

TIMESHARING MARKET ENTRY

HOLLAND

INPUT

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AUTHOR

Timesharing Market Entry Holland

TITLE

Working closely with the research data, s' needs. Clients are based, and

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ng firm. Clients companies.

OFFICES

UNITED STATES

2180 Sand Hill Road
Menlo Park, CA 94
(415) 854-3422

Park 80 Plaza West
Saddle Brook, NJ 0
(201) 368-9471

pany, Ltd.
7 Kita-Aoyama

EUROPE

INPUT Europe
500 Chesham House
150 Regent Street
London, W1R 5FA
England
London 439-6288
Telex 261426

AUSTRALIA

Infocom Australia
Highland Centre, 7-9 Merriwa Street
P.O. Box 110, Gordon N.S.W. 2072
(02) 498-8199

PGP Sistema SRL
20127 Milano
Via Soperga 36
Italy
Milan 284-2850

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Prepared For:

TYMSHARE

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TABLE OF CONTENTS

		<u>Page</u>	
I	INTRODUCTION	1	
II	SUMMARY	2	
III	THE DUTCH MARKET	4	
	Market Size by Service		
	Growth Trends by Category		
	Market Characteristics		
	Industry Sectors		
IV	COMPETITION	12	
	The Competitive Scene		
	Company Profiles		
V	ESTABLISHING A COMPANY	22	
	Advantages of The Netherlands		
	Formalities and Procedures		
	Financing		
	Tax Considerations		
	Matters Requiring Special Attention		
VI	STAFFING	33	
	Availability and Quality		
	Cost		
VII	COMMUNICATIONS	37	
	Domestic Line Costs		
	International Line Costs		
VIII	STRATEGY	39	
	Strategy Alternatives Already Used		
	A Preferred Composite Strategy		
	Pricing		
	A Second Strategy		
APPENDIX	I	Conversion Rates	46
	II	1978 Dutch Computer Staff Salaries	47
	III	Definitions	48

I N T R O D U C T I O N

I - INTRODUCTION

• This report has been produced to assist Tymshare in deciding on its entry into the Dutch market and to advise on how this could be best accomplished.

• To meet this requirement a description of the market for bureau services is given followed up with a commentary on the bureau companies which INPUT regards as the strongest competitors for Tymshare in Holland. In order to enable thorough planning of an entry into the Dutch market, information and advice is provided on all significant aspects of setting up a company and the major items of cost such as staff and data communications.

• When considering an entry into a new country, particularly one as developed and competitive as Holland, it is of vital importance that the right strategy is chosen. Conversion of a bad initial strategy to a good one later is very expensive and potentially disastrous. Consequently, we have endeavoured to bring all the relevant alternatives to Tymshare's notice; in addition we have recommended two - a choice from which could only be made after discussions have commenced with potential acquisitions or partners in the market.

• This report has been produced from data accumulated by INPUT in the course of past projects; the data was supplemented and in some instances, updated by re-visiting Holland during this study.



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S U M M A R Y

II - SUMMARY

- The Dutch market is of significant size in Europe being 50% of the U.K. market and 40% of the French market. The remote computing services portion (timesharing and remote batch) is smaller (24%) compared with that proportion (28%) in the U.K. and France; this suggests that there is some ground to be gained in Holland, particularly with timesharing services which are already growing at 29% p.a. This growth rate benefits from the high level of competition and the good quality, cost and availability of data communications.
- The top 5 companies (Honeywell, IBM, Computer Centrum Nederland, Alpha and RAET) have 20% of the market for all computer services and 35% of the market for remote computing services. In each case these top companies have huge backing from a U.S. parent or, in the case of the indigenous companies they have large captive workloads; indeed 20% of all Dutch computer services work is captive.
- 70% of computer services business arises from the very compact area bounded by the cities of Amsterdam, The Hague, Rotterdam and Utrecht. The majority of computer service companies operate from this area with two notable exceptions - Computer Centrum Groningen and Computer Centrum Nederland at the extreme North and South of the country.
- The recommended method of entry is by acquisition or joint venture with existing computer service companies followed by a data communication link with the U.K. computer centre. A 'composite' strategy of this type would give the following benefits:
 1. adequate local presence so essential to market acceptability,
 2. indigenous computer services staff with market connections and experience,
 3. tangible assets including contracts,
 4. market synergy from combined product list and additional facilities in the U.K.

