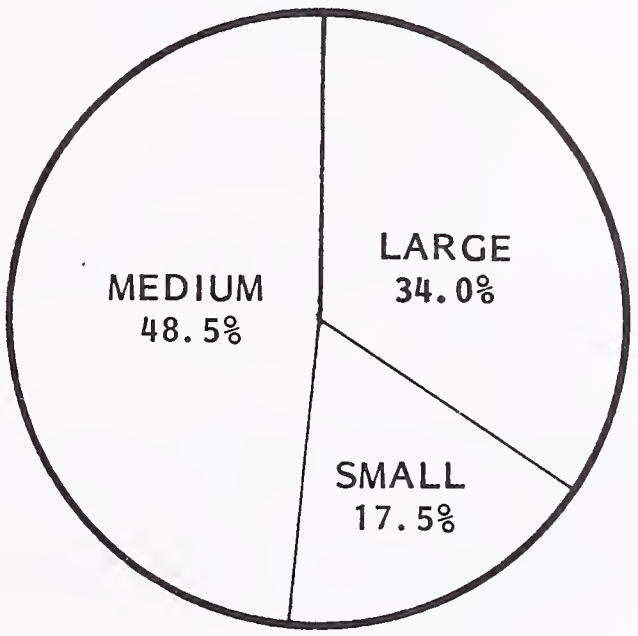


EXHIBIT IV-7

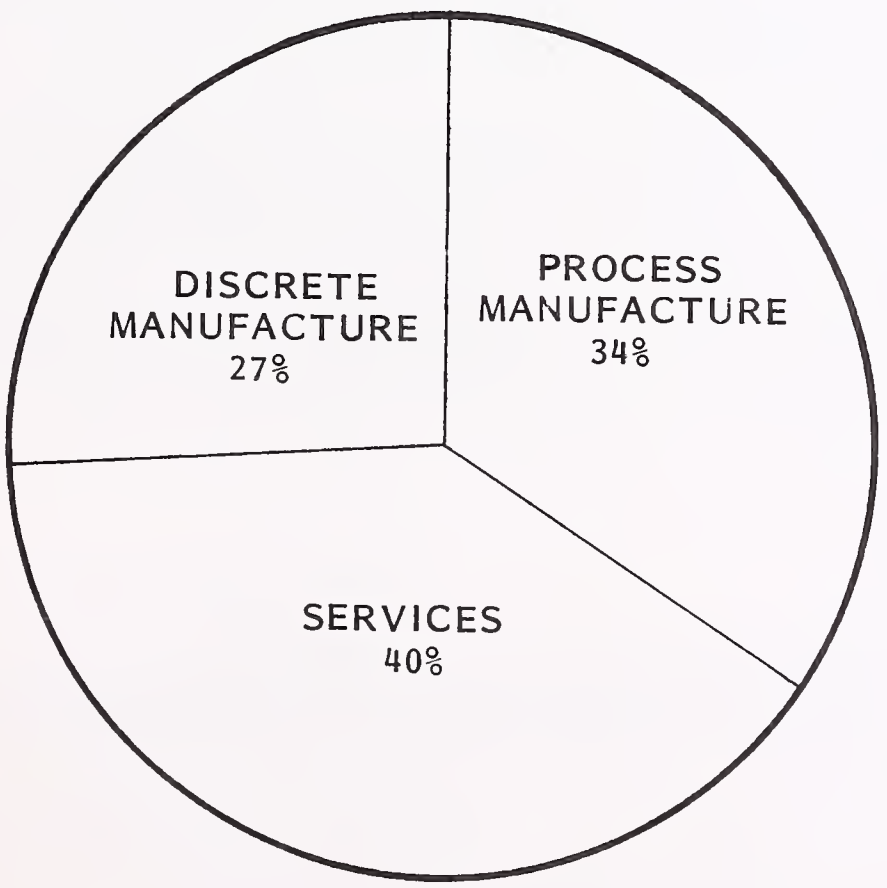
MAS USER

SAMPLE: ITALY, 1980 - BY SIZE AND BY ACTIVITY

COMPANIES BY SIZE



COMPANIES BY ACTIVITY



- The total sample represents 5% of the Italian GDP.

- The classification by size is on the basis of turnover:

  - Small - less than 10 billion lire
  - Medium - 10 to 100 billion lire
  - Large - over 100 billion lire

- Of the total number of companies interviewed, 34% are large, 48.5% are medium and 17.5% are small.

- A breakdown by activity shows that 34% of the interviewees belong to the process manufacturing sector, 27% to the discrete manufacturing sector while 40% belong to the services sector which includes the central government administration.

- Five percent of the sample do not have their own data processing installation while the other 95% include all types from first-time minicomputer users to some of the largest installations in the country.

- The DP staff employed by the sample accounts for 1.1% of the total staff employed by these companies, ranging from 0.95% in the large companies to an astonishingly large 3.9% in small companies. This indicates that even small companies are investing substantially in their data processing installations.

3. EDP PLANS

- Question 11 of the user questionnaire identifies the current objectives and priorities of the users regarding EDP, and their intentions for 1981 and 1982.

- The priorities given by respondents to each objective have been weighted and the results, shown in Exhibit IV-8, were summed and averaged over all responses.

- The main priority given over the period 1980-1982 by the Italian user, in common with all his European counterparts, is the installation of on-line applications. With some exceptions, which are discussed later, this ends the similarity between the users in Italy and those in other major countries.

- The next two major concerns of the Italian EDP manager for this year and the next are the installation of new mainframes and new peripherals, although this will decline in importance in 1982.

- Centralisation of EDP control is certainly not a problem, there is enough of it already, while decentralisation, although a relatively high priority in 1980, ceases to be one in 1981 and 1982. This does not indicate that the installations will be sufficiently decentralised by next year, it only says that the EDP manager wants to keep his control over the installation and is confirming this by giving a high priority to new mainframes and peripheral equipment.

- His lack of concern over the development of long-range EDP plans and the low priority given to EDP personnel productivity show him as being too involved in maintaining the status quo, although productivity will become somewhat more important in 1982.

- On the positive side, three new types of activity are growing rapidly in importance and, apart from the installation of on-line activities, will become by 1982 the most important objectives to the user:

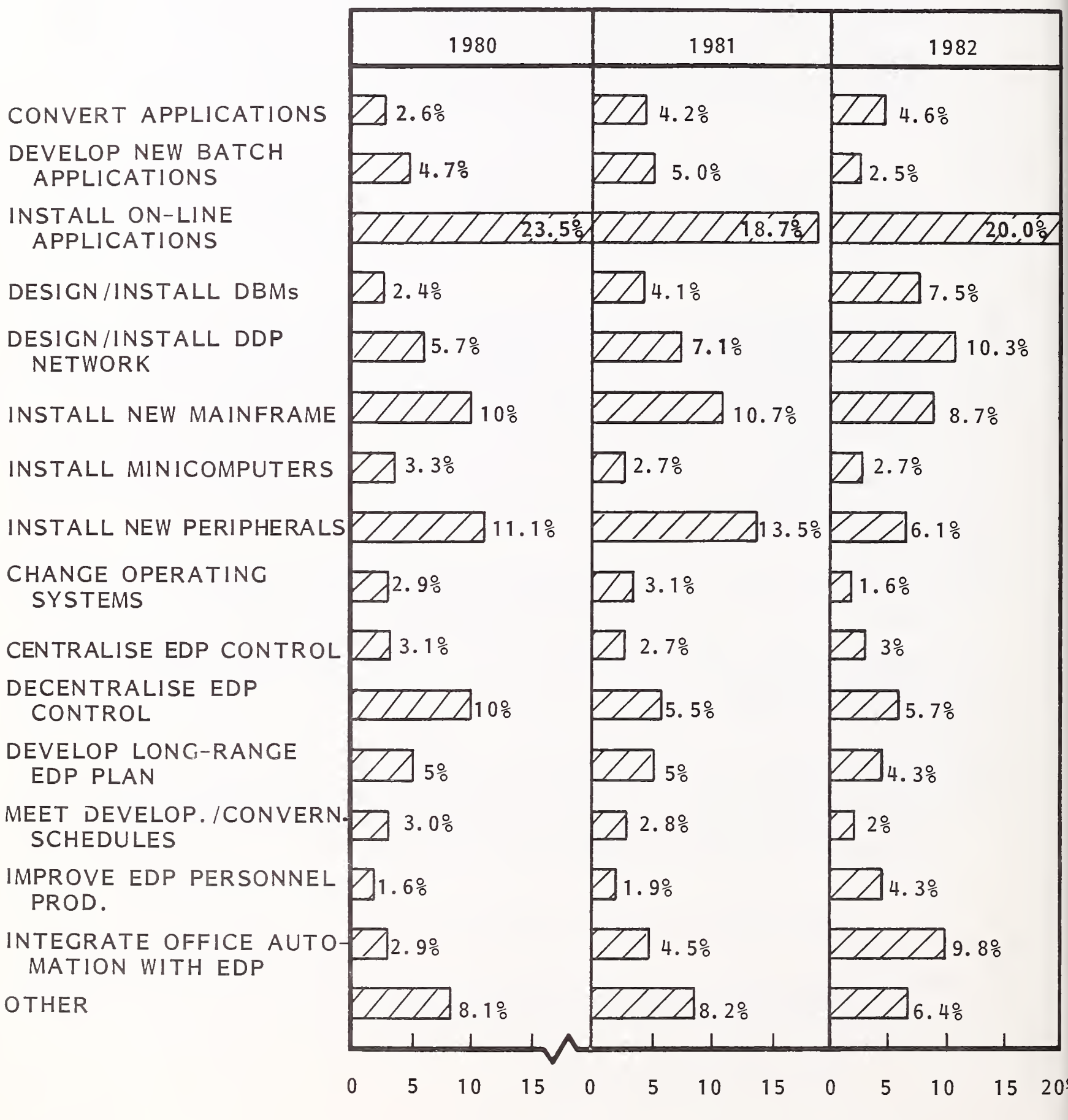
  - Design/installation of DDP networks.

  - Integration of office automation with EDP.

  - Design/installation of DBMS.

EXHIBIT IV-8

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



- Other more traditional activities have a fairly low priority and while they might grow momentarily their importance in 1982 will be lower than in 1980:

  - Development of new batch applications.

  - Change of operating systems.

  - Meeting schedules for conversions or development.

- The installation of minicomputers also has a very low priority which will decrease even further by 1982.

- On the other hand the conversion of applications will grow slowly but steadily from a low level in 1980.

- This picture, supplemented by additional findings, shows an EDP organisation clinging to its traditional position, assisted and buffered by the manufacturer. Through its anxiety to maintain centralisation and control, this organisation will soon face problems of such magnitude as to make the increased use of computer services vendors a certainty.

4. EDP PROBLEMS

- The problems the EDP manager will face in a few years are not the ones he sees now as being of utmost importance. Exhibit IV-9 shows a ranking obtained by analysing the responses to question 14 of the questionnaire regarding the urgency of problems facing the user in 1980.

- The top four problems are, in order of importance:

  - Personnel training.

  - Need for improvement in operations.

EXHIBIT IV-9

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

PROBLEM	MENTIONS IN EACH PRIORITY					
	PRIORITY 1	PRIORITY 2	PRIORITY 3	PRIORITY 4	PRIORITY 5	ALL MENTIONS (WEIGHTED)
PERSONNEL TRAINING	17	13	1	7	0	14.8%
NEED FOR IMPROVEMENT IN OPERATIONS	18	10	6	1	0	14.4
PERSONNEL RECRUITING	23	2	5	2	0	13.7
LACK OF USER INVOLVEMENT IN SYSTEM DEVELOPMENT	8	13	6	2	2	11.2
EXCESSIVE APPLICATION DEVELOPMENT TIME	4	12	8	7	2	10.4
NEED FOR BETTER PLANNING AND CONTROL	6	12	7	0	0	9.5
LACK OF GENERAL MANAGEMENT UNDERSTANDING	10	5	4	1	1	8.2
NEED TO IMPROVE DATA COMMUNICATIONS	1	7	8	0	0	5.5
UNSATISFACTORY HARDWARE MAINTENANCE	2	4	1	5	1	3.8
OTHERS	4	1	2	1	0	3.0
INADEQUATE SYSTEM SOFTWARE	2	3	2	0	1	2.8
INADEQUATE EDP BUDGET	2	2	2	1	0	2.5

- Personnel recruiting.

- Lack of user involvement in system development

- The personnel problem is obviously the most severe, and not only in Italy. Finding staff with the right qualifications and abilities is one major problem which makes the user turn to the outside for assistance.

- The EDP manager's frustration at the lack of end user involvement in system development will soon disappear when he starts to develop new applications for sections of end users with less and less awareness of EDP processes. He will then become frustrated with the lack of end user understanding of his solutions and the requests by the user for 'user-friendly' rather than 'EDP manager-friendly' systems.

- General management will eventually get more involved in data processing, or information processing, and the EDP manager who now does not see their lack of understanding as a problem will be asked increasingly to justify his actions and choices.

- The eventual addition of new applications and chronic lack of personnel will push 'Excessive application development time' further up the list. It is the most important problem in both the United Kingdom and France, and eventually will make the user purchase off-the-shelf or tailored applications programs.

- No immediate urgency is attached to the improvement of data communications. This is not at all surprising given the high incidence of central operations.

- It is very interesting to note that his budget causes the EDP manager least concern of all. We do not believe that this situation will continue for very much longer.

- One problem very high on the list of his European colleagues is that of a need for better planning and control. It is not yet apparent as an important issue to the Italian EDP manager but this too will soon begin to affect him.

5. APPLICATION AREAS

- Exhibit IV-10 indicates, in response to question 15, the relative distribution of application areas currently covered by the user, and the weighted importance of his intentions regarding new developments.

- The largest share of existing applications is in the accounting/finance area with a relatively even distribution amongst such traditional application areas as personnel/payroll, order entry and production/inventory control.

- The emphasis on new developments is somewhat different, with production/inventory control applications accounting for one quarter of all new developments. All other major components will drop their share except for order entry which will show a slight increase.

- The only other two sectors showing an increase are industrial manufacturing control and engineering/design. They start from very low bases, 2.3% and 4% respectively and both rise to 5.7%.

- Exhibit IV-11 shows the relation between each new development and the corresponding existing application, weighted by priority ranking, and the intended growth.

- Thus the top growth rate will be shown by new developments in industrial/manufacturing control with an increase of 340%.

- Personnel/payroll and distribution/transport are two areas in which the existing applications are more numerous than the number of intended new developments.

EXHIBIT IV-10

COMPARISON OF RESPONDENTS' EXISTING APPLICATION AREAS WITH THEIR 1980 DEVELOPMENTS, ITALY

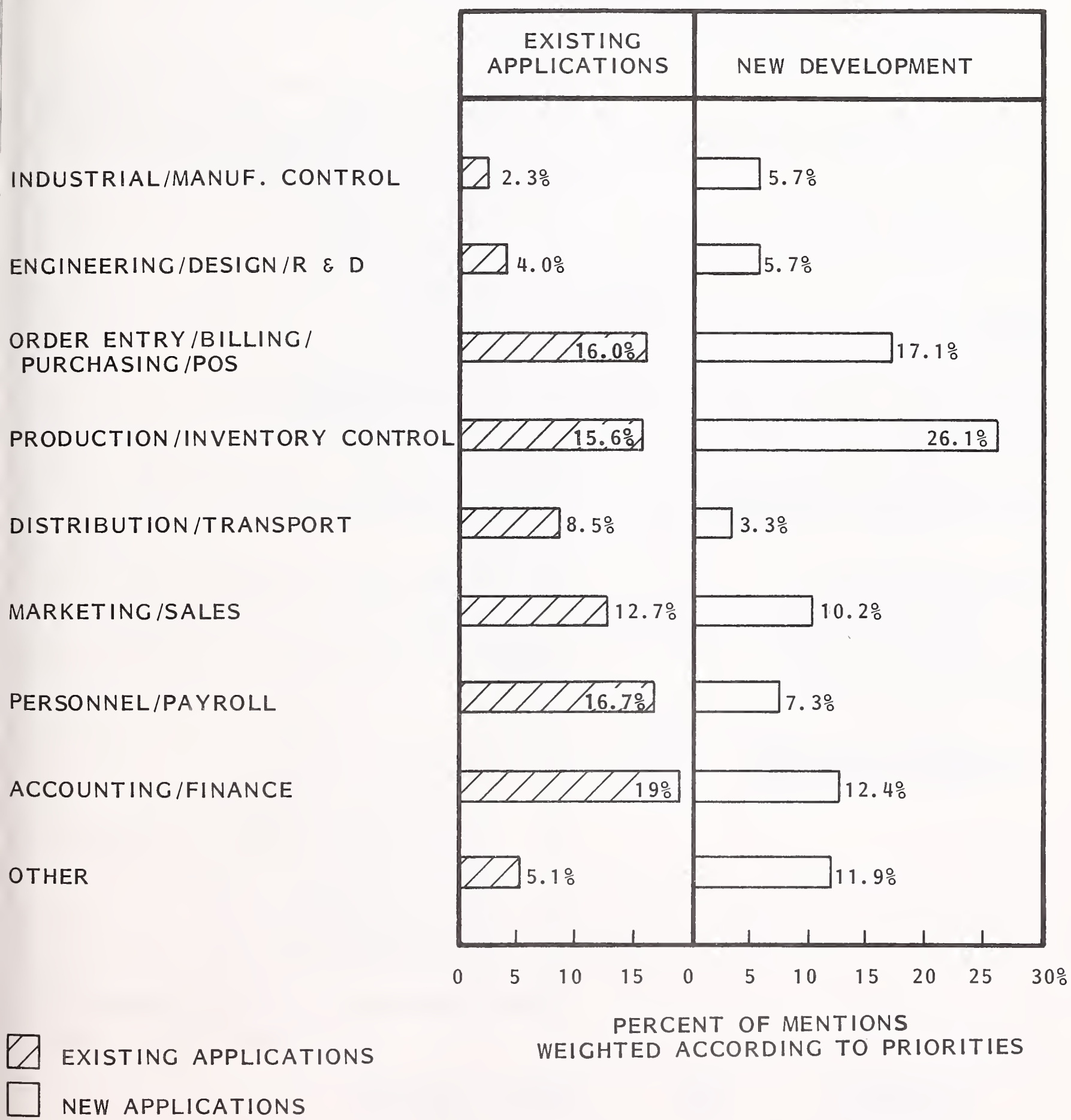
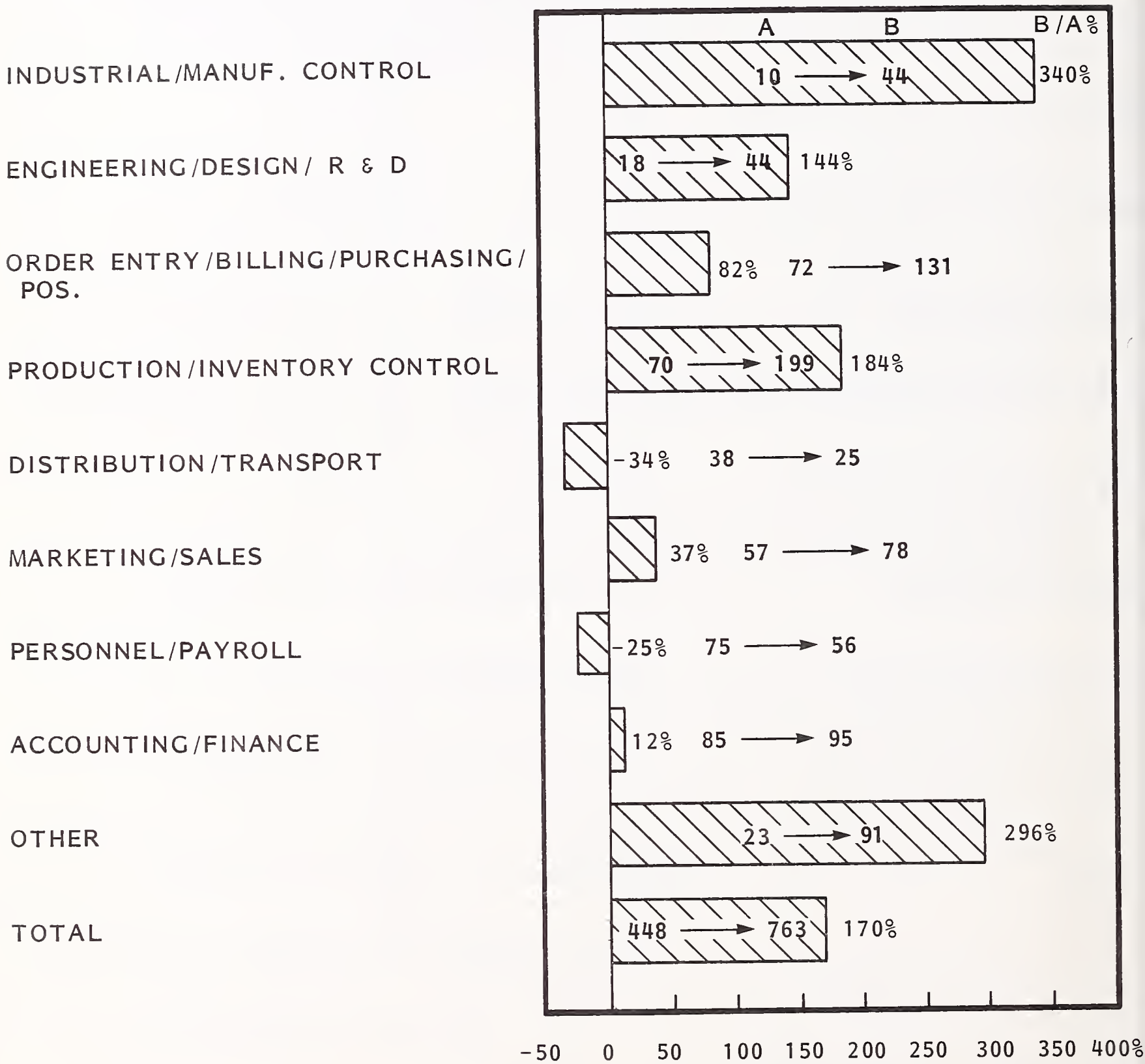


EXHIBIT IV-11

COMPARISON OF EXISTING APPLICATIONS AND 1980 DEVELOPMENTS - GROWTH RATES, ITALY



EXISTING → NEW

A → B

GROWTH PERCENT

B/A%

- The overall profile of the growth patterns is very similar to that obtained from French users but the high levels of EDP activity in that market are highlighted by the fact that the top growth rates oscillate around the 800% mark.

- Analysis of how the Italian user will distribute his new developments between central or remote sites is a further confirmation of the desire for centralised control.

- Exhibit IV-12 shows that, on average, as much as 91% of the new applications will be implemented for central operations.

  - Engineering/design/R&D is the new development area with the highest level, 23%, of remote operations content.

  - For the sake of comparison, the next highest value is for the marketing and sales sector with 13% of remote site operations.

- Not only does the EDP manager want to keep operations under his control, he also intends to develop most of the new applications in-house.

- The breakdown for the various applications can be seen in Exhibit IV-13 which shows that, on average, 89% of the new applications will be developed in-house while only 11% will be purchased outside.

  - As comparisons to these figures, only 66% of new applications in France will be implemented for central operations while 79% of the total will be developed in-house.

  - The situation in the U.K. is slightly different with 72% of new developments implemented for central operations while as much as 35% of the new applications will be purchased outside.