5. increased profit and/or price advantages when supplying from the U.K. computer centre.

- The 'composite' strategy depends initially on the availability of suitable computer service companies. An alternative approach would be to create the initial base company from one, or more, computer departments presently contained in indigenous corporations; in this way, most of the benefits of the composite strategy can still be retained including contracts in the form of captive business as part of the deal.
- A further alternative could be based on the creation of a 370 back up centre for a handful of major Dutch corporations, some of which have previously indicated interest.

T H E D U T C H
M A R K E T

- From the outset it must be recognised that the Dutch Timesharing Market is small (\$15M estimated for 1978), very well covered by the suppliers, conservative in its attitude to new entrants and therefore difficult to penetrate.
- Four million of the total 14 million population live in the Randstad Holland area, bound by the Amsterdam/Utrecht/Dordrecht lines and the coast. The commercial centre is Amsterdam, the administrative centre is the Hague and the industrial centre is Rotterdam. A growing industrial area is the Belgian border zone comprising the towns of Roosendaal, Breda, Tilbury and Eindhoven.
- The OECD recently analysed the Dutch Economy and identified long term structural problems. In the 1970s the manufacturing base has not grown fast enough to accommodate the faster growth of social services costs. The deficit was filled by taxing away real resources which has led to falling investment, a decline in profitability and a degree of unemployment.
- The Dutch are a realistic people, however, and they have faced this new situation (and the levelling-out of their natural gas revenues) with characteristic pragmatism. A moderate surplus is forecast for the balance of payments in 1978 and a start has been made towards reducing the "collective burden" of social services while providing incentives for private investment (see section V).

MARKET SIZE BY SERVICE

- The size and growth of the Timesharing and Remote Batch markets in the Netherlands are best seen in the context of the other Dutch services markets (Batch in particular) and in the wider context of the main European services markets.
- Exhibit 3.1. identifies the main market sizes in 1976 and 1977 for each of the important markets (France, Germany, UK) and the markets that have bearing on the Dutch market (Sweden, Denmark, Belgium).

EUROPEAN COMPUTER SERVICES MARKET SIZES, 1976, 1977 (\$M)

COUNTRY	1976 (\$M)					1977 (\$M)				
	RCS		BATCH	OTHER	TOTAL	RCS		BATCH	OTHER	TOTAL
	T/S	RB				T/S	RB			
(1) FRANCE	38	116	206	156	516	48.0	125.0	227	198	598
(2) GERMANY	15	70	242	128	455	16.7	81.3	270	167	535
(3) UK	44	71	170	115	400	53.0	75.0	190	150	468
(4) SWEDEN	8.5	42.5	129	55	235	11.0	47.0	140	70	268
(5) NETHERLANDS	9.3	36.7	96	55	197	12.0	41.0	102	68	223
(6) DENMARK	5.0	24.-	97	40	166	6.5	26.5	106	52	191
(7) BELGIUM	4.5	15.5	35	25	80	5.9	18.6	41.3	33.2	99
W. EUROPE	155.-	469.-	1259.-	717.-	2600.-	200.-	512.-	1359.-	919.-	2983.-

● Over 75 computer services suppliers shared the \$223M total market revenues in 1977, 20% of which were divisions of large corporations. Growth in T/S services was very high (29%), while RB services grew at less than half that rate (12%)

● With a catchment area of 50km, companies situated in Amsterdam, The Hague, Rotterdam, Utrecht and Hilversum cover just over 70% of the Dutch prospects.

● The percentage of "captive" revenue (or revenue obtained from parents or subsidiaries) is high in Holland, resulting from the ownership structure explained earlier. The value of this percentage is dropping slowly, but is currently over 20%.