EXHIBIT IV-12

PRIMARY MODES OF OPERATION FOR NEW DEVELOPMENTS:
CENTRAL VERSUS REMOTE SITES,
ITALY, 1979-1980

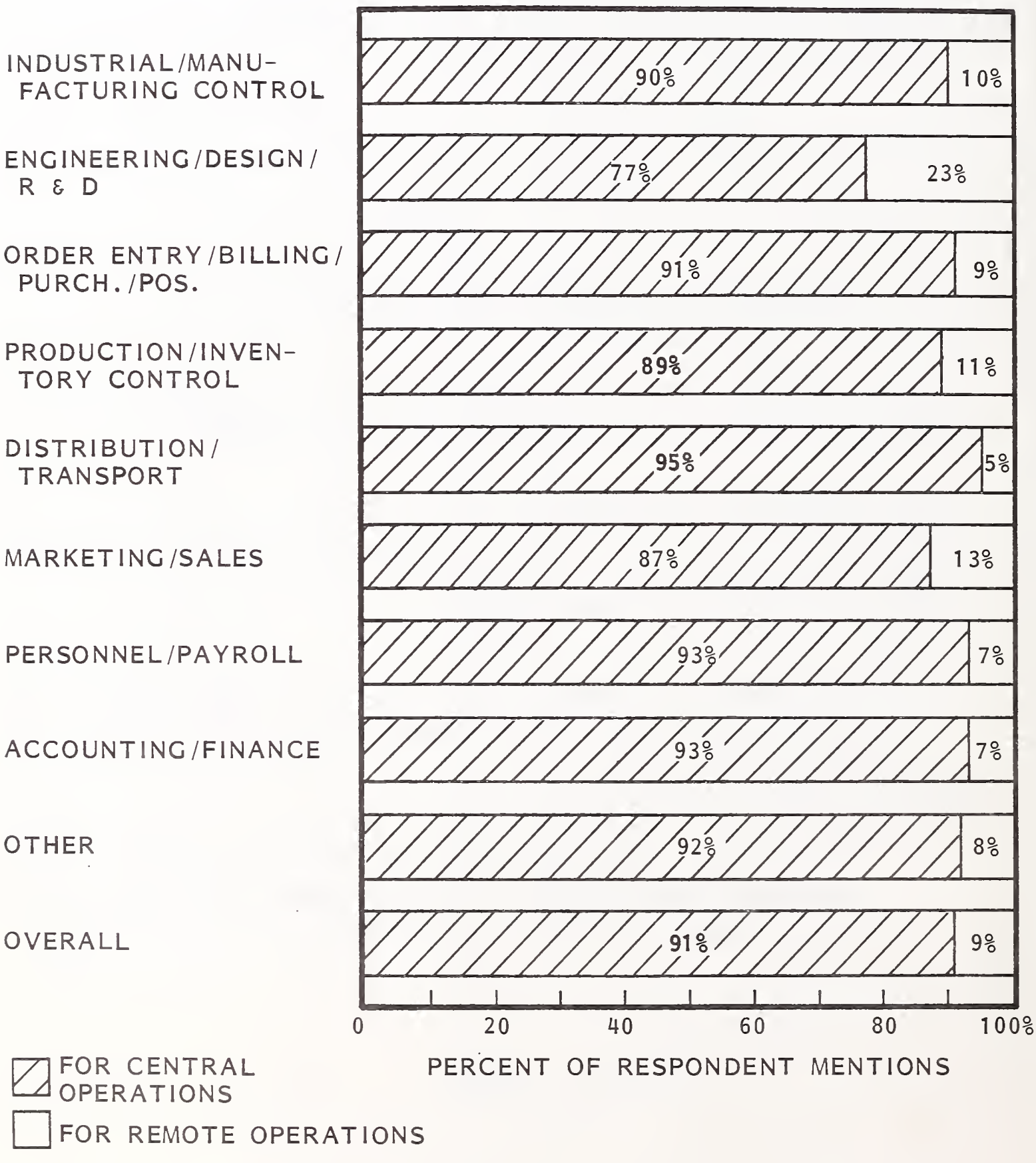
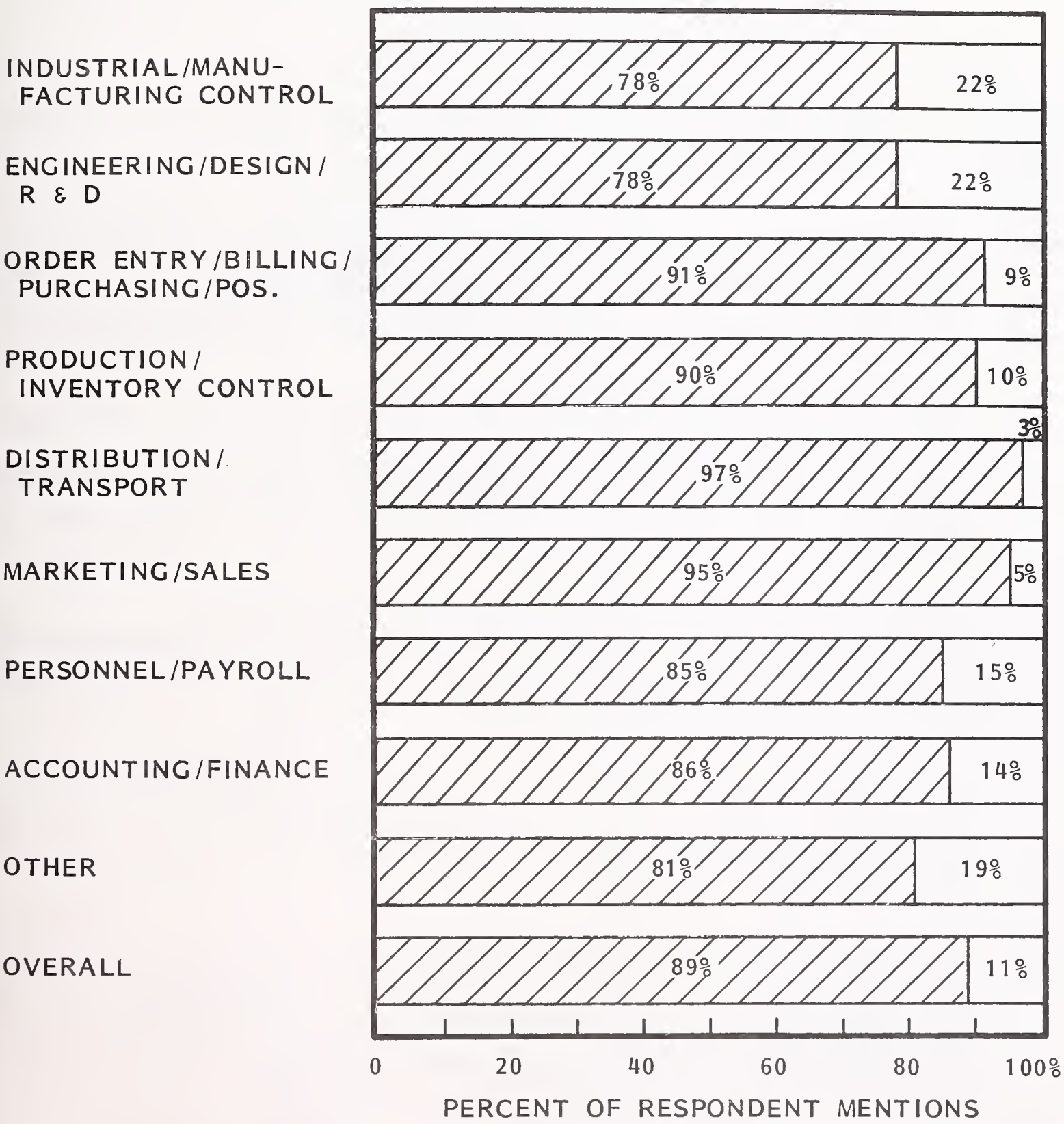


EXHIBIT IV-13

SOURCES OF NEW APPLICATION DEVELOPMENTS:
IN-HOUSE VERSUS OUTSIDE PURCHASE,
ITALY, 1979-1980



6. EDP BUDGET

- Ninety-seven interviewees replied to this section of the questionnaire. Exhibit IV-14 shows the breakdown of the EDP budget into its component parts and the percentage, within each part, that is for central or remote sites.

  - The largest proportion of the budget, 34% as against 40% in France and 43% in the U.K., is dedicated to personnel, while only 4% is assigned to processing services and 5% to software.

  - As can be expected, on average 93% is spent at central sites with 7% going to remote sites.

- Those who gave an indication of the growth anticipated for their EDP budgets estimated an overall increase of 21% between 1980 and 1981. The growth rates for individual sectors are given in Exhibit IV-14 in the right-hand column.

- These growth rates include the effects of inflation. If this is taken into account, at a 20% rate, the overall real growth in budget for this user sample would be only 1%, while several budget categories would show an effective reduction.

- Exhibit IV-15 gives INPUT's estimates for total Italian EDP expenditures by DP managers on the basis of the analysis of the user and vendor questionnaires and changes in the installed-base values.

- It is estimated that the total market expenditure on minicomputers will be substantially higher than that of the specific INPUT user sample, as will the total expenditure on software.

- The characteristics of the sample in relation to the total market are also such that expenditure on communications hardware and software will show a slower total growth than that indicated by the interviewed users.

EXHIBIT IV-14

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

BUDGET CATEGORY	1980 BUDGET		PERCENT SPLIT BETWEEN SITES		GROWTHS ANTICIPATED BY SAMPLE 1980-1981
	BILLION LIRE	PERCENT OF TOTAL	CENTRAL	REMOTE	
PERSONNEL INCLUDING RECRUITMENT AND TRAINING	73.8	34%	90%	10%	20%
MAINFRAMES	25.1	12	97	3	13
PERIPHERALS	25.4	12	97	3	13
MINICOMPUTERS	11.6	5	93	7	4
TERMINALS	16.0	8	89	11	30
COMMUNICATIONS HARDWARE AND SOFTWARE	15.0	7	90	10	58
SOFTWARE INCLUDING S/W MAINTENANCE	10.0	5	98	2	31
HARDWARE MAINTENANCE	6.1	3	97	3	8
PROCESSING SERVICES	9.5	4	99	1	10
SUPPLIES AND OTHER INCLUDING PROFESSIONAL SERVICES	21.8	10	97	3	26
TOTAL	214.3	100%	93%	7%	21%

EXHIBIT IV-15

EDP EXPENDITURES BY DATA PROCESSING MANAGERS FOR TOTAL ITALIAN MARKET

BUDGET CATEGORY	EXPENDITURE				ANTICIPATED GROWTH* (PERCENT)
	1980		1981		
	BILLION LIRE	PERCENT	BILLION LIRE	PERCENT	
PERSONNEL**	998	34%	1,178	34%	18%
MAINFRAMES	485	17	538	16	11
PERIPHERALS	302	10	344	10	14
MINICOMPUTERS	289	10	315	9	9
TERMINALS	134	5	172	5	28
COMMUNICATIONS HARDWARE AND SOFTWARE	130	4	189	6	45
SOFTWARE INCLUDING SOFTWARE MAINTENANCE	57	2	80	2	41
HARDWARE MAINTENANCE	210	7	229	7	9
PROCESSING SERVICES	180	6	196	6	9
SUPPLIERS AND OTHER INCLUDING PROFESSIONAL SERVICES	151	5	195	6	29
TOTAL	2,936	100%	3,436	100%	17%

*INPUT's ESTIMATE
**INCLUDING RECRUITMENT AND TRAINING

7. OUTSIDE COMPUTER SERVICES AND SOFTWARE EXPENDITURE BY END USERS

- Sixty-eight of the 103 respondents reported EDP expenditures which are not under the control of the EDP department. The average amount spent in this way during 1979 was 75 million lire.

- The interviewees estimated a 4% increase in this budget in 1980, growing to 9% in 1981.

- Exhibit IV-16 shows which departments other than DP purchase outside computer services, software and professional services and the proportions and amounts involved.

  - Our definition of end user includes not only those departments or functions not connected to existing EDP departments, it also encompasses those companies which are either first-time users without a defined DP function or existing users with no EDP department.

  - The two columns on the far right of this exhibit provide an estimate for the value of the total Italian market. The highest values correspond to the finance and personnel departments who between them spend 50% of all end user outside purchases.

- A comparison between DP manager and end user expenditures in 1980 for the different services is shown in Exhibit IV-17.

- From here it can be seen that 55% of the total will be spent by the eventual end user while the EDP department will be responsible for only 45% of the purchases of external services.

- For the individual services area:

EXHIBIT IV-16

OUTSIDE COMPUTER SERVICES AND SOFTWARE EXPENDITURES BY END USERS, ITALY

DEPARTMENT	NUMBER OF MENTIONS	PERCENT OF ALL OUTSIDE PURCHASES	PERCENT OF ALL RESPON-DENTS	AVERAGE PERCENT SPENT	END USER MARKET SIZE (BILLION LIRE)
OPERATIONS/ MANUFACTURING	15	22%	15%	7%	23
RESEARCH AND DEVELOPMENT ENGINEERING	12	18	12	10	32
CORPORATE	25	37	24	18	58
MARKETING/SALES	12	18	12	8	26
PERSONNEL	28	41	27	22	71
FINANCE	36	53	35	28	90
OTHER	6	9	6	7	22
TOTAL	134	198%	131%	100%	322

EXHIBIT IV-17

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

TYPE OF COMPUTER SERVICE	VIA DATA PROCESSING MANAGER		VIA END USER		BOTH SOURCES (BILLION LIRE)
	BILLION LIRE	PERCENT SPLIT	BILLION LIRE	PERCENT SPLIT	
PROCESSING SERVICES	180	45%	222	55%	402
SOFTWARE PRODUCTS	57	93	4	7	61
PROFESSIONAL SERVICES	47	33	96	67	143
COMPUTER SERVICES TOTAL	284	47%	322	53%	606
TURNKEY	5	14%	31	86%	36
TOTAL	289	45%	353	55%	642

- Ninety-three percent of all software products are purchased by the DP department and only 7% by other functions.

- The distribution of processing services purchases has a slight bias towards the end user at 55% to 45%.

- Two-thirds of all professional services are commissioned by the end user while only one third are requested by the DP manager.

- Eighty-six percent of all turnkey systems are ordered by the end user.

8. USAGE AND SATISFACTION

- Section H of the user questionnaire identifies which outside services are used and the degree of satisfaction with those services. It also evaluates the growth or decline of usage of each individual service between 1980 and 1982. The results have been tabulated in Exhibit IV-18.

- This exhibit shows that hardware maintenance leads, with 95% of all respondents using this service.

- Education and training follows with 60% of total users.

- The least used services are:

  - RCS with 8% usage (7% for remote batch).

  - Facilities management and turnkey systems with 3% usage.

- Exhibit IV-19 gives the levels of satisfaction with outside services expressed by the various users.

  - Satisfaction mentions were weighted by a points system (3 for high satisfaction, 1 for medium and -1 for low) to establish an overall rating.

EXHIBIT IV-18

DISTRIBUTION OF NON-USERS/USERS BY TYPE OF SERVICE: ITALY, 1980

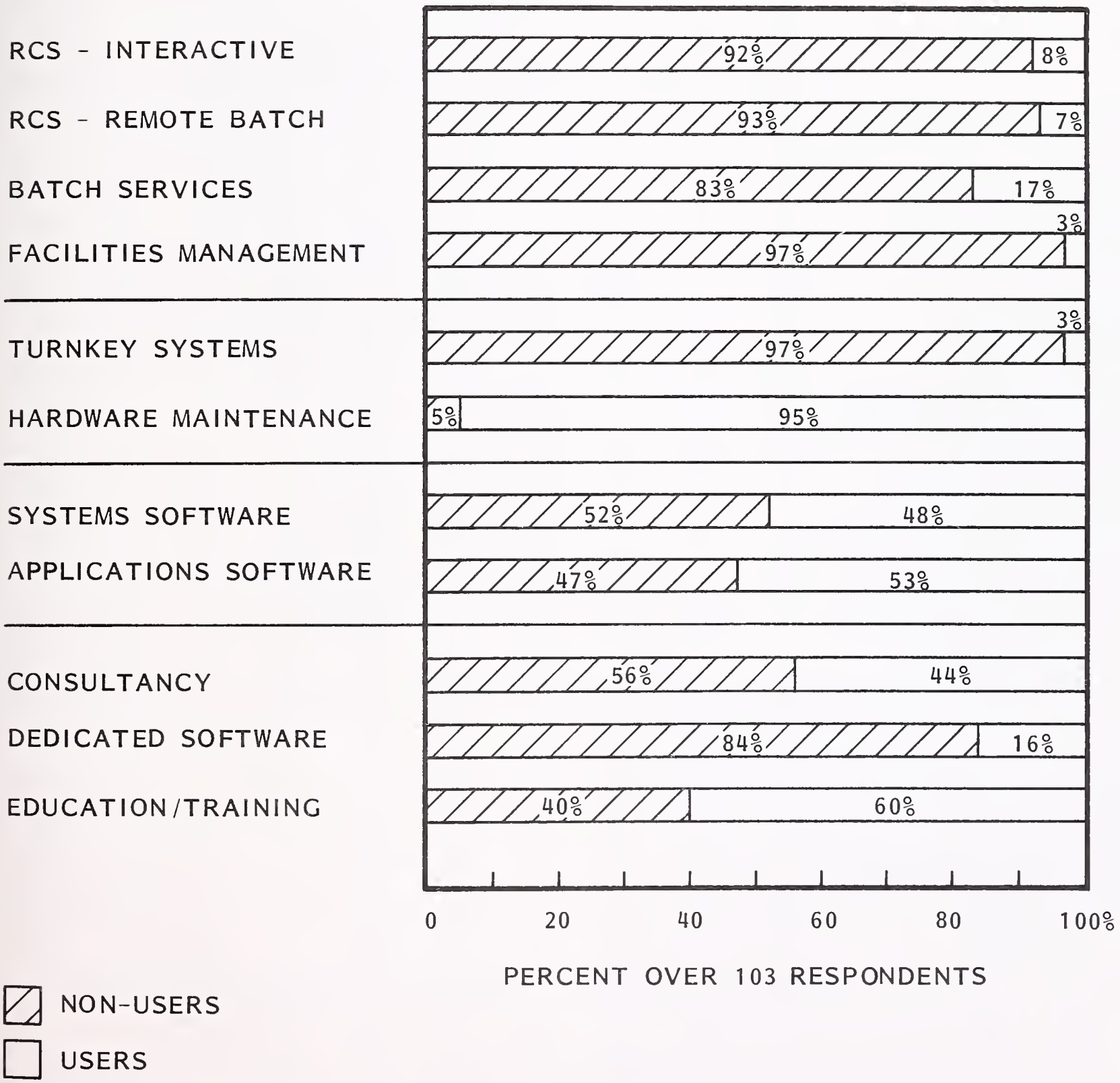


EXHIBIT IV-19

USERS' SATISFACTION WITH SERVICES,
ITALY

TYPE OF SERVICE	ALL MENTIONS	QUALIFIED MENTIONS			OVERALL SATIS-FACTION RATING*
		DEGREE OF SATISFACTION			
		HIGH	MEDIUM	LOW	
RCS - INTERACTIVE	8	4	2	2	1.5
RCS - REMOTE BATCH	7	2	4	1	1.3
BATCH SERVICES	18	2	15	1	1.1
FM	3	2	1	0	2.3
PROCESSING SERVICES	36	10	22	4	1.3
TURNKEY SYSTEMS	3	2	1	0	2.3
HARDWARE MAINTENANCE	98	45	47	6	1.8
HARDWARE SERVICES	101	47	48	6	1.8
SYSTEMS SOFTWARE	49	18	29	2	1.7
APPLICATIONS SOFTWARE	55	14	36	5	1.3
SOFTWARE PRODUCTS	104	32	65	7	1.5
CONSULTANCY	45	18	24	3	1.7
DEDICATED SOFTWARE	16	3	12	1	1.2
EDUCATION/TRAINING	62	14	44	4	1.3
PROFESSIONAL SERVICES	123	35	80	8	1.4
TOTAL FOR ALL SERVICES	364	124	215	25	1.5

* WEIGHTED ACCORDING TO GRADE OF SATISFACTION

SCALE: -1 LOW 1 MEDIUM 3 HIGH

- Highest satisfaction was for facilities management and turnkey systems at 2.3; this result is to be considered in the light of the very low usage of these services. Least satisfaction was shown by users of tailored software and batch services.

- The overall level of satisfaction for all services was a very neutral 1.5, a level of satisfaction slightly higher than medium. With the French user at 1.4 and his English colleague at 1.6 the Italian user seems to achieve a level of satisfaction similar to his European counterparts.

- A final analysis of usage by the EDP manager of outside computer services throws light on the expectations of the user sample as to the development of this usage over the period 1980-1982. The replies are shown in Exhibit IV-20.

- A comparison of these rates of change with a deflated growth rate, at 20% inflation rate, of the relevant categories of Exhibit IV-14 provides an instructive comparison:

	Budget Category	Associated with Satisfaction
Processing services	-10%	-11.7%
Software products	+11%	+13.0%
Professional services	+ 6%	+ 5.4%
Turnkey	N/A	0%

9. OFFICE OF THE FUTURE (BUREAUTICA)

- An analysis of the replies to Section I of the user questionnaires on the current and future use of data communications, database services and office automation facilities gave results which are tabulated in Exhibit IV-21.

EXHIBIT IV-20

EDP DEPARTMENT USERS' ESTIMATE OF THE LIKELY GROWTH IN USAGE OVER 1980-1982, ITALY

TYPE OF SERVICE	MENTIONS FOR:				AVERAGE OF GROWTH RATES (AAGR %)
	DECLINE	NO CHANGE	GROWTH	ALL	
RCS - INTERACTIVE	2	1	6	9	+ 15%
RCS - REMOTE BATCH	3	4	0	7	-28.5
BATCH SERVICES	8	5	5	18	-22.2
FM	0	2	1	3	+ 10
PROCESSING SERVICES	13	12	12	37	-11.7%
TURNKEY SYSTEMS	1	2	1	4	0
HARDWARE MAINTENANCE	21	58	20	99	+0.2
HARDWARE SERVICES	22	60	21	103	+0.19%
SYSTEMS SOFTWARE	5	25	21	51	+16
APPLICATIONS SOFTWARE	12	25	24	61	+10.5
SOFTWARE PRODUCTS	17	50	45	112	+13%
CONSULTANCY	4	32	12	48	+4.8
DEDICATED SOFTWARE	3	15	5	23	+2.2
EDUCATION/TRAINING	5	42	21	68	+7
PROFESSIONAL SERVICES	12	89	38	139	+5.4%
TOTAL FOR ALL SERVICES	64	211	116	391	+4.6%

EXHIBIT IV-21

PRESENT AND FUTURE USAGE OF TELECOMMUNICATIONS AND OFFICE AUTOMATION FACILITIES IN ITALY

CATEGORY OF SERVICE	NUMBER OF MENTIONS OF USE					
	NOW	1980-1982	1983-1985	GROWTH 1979-1985 (PERCENT)	NO PLANS	DON'T KNOW
DIAL-UP	30	6	1	23%	63	3
LEASED LINE	48	11	0	23	43	1
PACKET NETWORK	17	1	3	24	77	4
TELEX/TWX	51	1	0	2	48	2
PRESTEL/TELETEL	0	0	0	-	98	3
EURONET	1	1	0	100	98	1
IN-HOUSE VIEWDATA	0	1	1	-	99	1
OTHER DATABASE	9	5	3	89	81	1
ELECTRONIC MAIL	3	0	5	166	87	5
WORD PROCESSING	18	22	2	133	58	3
IMAGE PROCESSING	3	3	4	233	88	3
TELECOPIER/ FACSIMILE	7	10	3	186	75	4
CRT GRAPHICS	7	13	4	243	75	3

- The most used services are:
  - Telex (50% of respondents).
  - Leased line data transmission (48% of respondents).
  - Dial-up data transmission (30% of respondents).
  - Word processing (18% of respondents).
- The least used services in decreasing order are:
  - Electronic mail and image processing (3%).
  - Euronet service (1%).
  - Prestel/Teletel systems are not yet installed in Italy.
- By 1985, word processing systems will have more than doubled and will overtake, within our sample, the use of dial-up services.
- Use of all three data transmission systems will go up by 23 to 24%.
- The highest growth rates will be achieved, within the sample, by CRT graphics devices and image processing equipment, although this will be from a small installed base.
- Nevertheless in most cases the 'Don't Knows' and the respondents with 'No plans' far outweigh those with definite plans over the five-year period under consideration.
- The installation of up-to-date networks by the Italian telecommunications authorities might increase the use of specialised communciations systems.

- When and whether these communications services are going to be integrated into the responsibilities of the DP department is illustrated in Exhibit IV-22.

- Although most of the functions are under the supervision of the DP manager there are some exceptions.

- The most outstanding one is the telex service which has traditionally never been seen as being a data processing function and has been normally under the control of the office manager.

o Although a substantial proportion of existing word processing installations (40%) are currently not under the DP manager's wing all the future installations are planned to come under his control, indicating a greater integration of information processing which will be assisted by the advent of more sophisticated equipment.

o CRT graphics and image processing will, to a lesser degree be functions outside the scope of the DP department.

EXHIBIT IV-22

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

CATEGORY OF SERVICE	EDP RESPONSIBILITY FOR SERVICES: NUMBER OF MENTIONS				
	NOW	1980-1982	1983-1985	NO PLANS	DON'T KNOW
DIAL-UP	30	6	1	63	3
LEASED LINE	48	11	0	43	1
PACKET NETWORK	17	1	3	77	4
TELEX/TWX	10	1	0	87	2
PRESTEL/TELETEL	0	0	0	98	3
EURONET	1	1	0	97	1
IN-HOUSE VIEWDATA	0	1	1	97	1
OTHER DATABASE	8	5	2	83	1
ELECTRONIC MAIL	3	0	4	89	5
WORD PROCESSING	11	22	2	65	3
IMAGE PROCESSING	3	2	3	90	3
TELECOPIER/ FACSIMILE	5	10	3	77	4
CRT GRAPHICS	7	11	2	79	3

V STRATEGIC ISSUES

V STRATEGIC ISSUES

A. THE ITALIAN ECONOMY

- With the speed that characterises economic developments in Italy, things are taking a turn for the worse as all of Italy's familiar long-standing difficulties reemerge magnified now by a natural disaster of gigantic proportions.

- Although the various economic indicators point to an economic crisis, the country is nevertheless in many ways better equipped now to face the downturn in its economy than it would have been in the past, due mainly to the achievements of 1979.

- That year was one of the best, in economic terms, in recent years due to the fast growth which Italy managed alongside the stability of its balance of payments.

- The Italian GDP defied last year's repeated forecasts of a slowdown to advance in real terms by almost 5%. It was the fastest expansion of any major EEC country and the economic boom extended into the early part of 1980.

- Italy is the fourth largest bullion holder in the West and the relatively high price of gold has almost doubled the value of its reserves. It was therefore not surprising that the Central Bank of Italy was firmly against a devaluation of the lira.

- It was only towards the end of 1980 that steep rises in the price of oil and other commodities and the strengthening of the dollar following a sharp increase in domestic U.S. interest rates affected the lira, which lost ground against other currencies.

- But storm clouds are once again gathering.

  - Inflation having dropped to the respectable level (by current standards) of 12% at the end of 1978 is now running at well over 20% on an annual basis.

  - Interest rates have gone up sharply and there are signs that further rises in key lending rates and other forms of credit curbs are on the way.