GROWTH TRENDS BY CATEGORY

● Local Batch services are a mature market growing at 6% per annum, adequately served by good quality bureaux. Much of the off-line data preparation is slowly being converted to on-line capture, or, at least, local capture on line-connected (or connectable) devices.

• Turnkey solutions are quite popular and have captured the attention of the small/medium company. An increasing proportion of Dutch systems houses are actively reviewing ways of entering the minicomputer implementation market. Business minicomputers are now worth half of the total shipments of computers.

• Timesharing services, as already stated, are growing at 29% and have benefited from the high level of competition on the Dutch market. In addition, communications line quality, cost and availability are among the best in Europe. The rapidly broadening array of services is also a factor in this development.

• Remote Batch services are a growing market that will receive new life from the large number of companies now offering (or shortly to offer) "total" solution RCS. These include U.C.C., ADP and National C.S.S.

MARKET CHARACTERISTICS

• On average, Dutch Services companies operate with a high level of efficiency ; they have to, since keen competition keeps price increases low and the scarcity of qualified personnel keeps pushing salary costs up.

• In comparative terms, salaries are very high when confronted with those of the UK (approximately by a factor 2) while end-user service prices are only 30% higher.

• It is sometimes misleading to analyse staff distribution by function in Dutch services companies since the title may not give a clear indication of functions. In the T/S market, it is common to use salesmen for new account business development and support people for own-customer business development (account representatives). The ratio in new companies is one to one, growing to 1 salesman for every two support staff as the customer base expands.

COUNTRY MARKET CHARACTERISTICS

RANK	COUNTRY	RCS				COMMUNICATIONS		
		Market Size	End User Pricing	Accommodation/ Staff Costs	Availability	Cost	Quality	
1	U.K.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	
2	FRANCE	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
3	GERMANY	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
4	SWEDEN	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
5	NETHERLANDS	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	
6	BELGIUM	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	
7	DENMARK	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	

Legend : Very High High Medium Low

• Turnover per employee tends to be high for all of these reasons. Typically a ratio of \$40K per employee (or more) can be found, compared to \$22K in the UK, \$33K in France and \$35K in Belgium.

• A summation of all of the key market characteristics is not easily achieved and has to be subjective. How can you compare one service with another in a different country market ? Or again, it may be acceptable to have a higher number of staff in one country since the total cost is not greater than a smaller number in a different country. Such considerations make comparisons difficult.

• Exhibit 3.2. nevertheless gives a summary evaluation and comparison of some of the key factors :

- accommodation/staff costs
- end-user pricing levels
- communications costs/quality and availability
- market size

of the important RCS markets in Europe.

INDUSTRY SECTORS

• It is useful, in the context of an initial market entry, to examine the key industrial sectors and the major corporations active in each, since they form the backdrop to business activity in the marketplace. A basic knowledge of each is mandatory.

Energy

A vital aspect of the Dutch economy, Natural gas (Groningen) currently covers 55% of domestic energy consumption and oil 40%. The consumption of the latter is rapidly increasing and there is no sign of this abating since the Dutch nuclear programme has been delayed. Holland is the largest exporter of gas in the EEC, of course, the largest user is Germany, followed by Belgium, France and Italy. Gas Unie is the sole gas distributor.

Agriculture

A strong positive trade balance founded on animal products, horticulture and a very high efficiency of the farm holdings (which are growing in size). One of the mainstays of the economy.

Chemicals

Accounts for 30% of investment in the domestic industry with 20.5 B. Guilders turnover in 1976 (Basic chemicals 15.7 B. Guilders, finished products 4.8 B Guilders). Concentrated around Rotterdam (Shell, Esso, Akzo, ICI, Hoechst). Employs 10% of industrial workers.

Steel

In trouble like the rest of the European steel industry. Exports are dropping (currently 11% to US, 17% to UK, 8% to Germany) due to strong Guilder and losses are mounting due to 13% per annum increase in the wage bill. 90% of steelworkers employed by Hoogovens (part of Estel), remainder in NKF (part of Thyssen).

Construction

Domestic building sector in decline with high unemployment. Profitability being sustained by export performance and staff reductions. Government now finances 75% of the building production. Four main companies are Hollandsche Beton Group, Steri, Bos Kalis Westminster, Ballast Nedam.

Shipbuilding

Nationalisation is in full swing aimed at reducing capacity by 30% and workforce by 25%. Dutch shipyards have accounted for more than one third of the European ship repair market. Main groups are IHC Holland, De Groit Zwijsdricht, ADM (merger proposed with NDSM) and RSV (merger proposed with IHC).

Banking

Mergers have created groups of great strength (ABN and AMRO) and government has proposed a stateowned Post Office Bank. Healthy sector with good growth and significant international business.

Insurance

Dominated by 5 companies (all Dutch) : National Nederlanden (active in the US and UK), Ennia (owns Triumph Insurance in UK, active in US), AMEV, Amfas and Stad Rotterdam. Strong UK presence in the form of Delta-Lloyd (Commercial Union) and Royal Netherland (Royal Insurance).

Other

- The aircraft industry (Fokker) is surviving on Government support Dutch have three airlines KLM, Transavia and Martinair.
- Textiles have grown considerably faster than other West European countries, aided by a restructuring programme funded by the Government. Employment is down (46,000 in '76, 77,000 in '69) and sales are up (4.5 B Guilders in 1976).

C O M P E T I T I O N

SECTION IV - COMPETITION

● In terms of the type of service offered within the Dutch market, Honeywell Bull Network Information Services (HB-NIS) is simultaneously the largest supplier of commercial Financial Planning services and T/S market leader. HB-NIS had a 48% share of the total market in 1977, (see exhibit 4.1).

● In the same service category, ADP-NIS had a 22% market share and is easily the second largest T/S supplier in the Netherlands.

● In the scientific/engineering T/S services market, CDC had the largest share with 12% of the 1977 market. IBM has 11%.

MAIN RCS COMPETITORS IN THE NETHERLANDS

SALES IN 1977

RCS RANK	COMPANY	RCS SERVICES (\$M)			ALL SERVICES TOTAL (\$M)
		RB	T/S & DB	TOTAL	
1	HB-NIS	0.4	5.7	6.1	6.1
2	IBM	3.0	1.3	4.3	9.0
3	CCN (2)	3.3	0.1	3.4	9.0
4	ACD (3)	2.2	0.2	2.4	8.7
5	CDC	1.2	1.4	2.6	2.9
6	RAET	2.0	0.3	2.3	9.9
7	ADP-NIS	-	2.4	2.4	2.4

Note : (1) all of the RCS values are INPUT estimates, based on reliable sources
(2) Computer Centrum Nederland
(3) Alpha Computer Diensten

- ACD and RAET have particularly good market images; their operations are concentrated entirely in Holland and they are Dutch owned and managed. Both bureaux are IBM equipped and they have many large Dutch corporations as clients which are also IBM equipped (e.g. AHOLD, HOOGOEVENS, PAKHOED, OGEM etc).
- UCC has an excellent image for raw machine time and reliably provide a 10 minute response in Holland.
- IBM and CDC are not so well thought of. IBM's image has been somewhat tarnished by poor reliability of their timesharing service; on the other hand, CDC are criticised for giving the impression that they're not anxious to do business.
- Since IBM and CDC are the main suppliers of scientific and engineering services and are not currently the best thought of bureaux there undoubtedly exists an opportunity for a strong competitor in this area; one vital key to success is the ability of salesmen to sell the need and to follow up with good user support. Scicon are beginning to concentrate on the Dutch market and a shipbuilding company (IHC) have just recently hived off their computer interests, both to compete in the scientific and engineering market.
- The majority of bureaux (including ACD and RAET) tend to be in the commercial and administrative fields and competition is particularly strong for these services.
- The following pages contain a short profile of each main timesharing bureau operating in Holland.