  - The trade balance has begun to deteriorate sharply due to low productivity, soaring unit output costs and diminishing competitiveness abroad.

- There is also the abiding problem of energy or rather a lack of it, which forced Italy's net oil and petroleum products bill to top $13 billion. The latest OPEC price increases will push that figure to some $17 billion in 1980 and, depending on the extent of the economic slowdown, even higher in 1981.

- Energy is not the only problem which is here to stay. Others include the system of mobile wage indexation which means that price rises are effectively built into the system, the overstaffed and ponderous public administration and the enormous public sector deficit which is likely to top 14% of the Italian GDP.

- These prime ills are difficult to resolve and explain why inflation is so hard to eradicate.

- To compound these factors the recent natural disaster in the south of the country will divert vast sums of money from the budget which were destined for industry and commerce. The unavailability of these sums, needed for the reconstruction of the stricken regions, will cause great strains in the fabric of the economy.

- Exhibit V-1 gives basic Italian economic statistics for 1979 and 1980 showing an expected rise of 18.2% of the GDP (PLI).

B. GOVERNMENT INFLUENCE

- The Italian public administration is only now waking up to the fact that the computer hardware sector is an industry in its own right while it is still practically unaware of the existence of a computer services sector.

- Having said that, it is unnecessary to continue by saying that there is no official policy towards the sector. Moves are currently afoot by ANASIN, the association of Italian computer services companies, to awaken the awareness of the relevant authorities and there is a desire by the industry for an official acknowledgement of its existence.

- As in so many other instances in the data processing world the French attitude lies at the opposite extreme from the Italians' and Exhibit V-2 shows the powerful structure created by the French government to develop and support the computer industry as a whole and the computer services sector in particular.

- As a result of this emphasis:

  - The French computer services market is the largest in Europe.

EXHIBIT V-1

BASIC ECONOMIC STATISTICS, ITALY

INDICATOR		1979	1980	AAGR (PERCENT)
GDP*	BILLION LIRE	268,868	318,020	18.2%
	BILLION $**	$320.4	$379.0	18.2
POPULATION (MILLIONS)				
- TOTAL		56.88	57.23	0.6
- TOTAL WORKING		15.78	16.00	1.4
. AGRICULTURE, ETC.		2.33	2.00	0.1
. MANUFACTURING		7.00	6.98	-0.3
. SERVICE INDUSTRIES		6.45	7.02	8.8
NUMBER OF ORGANISATIONS*** (MILLIONS)		-	2.55	-
NUMBER OF ESTABLISHMENTS*** (MILLIONS)		-	2.10	-

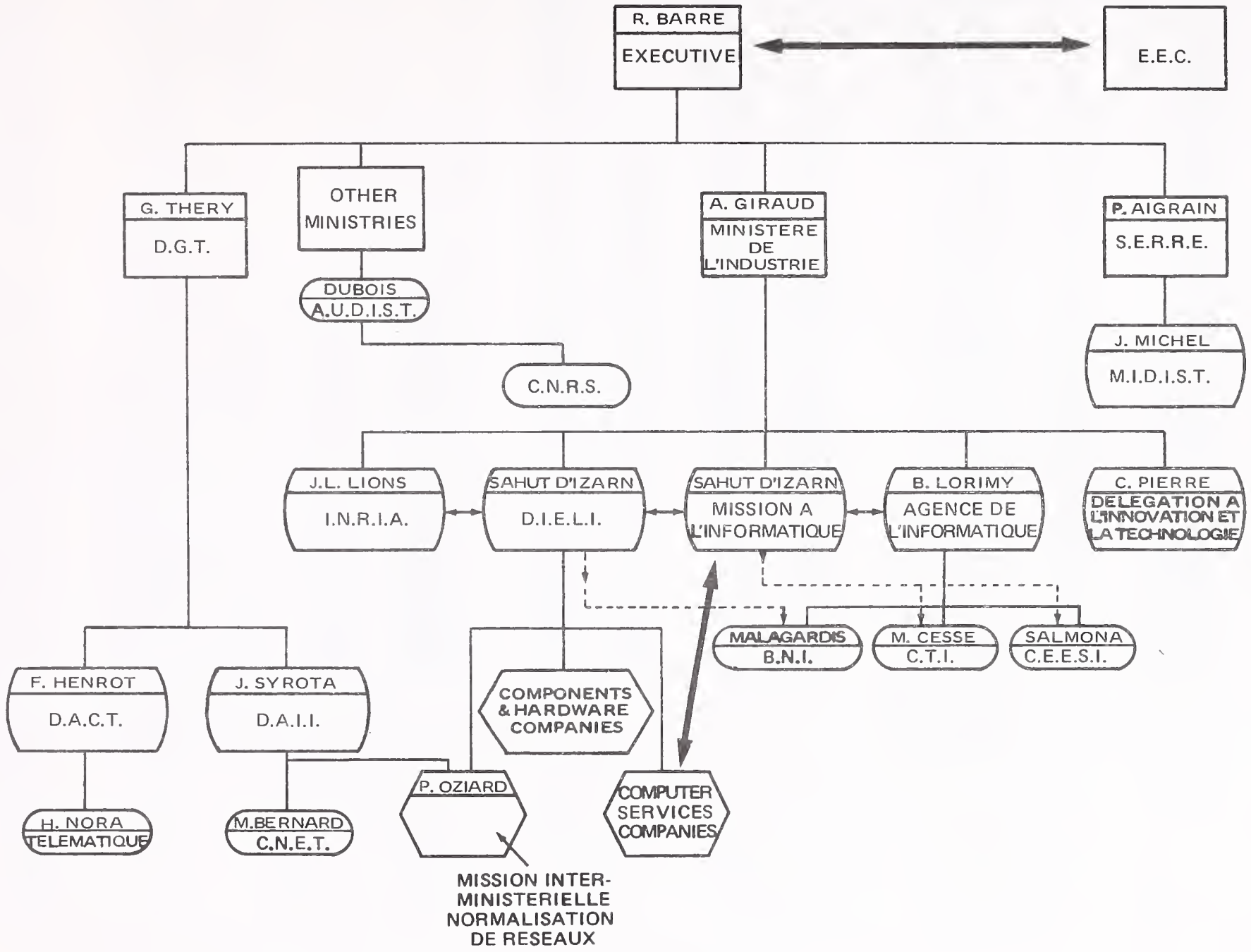
NOTES: *AT MARKET PRICE
**AT CURRENT EXCHANGE RATES (JAN. 1981)
***THESE FIGURES INCLUDE THE NUMBERS ENGAGED IN AGRICULTURE, FORESTRY AND FISHING, BUT EXCLUDE BUSINESSES RUN FROM HOME PREMISES

SOURCES: NATIONAL STATISTICAL INSTITUTE AND INPUT ESTIMATES

1975 = 100

EXHIBIT V-2

THE FRENCH ADMINISTRATION - ORGANISATIONS RESPONSIBLE FOR THE COMPUTER SERVICES SECTOR



- Three French computer services vendors have the largest turnover in Europe apart from IBM.

- French companies are increasingly active worldwide, expanding often by acquisition.

- French database/Videotex activities are buoyant.

- These results and many others have been achieved by government policies and directives issued directly, through the PTT authorities or the Ministry of Industry, which:

  - Support selected computer services companies.

  - Fund development of specific subsectors and applications.

  - Promote the creation of on-line databases.

  - Instruct governmental offices at all levels to use outside services.

  - Educate the end user (e.g. by the compulsory installation of on-line telephone directory terminals).

  - Sell French services abroad.

- Conversely the lack of involvement of the Italian government in the formulation of any plans aimed at the computer sector is sorely felt by the local industry, leaving it quite open to aimless and slow development and to encroachment by foreign vendors.

- The French involvement was originally directed at the computer hardware industry, towards CII and small equipment manufacturers. This approach was not totally successful but it gave birth to a very strong computer services sector to which the government has now turned its attention.

- Beside Olivetti at the low end of the hardware scale, Italy lacks, unfortunately, the existence of a strong national manufacturer to support and motivate the services companies.

- The third crucial factor is the involvement of the respective Ministries for Telecommunications.

- The modernisation of the telephone network and the creation of the Transpac network in France and the heavy marketing effort aimed at its use have bolstered the penetration of RCS including the imminent rapid growth of database services.

- The policy of the DGT (Direction Generale des Telecommunications) is to offer services that are one generation ahead of what users can currently accept, thus educating a demand in the desired direction and in a very elegant way safeguarding the PTT's monopoly.

- In Italy the telecommunications authorities have failed to take the lead in providing adequate services and networks which would assist the processing services sector.

- That is not to say that plans for modern switching equipment and data-grade lines and networks do not exist. They do and they are updated regularly in step with the latest technologies. It is the implementation of these plans that is lagging behind. The only public data network available is Euronet and some private networks.

- What is more, it seems that the quality of service is deteriorating and the availability of lines is diminishing.

- There will certainly have to be a change in attitude in the various official circles if the computer services sector is to have any degree of success.

C. EQUIPMENT MANUFACTURERS AND THE MAINLINE VENDOR ROLE

- The Italian DP environment is still very much dominated by the hardware manufacturers who are able to influence the user and his choice of products, thereby shaping the structure of individual systems and of the sector in general.

- The large multinationals dominate the market almost throughout the whole range of DP equipment with IBM well in the lead with a 44.6% market penetration followed by Honeywell with 25% and Siemens at 6.8% as shown in Exhibit V-3.

- In contrast to the U.K., France and Germany which all have substantial national manufacturers of both large and small systems and who in most cases enjoy governmental support, Italy lacks a national hardware vendor of sufficient stature to compete against foreign suppliers.

- Olivetti, the major contender, is only active at the low end of the product range and is still experiencing the problems caused by updating its offerings and consequently its production methods.

- Governmental financial support for Olivetti, although approved in theory, is not being implemented with the urgency demanded by competitive pressures.

- The major manufacturers present on the Italian market are currently in the process of reviewing their structures to compensate for falling hardware revenues and changing user requirements and are actively engaged in promoting an image as services companies rather than simply as hardware suppliers.

- Local computer services companies have seen their development severely hampered and have been relegated to a secondary supportive position by several factors, including:

EXHIBIT V-3

MAJOR HARDWARE MANUFACTURERS
ON THE ITALIAN MARKETS,
1979

MANUFACTURER	TURNOVER (BILLION LIRE)	PROFIT-ABILITY (PERCENT)	MARKET SHARE** (PERCENT)
IBM ITALIA*	1,235.7	13.6%	44.6%
OLIVETTI*	923.3	2.58	4.7
HONEYWELL*	194.4	3.64	25.0
SPERRY RAND ITALIA	92.6	2.70	5.0
TEXAS INSTRUMENTS*	82.2	3.89	1.8
HEWLETT PACKARD	45.6	1.33	1.6
MEMOREX*	44.4	14.23	N/A
SIEMENS DATA	43.3	0.04	6.8
NCR ITALIA	24.9	15.45	N/A
BURROUGHS	15.5	1.87	1.1
NIXDORF	13.2	1.29	N/A
DATA GENERAL	8.2	6.50	N/A
PHILIPS	N/A	N/A	4.2

*EXPORTERS.
**PERCENTAGE OF COMPANIES USING MANUFACTURERS' EQUIPMENT.

- The ubiquitous presence of multinational and other foreign hardware vendors.

- The apparent coincidence until very recently of supply and demand, often supplier inspired, for centralised systems.

- The active promotion of processing and software services by the hardware vendors resulting, for example, in IBM having a services turnover four times as large as that of its closest rival.

- The absence of a strong local manufacturer to support and promote a national computer services sector.

- With new developments in computer technology and with the fragmented structure of the Italian market, a potential opportunity is coming into being for the computer services sector to step out of the shade of the hardware vendors into primary roles vis-a-vis the user.

- The "mainline" concept which is relevant to a stabilised or maturing market and refers to a state in which the principal vendors in the market control their own medium-term destinies by controlling the distribution channels to the users of their products or services, has been introduced and developed in the European strategy report, the first volume of the current MAS/Europe programme.

- This "mainline" role has been controlled so far, effectively, by the hardware vendors through their control of product manufacture and direct selling outlets to their customer base.

- The drastic fall in the cost of hardware has created a problem for manufacturers who will have to move closer to their user base with both products and services while maintaining a high rate of new product developments to satisfy the demands of a competitive environment.

- This expanded role is taxing the capabilities of most manufacturers and the potential inability to satisfy all the demands of the market presents an opportunity to the services companies to assume a "mainline" role, as described in Exhibit V-4.

- Whether any of the Italian services companies is willing to take on the manufacturers at their own game or whether indeed any is in a position to do so is another matter.

- Processing services companies are best placed to attempt this move as they have acquired the necessary commercial and financial skills as well as having had more exposure to the users in their role of the alternative solution.

- Software products companies and systems and software houses are in a less advantageous position due to their historic role as subcontractors.

- This analysis is partly being justified by events in Italy where the most successful turnkey systems vendors, an intermediate step towards the mainline, have all evolved from the original processing services activities which are now either relegated to a position of secondary importance or are scheduled to be fully discontinued.

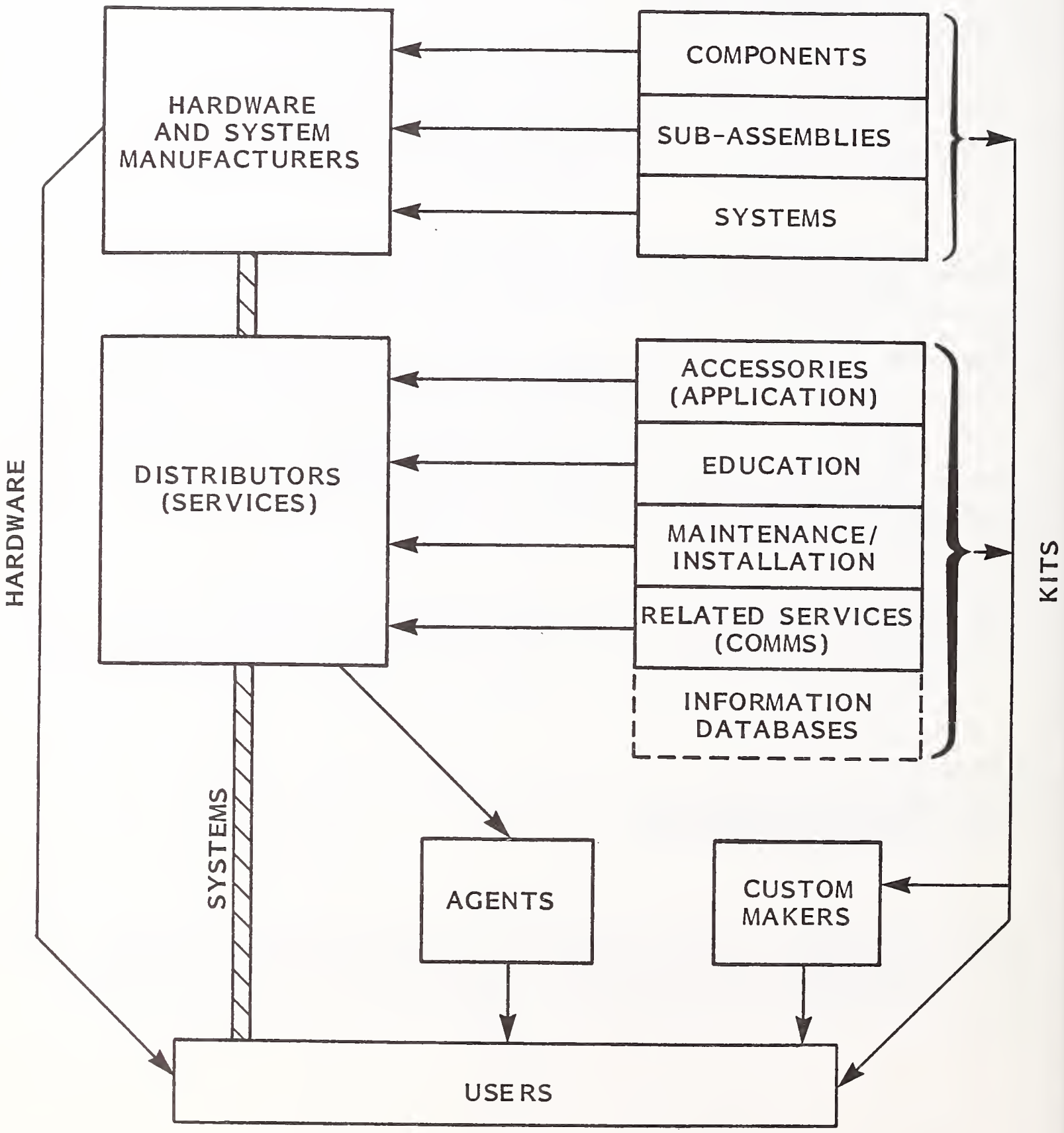
- Nevertheless this will be an uphill battle for the services companies who will have to contend with the hardware vendors' already existing organisations and expertise and with their own comparative poverty of finance.

D. OFFICE AUTOMATION

- A mention of office automation in the Italian context immediately brings to mind the name of Olivetti for whom the office is the traditional market.

EXHIBIT V-4

EVOLUTION OF THE MAINLINE ROLE



- Most of the production of computer hardware in Italy is biased towards products at the lower end of the range and applicable to the eventual automation of the office.

- Word processing is the sector of office automation where most activity will take place within the next five years.

- Within Italy, Olivetti is a strong contender to lead the market due to:

  - Its well established position as a supplier of office equipment.

  - Its countrywide distribution and services network.

  - Its 1979 base of 50% of all installed word processing systems.

- On the other hand IBM will be a serious competitor:

  - Supplying a wider product range.

  - Offering compatibility with its DP equipment.

  - Providing a powerful communications capability.

  - Employing aggressive marketing techniques.

- Despite its great potential and glamorous image, word processing will not enter the office as rapidly as presumed.

- The major limitations to a faster proliferation of more sophisticated word processing systems will be staff oriented:

  - The willingness of secretarial staff to accept the new equipment.

  - Their ability to speedily learn to use it to its full capabilities.

- The need for management to change its established working methods.

- The estimated number of word processing systems installed in Italy in 1979 was 10,000.

- This number is expected to rise at an average of 19% per annum to reach 20,000 in 1983 and then to increase at 30% to 26,000 by 1984.

E. FOREIGN PENETRATION

- The presence in a market of substantial foreign competition provides a challenge to the local industry which results in general in the eventual strengthening of the sector as a whole.

- This has certainly been the case in the U.K. and West Germany and while it has been a contributing factor in France, the problem there was dealt with in a different way. The results in all cases were beneficial to the national computer services companies.

- In Italy where, except for the obvious and very strong participation of IBM, Honeywell/GEIS and INFONET which eventually was acquired by an Italian company, participation of other U.S. owned services companies came either very late, or on a small scale or not at all.

- With this incentive absent from the market its financial and technical advance was slowed.

- In recent times, though, other European companies have started to approach Italy as a potential investment target and several computer services companies, mainly French have opened offices in the country or have established contacts with local counterparts.

- The most successful of these has been METRA Italia with a turnover of some two billion lire in 1979 which nearly took the company into the 'top twenty'.

- Other companies, French and British amongst them, are considering moving into Italy and one Italian official commented that not a week passed without some foreign firm making enquiries regarding local opportunities.

- Beside Metra other French companies active in Italy are:

  - GSI with its subsidiary EAD.

  - CCMC with its subsidiary CCEC.

  - SG2 in a 45% joint holding with a local financial group.

  - CAP through an asssociated company, SYNTAX.

  - CISI through joint ventures with SELESTA and RTP.

- This cross-fertilization will prove advantageous by introducing:

  - Much needed capital.

  - New technologies and products.

  - New marketing concepts.

  - New markets.

  - A competitive stimulus.

- Little attention has been paid so far by Italian services companies to their own opportunities abroad and while these should be greatest in the Third World and in particular in Latin-language countries and in Africa, Italian products ought to have some success in Europe too.

VI PROCESSING SERVICES

VI PROCESSING SERVICES

A. INTRODUCTION

- The total processing services sector is currently the largest within the Italian computer services industry and is forecast to maintain this prime position until 1984 and beyond.

  - Nevertheless its overall growth rate is the lowest, with some areas within it experiencing a contraction in real terms.

  - New services and technologies such as database enquiry systems, FM and USHS are coming onto the market and will contribute to the eventual recovery of the processing sector but, while their contribution will be significant in France and the U.K., their contribution to the Italian market will be quite small at least up to 1984.

- Many of the participants in the more traditional activities of this sector, such as data entry and batch services, are looking for alternative sources of revenue and are diversifying or actually leaving the sector.

- Videotex and database services are two paths which processing companies would be wise to follow in the medium term.

- The short-term solution of providing USHS, with a long-term view towards a more product orientated hardware-software integrated service may be another way of protecting markets in the processing services area.

B. MARKET DEVELOPMENT, 1978-1984

1. INTRODUCTION

- The total processing services market, defined to include remote computing, batch and data entry services as well as facilities management amounted to 277 billion lire in 1978 representing 67.5% of the total computer services market.

- It is forecast to rise over threefold to 879 billion lire in 1984 by which time it will have reduced its share of the total market to 41%.

- The average annual growth rate over the period will be 21%.

2. GROWTH, 1978-1980

- The total processing services market grew 20% between 1978 and 1979 and the growth for 1980 was expected to be 21% with a total market value of 402 billion lire, as can be seen in Exhibit VI-1.

- The major contributor to the growth of the sector has been the RCS subsector growing at 34% and 45% in 1979 and 1980 respectively.

- The growth of batch services actually slowed down as users increased in-house installations of small equipment and batch bureaux upgraded their configurations, converting existing accounts to remote batch. While the growth between 1978 and 1979 was 18%, in 1980 it was down to 17%.

EXHIBIT VI-1

THE ITALIAN PROCESSING SERVICES MARKET
DEVELOPMENT, 1978-1980

MODE OF SERVICE	1978 BILLION LIRE	GROWTH 1978-1979 (PERCENT)	1979 BILLION LIRE	GROWTH 1979-1980 (PERCENT)	1980 BILLION LIRE
REMOTE COMPUTING (RCS)	50.0	34%	67.0	45%	96.5
BATCH	149.6	18	176.5	17	206.5
DATA ENTRY	76.7	13	86.7	11	96.2
FACILITIES MANAGEMENT (FM)	0.9	100	1.8	50	2.7
TOTAL PROCESSING SERVICES	277.2	20%	332.0	21%	401.9

- The introduction of new equipment and new methods of data collection and entry were responsible for an even sharper fall in the growth rate of data entry services, from 13% in 1979 to 11% in 1980, well below the inflation rate.

- Facilities management services are not widespread in Italy and, while growth rates are high, actual values are still negligible compared to the rest of the sector. The corresponding market grew three times from 0.9 billion lire in 1978 to 2.7 billion lire in 1980.

- Exhibit VI-2 gives a breakdown of RCS for 1979 showing that remote batch services represented the bulk of the sector, 75%, with interactive RCS representing 25%.

  - Nevertheless the latter grew by 55% between 1979 and 1980 while remote batch increased at a 40% rate in that period.

  - Data base enquiry services, at 35% growth, and USHS, at 70%, both achieved 0.2 billion lire, but, while still at a low level in 1980 they are forecast to have substantially higher growth rates over the period to 1984.

3. FORECAST, 1980-1984

- Exhibits VI-2 and VI-3 show in tabular and graphical form the forecast development of the various components of the processing services sector through 1984.

- With the RCS subsector growing at an average of 43% per annum between 1979 and 1984 and batch services stagnating with an average growth rate of 13%, well below the inflation rate, RCS will overtake batch services in 1984 to become the largest component of the processing market.

- Data entry will also show a steady decline, growing at a low 9% average per annum which in real terms is a shrinking market.

EXHIBIT VI-2

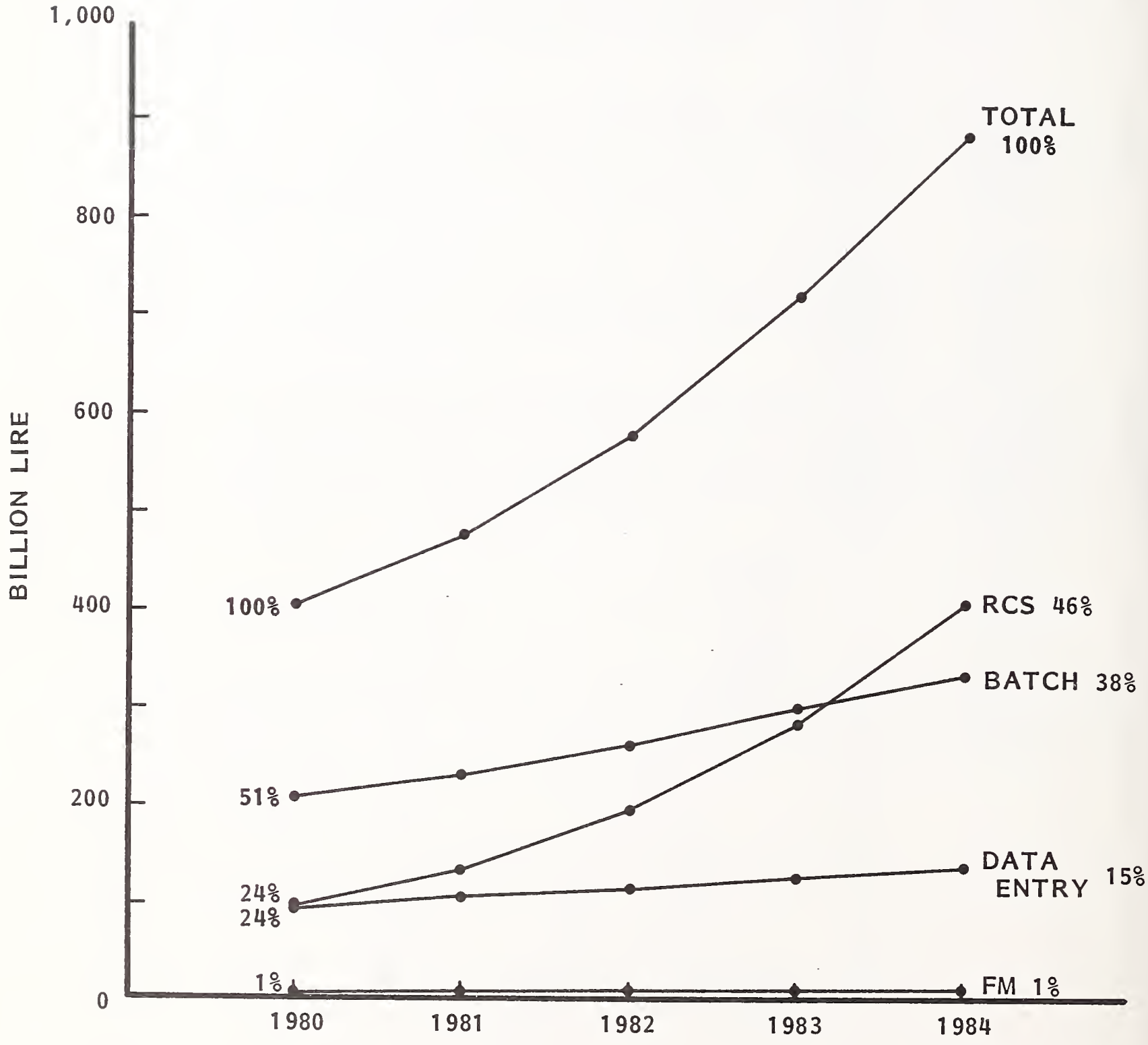
THE ITALIAN PROCESSING SERVICES MARKET

FORECAST BY MODE OF SERVICE, 1980-1984

MODE OF SERVICE	MARKET FORECASTS IN BILLION LIRE							
	1979	GROWTH 1979-1980 (PERCENT)	1980	1981	1982	1983	1984	AAGR (PERCENT)
INTERACTIVE	16.8	55%	26.0	38.7	58.2	85.0	117.3	48%
REMOTE BATCH	50.0	40	70.1	93.4	125.5	164.8	208.4	33
DATA BASE ENQUIRY	0.1	35	0.2	0.8	4.0	11.7	42.7	210
USHS	0.1	70	0.2	1.2	8.1	22.4	34.8	216
RCS - SUBTOTAL	67.0	45%	96.5	134.1	195.8	283.9	403.2	43%
BATCH	176.5	17	206.5	231.3	261.3	298.0	330.7	13
DATA ENTRY	86.7	11	96.2	105.8	116.4	126.9	135.7	9
FM	1.8	50	2.7	3.7	5.2	7.0	9.3	39
TOTAL PROCESSING SERVICES	332.0	21%	401.9	475.0	578.7	715.8	878.9	21%

EXHIBIT VI-3

ITALIAN PROCESSING SERVICES SECTOR
MARKET FORECAST,
1980-1984



- The yearly growth rates of all the subsectors in the processing services industry are charted in Exhibit VI-4.

- The growth of the RCS sector will be due to several contributing factors:

  - The growing presence and activity of international RCS vendors who will bring their marketing skills and financial power to bear on the market.

  - The temporary shift from batch to remote batch services, although the high cost of remote batch terminals will make the interactive RCS solution more attractive.

  - The growth of data base services, slow at first but starting to gather speed towards the end of the forecast period.

  - The increasing realisation by bureaux of the advantages of installing micro-based, reasonably priced, intelligent hardware on their clients' premises; i.e., USHS.

- To the user, who will find his requirements for transaction-oriented processing not really compatible with interactive RCS, the USHS service will be the perfect solution as he will be able to conduct his interactive operations in-house on the bureau-supplied equipment and still do his remote batch processing using the bureau-provided connection to its own computer centre.

- The forecasts of growth between 1980 and 1984 of these components of RCS are tabulated in Exhibit VI-2 and shown in graphical form in Exhibit VI-5.

  - The average annual growth rate of interactive services is forecast to be 43% between 1979 and 1984 taking the market from 17 to 117 billion lire. Both the 1979 and 1984 values represent 28% of the total RCS market.

EXHIBIT VI-4

ITALIAN PROCESSING SERVICES SECTOR
GROWTH RATES
FORECAST, 1980-1985

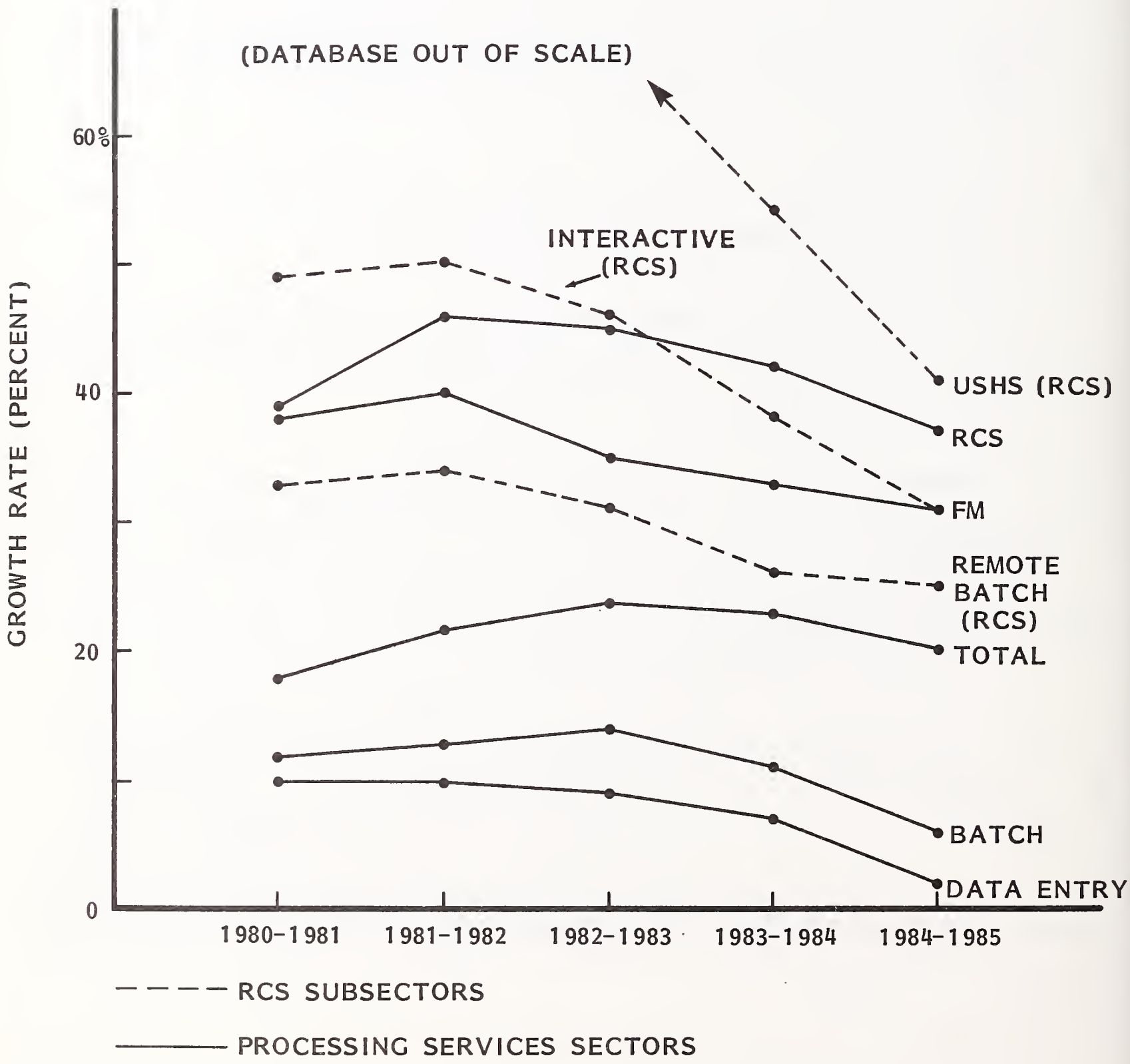
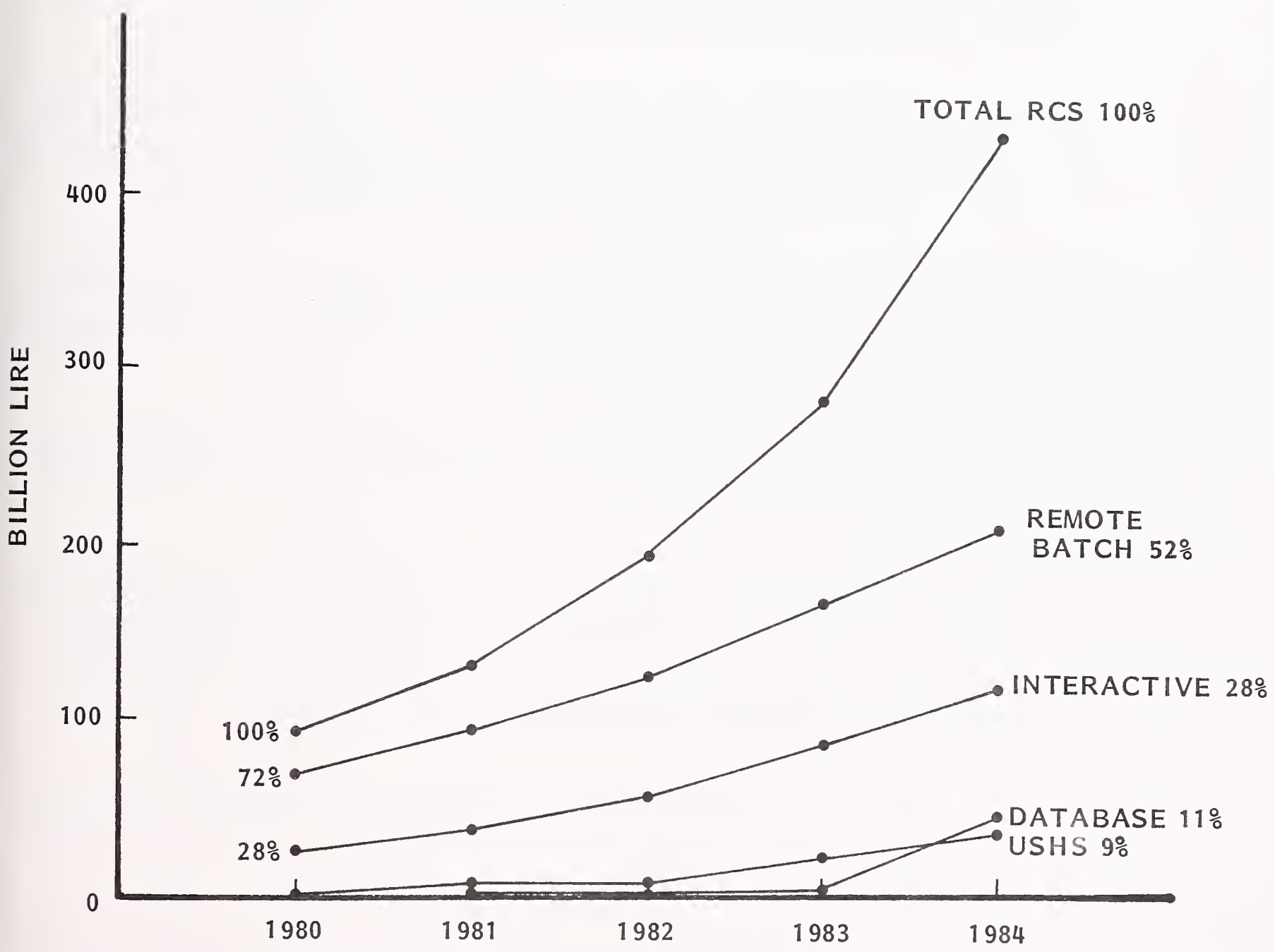


EXHIBIT VI-5

ITALIAN REMOTE COMPUTER SERVICES
MARKET FORECAST, 1980-1984



- The growth of remote batch, starting at 50 billion lire in 1979 and reaching 208 billion in 1984 at an average yearly rate of 33% will imply a relative drop from 72% of the total RCS market in 1979 to only 52% in 1984.

- The remaining 20% of the 1984 market will be divided into data base services at 43 billion lire or 11%, and USHS at 35 billion lire representing 9% of the RCS market. The respective average annual growth rates are forecast to be 210% for data base enquiry services and 216% for USHS.

- Batch services, while still a large proportion of the market, will suffer from competitive, technological and inflationary pressures and will grow from 176 billion lire in 1979 to 331 billion in 1984, a 13% average rate per year.

- Data entry services will keep going through inertia, on the part of both the users and the suppliers and it will grow at an average of 9% per year from 87 billion lire in 1979 to 136 billion lire in 1984.

- Exhibit VI-4 shows a steady decline for batch and data entry services from 1982 to 1983 onwards.

- Facilities management is very popular with neither the Italian user nor the supplier. In general the user wants to have control of his own operations, in particular over such sensitive areas as finance and accounting and the presence of third parties is not welcome.

  - Nevertheless some classic FM operations do exist and the market, albeit small, is growing at about 50% per year.

  - This growth will continue as more services companies start providing processing services to closed user groups through agreements with the relevant trade asssociations or professional bodies.

- This second way of providing FM services will help the growth of the sector as defined and, growing at an average of 39% annually, it will reach revenues of 9.3 billion lire in 1984.

C. USER ATTITUDES

- An analysis of the relevant responses and user comments in the user's questionnaire confirms three findings established in previous chapters regarding processing services.

  - The fragmentation of the market: of the 39 companies mentioned, over 80% received only one mention.

  - The dominance of IBM, with nearly 30% of all mentions, all but two as first choice.

  - The low level of user satisfaction with the services provided by vendors in this sector. Nearly 50% of all responses expressed dissatisfaction to a higher or lesser degree. The same proportion applied to comments made regarding IBM.

- Vendors mentioned more than once were:

  - IBM: 17 times, 15 of which were in first place.

  - CEDATI: three times, all in first place.

  - Honeywell, Olivetti, Siemens, Univac, CEDLAB: twice each.

- A representative sample of comments is shown below:

  - 'Real professionals, very satisfied' (regarding Siemens).

- 'Very good' (re IBM, ADP).

- 'We use processing services in emergencies'.

- 'We have had very bad experiences'.

- 'Too expensive'.

- 'Good value for money'.

- 'Very bad' (re IBM).

- 'Timetable problems'.

- 'Need for improvements in the service'.

- This last comment was the one made with most frequency.

- As can be seen from Exhibit IV-19, highest satisfaction was expressed for FM services, followed by RCS interactive services while batch was the least satisfactory.

- Most of the above responses were obtained from DP managers who are in fact not the main users of outside processing services. As can be seen in Exhibit IV-17 the end user purchases 55% of these services while the DP manager is responsible for 45% of the expenditure on the sector.

D. VENDOR ISSUES AND THE IMPACTS ON PROFITABILITY

1. INTRODUCTION

- Fifteen companies replied to the questions in the data processing services module of the Vendor Issues Questionnaire which can be found in Appendix C.

- Their distribution by major orientation was as follows:

  - Six companies provide mixed services including batch, RCS, data entry and in one case FM.

  - Two companies specialise in RCS services, both of them interact with or are a part of international networks.

  - Seven respondents obtain their main revenue from data entry services.

- To confirm previous comments on geographic distribution, six of the seven data entry companies reside in Rome while only one of the mixed service or RCS companies comes from the Italian capital. All others are based in the north, mainly Milan.

2. GROWTH IN REAL NEW BUSINESS

- There was no agreement between the repondents about the trend towards an increase or a slowdown in the volume of new business over the coming two-year period.

- Of the mixed or batch services companies, two agreed that business was slowing and would continue to do so for at least two years.

  - One of the above claimed that business dropped by 20% over the last year as clients tended to install in-house stand-alone minicomputers, and the intention of this supplier is to close down all batch services during 1981.

  - One batch company whose volume of business is dropping in real terms due to the parent's policy of freezing prices as a means of containing inflation foresees that the trend will be reversed within two years and that new clients will be on the increase.

- Another batch firm whose business is currently increasing estimates that business may drop by as much as 50% by 1982 to 1983, also due to the in-house mini solution.

- The last company in this subgroup affirms that business is growing at 20% but will slow down to 10% or 15% by 1982 which in actual terms would imply a 5% to 10% drop.

- Of the companies involved in data entry, three affirmed that the volume of business is not falling and that this will still be so in two years', time. These companies are closely involved with work for ministries and other official organisations, which is the reason for their optimism regarding future activities.

  - This situation is confirmed by another vendor who asserts that business is dropping in actual terms and will continue to fall, 'except in the case of government'.

  - Another data entry firm sees the current rise in business as 'only due to inflation' and expects that the mini will be responsible, within two years, of a fall in its volume of trading.

- Only one company, which is currently slowing down at a 10% to 15% rate, expects its business will increase within the next two years. It too conducts most of its business (80%) with the government.

- One of the RCS vendors with a current 25% increase in business expects a growth of 20% per annum over the next two years and is looking forward to a continuing expansion.

3. IN-HOUSE DISTRIBUTED DATA PROCESSING

- Only one company, providing data entry services to the government, claims that its users are not adopting in-house distributed or dispersed data process-

ing. All other respondents confirm that some of their large clients are adopting DDP and that this is affecting their business, in most cases negatively, but in some, mainly RCS vendors, in a positive manner.

- Only four vendors, all suppliers of batch services, say what proportion of business was lost to DDP, and they estimate this at between 10% and 50%.

- One supplier claims that he does not lose clients but that these are replacing processing services by software services which, in fact, are more remunerative.

- Both RCS vendors claim that they are gaining clients by offering DDP through the connection of stand-alone minis or intelligent terminals to their networks.

- Two suppliers attributed all their lost business to in-house stand-alone minis, two others saw all their lost accounts going to minis connected to in-house networks while one lost all his business to batch processing on the in-house mainframe.

- The average destinations for lost accounts are:

- Stand-alone minis	44%
- Connection to in-house networks	43
- Batch on in-house mainframe	13
	100%

4. NEW TYPES OF USERS

- All respondents, except for one, agree that new users such as small businesses and professionals prefer a mini/micro based solution. Of these, one distin-

guished between small businesses who follow this rule and professionals who do not tend towards this type of solution.

- None of the respondents sees this potential new business being lost to another bureau and they estimate that 87% of new users will tend to purchase minis or micros and only 13% will acquire new mainframes.

- These figures match up remarkably well with those in Point 3 regarding in-house DDP.

5. USHS

- While in other countries there is a view amongst computer bureaux of the growing importance of USHS as a vehicle for retaining and improving business, the results in Italy show that this solution and its implications have not yet been fully appreciated.

- While both the RCS vendors see the value of USHS currently as being of medium or high importance and high for both of them within two years, there is no such unanimity in the other subsectors.

- In data entry, only one supplier sees USHS as having a high importance now and still high in five years' time, all six others see it as of low importance at the moment and only four go as far as considering USHS to be of medium importance in five years.

- In the batch or mixed services subsector the outlook is even dimmer. Two firms give USHS a high importance rating at present and maintain it for the future. But while for the present two other suppliers give it medium importance and one rates it as being low in five years' time all three consider USHS as having low importance for their bureau activities.

6. FACILITIES MANAGEMENT

- Most respondents agreed that bureaux will have to offer an integrated facilities management service either to individual firms or to closed user groups within the next five years.

- One-third of the respondents think that FM is or should be offered now, over half consider that it should be offered in two years' time while over two-thirds of the suppliers consider the provision of FM systems in five years to be important.

- One of the respondents who does not see FM as part of his future services gives as his reason for it the lack of staff.

7. THIRD-PARTY DISTRIBUTION

- Of 15 respondents, 13 are finding their business more costly to obtain than in the past.

- They estimate the average percentage increase in costs to range between 10% and 25% with an average of 17% over all responses and the higher increases for data entry suppliers.

- Despite the pressure on margins produced by this increase in cost only two suppliers intend to sell their services through third parties or already do so. The need to keep in close touch with the user is built-in in this sector.

8. PRICING ELEMENTS

- Most of the vendors used all the pricing elements mentioned in question 17 of the questionnaire, with very few exceptions or deviations.

- Some additional elements quoted were:

- Software development.

- Software maintenance.

- Number of I/O.

- Magnetic tape and disc loading.

- One vendor uses the 'cost and feed' system of accounting while another uses UNIVAC International Accounting Routines.

- Only three respondents use Fixed Capacity Pricing (FCP) techniques and only one of these quotes a maximum percentage of CPU load for FCP use, a targetted 30%.

- All companies calculate their prices on 'Historical cost-plus' methods while 65% may combine this with an analysis of 'Market Value'.

9. SOFTWARE PROCUREMENT/DEVELOPMENT

- Question 21 refers to the percentage of software used by the vendors originating from the following sources:

  - Using the hardware manufacturer's software.

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

  - Building software in-house.

- The averages of replies by type of software were as follows:

	Use Manufacturer's	Buy	Develop In-House
Systems software	57%	26%	17%
Applications	-	34%	66%
Utilities	21%	31%	48%

- When asked about the number of installations or clients required to recover software procurement/development the vendors provided only four replies.

  - For three companies it takes four or five accounts to recover the cost of applications packages, and for the fourth it takes 50 installations.

  - The only supplier giving an answer relative to utilities packages placed the number of clients at five.

10. PROFITABILITY

- To questions about various external factors and their effects on profitability, answers were that the main influence on profits was, understandably, the increase in prices matching inflation. This was followed in importance by the positive effect of already depreciated equipment and finally by falling hardware costs.

- Other factors mentioned in this context were:

  - Compression of internal costs through internal reorganisation.

  - The high price to the user of software development.

- Five respondents felt that management spent too much time on day-to-day profit management to the detriment of medium (two years) and long-term (five years) planning.

  - Eight respondents reckoned that management was not sacrificing medium and long-term planning to the preoccupation with day-to-day profit management.

  - One company thought that although enough attention was being paid to the medium term not enough was given to long-term planning, while another company considered that the opposite was happening.

E. COMPETITIVE ANALYSIS

- Exhibit VI-6 ranks the leading processing services vendors by type of service and by market share in 1979.

- Facilities management does not appear in this table but only two major companies provide this service in any substantial form at present.

  - GE-DA and Honeywell hold most of the external market and while Italsiel is the major provider of FM to the government this is considered to be a captive service.

- The data entry subsector is dominated by Roman companies providing their services to the government and its various departments. There is a large amount of subcontracting among companies in the sector and also to home-based free-lancers.

  - Sopin was the 1979 market leader with 8.8% of the total data entry market which amounted to 86.7 billion lire.

EXHIBIT VI-6

TOP SUPPLIER RANKING AND SECTOR MARKET SHARES BY SERVICE TYPE,
ITALY, 1979,
PROCESSING SERVICES

TYPE / RANK	BATCH SERVICES	MARKET 176.5 BILLION LIRE	RCS	MARKET 66.6 BILLION LIRE	DATA ENTRY SERVICES	MARKET 86.7 BILLION LIRE
	SUPPLIER NAME	PER-CENT SHARE	SUPPLIER NAME	PER-CENT SHARE	SUPPLIER NAME	PER-CENT SHARE
1	IBM	7.1%	IBM	38.7%	SOPIN	8.8%
2	DATA MANAGEMENT	3.0	GEISCO	9.5	SIPE	7.1
3	GE-DA	2.3	GE-DA	3.3	CDS	6.1
4	SOPIN	1.5	DATA MANAGEMENT	2.4	ITALSPED	5.2
5	SYSTEM PRINTING	1.2	ADP	2.2	SELDAC	3.9
6	SICIT	1.1	ITALSIEL	2.0	CER	3.5
7	SEDA	1.0	CERVED	1.8	AUS. EL. DA	2.8
8	SIPE	0.7	SOPIN	1.3	SYSTEM PRINTING	1.4
9	CDS	0.6	CDC	1.0	SEDA	1.0
10	SELE	0.6	SEDA	0.6	GE-DA	0.5
11	AUS. EL. DA	0.5	SELE	0.6	SICIT	0.5
12	DATAMONT	0.4	DATAMONT	0.3		
13	ITALSIEL	0.2				
14	SELDAC	0.2				
15						
15						
17						
18						
19						
20						

- Some changes are to be expected in this table as various companies start placing increasing emphasis on other sectors to the detriment of their activities in this one.

- RCS and batch services are dominated by IBM, especially RCS, where their share of the 1979 market was just under 40%.

  - There is an overall influence from international companies or local vendors with links to international networks, but besides IBM and GEISCO (9.5% market share) other international RCS vendors have a relatively low participation or are not in the country at all. Examples of these situations are ADP with only 2.2% of the market, CDC with 1%, Tymshare and Comshare.

  - A new entrant in the marketplace is CISI which established a joint venture with a local vendor, thus including Italy within CISINET.

- With the exception of IBM, national companies dominate the batch services market almost exclusively.

- IBM's share of the 176 billion lire 1979 market was 7.1% and it was followed by Data Management with 3% and GE-DA with 2.3%.