INPUT (EUROPE) SHORT FILE

Date	_____
Interview No.	_____
Reference	_____

Company HONEYWELL BULL B.V.

Address VLIEGTUIGSTRAAT 26
AMSTERDAM

Telephone (020) 15 89 55

Contact _____ Title _____

Managing Director W P VAN DUYLE

Offices also in GRONINGEN, AMERSFOORT, THE HAGUE, TILBURG

Associated with _____

Turnover \$6.1M Year 1977 Growth % _____

Employees Total _____ Operations _____ Sales _____

Owned by _____

EDP equipment MAIN CENTRE (AMSTERDAM): H6050, H1200, DATANET 355.

BRANCHES: 2 x G 130, 2 x G 265, 8 x GAMMA 10, 2 x DATANET 30.

Services offered

Time sales

Custom services (local)

Standard progr. (local)

Remote batch (\$0.4M)

Time sharing (5.7M)

Data entry

~~XXXXXXXXXX~~

Facilities management

Software packages

Management consulting

Product categories

Payroll

General accounting

Inventory control

Industry specialised

Name industry speciality _____

Other products _____

INPUT (EUROPE) SHORT FILE

Date	_____
Interview No.	_____
Reference	_____

Company IBM NEDERLAND N.V.

Address JOHAN HUIZINGLAAN 263
AMSTERDAM

Telephone (020) 5 13 31 11

Contact _____ Title _____

Managing Director _____

Offices also in ZOETERMEER, ARNHEM, EINDHOVEN, HENGELO

Associated with -

Turnover \$9.0M Year 1977 Growth % _____

Employees Total _____ Operations _____ Sales _____

Owned by IBM WORLD TRADE

EDP equipment MAIN CENTRE (ZOETERMEER): 1 x 370/125, 2 x 370/145, 1 x 370/15
1 x 155 MP, ARNHEM EINDHOVEN AND HENGELO ARE RJE STATIONS
USING 360/20'S

- Services offered Time sales Custom services (local)
- Standard progr. (local) Remote batch (\$3.0M)
- Time sharing (\$1.3M) Data entry
- ~~Management consulting~~ Facilities management
- Software packages Management consulting
- Product categories Payroll General accounting
- Inventory control Industry specialised

Name industry speciality Construction and manufacturing

Wide variety for CALL and TBS (for timesharing and remote
batch resp.) including program and report generators and
forecasting (AS FORECASTING), statistical analysis (STAT
PACE), network analysis (PNA) and financial planning (STRATPLA
packages.

INPUT (EUROPE) SHORT FILE

Date _____
Interview No. _____
Reference _____

Company COMPUTER CENTRUM NEDERLAND (CCN) B.V.

Address SCHINKELSTRAAT 4
HEERLEN

Telephone (045) 78 71 11

Contact P H VAN WIECHEN Title OPS DIRECTOR

Managing Director H B DURVILLE

Offices also in SEVERAL BRANCH OFFICES IN THE SOUTHERN HALF OF THE
COUNTRY.

Associated with COMPUTER CENTRUM GRONINGEN (CCG)

Turnover \$9M Year 1977 Growth % 10 - 25

Employees Total 220 Operations 20 Sales 40

Owned by DSM (DUTCH STATE MINING NOW CHEMICAL COMPANY)

EDP equipment UNIVAC 1100/41; UNIVAC 1108 (TO BE REPLACED BY 1100/41)
LOCAL CONCENTRATION IN BRANCH OFFICES.

Services offered Time sales Custom services (local)

Standard progr. (local) Remote batch (\$3.3M)

Time sharing (\$0.1) Data entry

Mgt. consulting Facilities management

Software packages Management consulting

Product categories Payroll General accounting

Inventory control Industry specialised

Name industry speciality Health insurance and pharmacy billing.

Other products Mainly commercial applications, some technical/
scientific. Licences KNH/PERT.

INPUT (EUROPE) SHORT FILE

Date	_____
Interview No.	_____
Reference	_____

Company ALPHA COMPUTER DIENSTEN B.V.