VII SOFTWARE PRODUCTS

VII SOFTWARE PRODUCTS

A. INTRODUCTION

- The software products sector is the second fastest growth area in the Italian computer services market after turnkey systems.

- While its 1978 size was 8% of the total market, it will have risen to over 20% of the market by 1984, growing 13 times in actual value.

- Progressively increasing unbundling will contribute to a large extent to the fast growth of this sector.

- The main characteristic of the market is its domination by the hardware vendors and this situation will continue, with certain fluctuations, throughout the forecast period.

B. MARKET DEVELOPMENT, 1978-1984

1. GROWTH, 1978-1980

- The total Italian software products market in 1978 amounted to 33 billion lire. This value includes both system and applications products sold by manufacturers and independents.

- The market grew 32% in one year to 43.7 billion lire in 1979. The manufacturers' proportion of this value amounted to 70% of the total with the independents taking only 30%.

- Exhibit VII-1 shows in tabular form how the market is divided by source of the products: manufacturers and independents; it also gives the split by type of product: systems or applications packages. Exhibit VII-2 gives a graphical view of the composition of the same market.

- In 1979 user expenditure on system software products was 75% of the total and only 25% was spent on applications software.

- The market growth accelerated in 1980 and increased by 40% to over 61 billion lire, 73% of which was for systems software, giving a slight increase to applications software. The manufacturers' share decreased to 65% of the total market.

2. FORECAST, 1980-1984

- The patterns of the last two years of overall high growth and the tendencies to changes regarding the source and type of product are expected to continue.

- The sector growth rate is expected to rise steeply up to 1983 when it will reach 74%. INPUT expects this growth to slow down to 51% in 1984, continuing with 42% in 1985.

- This fast growth will be largely fuelled by the unbundled software products coming onto the market which will have an increasing effect on total values, as will be shown later.

- The total sector will increase tenfold between 1979 and 1984, from 43.7 billion lire to 431 billion at an average annual rate of 58%.

EXHIBIT VII-1

ITALIAN SOFTWARE PRODUCTS MARKET FORECAST,
1980-1984

TYPE AND SOURCE		MARKET FORECASTS IN BILLION LIRE								
		1978	1979	GROWTH 1979-1980 (PERCENT)	1980	1981	1982	1983	1984	AAGR (PERCENT)
MANUFACTURERS	SYSTEMS	-	24.5	29%	31.7	44.5	63.1	98.4	129.5	40%
	APPLICATIONS	-	6.1	31	8.0	19.6	45.9	88.7	142.5	88
TOTAL MANUFACTURERS		-	30.6	30	39.7	64.1	109.0	187.1	272.0	55
INDEPENDENTS	SYSTEMS	-	8.5	50	12.8	19.8	30.3	54.2	79.6	56
	APPLICATIONS	-	4.6	87	8.6	13.2	24.8	44.2	79.5	77
TOTAL INDEPENDENTS		-	13.1	63	21.4	33.0	55.1	98.4	159.1	65
TOTAL SOFTWARE PRODUCTS		33.1	43.7	40%	61.1	97.1	164.1	285.5	431.1	58%

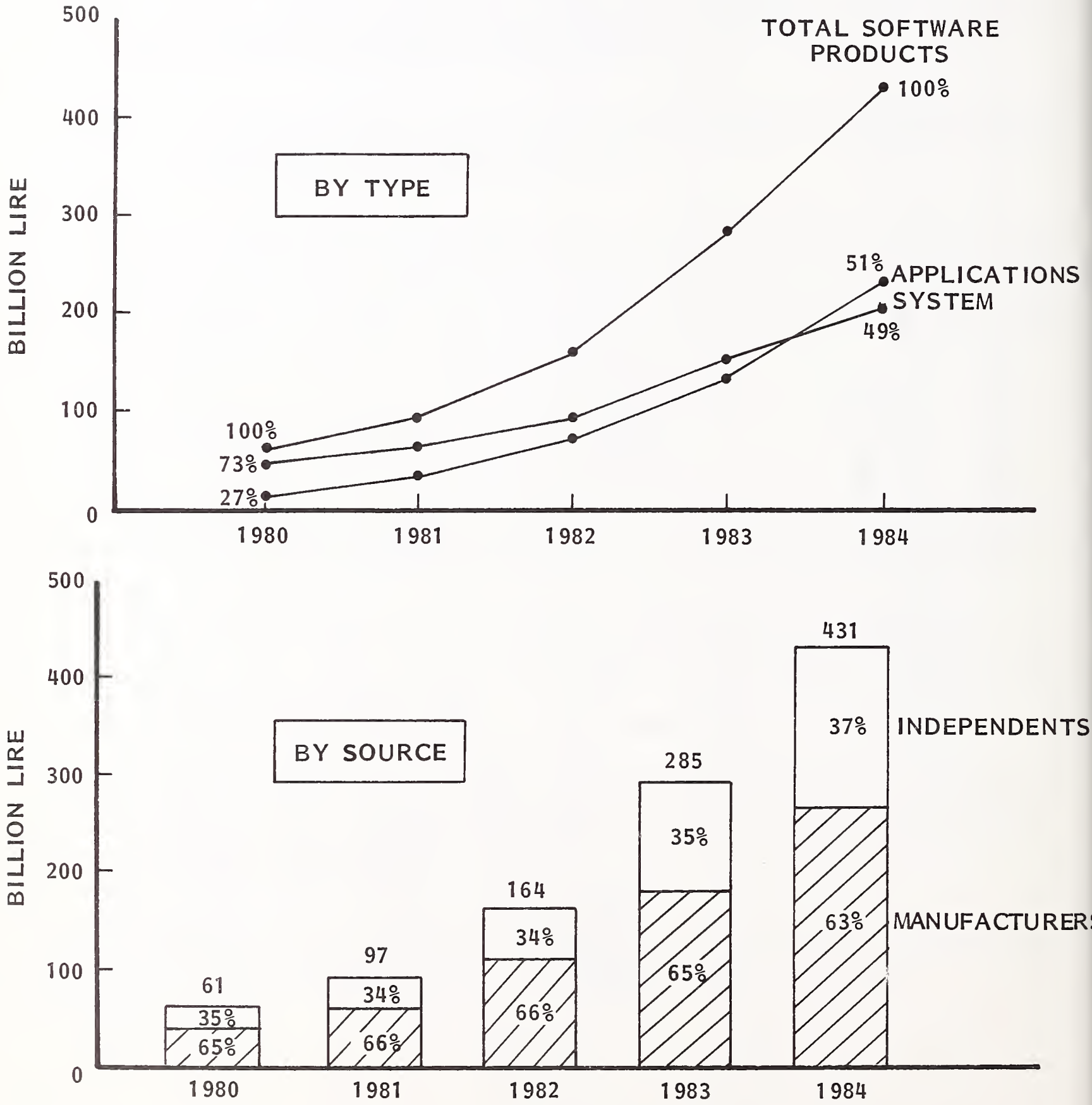
TOTAL SYSTEMS	-	33.0	35%	44.5	64.3	93.4	152.6	209.1	45%
TOTAL APPLICATIONS	-	10.7	55%	16.6	32.8	70.7	132.9	222.0	83%

EXHIBIT VII-2

ITALIAN SOFTWARE PRODUCTS MARKET FORECAST

BY TYPE AND BY SOURCE, 1980-1984

GRAPHICAL REPRESENTATION



- The part of the market attributable to new unbundled products is, in billion lire:

	1980	1981	1982	1983	1984
Included		14.6	44.3	100.0	166.0

- The importance of this component becomes obvious when considering that in 1984 it will represent 38% of the total market.

- Further analysis of the trends shows very little change in the manufacturers' and independents' market share.

  - The 1980 proportions of 65% for the manufacturers and 35% for the services companies, change to 63% to 37%, respectively in 1984.

- The reasons for the manufacturers' predominance are:

  - Ninety-three percent of the expenditure on software products is controlled by the DP manager (see Exhibit IV-17) who is in constant contact with the manufacturer.

  - Satisfaction with manufacturer originated software is fairly high.

  - The market, being segmented by machine type, is more susceptible to being influenced by the hardware supplier.

- The sales of applications packages will grow at an annual average of 83%, as opposed to 45% annually for system packages, and will overtake the latter in 1984, taking 51% of the market in that year.

  - One of the reasons for this shift towards applications software will be the growing pressure from end users in their DP departments for more

and better applications systems and the inability of the latter to produce satisfactory in-house products within the required time-scales.

- Another factor promoting this trend will be the growing penetration of micro-based personal and minisystems as these require only some 30% of systems software, the rest being applications software.

- Some factors in favour of the systems software business are:

  - Systems software is more easily defined and so developed and marketed with less risk than applications software.

  - The increasing trend towards end-user programming brings with it a growing need for newer and simpler software implementation tools such as DBMS modules, data dictionaries, table processors, text editors, etc.

  - Standardisation of requirements for application products is still too far away making the market for any product difficult to identify and target.

  - Tailored software developments carried out in the professional services sector are being increasingly assisted by systems tools.

- IBM's new generation of hardware is expected to impact the software products market by 1983 as the number of installations starts to become significant. A further round of software unbundling will probably accompany the launch of the new equipment.

- Prices have risen very slowly in the Italian software products sector, at no more than 5% or 6% in 1978 to 1979, due to strong competitive pressures, as shown in Exhibit III-7.

- INPUT expects these low price increases to continue throughout the forecast period, 6% during 1981 and 1982 growing to 8% for the two years following.

- Considering the weakness of the lira and the fact that a substantial proportion of software products is imported from the U.S.A. these slight changes in prices will put a great strain on the independent vendors.

- Some vendors, in particular those with a good reputation and market image are in a better position to increase their prices and are linking these to the fluctuation of the exchange rate.

C. USER ATTITUDES AND THE DISPERSAL OF INTELLIGENCE

1. ATTITUDES TOWARDS SOFTWARE PRODUCTS

- Ninety-eight users indicated their preferences for suppliers of software products by ranking the top three vendors and by commenting on issues relevant to the sector.

- Part of the replies are based on actual experiences, others, given by non-users of software products services, are based on reputation.

- Forty-five companies, nine of them manufacturers and 36 independent software products vendors were mentioned a total of 148 times. IBM accounted for 38 mentions (26% of the total) while all nine manufacturers totalled 47% of all mentions.

- Despite this numeric dominance of hardware vendors the three most mentioned companies, after IBM, were computer services companies.

- Rankings by number of mentions were:

  - Hardware manufacturers.

	First Preference	Other Mentions	Total
IBM	31	7	38
HIS	6	2	8
Olivetti	3	4	7
Siemens	4	1	5
Univac	3	2	5
DEC	1	1	2
HP	1	1	2
Nixdorf	1	-	1
NCR	1	-	1
	51	18	69

- Independent suppliers.

	First Preference	Other Mentions	Total
Computer Associates	6	4	10
Syntax	4	5	9
Selesta	4	5	9
O-Dati	2	3	5

Datamont	-	5	5
Data Management	3	1	4
Total	3	1	4
Formula	1	2	3
Westinghouse	2	-	2
SDI	1	1	2
Delta Dati	-	2	2
Single Mentions	16	9	25
	40	39	79

- Adding the mentions for Syntax to its parent company, Olivetti, places this combination in second place with a total of 16.

- IBM elicited 22 favourable comments and 7 unfavourable ones and, in general, users were more satisfied with the hardware vendors than with the independents.

- At the same time satisfaction was greater with applications packages, as can be verified from the results shown in Exhibit IV-19.

- The salient comment most often repeated referred to the 'need to adapt the packages to the user's need' and to the difficulties attached to this.

- Appropriate comments are:

- 'A long and difficult adaptation is always necessary'.

- 'Very difficult to adapt IBM packages to specific needs'.

- 'We often find the packages too advanced'.

- 'Packages require careful examination before purchase'.

- 'Suppliers are unreliable and usually trick people'.

- 'IBM is too theoretical but helpful'.

- 'Too complicated'.

- 'Many problems with timetables'.

- 'We are satisfied but will produce packages internally in future'.

- 'IBM is impressive at times'.

- 'HIS has excellent system software'.

- Whereas comments on manufacturers are generally moderate whether they be positive or negative, comments regarding services companies are generally much more extreme, either full of praise or very scathing.

2. SPREAD OF SMALL COMPUTERS

- The majority of the revenues of the DP industry are generated in the mainframe area. Increasingly during the last decade, the minicomputer, whether operated in a stand-alone mode or in association with some form of mainframe driven network, has grown to claim a larger proportion of the total revenues earned. On the back of this change the software and system houses have continued to flourish, as the continued growth of the professional services sector witnesses.

- The 1980s present a major threat to project-oriented people-based companies such as these because:

  - Personal computers supplied with powerful software will be linked to in-house systems and vendor processing networks to provide end users with capabilities presently only enjoyed by large minicomputer configurations.

  - These microprocessor-based products will be provided with extensive software capabilities derived from a vast range of program products, more and more based on firmware modules designed, assembled and tested in the future program factories of the semiconductor companies.

- The software products to run on these systems will be supplied through third-party distribution channels consisting of franchised distributors and dealers. The distribution networks will be both exclusive (to one manufacturer, or to one type of mainframe or to one proprietary network) and non-exclusive.

- At the distributor level the main commercial requirements will be:

  - Sufficient capital to carry adequate spare parts stocking levels.

  - Field service capability to handle network connections and the more complex stand-alone installations e.g. those with multiprocessor systems.

- At the dealer level the business will require:

  - Showrooms and sales staff.

  - First line spare parts stocking.

  - Education and documentation capability.

- Support to honour manufacturers' warranty commitments.

- Neither of these levels forms a natural business match with existing vendors in the computer services industry:

  - Processing services will need to evolve the USHS concept away from the account selling image it presently holds.

  - Professional services companies are only accustomed to direct selling to the DP manager or end user.

  - Software products vendors of any size are still firmly wedded to the mainframe portion of the market.

- Eventually, end-user sales of small computer products will be dominated by the newest type of operator to the industry, the dealer/distributor. This is a type of vendor who specialises in supply and service without having any development capability. Together with his manufacturer, he is the long-term challenge to the "main-line" processing services company, who also claims to offer the total solution capability.

D. VENDOR ISSUES

1. INTRODUCTION

- Twelve independent vendors replied to the "Software Products" module of the Vendor Issues Questionnaire. They included:

  - Four software and systems houses.

  - Seven general services companies, of which four are largely involved in batch processing or data entry services.

- One specialist international RCS vendor.

2. MOST HEAVILY USED PROGRAMMES

- The above sample includes both vendors of internally produced packages and companies representing international software product suppliers or licensees of specific packages.

- Among the packages most sold or, in the case of the RCS vendor, most used were the following examples, with some of these running at 50 to 100 installations:

  - Librarian.
  - ADABAS.
  - F.D.R.
  - Finance.
  - JARS.
  - ANSYS.
  - ROSCOE.
  - Corfou.

- Amongst locally produced packages, best sellers named were:

  - SIB (banking).
  - Administrative applications.

- GEPE (personnel).

- GEFIN (financial).

- Scientific applications.

- PAS.

- Other industry specific applications packages.

- System software.

- Here too some of the packages (including modules) have well over 100 installations.

3. GROWTH RATES

- Only one company expects a decrease in its growth rate for software products. The company, having plans for a rapid expansion into turnkey operations, will probably place less effort in the software packages sector.

- All others foresee a continuing high growth over the five-year period to 1984.

- The average estimated growth rates were:

  - In the years to 1982 - 28.2%.

  - In the years to 1985 - 28.7%.

- Most companies expected a steady growth over the five years but one company foresaw a growth of 20% over two years and an increase to 30% over five years, while one vendor expected a decrease from 28% for the first two years to 22% by 1985.

4. PROFITABILITY

- Eight respondents stated that this rapid growth is negatively affecting profitability.

- Of the four who found that profitability was not affected by their growth:

  - One supplier acts largely within the framework of its parent company.

  - One company is not expecting growth.

  - Two are specialist software/systems houses and are amongst the market leaders in the sector.

5. SOFTWARE DEVELOPMENT PLANNING

- The question regarding the number of sales or installations of a product required to cover the cost of its development was aimed at evaluating productisation and investment plans or policies.

- Only four companies gave data in reply to the question while others stated that it varied with the type of product.

- The respondents who gave figures quoted the following average values:

  - Application packages: 5, 50, 2 and 10 installations respectively.

  - Utilities: 5 and 2 installations.

- Except in the case of a few firms it seems that companies do not tend to develop products for commercialisation with a front-end investment and a defined business plan. The 'product' evolves mostly on the back of tailored software, developed for a specific application and subsequently packaged and

commercialised. The investment has therefore been mostly paid for the original client.

- Certainly a clearer production and marketing policy will have to be carefully evolved if these independent suppliers are to compete successfully with the hardware firms.

6. COST OF SALES

- The vast majority of respondents, eleven out of twelve, affirmed that their costs of sales are rising.

- The percentage rises of unit sales costs vary between 10% and 22%, the average resulting in a 16.6% increase over last year's costs.

- This value is in strong contrast with the price increases of about 5% allowed by market forces.

7. COMPARISONS WITH HARDWARE MANUFACTURERS

- Only two suppliers, both of them software/systems houses, claimed to use hardware vendors' software prices to establish their own and indicated that the market can tolerate a substantial difference in prices between hardware vendors and independent suppliers.

- This difference was placed at 20% by one and 50% by the other vendor and is accepted by the user because lower support and maintenance charges compensate partly for the higher product price.

- Six suppliers expect hardware suppliers' software to become more competitive within two years and seven presume that this will happen within a five-year period.

- Independent vendors intend to counteract this increased competition by:

- Improved product quality.

- Improved service.

- Adaptability to customers' needs.

- Improved productivity.

8. SUPPORT AND SERVICING

- Of the twelve respondents, four suppliers provide a phone-in support centre for software product queries while only one of the remaining eight is planning to install one.

- In contrast, only one vendor, the RCS supplier, provides an on-line remote diagnostic capability while three others have plans to develop this type of facility.

- As one of the respondents put it when asked how he would expect to contain escalating personnel costs:

  - 'It is impossible to contain costs, the only solution is to improve productivity'.

9. IMPACT ON PROFITABILITY

- The main immediate threats to the profitability of software vendors are:

  - Inflation.

  - Competition.

  - Weakness of the lira.

- On a broader scale they will be faced with two major issues:

  - Implementation and service costs escalating with the growth of the customer base. These activities will have to be done professionally and will have to be controlled very rigorously.

  - For the moment the difference in prices compared to hardware vendors is not a problem, but with the shift of these towards a service company image, brought about by the fall in hardware revenues, competition will become fiercer.

E. COMPETITIVE ANALYSIS

- Exhibit VII-3 gives the 1979 ranking of the top software products suppliers in Italy.

- The market is dominated by IBM with a share of 18.3% of the total. Its closest competitor, Data Management has only a third of IBM's total, 6.2%, followed by Syntax with nearly 4%.

- Progressive unbundling will bring other manufacturers into this chart and one at least, Honeywell, will occupy a prominent position.

- Other companies active in the sector are:

  - Computer Associates.

  - Cedaf.

  - SPL.

  - O-Dati.

EXHIBIT VII-3

ITALIAN SOFTWARE PRODUCTS SECTOR, TOP SUPPLIER RANKINGS, 1979

RANK	SUPPLIER	MARKET SHARE (PERCENT)
1	IBM	18.3%
2	DATA MANAGEMENT	6.2
3	SYNTAX	3.9
4	SELESTA	2.7
5	SOPIN	2.0
5	G.S. GENERAL SYSTEMS	2.0
7	ITALSIEL	1.4
7	PRAXIS	1.4
9	TEKNOCONSULT	0.9
9	FORMULA	0.9
11	SYSDAT	0.7
12	GE-DA	0.4
12	SELDAC	0.4
	TOTAL	41.2%

TOTAL MARKET: 43.7 BILLION LIRE

- SDI.

- Several of these figure prominently amongst user responses but their turnovers were either not available or were obtained too late for inclusion in the analysis.

VIII PROFESSIONAL SERVICES

VIII PROFESSIONAL SERVICES

A. INTRODUCTION

- The professional services sector is composed of:
  - Consultancy, including body hire.
  - Dedicated software.
  - Education and training.
- In common with other countries the Italian market for this sector is the second largest within all computer services and its share in 1979 was 21.4% of the total market.
- Professional services revenue will grow at a rapid pace and the market value will increase five and a half times by 1984 maintaining its overall position closely behind the processing sector.

B. MARKET DEVELOPMENT, 1978-1984

1. GROWTH, 1978-1980

- The sector experienced a 28% growth between 1978 and 1979, taking the market from 84 billion lire to 108 billion. A 32% growth during 1979-1980 will bring the market figure to 143 billion lire, as shown in Exhibit VIII-1.

- This is one of the sectors best able to cope with inflation due to its project orientation and the consequent ability of establishing realistic prices independently of previous contract prices. This applies in particular to tailored software and consultancy services but somewhat less to time and materials or cost-plus contracts.

- This ability to price services individually in a high inflation environment will protect the sector quite adequately in the next five years without slowing down its growth rate.

- From Exhibit VIII-1 it can be seen that the dedicated software segment experienced the largest absolute growth between 1979 and 1980, equivalent to 35% of its 1979 market value.

- Consultancy services increased by 29% over the same period; the corresponding absolute value, 16.2 billion lire, is only slightly below the increase experienced by dedicated software.

  - While the annual growth rate for consultancy is expected to stay at approximately the same level up to 1985, dedicated software will grow at a much faster rate, nearly 50% per annum average to give the whole sector 28% of the total services market in 1985.

- The highest growth rate was for education and training services at 40%.

EXHIBIT VIII-1

ITALIAN PROFESSIONAL SERVICES MARKET
FORECAST BY TYPE OF SERVICE, 1980-1984

TYPE OF SERVICE	MARKET FORECASTS IN BILLION LIRE								
	1978	1979	GROWTH 1979-1980 (PERCENT)	1980	1981	1982	1983	1984	AAGR (PERCENT)
CONSULTANCY	-	56.0	29%	72.2	97.1	124.7	160.4	204.1	30%
DEDICATED SOFTWARE	-	49.7	35	67.1	98.6	149.7	234.2	362.2	49
EDUCATION AND TRAINING	-	2.4	40	3.4	5.5	9.3	16.7	30.2	66
TOTAL PROFESSIONAL SERVICES	83.8	108.1	32%	142.7	201.2	283.7	411.3	596.5	41%

- Although small in value at 2.4 billion lire in 1979, growing to 3.4 billion in 1980, this sector will show a very rapid growth reaching 30 billion lire in 1984.

- The increasing importance of education and training as a source of revenue for the services industry will be caused by:

  . The chronic shortage of experienced personnel.

  . The increasing penetration of small and personal computers.

  . The progressive unbundling of training courses by the manufacturers.

2. FORECAST, 1980-1984

- The Italian user shares two fundamental characteristics with his German counterpart:

  - The desire to have his own in-house installation.

  - The desire to have his own individually tailored, nonstandard application software.

- The Italian services industry is well structured to satisfy these characteristics, as most companies in the market offer professional services, either as consultancies, as suppliers of systems expertise and tailored software or suppliers of contract personnel.

- Of the three subsectors analysed in this market in 1979, consultancy services held the major share with over 50% of the revenue, and this situation continued in 1980.

- But in 1981 there will be a reversal as dedicated software revenues overtake consultancy.

- The total professional services market was valued at 108 billion lire in 1979 and is expected to grow at a 41% annual average rate over five years to reach 596 billion lire in 1984, as shown in Exhibits VIII-1 and VIII-2.

  - This rate is equivalent to an average of 25% per annum in real terms and is consistent with growth for this sector in other European countries.

- The components of this sector will grow at different rates, with education and training growing fastest, albeit from a low initial base, and dedicated software showing the largest growth in value of user expenditure.

  - Consultancy services are forecast to grow from 56 billion lire in 1979 to 204 billion in 1984, equivalent to a 30% average annual actual rate or a 13% real growth rate.

  - The market, though potentially somewhat higher, will be limited by lack of sufficient manpower as increasing numbers of already scarce personnel will be committed to other, more buoyant areas.