Address INDUSTRIEWEG 134
ROTTERDAM

Telephone (010) 151 800

Contact _____ Title _____

Managing Director (JOINT) A.F. CRAMER, IR F.M.M. VAN IERSAL

Offices also in AMSTERDAM, ENSCHEDE

Associated with _____ FOUNDED: 1971

Turnover \$8.7M Year 1976 Growth % _____
(\$1.54M CAPTIVE)

Employees Total 250 Operations 20 Sales 35

Owned by NEDERLANDSE MIDDENSTANDBANK (NMB)

EDP equipment 3 x 370/158
HB GAMMA 15

Services offered Time sales Custom services (local)

Standard progr. (local) Remote batch (£2.2M)

Time sharing (\$0.2M) Data entry

~~Not xxxxxxxx~~ Facilities management

Software packages Management consulting

Product categories Payroll General accounting

Inventory control Industry specialised

Name industry speciality (ies): Government/administration, hospitals.

Other products Standard programs for accounting, stock control, payroll,
sales analysis, hospital information, direct mail and
membership administration.

INPUT (EUROPE) SHORT FILE

Date	_____
Interview No.	_____
Reference	_____

Company CDC DATA SERVICES

Address J C VAN MARKENLAAN 5
RIJSWIJK

Telephone (070) 94 93 01

Contact _____ Title _____

Managing Director ING T C VERSCHOOR

Offices also in BRUSSELS

Associated with _____

Turnover \$2.9M Year 1977 Growth % _____

Employees Total _____ Operations _____ Sales _____

Owned by CDC CORP

EDP equipment CDC 6600 IN BRUSSELS

- Services offered Time sales Custom services (local)
- Standard progr. (local) Remote batch (\$1.2M)
- Time sharing Data entry
- ~~xxxxxxx~~ Facilities management
- Software packages Management consulting
- Product categories Payroll General accounting
- Inventory control Industry specialised

Name industry speciality Financial, process manufacturing (Petroleum),
engineering and government.

Other products Wide variety of packages for general business, scientific
and engineering applications including Arbitron (Audience
rating), BTSI (Brokerage Accounting), Telemony (Electronic
Fund Transfer), and Unistruc (Structural analysis).

INPUT (EUROPE) SHORT FILE

Date	_____
Interview No.	_____
Reference	_____

Company RAET

Address SICKESZPLEIN 1
ARNHEM, HOLLAND

Telephone (085) 452022

Contact _____ Title _____

Managing Director (JOINT) : DRS J M ALBERS, IR H MATHES

Offices also in ROTTERDAM, AMSTERDAM, GORINCHEM, GOUDA, AMSTELVEEN

Associated with ORDA - B (BELGIUM)

Turnover \$9.9M Year 1977 Growth % _____
(\$2.29M CAPTIVE)

Employees Total 360 Operations 72 Sales 26

Owned by 1/3 HEIDEMAATSCHAPPIJ 2/3 OGEM (PREVIOUSLY 1/3 PAKHOED)

EDP equipment ARNHEM - 370/155
ROTTERDAM - 370/145
GORINCHEM - DATA 100/70 II TERMINAL
GOUDA - PHILIPS P1075

- Services offered Time sales Custom services (local)
- Standard progr. (local) Remote batch (\$2.0M)
- Time sharing (\$0.3M) Data entry
- Mgt. consulting Facilities management
- Software packages ~~Management consulting~~
- Product categories Payroll General accounting
- Inventory control Industry specialised

Name industry specialities): Discreet manufacturing, retail/wholesale, banking/
financial, government, insurance, construction. Applications
include production planning, network planning, statistical
and numerical analysis.

Other products _____
Packages for book-keeping, order processing, stock control
purchase accounting, general ledger and market analysis.