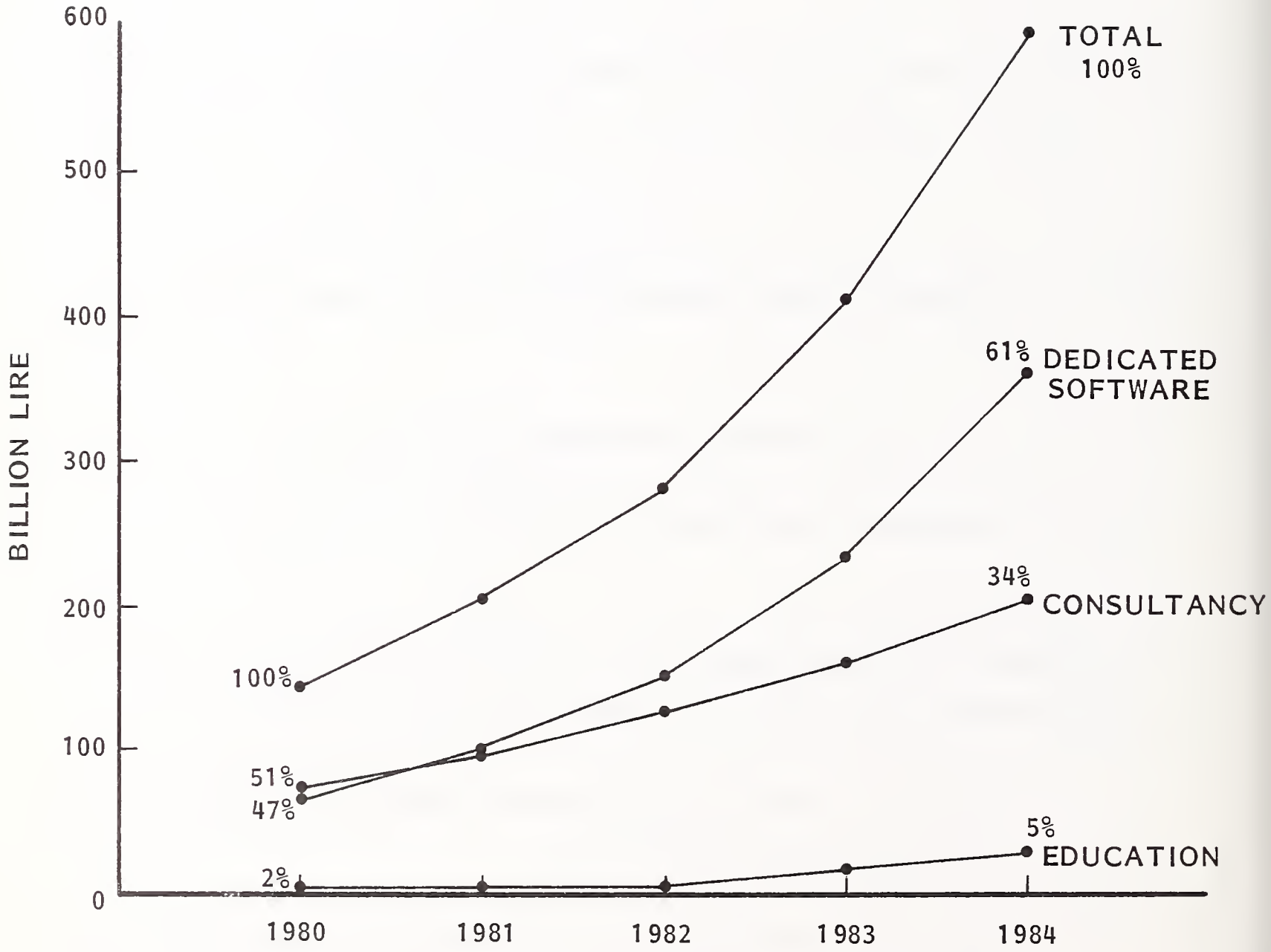
- Dedicated software sales will lead in absolute terms, growing at an average annual rate of 49% between 1979 and 1984 and increasing in revenue over seven times from 50 billion lire in 1979 to 362 billion in 1984.

  - Revenues in 1984 will represent 61% of the total professional services market compared to 46% in 1979.

  - Exhibit III-12 shows that the growth rate will peak in 1983, a year in which it will reach 56% in actual value or 36% in real terms.

EXHIBIT VIII-2

ITALIAN PROFESSIONAL SERVICES MARKET FORECAST, 1980-1984 - GRAPHICAL REPRESENTATION



- Changing patterns in management concepts and a consequent restructing of company organisations will call for an increase in new applications software.

  - The already overstretched internal EDP departments will be unable to supply in the time-scales required, compelling the user to buy outside, while the individualistic nature of companies will make them prefer a tailor-made solution.

  - Frequent changes in fiscal policy and the forthcoming EEC unification of accounting practices are other factors favourable to the growth of this area.

  - The increasing number of stand-alone minis and micros being installed in small companies or by first-time users will also contribute to the large increase in requirements for individually designed simple-to-use software.

- Education and training is an area showing good potential for services companies, as the main problem identified by the users and vendors interviewed was the shortage of qualified staff.

  - This problem will certainly not decrease with time and the provision of basic and advanced training courses and even familiarisation seminars for management will become increasingly necessary and indeed lucrative.

  - The market for education and training amounted to only 2.4 billion lire in 1979 but will grow at an average annual rate of 66% to 30.2 billion lire in 1984.

  - The yearly growth rate will increase up to 1983-1984 when it will peak at 81%.

- Part of the increase in the value of this market will be due to manufacturers' unbundling of their training courses thereby reducing the number of free courses available to users.

C. USER ATTITUDES TOWARDS PROFESSIONAL SERVICES

1. GENERAL ATTITUDES

- A clear distinction can be drawn between the end user and the DP manager regarding their attitudes to professional services, especially in Italy where most new developments are still expected to be carried out in-house.

- Whereas the end user will in general regard the outside consultant as a useful advisor or an indispensable service, the EDP manager still sees the supplier of professional services as a potential competitor only to be used as a last resort.

  - A confirmation of this situation can be seen in Exhibit IV-17 which shows that during 1980, two thirds of all user expenditures for professional services will be by the end user or the first-time user, while only one-third will have come from the DP department.

- As in other countries, the only service readily acceptable to all parties is training and education which is one activity not considered appropriate for in-house provision.

  - Not surprisingly, Exhibit IV-18 shows that of all users interviewed, mostly DP managers, 60% made use of outside education and training facilities while only 44% required consultancy services.

- Considering that dedicated software represents the largest and fastest expanding sector it is interesting that only 16% of interviewees purchased this service, but it should be remembered that much of this activity is aimed at minisystems for end users.

- Nevertheless, users expressed a higher degree of satisfaction with consultancy services than with education and, as is shown in Exhibit IV-19, users were least satisfied with dedicated software, at a level barely above 'medium satisfaction'.

2. SUPPLIERS

- Nearly 50% of interviewees availing themselves of outside professional services obtain them from their hardware supplier.

- Companies were mentioned with the following frequency, not always as first priority:

  - Manufacturers:

IBM	-	27 mentions, 24 times as first or only choice
Olivetti	-	5 mentions
HIS	-	4 mentions
Siemens	-	3 mentions
Univac	-	2 mentions

  - Several other manufacturers were mentioned once.

- Services companies:

Datamont	-	5 mentions
O-Dati	-	4 mentions
Orga	-	3 mentions
GE-DA, Praxis, PGP	-	2 mentions

- Several other vendors were mentioned once.

- Comments made by users were very varied but on average remained on the side of caution regarding use of professional services.

- In general there seemed to be more satisfaction with services companies than with hardware vendors although both types received comments such as:

  - 'Excellent'.

  - 'We had very bad experiences in the past'.

- The overall tone comes over in the following comments.

  - 'Have to be used with caution'.

  - 'Good in emergencies'.

  - 'Useful on occasions' or 'Only when necessary'.

- The only area mentioned specifically was training which confirms that this aspect is more easily identifiable as stand-alone and just as many users said that training courses were 'very good' as those who said they were 'bad' or 'unsatisfactory', often referring to the same supplier.

D. VENDOR ISSUES AND THE IMPACTS ON PROFITABILITY

1. INTRODUCTION

- Twelve vendors completed the professional services module of the Vendor Issues Questionnaire.

  - One was exclusively a software house.

  - One was a major consultancy company.

  - Two were major RCS vendors with some activities in consultancy services.

  - One was mainly a turnkey systems supplier.

  - Seven were multiple-services vendors with a varying proportion of turnover derived from professional services.

2. NEW TYPES OF BUSINESS

- Only three respondents ascribe some of their growth to hardware related turnover.

  - One company derives 40% of its turnover from hardware.

  - Two replies give the percentage at 10%, one of these foresees a doubling to 20%.

  - A fourth replied in an indirect fashion by stressing that the ever increasing installed base of hardware promotes the saleability of their services.

- Eight vendors foresee definite advantages for services companies brought about by the microprocessor and the consequent opening up of new business and new applications.

- The sources of these new microprocessor based opportunities are expected to be:

-	New first-time users	45%
-	New clients already using computers	34%
-	Existing clients	21%

- This high estimate for new business coming from first-time users presents a marketing problem which might require a modification in sales methods, possibly through indirect selling of integrated systems.

3. TYPES OF CONTRACTS

- The three main types of contracts were employed by respondents in the following proportions:

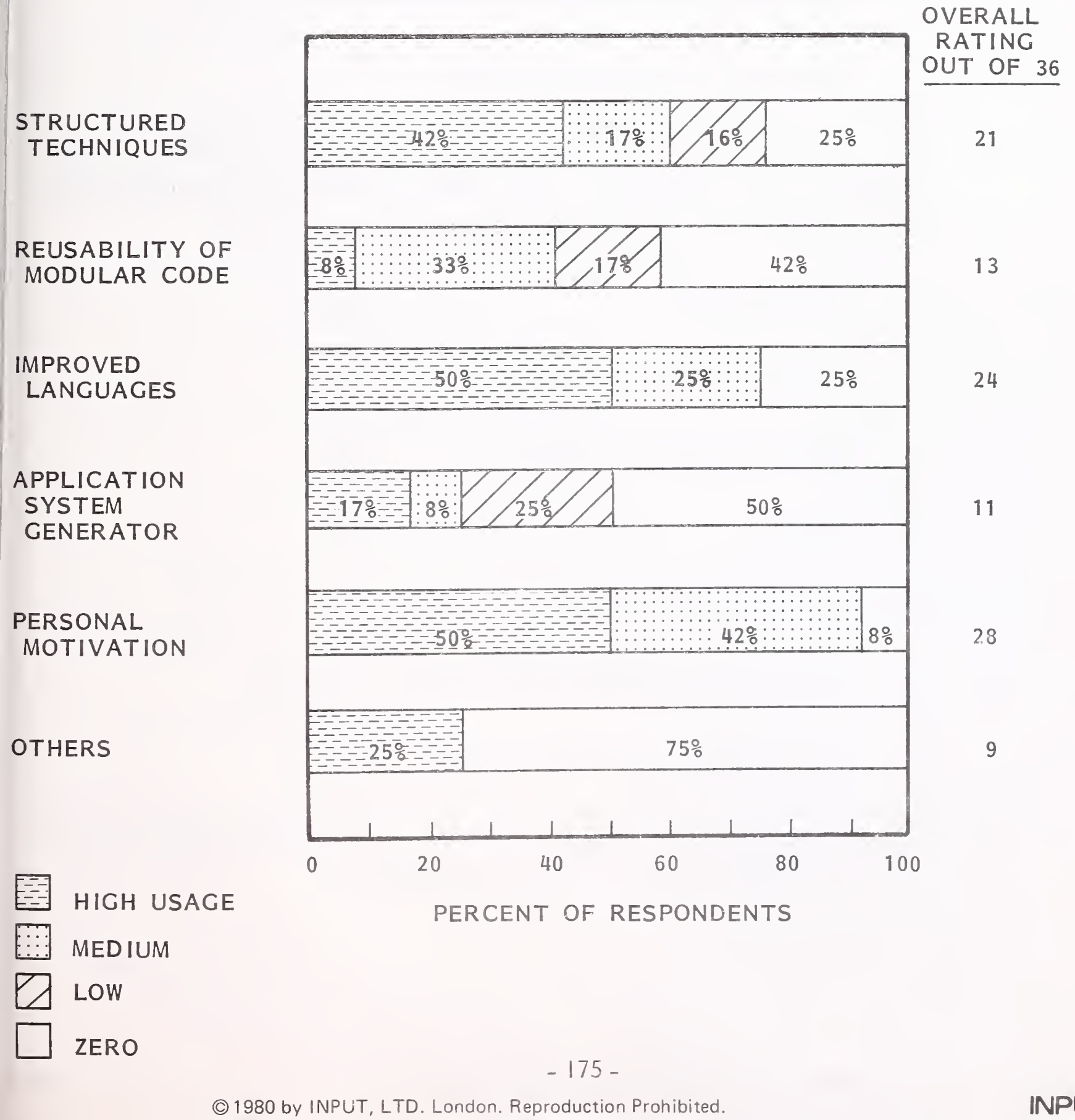
-	Fixed price	75%
-	Time and materials	92%
-	Body hire	42%

4. PRODUCTIVITY, PROFITABILITY AND PRODUCT ORIENTATION

- The emphasis placed on different methods used by respondents to improve their own productivity has been analysed and is shown in Exhibit VIII-3. Responses have been weighted to obtain a uniform grading.

EXHIBIT VIII-3

RESPONDENTS' USAGE OF PRODUCTIVITY TECHNIQUES, ITALY



- This 'human' method for improving productivity is closely followed by two technical ones, use of 'improved languages' and 'structured techniques'.

- In one case it was pointed out that 'reusability of modular code' is employed for the purposes of portability.

- Other techniques quoted were:

  - Methodology for the analysis and implementation of a project.

  - Specialisation in application sectors.

- Nine companies gave their assessment of the weight of different factors determining their profitability. The replies are consistent with their productivity related issues, as can be seen in the following distribution.

- Calibre of staff	35%
- Project management methods	32%
- Software productivity techniques	23%
- Other	10%

- Other factors mentioned were:

  - Implementation, support and maintenance techniques.

  - Specialisation in application sectors.

- The general attitude is still one of 'virtuoso' performances rather than a tendency towards production engineering techniques.

- Only five companies of those interviewed were interested in a specific product orientation.

  - The extent of productisation varied from 8% within two years to 80% within five years. The other respondents are expecting to be 20%, 35% and 50% product orientated.

  - Three companies claimed emphatically that they do not intend ever to become product orientated.

5. LANGUAGES

- The languages used in software development are distributed as follows:

  - Assembler 7.5%

  - Traditional high-level, e.g., COBOL, RPG 66.0%

  - Newer high-level, e.g., CORAL, PL1, PASCAL 9.0%

  - Nonprocedural, e.g., query, DBMS 11.5%

  - Other, e.g., Macrolanguages, Tabol 6.0%

- The usage of traditional high-level languages is still proportionately very high. There will be a move away from these and towards the newer high-level but also towards nonprocedural languages.

6. ACCEPTANCE TESTING

- Ten vendors replied to the question regarding the types of acceptance tests used.

-	Agree specifications in writing with user	100%
-	Design acceptance tests jointly with user	90%
-	Undertake formal tests on user's site	70%
-	Get user to agree to a formal set of acceptance tests	50%
-	Undertake formal 'factory' tests on vendor's site	50%
-	Enforce formal specifications modifications procedure	20%

- The weakest areas for project design and acceptance tests are concentrated on the middle stages of a project; i.e., formal tests at vendors' sites and the formalisation of acceptance tests and procedures for the modification of specifications.

7. STAFF, SKILLS AND TRAINING

- All respondents agreed that new skills are required from personnel to implement the new decentralised applications such as DBMS, DDP and office automation.

- The interviewees provided their staff with training supplied as follows:

-	Own in-house courses	45%
-	Manufacturers' courses	13%
-	Courses from independents	5%
-	'On-the-job' training	37%

- It is expected that the percentage of courses obtained from independents will rise, partly to the detriment of manufacturers' courses and partly at the expense of in-house courses.

- Considering the shortage of staff, it is to be expected that the services companies will resort to outside help on occasions.

  - Of the respondents, only three companies affirm that they never use any outside personnel whatsoever.

  - Of the rest, all but one use specialist consultants 'sometimes' or 'often' (one reply).

  - Seven use analysts and programmers 'sometimes'.

  - Nobody uses free-lance operators ever.

  - Two companies use 'other' types of outside staff 'sometimes'; one of them refers to sales personnel.

8. CONSULTANCY TRENDS

- The majority of assignments being given to the professional services companies interviewed referred to general implementation advice and development including equipment selection, as indicated by eight responses.

- Three respondents indicated an interest in performance measurement while one respondent found growing requirements for education and training services.

E. COMPETITIVE ANALYSIS

- One of the characteristics of the Italian computer services industry is that most of the companies active in the sector offer most types of services and nearly everyone offers professional services.

- The fragmentation of the market can be clearly seen in Exhibit III-21 which shows that in professional services, the top 20 companies command only 16.2% of the market.

  - Many of the small companies are actually organisations set up by one or two 'free-lance' systems or software professionals.

  - They usually act locally and new business is obtained by word of mouth or personal contacts, in many cases with or through their original employers.

  - This type of 'individual company', ephemeral in nature but like the phoenix resurrecting from the ashes time and time again, has the unfortunate effect of depressing prices and sometimes devaluing an industry still in search of a public image.

- Exhibit VIII-4 shows the leading 15 companies offering professional services on the Italian market and their market shares.

  - The order of ranking is given in percentages of market share the companies had in 1979.

  - Hardware manufacturers are conspicuous by their absence from this table but as far as our analysis is concerned, their professional services are offered within the framework of their supply of hardware.

- Metra, in fifth position, is the most active foreign company.

EXHIBIT VIII-4

ITALIAN PROFESSIONAL SERVICES SECTOR -
TOP SUPPLIER RANKINGS, 1979

RANK	SUPPLIER	MARKET SHARE (PERCENT)
1	ITALSIEL	4.8%
2	SYNTAX	3.8
3	G.S. GENERAL SYSTEMS	2.5
4	GE-DA	2.0
5	METRA	1.8
6	SYSTEMS AND MANAGEMENT	1.3
7	CDS	0.8
7	TEKNOCONSULT	0.8
9	SYSDAT	0.5
9	PRAXIS	0.5
9	FORMULA	0.5
12	GEISCO	0.4
12	CER	0.4
12	SELE	0.4
15	SELESTA	0.3
	TOTAL	20.8%
TOTAL MARKET: 108.1 BILLION LIRE		

- The market leader is the government-owned giant, ITALSIEL, whose main activity on the external market is in fact the provision of professional services. At five billion lire, this is equivalent to 70% of its external revenue.

- SYNTAX, the second ranked company, obtains some 67% of its total external revenue from this sector. This proportion is equivalent to some four billion lire.

- As can be seen from Exhibit VIII-4, the top 15 companies represent 20.8% of the total market and have a joint revenue of 22.5 billion lire.

IX TURNKEY SYSTEMS

IX TURNKEY SYSTEMS

A. INTRODUCTION

- Turnkey systems is an area of great topicality in Italy at the moment, as every single services company is interested in exploring the possibilities of entering this market. The attractions are great and the Italian market is ready for this type of product.

  - The apparent ease of entry into the sector and, even more so, the ability to prosper in it are deceptive and the pitfalls great.

- Companies supplying a system including hardware and software to the user's specifications may be providing a turnkey system within the strict definition of the term but they are providing only a professional service and are still a long way from being turnkey companies.

- Those intending to get into the turnkey sector will require, first of all a commitment to productisation and then a very substantial long-term investment in production, marketing, maintenance and support structures to provide a fully integrated value-added service once a specific market sector has been identified and chosen.

- Processing services companies are better prepared than professional services vendors for this kind of 'industrial' approach and, as will be shown further on,

it is mainly the former who have been approaching the market with most success.

B. MARKET DEVELOPMENT, 1978-1984

1. DEFINITION

- For the purposes of this report the market analysed has been restricted to that of turnkey systems supplied by computer services companies exclusively. Systems supplied by hardware vendors were not considered.

- The cost of the hardware is included in all the figures given in this chapter.

2. GROWTH, 1978-1980

- The Italian turnkey market experienced an extremely fast development in this period and in particular in 1979 to 1980 as a result of the following combination of related factors:

  - The search for diversification by computer services companies, in particular those in the traditional data entry and batch areas which are in retreat with respect to other sectors.

  - The ready availability of increasingly low-cost hardware.

  - The introduction of automation into a growing number of smaller businesses.

- Several services companies have had the will to commit themselves to a substantial investment programme during the last two years and have reached Original Equipment Manufacturer (OEM) agreements with hardware manufacturers for the supply of small computers to be incorporated into 'production' turnkey systems.

- The initial results can be seen in Exhibit III-12 which confirms that the turnkey sector had the highest yearly growth of all sectors in the 1979 to 1980 period. This growth of 73% compares to a 30% growth for the previous year.

- The total turnkey market in 1978 was 16.2 billion lire, growing to 21 billion in 1979 and to 36.3 billion in 1980, as is detailed in Exhibit IX-1.

  - The salient feature of the market is its orientation towards industry speciality systems, with 90% of the turnover stemming from products aimed at specific industry or commercial sectors like banking, the textile industry and/or the vehicle spare parts trade.

  - This tendency towards productisation and vertical, industry specific marketing, a very sensible management decision, has resulted in part from a natural extension of original data processing activities of the current market leaders of the turnkey sector.

  - These companies serviced the processing needs of specific sectors and have acquired an extensive knowledge of the sectors' needs as well as a good reputation either with the individual members or with the relevant professional bodies or trade associations.

3. FORECAST, 1980-1984

- Exhibit IX-1 and IX-2 also show, in tabular and graphical form the detailed forecasts of the development of turnkey markets in Italy for the period 1980-1984.

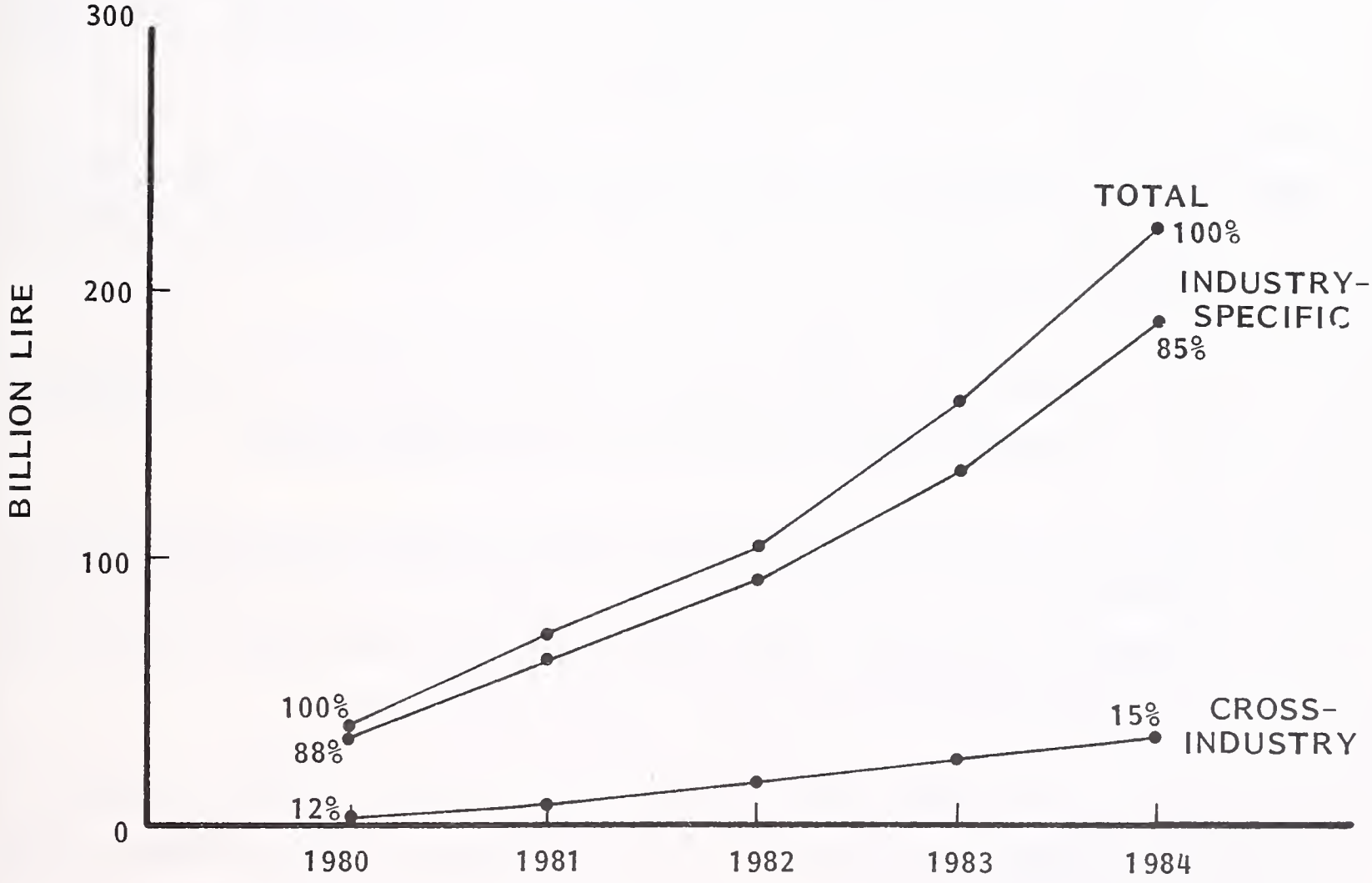
EXHIBIT IX-1

ITALIAN TURNKEY MARKET
FORECAST BY TYPE OF PRODUCT, 1980-1984

TYPE OF PRODUCT	MARKET FORECAST IN BILLION LIRE								
	1978	1979	GROWTH 1979-1980 (PERCENT)	1980	1981	1982	1983	1984	AAGR (PERCENT)
INDUSTRY-SPECIFIC	-	19.0	69%	32.1	60.8	92.7	136.5	195.3	59%
CROSS-INDUSTRY	-	2.0	110	4.2	9.2	15.1	24.1	34.4	77
TOTAL TURNKEY	16.2	21.0	73%	36.3	70.0	107.8	160.6	229.7	61%

EXHIBIT IX-2

ITALIAN TURNKEY MARKET FORECAST, 1980-1984 - GRAPHICAL REPRESENTATION



- The same forces causing the current rapid expansion of the sector will continue to influence the market and give its growth impetus through 1984.

- Nevertheless this year's high 73% increase, due to the sudden and very successful entry into the market of one company in particular, SICIT, will continue for only another year with a 93% predicted growth rate for 1980 to 1981.

- After 1981 the turnkey systems market supplied by the computer services companies will still grow at a high rate but the rates will decline to the 50% to 60% region as the total base grows.

- A dampening factor on the growth of this specific computer services-driven sector will be provided by the activities of the hardware manufacturers who will be attracting many of the first-time users to whom they will be much better known than the services companies.

- INPUT forecasts that the total turnkey market held by the services sector will grow over 10 times from 21 billion lire in 1979 to 229.7 billion lire in 1984, an annual average growth rate of 61%.

  - Overall, the turnkey sector represented 4.2% of the total computer services market in 1979 and it will reach 10.7% in 1984.

- As the dominance of the current market leaders is gradually diluted by offerings from a growing number of competitors and in particular those supplying tailor-made turnkey systems on an individual basis the cross-industry horizontal product will gain slowly in market penetration.

  - The average annual growth rate for industry-specific products is forecast to be 59% while the cross-industry market will be growing faster at 77%.

- While over 90% of all systems sold in 1979 were industry specific, the 1984 figure will have dropped to 85%.

C. USER ATTITUDES

- Only three respondents to the INPUT User Questionnaire have purchased turnkey sytems and of this number two expressed high satisfaction with the systems and the third placed his satisfaction at 'medium'.

  - These figures are too low for any conclusions to be drawn from their responses. Nevertheless 28 respondents gave their comments regarding turnkey services in general and gave their preferences for suppliers of these systems.

  - Of the 28 responses, 14 mentioned a total of 21 suppliers. It is the distribution of these names that ought to worry the computer services companies:

  - Hardware manufacturers were mentioned 16 times.

  - Services companies were mentioned only five times.

- The only companies mentioned more than once were:

  - IBM - eight times, always in first place.

  - Olivetti - four times, once in first place.

- Moreover none of the five services companies is a recognised supplier of turnkey systems, but all five are very active in the professional services sector.

- The four most commonly expressed comments were:
  - 'Will probably use in future'.
  - 'We are not ready for them yet'.
  - 'Quite happy with our new system'.
  - 'Any system would require adaptation to our specific needs'.
- This last comment characterises a market that will have to be educated to buy a standard product rather than tailor-made systems.

D. VENDOR ISSUES AND THE IMPACTS ON PROFITABILITY

1. INTRODUCTION

- Nine companies answered the hardware services module of the Vendor Issues Questionnaire.
- The activities of these nine interviewees can be classified as follows:
  - Five companies are originally data processing services suppliers.
  - One is a mixed activity services company.
  - Two are professional services companies.
  - One is an RCS vendor.
  - One is an integrated hardware orientated company.

2. VENDOR RELATIONSHIPS

- All the companies interviewed are engaged in small system offerings and some of them are embarked on large-volume sales activities.

  - Eight companies have OEM agreements with the hardware vendors.

  - Four companies have joint sales agreements with their suppliers.

  - Two companies conduct joint product development with the manufacturer or with third parties.

  - Three companies develop software for the hardware manufacturer.

- The various agreements are with the following manufacturers.

- Honeywell	- with four turnkey suppliers
- DEC	- with three suppliers
- Olivetti	- with two suppliers
- Hewlett Packard	- with three suppliers
- Data General	- with two suppliers
- Univac, Nixdorf, Centronics, Tally, IBM, Texas Instruments, Plessey, Data Products	- with one supplier each

3. ENGINEERING FACILITIES AND MANUFACTURING POLICY

- Eight of the interviewed companies confirmed that they had some form of hardware related structure within their organisation while one did not, leaving all responsibility to the hardware manufacturer.

- Three companies had the following facilities:

  - System manufacture.

  - System integration.

  - System commissioning.

  - System maintenance.

- Two companies had all of the above except for hardware maintenance which is carried out by the hardware vendor. One of these is nevertheless considering taking maintenance over from the manufacturer to eliminate organisational difficulties arising from this dual responsibility of split hardware and software maintenance.

- Two turnkey systems suppliers have only a system commissioning capability.

- One company has a systems maintenance capability.

- The only company claiming to have a real integration policy was the RCS vendor who asserted that 80% of the total cost of the systems was 'produced' internally. This claim is somewhat special as the vendor obtains most of these products from the parent company, a hardware manufacturer.

- Although six others said that they were following a policy of vertical integration, i.e. to have a line of products, on the figures given, the vendor closest to achieving integration had 50% 'produced' internally and 50% 'bought-in'.

- The average of seven replies was:

  - Made in-house 29%

- Bought-in 71%

- These replies do not include the two market leaders who did not quantify their involvement despite pursuing a definite policy of productisation.

4. INVESTMENT

- Although all respondents differentiate between working and investment capital this differentiation varies according to the product and the activity.

- The components differentiated in the questionnaire are seen below accompanied by the number of companies investing up-front in each of these items:

- System software products	- four companies
- Applications software products	- six companies
- Hardware	- four companies
- Spares stock	- five companies

- Only two companies, the RCS vendor and one of the market leaders, provide up-front investment for all four of the above.

- One of the data processing companies increasingly involved in turnkey systems invests in all of the above except for systems software products.

- Only two companies invest in both systems and applications software products but not in any form of hardware.

- One of the market leaders invests only in hardware and spares but not in software.

- Two companies invest in only one sector; one does so in applications software while the other invests in spare parts.

- Finally one company does not invest, up-front, in any of the above.

- As was mentioned before, the will to invest in productisation of turnkey systems is a major indication of the realisation of the basic factors of this market and of the seriousness of intent of success.

5. ACCEPTANCE AND WARRANTY

- Only one company, the software house, claimed to enforce all acceptance tests defined in the questionnaire.

- Most tests were applied by the respondents to a greater or lesser degree, and of eight reponses the results obtained were as follows:

- Agreement of specifications in writing	-	5
- Design acceptance tests jointly with client	-	5
- Agree with user formal acceptance tests	-	5
- Vendors' site factory test	-	7
- User's site formal tests	-	6
- Formal procedures for modification of specifications	-	5

- All companies offer a warranty for the system supplied.

- Seven vendors offer a hardware warranty; five of them offer a 12-month guarantee. One vendor offers the constructor's guarantee, and one includes the warranty in the contract negotiations.

- Eight vendors offer a software warranty. Five offer 12-month guarantees, two offer a six-month warranty, one does so for a three-month period, and one establishes the period in the contract.

- Certain guarantees must be given in Italy by the vendor regarding modifications to the system brought about by officially enforced changes in fiscal or accounting procedures and these somewhat open-ended forced guarantees may put a strain on the supplier's organisation.

6. PROFITABILITY

- The main competition the computer services company will have to face in the turnkey market is the hardware manufacturer who at the same time is the source of the elements required for his integration operations.

- There are two distinct areas in which activities will take place and the first decision management will have to make is which of these to choose.

  - The large one-off project.

  - The volume sales repeat project for small systems.

- This choice will be determined by whether the major corporate objective is going to be profitability or cash-flow with the one-off project being profitability orientated and the volume sales approach making cash-flow its first priority.

- The successful achievement of either of the above goals requires tight:

  - Project management.

- Financial management of cash flow.

- Management of subcontractors.

- Definition of hardware and software warranty conditions.

- Hardware maintenance organisation.

- The correct solution of the above points will be instrumental in allowing the systems house to provide a credible image and in fact will enable it to survive.

E. COMPETITIVE ANALYSIS

- Exhibit IX-3 shows a ranking table of the major independent vendors in the Italian turnkey market according to their share of this market in 1979.

- The 10 companies listed achieved 58.8% of the total market during that year. This was equivalent to 12.3 billion lire and these figures include the hardware content of the systems.

- The overall market leader in 1979 was Datamat with a 19% share followed by SICIT with nearly 12% and Data Management with 7%.

- With the rapid expansion of this sector it is inevitable that changes will occur in this ranking and it is a certainty that hardware vendors will remain leading contenders for the expanding small business sector in years to come.

- An interesting development is the appearance of the "Computer Shop" on the streets of the main Italian cities selling "APPLE" and other personal computer-based systems.

EXHIBIT IX-3

ITALIAN TURNKEY SYSTEMS SECTOR -
TOP SUPPLIER RANKINGS, 1979

RANK	SUPPLIER	MARKET SHARE (PERCENT)
1	DATAMAT	19.0%
2	SICIT	11.9
3	DATA MANAGEMENT	7.1
4	SELE	5.2
5	SEDA	4.8
6	SYSTEMS AND MANAGEMENT	3.8
7	SELDAC	2.8
8	SYNTAX	1.9
9	SYSDAT	1.4
10	TEKNOCONSULT	0.9
	TOTAL	58.8%
TOTAL MARKET: 21.0 BILLION LIRE		

APPENDIX A: DEFINITIONS

APPENDIX A: DEFINITIONS

- **Small Business Computer,** for the purpose 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 disk capacity, provides multiple CRT work stations, and offers business-oriented system software support.

- **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 system 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.

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

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

- **A Small Business Computer Manufacturer** builds its system 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.

- **A Distributor** purchases the small business computer on an OEM basis from the manufacturer and markets it to the end user. He may or may not provide a turnkey system.

- **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.

- **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 called Midicomputers; they have the power of a small mainframe and are often used standalone for specialist applications.

- **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."

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

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

  - 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:

  . INTERACTIVE (Timesharing) is characterized by 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 is where the user hands over control of a job to the vendor's computer, which schedules job execution according to priorities and resource requirements.

  . DATA BASE is characterized by the retrieval of information from a vendor-maintained data base which may be owned by the vendor or a third party.

- 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.

• **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-oriented.

- 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 an application 'tool' that the user employs to produce its unique solution. Specialty applications can be either business or scientific in orientation; data base services where the vendor supplies the data base 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, data base management systems, information retrieval software, scientific library routines, and other systems software.

- **User Site Hardware Services (USHS) Or On-Site Computing** (or Combination Processing) is a relatively new type of service which consists of offering a mixed solution to a user's requirements, comprising:

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

  - 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.

  User Site Hardware may be supplied on a turnkey or OEM basis; it acts as the terminal or terminal cluster controller for the remote computing part of the service.

- **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.

- **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.

- **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 a lower level in a group is not classed as captive revenue, because it is usually gained in competition with other vendors.

- 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.

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

APPENDIX B: CAMP UPDATE QUESTIONNAIRE

PGP - INPUT / CAMP (UPDATE 1980)
Company Analysis And Monitoring Programme

Intervistatore

Telefono ☐ Posta ☐ Intervista ☐

Data ☐☐☐☐

Intervistato _____

Qualifica _____

1. INFORMAZIONI GENERALI SULLA SOCIETA'

NOME DELLA SOCIETA'/SEDE PRINCIPALE

Nome della Società _____

Indirizzo _____

_____

_____

Telefono _____ Telex _____

FILIALI/ALTRE SEDI

_____

_____

_____

_____

_____

RESPONSABILI

Direttore Generale: Nome _____ Qualifica _____

Altri responsabili: Nome _____ Qualifica _____

Nome _____ Qualifica _____

Nome _____ Qualifica _____

Nome _____ Qualifica _____

Nome _____ Qualifica _____

Nome _____ Qualifica _____

PROPRIETA' E SOCIETA' CONTROLLATE

DATA INIZIO ATTIVITA' ..... Tipo di società: Privata ☐ Pubblica ☐ Società controllata ☐

Maggiori azionisti

Nome _____ ☐ %

Nome _____ ☐ %

Nome _____ ☐ %

Nome _____ ☐ %

Società controllate/quota azionaria

Società _____ ☐ %

Società _____ ☐ %

Società _____ ☐ %

Società _____ ☐ %

DIPENDENTI

Numero totale _____

Analisti/Programmatori _____

Sistemisti _____

Consulenti _____

Perforatori _____

Commerciali _____

Operatori _____

Totale dip.del gruppo _____

2.(a) DATI FINANZIARI (in lire italiane)

RISERVATO ALLA PGP / INPUT

FATTURATO TOTALE A FINE ANNO							INCREMENTO (%)	
	1978		1979		1980 (Prev.)		1978/79	1979/80 (Prev.)
	FATT.(milioni di Lit.)	FATT.verso il gruppo %	FATT.(milioni di Lit.)	FATT. verso il gruppo %	FATT.(milioni di Lit.)	FATT. verso il gruppo %		
EXPORT IN EUROPA								
EXPORT EXTRA EUROPA								
FATTURATO TOTALE GRUPPO								

2.(b) COMPOSIZIONE DEL FATTURATO

COMPOSIZIONE DEL FATTURATO (IN LIRE ITALIANE O IN %)			
TIPO DI SERVIZIO	FATTURATO (in milioni di Lit.)	% ANNO PREC.	% TRA 2 ANNI
RCS: Interattivo			
RCS: Remote Batch			
BATCH (inclusa la preparazione dati)			
FACILITIES MANAGEMENT			
U.S.H.S. (On-Site Computing) (Incluso l'affitto dei terminali)			
PRODOTTI SOFTWARE : Applicativo			
Verticali			
Orizzontali			
Sistema			
SERVIZI PROFESSIONALI : Consulenza			
Software dedicato			
Formazione			
SISTEMI CHIAVI IN MANO Verticali			
Orizzontali			
MANUTENZIONE HARDWARE			
ALTRO (specificare)			

2.(c) La vostra società fornisce differenti livelli di manutenzione di prodotti software? SI NO

Se si può indicare, per favore, in quale misura i costi dei differenti livelli di manutenzione incidono, in percentuale, sul costo totale del prodotto software? ____ %

2.(d) Quanti dei vostri dipendenti sono addetti alla manutenzione dei prodotti software? ____

3. HARDWARE INSTALLATO

Specificate, per favore, il nome del costruttore, il modello, la quantità e il modo d'uso dell'hardware installato presso la vostra società.

UNITA' CENTRALI (presso la società)	N° SISTEMI INSTALLATI	USO		
		ELABORAZIONE	SVILUPPO	COMMUNICA-TIONS
TERMINALI				
Numero di terminali installati presso utenti				

MINI/MICRO (presso clienti)	N° SISTEMI Installati nel 1979	Costo medio hardware (prezzo in Lit./per sistema)		

4. LINGUAGGI

Elenchi, per favore, i linguaggi che vengono abitualmente utilizzati nella vostra attività e dei quali il vostro staff abbia una specifica competenza.

_____ _____ _____ _____

_____ _____ _____ _____

5. PRINCIPALI PRODOTTI E SERVIZI

Per favore, può descrivere i prodotti e / o i servizi più importanti tra quelli attualmente offerti dalla vostra società?

6. SPECIALIZZAZIONE PER SETTORI DI ATTIVITA'

Indicate, per favore, in percentuale sul fatturato totale, la quota di fatturato ottenuta da ciascun settore, tra quelli sotto elencati. Indicate, inoltre, se la vostra società commercializza prodotti e servizi specifici per questi settori. (V)

SETTORI	FATT. %	PROD.	SETTORI	FATT. %	PROD.
Agricoltura/Foreste/Pesca		☐	Commercio all'ingrosso		☐
Alimentari/Bevande/Tabacchi		☐	Commercio al Dettaglio/Rist./Alb.		☐
Tessile/Abbigliamento/Calzature		☐	Trasporti		☐
Legno e mobilio		☐	Poste e Telecomunicazioni		☐
Editoriale e cartario		☐	Bancario e finanziario		☐
Chimico e petrolifero		☐	Assicurazioni		☐
Minerali non metallici		☐	Immobiliare		☐
Siderurgia		☐	Pubblica Amministrazione Centrale		☐
Metallurgia		☐	Pubblica Amministrazione Locale		☐
Elettricità/Gas/Acqua		☐	Pubblica Istruzione/Scuola		☐
Costruzioni		☐	Altri		☐

7. AREE APPLICATIVE

Indichi, per favore, in percentuale sul fatturato totale, la quota di fatturato relativa a ciascuna area applicativa tra quelle sotto elencate e l'eventuale commercializzazione da parte vostra di prodotti software orizzontali (applicativi e di sistema) per ciascuna area (V)

AREE APPLICATIVE	FATT. %	PROD.	AREE APPLICATIVE	FATT. %	PROD.
Controllo di processo		☐	Contabilità		☐
Calcolo scientifico		☐	Analisi finanziarie/Planning		☐
Gestione ordini		☐	Operazioni finanziarie e di borsa		☐
Produzione/Magazzino		☐	Automazione ufficio		☐
Distribuzione/Trasporti		☐	Servizi di database		☐
Marketing/Vendite		☐	Data Communications		☐
Paghe e stipendi/Personale		☐	Altri		☐

8. ACCORDI OEM/THIRD PARTY

Avete attualmente accordi commerciali con costruttori di Hardware? Se si, indicate, per favore, il tipo di accordi e il nome del costruttore.

TIPI DI ACCORDO	SI	NO	NOME DEL COSTRUTTORE
SCONTI SU QUANTITA' OEM	☐	☐	
SOFTWARE SU COMMESSA	☐	☐	
VENDITE CONGIUNTE	☐	☐	
SVILUPPO CONGIUNTO DI PRODOTTI	☐	☐	

9.(A) TARIFFE PRATICATE VERSO L'ESTERNO

QUALIFICHE	PER ORA	PER GIORNO	PER SETTIMANA	SCONTO PER PROGETTI DI LUNGA DURATA
RESPONSABILE DI PROGETTO				
CONSULENTI				
ANALISTI				
PROGRAMMATORI				

. (B) In che modo fatturate le spese di trasporto e di trasferta sui contratti time and materials?

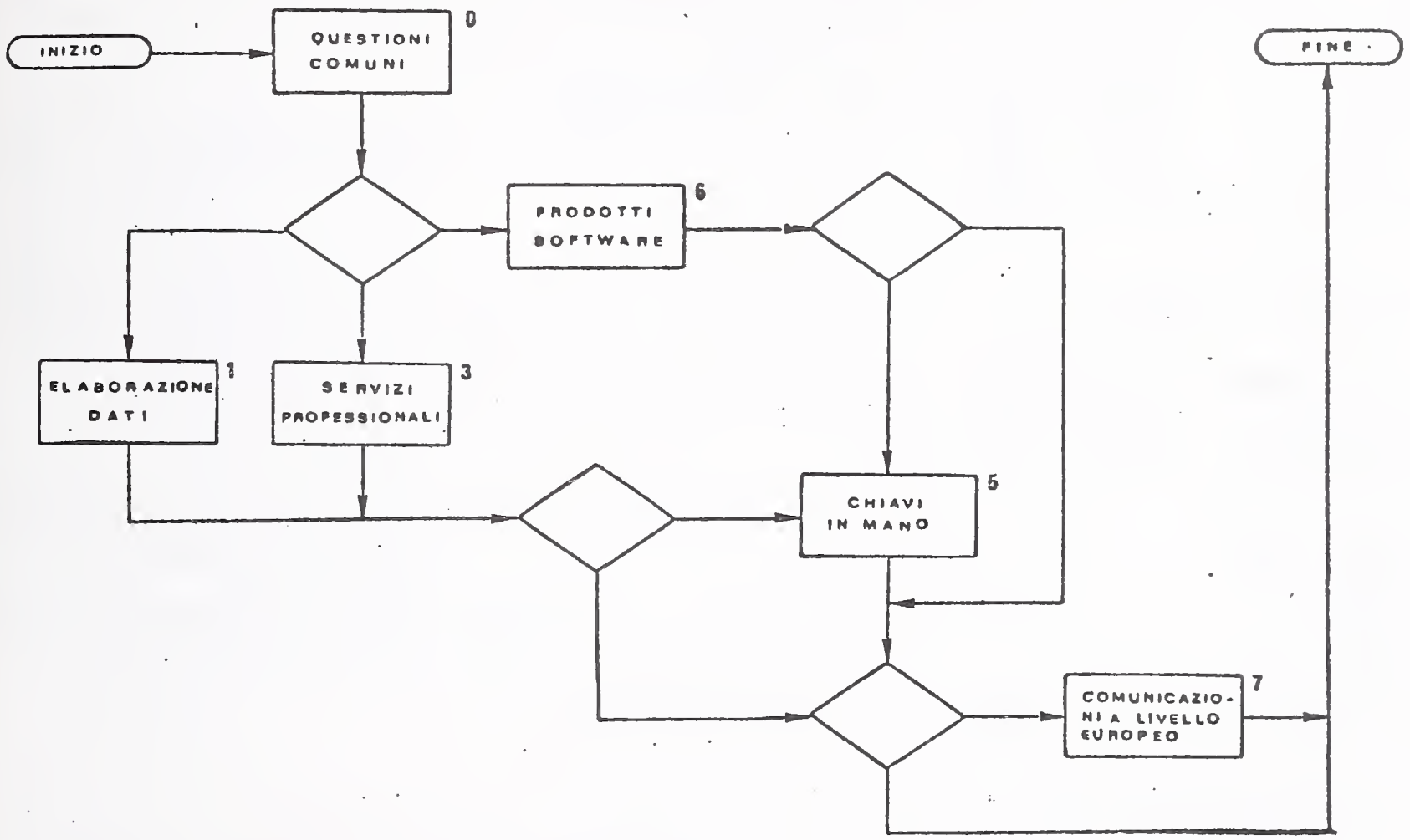
. E' possibile avere una copia di un vostro contratto standard? SI NO
Siete interessati ad avere informazioni più dettagliate sulla PGP /INPUT? SI NO
Potete inserirci nella vostra mailing list per brochure, annunci di prodotti, bilancio annuale ecc.? SI NO

Grazie per la vostra collaborazione.

APPENDIX C: MAS/EUROPE 1980 VENDOR QUESTIONNAIRE

DIAGRAMMA A BLOCCHI RELATIVO AI TIPI DI ATTIVITA' DELLA SOCIETA'

Q.0. Per favore, indicate (X) i moduli applicabili alla vostra attività :



M O. QUESTIONI GENERALI

Q.1. Nella vostra attività tendete a sviluppare maggiormente prodotti o applicazioni di tipo orizzontale (X) o di tipo verticale (IS), o entrambi in eguale misura (=)?

X	IS	=

Quale sarà in percentuale l'importanza rispettiva (di X e IS) nei prossimi due anni?

E fra 5 anni

Eventuali commenti

Q.2. Il vostro fatturato per cliente ha un andamento decrescente nel tempo (determinando così un aumento del costo unitario dei servizi venduti) ?

si	no

Q.3. I vostri piani di sviluppo considerano l'eventualità di :

- inflazione continuata (se si, specificare come)

si	no

- recessione continuata (se si, specificare l'effetto)

si	no

Q.4. La carenza di personale è un ostacolo reale o prevedibile per lo sviluppo delle vostre attività?

Se si, in quale misura (Alta, Media, Bassa) relativamente alle seguenti funzioni :

	reale	prev.	no
- Venditori	A	M	B
- Supporto vendite	A	M	B
- Programmatori/Analisti	A	M	B
- Operatori	A	M	B
- Sistemisti	A	M	B
- Dirigenti	A	M	B
- Altri	A	M	B

Q.5. Potete, per favore, indicare le vostre più importanti aziende concorrenti?

a _____ b _____ c _____

M 1. SERVIZI DI ELABORAZIONE (Elaborazione, Prep. dati, COM e OCR)

Q.10. Intendendo per "volume effettivo di nuove attività", il valore di fatturato rappresentato dal saldo tra nuovi ricavi al netto degli incrementi di prezzo dovuti all'inflazione e ricavi non realizzati o persi, il tasso di crescita di tali nuove attività è in diminuzione? sì no ____ %

– sarà in diminuzione nel giro di due anni? sì no ____ %

Commenti

Q.11. Le grandi aziende vostre utenti stanno adottando soluzioni di sviluppo di informatica distribuita al loro interno? sì no nr clienti persi ____ %

Se si, la maggior parte di esse si orienta verso :

– Minisistemi stand-alone ____ %

– Integrazione con la rete interna ____ %

– Elaborazione batch sulle unità centrali interne ____ %

Commenti

Q.12. Ritenete che nuovi tipi di utenti come i professionisti o le piccole aziende propendano verso l'acquisizione di mini/micro computer sì no

Se si, in quale percentuale, il vostro potenziale di nuove attività viene ridotto a favore di :

– altre società di servizi ____ %

– acquisizione di mini/microcomputer ____ %

– acquisizione di unità centrali ____ %

Q.13. Il servizio U.S.H.S. (User Site Hardware Services) è una soluzione adeguata per lo sviluppo delle società di elaborazione dati? (classificate, per favore, con Alta, Media, Bassa)

A M B

– sul breve periodo

– entro 2 anni

– entro 5 anni

Commenti

(utilizzare il modulo HARDWARE)

Q.14. Il servizio F.M. (Facilities Management) è o costituirà una soluzione che le società di elaborazione dovranno necessariamente adottare per fornire servizi "completi" comprendenti hardware, operatori, software, formazione ecc.?

- nel breve periodo — si ☐ no ☐
- entro 2 anni — si ☐ no ☐
- entro 5 anni — si ☐ no ☐

Commenti

Q.15. Il costo della vostra attività è maggiore rispetto al passato? si ☐ no ☐

Se si, indicate in percentuale l'aumento medio annuo del costo per unità venduta ☐ %

Q.16. State considerando la possibilità di commercializzare i vostri servizi attraverso altre società (indicate, per favore, in quale % sul fatturato)

- già operante — si ☐ no ☐ ☐ %
- entro 2 anni — si ☐ no ☐ ☐ %

Commenti

Q.17. Quali criteri utilizzate per determinare il prezzo dei servizi?