INPUT (EUROPE) SHORT FILE

Date	_____
Interview No.	_____
Reference	_____

Company UCC

Address GEDEMPTE GRACHT 40
THE HAGUE

Telephone (070) 65 98 56

Contact _____ Title _____

Managing Director P. GOLDNEY

Offices also in _____

Associated with _____

Turnover \$3.6M Year 1976 Growth % _____

Employees Total 12 Operations _____ Sales _____

Owned by WYLEY CORPORATION

EDP equipment MULTIPLEXOR AT OFFICE IN THE HAGUE CONNECTED TO UNIVAC
1106 IN LONDON (EXEC 8 AS OPPOSED TO EXEC 2 IN THEIR
MAIN EUSTON CENTRE 1108's)

Services offered Time sales Custom services (local)

Standard progr. (local) Remote batch

Time sharing Data entry

Mgt. consulting Facilities management

Software packages Management consulting

Product categories Payroll General accounting

Inventory control Industry specialised

Name industry speciality (ies) Engineering, construction garages, nuclear
installation, chemical plant.

Other products _____

**INPUT (EUROPE)
SHORT FILE**

Date _____
Interview No. _____
Reference _____

Company ADP/NETWORK SERVICES INT'L

Address J.C. VAN MARKENLAAN 3 DUTCH BRANCH ; HQ IN LONDON
RIJSWIJK

Telephone (070) 94 89 62

Contact _____ Title _____

Managing Director B. TYTHERLEIGH (LONDON)

Offices also in AMSTERDAM, ROTTERDAM, EINDHOVEN

Associated with _____

Turnover _____ Year _____ Growth % _____

Employees Total _____ Operations _____ Sales _____

Owned by ADP INC

EDP equipment 14 x DEC SYSTEM 10

Services offered Time sales Custom services (local)

Standard progr. (local) Remote batch

Time sharing Data entry

~~Management consulting~~ Facilities management

Software packages Management consulting

Product categories Payroll General accounting

Inventory control Industry specialised

Name industry speciality Banking and finance, manufacturing, wholesale and retail distribution.

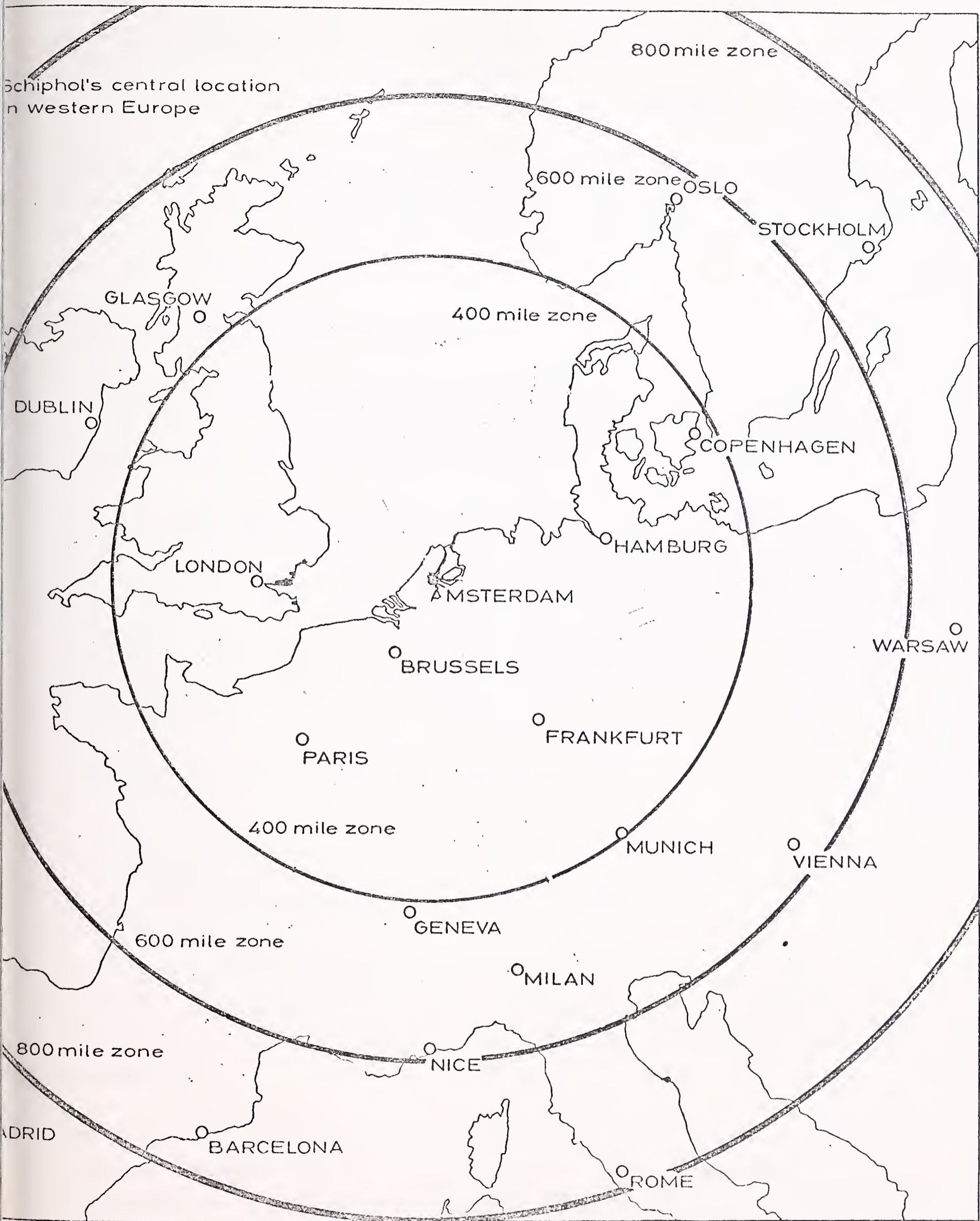
Other products Finalyst, Cyphertab, Budget, Oracle, TSAM, CPMS etc.