- tempo di utilizzo di CPU — si ☐ no ☐
- dimensione dei file — si ☐ no ☐
- tempo di collegamento — si ☐ no ☐
- uso della stampante — si ☐ no ☐
- altri (specificare, per favore) — si ☐ no ☐

Commenti

M 1. Continua

Q.18. Utilizzate tecniche di vendite e di relativo pricing, di capacità fisse di memoria (Fixed Capacity Pricing Techniques)

Se si, quale % di CPU prevedete di affittare o affittate in tal modo?

	sì	no
	previsto	attuale
	%	%

Q.19. Quali metodi di determinazione di prezzo utilizzate?

	sì	no
- Costi interni		
- Valori di mercato		
- Altri (specificare, per favcre)		

Ccmmenti

Q.20. Quante installazioni sono necessarie, mediamente, per coprire i costi di sviluppo del software?

- packages applicativi	
- utilitiès	

Q.21. In quale percentuale, tra le "fonti" sottoelencate, ottenete il software da voi utilizzato?

	costruttori	acquisto	sviluppo interno
- software di sistema			
- software applicativo			
- utilities			

Commenti

Q.22. In quale misura i vostri profitti sono stati supportati da fattori esterni o congiunturali come :

	effetto		
	alto	medio	basso
- costi hardware già ammortizzati			
- diminuzione dei costi hardware	A	M	B
- adeguamento dei prezzi al tasso di inflazione	A	M	B
- altro (specificare, per favore)	A	M	B

Commenti

Q.23. Ritenete di dedicare eccessivo tempo nella gestione quotidiana delle attività e della profittabilità della vostra azienda a detrimento di:

	sì	no
- piani a medio termine (prossimi 2 anni)		
- piani a lungo termine (prossimi 5 anni)		

M 3. SERVIZI PROFESSIONALI

Q.30. In quale misura il fatturato relativo all'hardware ha contribuito alla crescita della vostra società negli ultimi tempi? ☐ %

Commenti

Q.31. Il settore di servizi di informatica trarrà vantaggi dalla diffusione dei microprocessori, in termini di nuove applicazioni correlate alla installazione di questi ultimi? si no

Se si, ciò deriverà principalmente da :

(stimare, per favore, anche l'incremento relativo in % di nuove attività)

- nuovi clienti (nuovi utenti) si no ☐ %
- nuovi clienti (già utenti) si no ☐ %
- clienti esistenti si no ☐ %

Q.32. Quali tipi di contratti offrite abitualmente

- Prezzo fisso si no
- Time and materials si no
- Body hire si no
- Altri (specificare) si no

Commenti

Q.33. Quali metcdi utilizzate per incrementare la produttività?

(classificate con impiego Alto, Medio, Basso)

- Tecniche strutturate (es. met. Jackson) A M B
- Riutilizzo di codifica modulare A M B
- Linguaggi evoluti A M B
- Generatori di sistemi applicativi A M B
- Incentivi e motivazioni personali A M B
- Altro (specificare, per favore) A M B

Q.34. Quali fattori determinano la profittabilità della vostra attività?

- Tecniche per l'incremento della produttività nel software ____ %
- Metodi di gestione dei progetti ____ %
- Qualità del personale impiegato ____ %
- Altro (specificare) ____ %

100 %

Commenti

Q.35. Prevedete che la vostra società si orienterà verso la fornitura di una gamma completa di prodotti software non dedicati?

entro [2 anni] [5 anni] [MAI]

(Potete, per favore, stimare la quota massima di fatturato, in % sul totale, ricavabile dalla vendita di prodotti software?)

MAX ____ %

[si] [no]

Q.36. Potete indicare approsimativamente in quale percentuale vengono usati nellc sviluppo del software i seguenti linguaggi :

- Assembler ____ %
- Tradizionali ad alto livello- COBOL, FORTRAN, BASIC, ALGOL 60, RPG ____ %
- Innovativi ad alto livello- PL 1, CORAL 66, RTL 2, PASCAL, APL ____ %
- Non - procedurali - Query, DBMS non-host ____ %
- Altri (specificare) ____ %

Q.37. Quali tipi di test di accettazione utilizzate?

- Sviluppo con l'utente delle specifiche di test [si] [no]
- Test di accettazione del progetto con l'utente [si] [no]
- Insieme formale di test concordato con l'utente [si] [no]
- Test formali effettuati presso la vostra sede [si] [no]
- Test formali effettuati presso il cliente [si] [no]
- Imposizione della procedura formale di modificazione delle specifiche [si] [no]

Q.38. Ritenete che le nuove applicazioni di tipo decentrato (DBMS, DDP, Office Automation) richiedano conoscenze e professionalità di tipo nuovo da parte del personale addetto?

Q.39. Con quale frequenza utilizzate personale esterno (o subappalto di lavori all'esterno)

	A VOLTE	SPESSO	MAI
- Consulerti esperti	☐	☐	☐
- Analisti e programmatori	☐	☐	☐
- Cperatori	☐	☐	☐
- Altri _____	☐	☐	☐

Q.40. In che modo addestrate il personale (indicate, approssimativamente, in quale % vengono utilizzate le diverse soluzioni)

- corsi interni	si	no	☐ %
- corsi presso costruttori	si	no	☐ %
- corsi presso società di consulenza	si	no	☐ %
- addestramento "on the job"	si	no	☐ %

Q.41. In quale direzione tendono, secondo voi, ad orientarsi gli incarichi di consulenza? Verso :

- implementazione e sviluppo	si	no
- selezione del personale	si	no
- misurazione delle prestazioni	si	no
- altri _____	si	no

Commenti

---

5. SERVIZI HARDWARE (Chiavi in mano, Integrators, Distributori, TPM, Third Party Maintenance)

Q.50. Disponete di una vostra struttura relativamente all'hardware?

Se si, essa è relativa a :

- Produzione di sistemi	si	no
- Integrazione di sistemi	si	no
- Avviamentc di sistemi	si	no
- Manutenzione di sistemi	si	no
- Altro	si	no

Q.51. Seguite una politica di integrazione verticale dei sistemi? si no

(in altri termini: tendete ad avere una vostra linea di prodotti?) si no

Qual'è sul costo totale dei sistemi la quota percentuale relativa alle parti "prodotte" all'interno e alle parti "acquistate" all'esterno? [ ] % [ ] %

Q.52. Nella vostra attività differenziate le spese correnti dalle spese per investimenti? si no

Commenti

Q.53. Seguite una politica di investimento o di approvvigionamento relativamente alle singole componenti dei sistemi venduti indipendentemente dagli ordini in essere?

- Prodotti software - Sistema	si	no
- Prodotti software - Applicativi	si	no
- Hardware	si	no
- Pezzi di ricambio	si	no
- Altro	si	no

M 5. Continua

SE L'INTERVISTATO HA RISPOSTO AL MODULO "SERVIZI PROFESSIONALI" PASSARE ALLA DOM. Q.55.

Q.54. Quali tipi di test di accettazione utilizzate?

- Sviluppo con l'utente delle specifiche di test — si / no
- Test di accettazione del progetto con l'utente — si / no
- Insieme formale di test concordato con l'utente — si / no
- Test formali effettuati presso la vostra sede — si / no
- Test formali effettuati presso il cliente — si / no
- Imposizione della procedura formale di modificazione delle specifiche — si / no

---

Q.55. Offrite dei contratti di garanzia e per quale durata?

			giorni	mesi
- hardware	si	no		
- software	si	no		

M 6. PRODOTTI SOFTWARE

Q.60. Potete indicare quali sono i vostri prodotti maggiormente venduti?

	Nr. Installazioni
1.	
2.	
3.	

Q.61. Ritenete che nei prossimi anni si avrà lo stesso tasso di crescita realizzatosi in questi anni relativamente ai prodotti software (valutabile attorno al 20 ÷ 30%)?

			Tasso di crescita
– nei prossimi 2 anni	si	no	%
– nei prossimi 5 anni	si	no	%

Q.62. La profittabilità dei vostri prodotti è influenzata da questa rapida crescita? si no

Q.63. Quante installazioni o vendite di prodotti software sono normalmente necessarie per la copertura del loro costo di sviluppo?

- software di sistema
- software applicativo
- utilities

Q.64. Il costo della vostra attività è maggiore rispetto al passato? si no

Se si, indicate in percentuale l'aumento medio annuo del costo per unità venduta %

M 6. Continua

Q.

65.& 66 . SOCIETA' NON FORNITRICI DI HARDWARE

Q.65. Il prezzo del software offerto dai costruttori è in generale meno alto di quello offerto dalle società di servizi non fornitrici di hardware.

Utilizzate il prezzo del software dei costruttori come termine di riferimento per la determinazione dei vostri prezzi? si no

Se si, qual'è, a vostro parere, la differenza tra i due prezzi, in percentuale, verso la quale il mercato è sufficientemente tollerante? + [ ] %

Commenti

Q.66. Prevedete che i prodotti software dell'IBM e degli altri costruttori diverranno sempre più competitivi?

- nel breve pericdo (2 anni) si no
- nel lungo periodo (5 anni) si no

Se si, in quale modo contrastate questa tendenza? _____

Q.67. E' possibile avere un elenco dei vostri servizi e dei relativi prezzi? si no

---

Q.68. Ritenete che le attività di supporto o di servizio siano un fattore cruciale per l'aumento della produttività delle vostre attività? Le utilizzate o pensate di farlo in futuro:

	In uso	prev.	no
- centri di supporto su chiamata	[ ]	[ ]	[ ]
- diagnosi remota/on-line	[ ]	[ ]	[ ]

Se non utilizzate nè utilizzerete nessuna di queste soluzioni, come pensate di contenere i costi crescenti del personale? _____

M 7. LA SITUAZIONE DELLE TELECOMUNICAZIONI A LIVELLO EUROPEO

Q.70. Prevedete che le vostre prospettive di sviluppo verranno limitate o negativamente influenzate dalla posizione di monopolio detenuta dai PTT?

- nel breve periodo (2 anni) — si / no
- nel lungo periodo (5 anni) — si / no

Q.71. Quali aspetti specifici, tra quelli sotto elencati, influenzeranno maggiormente la vostra attività? (classificate la dimensione di tale impatto con Alto, Medio, Basso, Negativo)

	A-M-B-N
- Aumento delle tariffe	
- Scarsa qualità delle linee affittate	
- Trasmissioni di dati tra paesi rese difficoltose da una legislazione restrittiva	
- Collegamenti alle reti di trasmissione dati disciplinate in modo più rigoroso	
- Competizione crescente da parte delle reti pubbliche di trasmissione dati (TRANSPAC)	
- Competizione crescente da parte di PTT in quanto fornitori di servizi	
- Servizi viewdata e videotext	
- Altri _____	

Commenti

Q.72. Se la risposta alla Q.70. è stata SI per una delle domande, quali sono le vostre strategie per evitare la riduzione del vostro tasso di crescita

- diversificazione delle attività — si / no
- incremento del proprio grado di competitività — si / no
- altro (specificare, per favore) — si / no

Q.73. Prevedete di ampliare nei prossimi 2 o 5 anni la gamma dei prodotti o dei servizi da voi offerti aggiungendo alle vostre attività abituali uno o più servizi tra quelli sotto elencati?

Si, entro	2 Anni	5 Anni	No	In uso
- aggiunta di una reta di trasmissione dati ai centri servizi	☐	☐	☐	☐
- uso della rete pubblica di trasmissione dati per servizi di valore aggiunto	☐	☐	☐	☐
- servizi di tipo viewdata	☐	☐	☐	☐
- uso della rete Euronet per fornire servizi di tipo Database	☐	☐	☐	☐
- fornitura di servizi Database mediante altri canali	☐	☐	☐	☐

Commenti

Q.74. Prevedete che esistano delle opportunità per la società di servizi di informatica derivanti dallo sviluppo dell' "Office automation"?

Se si, in rapporto a :

- centri o reti di word-processing	si	no
- posta elettronica	si	no
- trasmissione di fac-simili	si	no
- sistemi di trattamento dell'immagine/grafici CRT	si	no
- multi-function equipment (es. PABX intelligente)	si	no

APPENDIX D: MAS/EUROPE 1980 USER QUESTIONNAIRE

EDP USER PANEL 1980

QUESTIONARIO

Nome della società _____

Indirizzo _____

_____

_____

Società madre _____

Nome dell'intervistato _____

Qualifica _____

N° Telefonico _____

Indirizzo (qualora fosse diverso da quellc indicato sopra) _____

_____

_____

Vi ringraziamo della collaborazione, assicurandovi che i dati e le informazioni da voi fornite verranno utilizzati in forma confidenziale e riservata.

QUESTIONARIO PER GLI UTENTI EDP

INFORMAZIONI GENERALI

1. Attività principale _____
2. Codice ISIC _____
3. N° dipendenti _____ (2)
4. N° addetti EDP _____ (3) Capitale sociale(milioni di Lit.) _____ (4)
5. Fatturato (1979)(in milioni di Lit.) _____ (5) 6. Attivo(milioni di Lit.) _____ (6)
7. Se la dimensione della società viene indicata mediante altri parametri, indicare quali _____ (7)
   Le informazioni sopra fornite si riferiscono a: 8. ☐ Divisione/sussidiaria
   o 9. ☐ Gruppo/casa madre (8)
10. Nel caso si riferissero a direzione o sussidiaria, qual'è il capitale sociale del gruppo?(milioni di Lit.) _____ (9)

PREVISIONI DI SVILUPPO EDP

11. Quali sono e saranno i vostri principali obbiettivi e pricrità per i prossimi tre anni? (Classificare i primi cinque in ordine di importanza, tra quelli sotto elencati, con un punteggio da 1, molto importante a 5, molto poco importante).

CATEGORIA (11-37)	ORDINE DI PRIORITA' 1980	1981	1982	CATEGORIA (CONT.) (38-61)	ORDINE DI PRIORITA' 1980	1981	1982
Conversioni di applicazioni	11	12	13	Accentramento del controllo EDP	38	39	40
Sviluppo di nuove appplicazioni batch	14	15	16	Decentramento del controllo EDP	41	42	43
Installazioni di applicazioni on-line	17	18	19	Sviluppo di un piano EDP a lungo termine	44	45	46
Disegno/installazione DBMS	20	21	22	Rispetto dei tempi di sviluppo e conversione previsti	47	48	49
Disegno/installazione di reti DDP	23	24	25	Aumento della produttività del personale EDP	50	51	52
Installazione di nuovi sistemi	26	27	28	Integrazione dell'automazione dell'ufficio con l'EDP	53	54	55
Installazione di mini sistemi	29	30	31	Altri (specificare e classificare)	56	57	58
Installazioni di nuove periferiche	32	33	34		59	60	61
Cambio del sistema operativo	35	36	37				

12. Il vostro budget è stato condizionato da previsioni di recessione o di crisi?(1) Si _____ (2) No _____ (62)
13. Se si in quale percentuale _____ %(63) e in quali aree _____ (64)

PROBLEMI EDP

14. Quali sono i problemi più significativi per voi nel 1980, relativamente all'EDP? (Classifichi i primi cinque in ordine di importanza, con un punteggio da 1, molto importante a 5, molto poco importante).

CATEGORIA (65-78)	ordine di priorità 1980	CATEGORIA (CONT.)	ordine di priorità 1980
Reclutamento del personale	65	Tempo eccessivo nello sviluppo delle applicazioni	66
Addestramento del personale	67	Budget EDP inadeguato	68
Scarsa comprensione da parte della direzione generale	69	Necessità di miglioramento delle funzioni di data communications	70
Scarso coinvolgimento delle utenza interna nello sviluppo del software	71	Manutenzione hardware insoddisfacente	72
Inefficienza del software di sistema	73	Altri (specificare e classificare)	74
Miglioramento delle prestazioni	75		76
Necessità di pianificazione e controllo più efficaci	77		78

D. APPLICAZIONI EDP

15. Quali nuove applicazioni verranno sviluppate (o acquistate) nel 1980? Verranno utilizzate localmente o a distanza, e quale sarà la loro importanza relativa all'interno dei vostri piani di sviluppo? (Indicare con 1 la più importante, con 2 la seguente ecc. Indicare, per favore, anche le applicazioni esistenti, nell'ultima colonna).

AREE APPLICATIVE (91 - 122)	NUOVO SVILUPPO ORDINE DI PRIORITA'	UTILIZZO LOCALE (1)	UTILIZZO REMOTO (2)	ORIGINE SVILUPPO IN-HOUSE (1)	ORIGINE ACQUISTO (2)	ESISTENTI
Controllo di processo	79		80		81	82
Calcolo scientifico	83		84		85	86
Gestione ordini / fatturazione	87		88		89	90
Produzione / magazzino	91		92		93	94
Distribuzione / trasporto	95		96		97	98
Marketing / vendite	99		100		101	102
Personale / paghe e stipendi	103		104		105	106
Contabilità / finanza	107		108		109	110
Altri (specificare) _____	111		112		113	114
_____	115		116		117	118
_____	119		120		121	122

16. Quali tipi di ricerche o informazioni potrebbero esservi utili nella formazione dei vostri piani di sviluppo EDP? La vostra risposta può aiutare la INPUT a migliorare i propri servizi _____ (123)

. BUDGET EDP

17. Qual'è il vostro budget EDP per il 1980? (in milioni di Lit.) _____ (124)

18. Il vostro budget include:
a) l'acquisizione dati (1) Si _____ (2) No _____ c) la formazione Si _____ No _____
) i prodotti software Si _____ No _____ d). le forniture Si _____ No _____ (125)

19. Quali altre voci non sono comprese nel budget? _____ (126)

20. Il vostro budget è stato influenzato dall'inflazione? (1) Si _____ (2) No _____ (127)

21. Se si, in quale percentuale _____ %(128) e in quali aree? _____ (129)

22. Potete indicare per singole voci, la ripartizione del vostro budget EDP nel 1980 e le sue suddivisioni tra applicazioni locali e remote? Potete indicare, inoltre, le variazioni, in aumenti o in diminuzioni, delle singole voci per il 1981?

VOCI DI BUDGET (130 - 169)	BUDGET TOTALE 1980 (milioni di Lit.)	% LOCALE	% REMOTO	VARIAZIONI PREVISTE NEL 1981 % AUMENTO (1)	% DIMINUZIONE (2)
Personale (compresa la formazione)	£ 130	%131	%132	%	%133
Unità centrali	£ 134	%135	%136	%	%137
Periferiche	£ 138	%139	%140	%	%141
Mini sistemi	£ 142	%143	%144	%	%145
Terminali	£ 146	%147	%148	%	%149
Hardware e software per data communication	£ 150	%151	%152	%	%153
Software (acquisto o affitto)	£ 154	%155	%156	%	%157
Manutenzione da parte del venditore (hardware e software)	£ 158	%159	%160	%	%161
Servizi di elaborazione dati (esterni)	£ 162	%163	%164	%	%165
Acquisto di supporti e altro	£ 166	%167	%168	%	%169

Il vostro budget EDP è compresa una voce relativa all'acquisto di sistemi chiavi in mano (sistemi che combinino l'hardware e il software applicativo)? (1) Si _____ (2) No _____ (170)
Se si, qual'è l'ordine di grandezza di questa spesa (milioni di Lit.) _____ (171)

F. HARDWARE

24. Indicate, per favore, il numero di sistemi general-purpose installati e ordinati, utilizzati localmente o in modo remoto.

COSTRUTTORE	SERIE/MODELLO	N° SISTEMI INSTALLATI	N° SISTEMI ORDINATI	UTILIZZO LOCALE (N° SIST.)	UTILIZZO REMOTO (N° SIST.)
IBM	303X; 370/158-168	(172)	(173)	(174)	(175)
	4300	(176)	(177)	(178)	(179)
	8100/3790	(180)	(181)	(182)	(83)
	Altri modelli 370 o 360	(184)	(185)	(186)	(187)
	Sistemi 3, 32, 34, 38	(188)	(189)	(190)	(191)
	Altri ad esempio, Serie 1	(192)	(192)	(194)	(195)

Se i sistemi non sono IBM, per favore, indicare:

COSTRUTTORE	SERIE/MODELLO	N° SISTEMI INSTALLATI	N° SISTEMI ORDINATI	UTILIZZO LOCALE (N° SIST.)	UTILIZZO REMOTO (N° SIST.)
(196)	(197)	(198)	(199)	(200)	(201)
(202)	(203)	(204)	(205)	(206)	(207)
(208)	(209)	(210)	(211)	(212)	(213)

25. Per favore, indicate, il numero di unità installate o previste, relativamente alle categorie sotto elencate:

AVETE INSTALLATO :	NON PREVISTI	NESSUNO, MA PREVISTI	NUMERO INSTALLATI	SVILUPPO PREVISTO (1980 - 1981)
A) Minisistemi o small business computer	214	215	216	%217
B) Microcomputer o personal computer	218	219	220	%221
C) Terminali intelligenti	222	23	224	%225
D) Terminali non intelligenti	226	227	228	%229

Con quali modalità la direzione EDP pianifica e controlla l'acquisizione e l'uso delle unità, di cui al punto A) e B)?

25.A _____ (230)

25.B _____ (231)

G. SERVIZI DI SOFTWARE E DI ELABORAZIONE ACQUISTATI ALL'ESTERNO

26. La vostra società acquista all'esterno servizi di elaborazione, indipendentemente dalla Direzione EDP?

(1) Si _____ (2) No _____ (232)

27. Se si, qual'è stata approssimativamente la spesa relativa all'acquisto di servizi EDP all'esterno nel 1979 _____ (233)

28. Quale sarà l'aumento o la diminuzione prevista tra il 1979-1980? _____ %(234) 1980-1981 _____ %(235)

29. Quali Direzioni della vostra società acquistano servizi all'esterno?

Finanza _____ %(236) Produzione _____ %(240)
Centrale _____ %(237) Marketing/Vendite _____ %(241)
Personale _____ %(238) Altre(specificare)
Ricerca e sviluppo _____ %(239) _____ %(242)

H. GRADO DI SODDISFAZIONE RELATIVO AI SERVIZI EDP ACQUISTATI ALL'ESTERNO E LORO UTILIZZO IN FUTURO

30. Per favore indicate il vostro grado di soddisfazione(Alto,Medio,Basso)relativo ai differenti tipi di servizi, acquistati all'esterno e l'aumento o la diminuzione probabili di essi per i prossimi due anni.

SERVIZIO / SISTEMA	GRADO DI SODDISFAZIONE				VARIAZIONE PREVISTA (1980 - 1982)	
	NON UTILIZZATO (1)	ALTO (2)	MEDIO (3)	BASSO (4)	INCREMENTO (PERCENTUALE)	DECREMENTO (PERCENTUALE)
Servizi di elaborazione						
RJE - Interattivo	243	244	245	246	%247	%248
RJE - Remote batch	249	250	251	252	%253	%254
Batch (incl. COM, OCR)	255	256	257	258	%259	%260
Facilities Management	261	262	263	264	%265	%266
Sistemi chiavi in mano	267	268	269	270	%271	%272
Manutenzione hardware	273	274	275	276	%277	%278

30. Continuazione

SERVIZIO / SISTEMA	GRADO DI SODDISFAZIONE				VARIAZIONE PREVISTA (1980 - 1982)	
	NON UTILIZZATO	ALTO	MEDIO	BASSO	INCREMENTO (PERCENTUALE)	DECREMENTO (PERCENTUALE)
Prodotti software di sistema	279	280	281	83	%283	%284
Prodotti applicativi	285	286	287	288	%289	%290
Servizi professionali :						
Consulenza	291	292	293	294	%295	%296
Software dedicato	297	298	299	300	%301	%302
Formazione	303	304	305	306	%307	%308

31. In base alla vostra esperienza relativa ai fornitori di servizi EDP, potete dare un commento sintetico sui quattro(4) tipi di servizi sotto elencati? (Se non utilizzati, scrivere N/A):

1. Elaborazione dati _____ (309)
2. Sistemi chiavi in mano _____ (310)
3. Prodotti software _____ (311)
4. Consulenza esterna _____ (312)

32. Indicate, per favore, per ogni tipo di servizi, i tre (3) fornitori preferiti, in ordine di preferenza (A = il più preferito) (Se i servizi non sono utilizzati, scrivere N/A)

1. Elaborazione dati A. _____ (313) B. _____ (314) C. _____ (315)
2. Sistemi chiavi in mano A. _____ (316) B. _____ (317) C. _____ (318)
3. Prodotti software A. _____ (319) B. _____ (320) C. _____ (321)
4. Consulenza esterna A. _____ (322) B. _____ (323) C. _____ (324)

I. L'UFFICIO DEL FUTURO

33. Potete indicare, tra i servizi e i sistemi sotto elencati, quelli già utilizzati da voi e quelli previsti? E se sono, o saranno, sotto la responsabilità della direzione EDP?

CATEGORIE	ESISTENTI O PREVISTI					RESPONSABILITA' DIREZIONE EDP				
	IN USO	NEL 1980-1982	NEL 1983-1985	NON PREVISTI	NON SO	ATTUALE	NEL 1980-1982	NEL 1983-1985	NON PREVISTA	NON SO
TRASMISSIONE DATI										
▲ RETE COMMUTATA					325					326
▲ LINEE DEDICATE					327					328
▲ TRASMISSIONE A BLOCCHI					329					330
▲ TELEX					331					332
SERVIZI DATABASE										
▲ PRESTEL					333					334
▲ EURONET					335					336
▲ VIEWDATA					337					338
▲ ALTRO					339					340
OFFICE AUTOMATION										
▲ POSTA ELETTRONICA					341					342
▲ WORD PROCESSING					343					344
▲ IMAGE PROCESSING					345					346
▲ TRASMISSIONE FAC-SIMILI					347					348
▲ VIDEO GRAFICA					349					350