E S T A B L I S H I N G
A C O M P A N Y

If the assumption is made that a tentative decision to enter the Dutch market has been reached, either as a means of structuring the flow of returns (profits, dividends) from existing investments or for attacking the Dutch market itself, then the relative advantages of doing so must be analysed.

1. ADVANTAGES OF THE NETHERLANDS

- The Netherlands is located almost in the centre of the large Western European industrial areas with easy access to Paris, London, Brussels, The Ruhr, Bremen, Hannover etc. A market of 180 million people lies within an hour's flight.
- The vast majority of Dutch businessmen speak English and German, to the extent that it is unnecessary to speak Dutch for initial operations (although on-going activities on the Dutch market itself are best carried out in Dutch, of course).
- The Dutch customs system provides a number of free trade zones which offer attractive advantages for the movement of all types of merchandise.
- There are no special restrictions on the ownership by foreign enterprises of property in Holland.
- No corporation tax is paid by holding companies established in Holland. Profits and dividends can be transferred without license in the currency of the destination country or in Dutch Guilders.
- A license is not required for the transfer of capital repayments or the proceeds of liquidation of a venture, regardless of whether the investment was or not evidenced by certificates of listed or unlisted stock, provided certain simple rules are followed.
- A convertible Guilder account may be maintained in a Dutch bank by any non-resident and deposits and debits may be made



for transfer anywhere in the world. Both a foreign managed international company in the Netherlands and a foreign supplier wishing to free his Dutch customers from all foreign exchange formalities can take advantage of such an account.

- The Dutch Guilder is tied to the Deutschmark which has meant a steadily increasing currency value. Holland has low inflation, relatively low unemployment and the lowest percentage of hours lost by strikes in Western Europe.

2. FORMALITIES AND PROCEDURES

- Foreign subsidiaries in the Netherlands receive the same treatment as domestic enterprises and they profit equally from investment incentives (see V-3).

- To begin with the form of the company must be chosen i.e. whether a B.V. (Besloten Vennootschap met beperkte aansprakelijkheid) or N.V. (Naamloze Vennootschap) business form is to be adopted. "B.V." is equivalent to a private limited company and for that reason is usually preferable. "N.V." is equivalent to a public limited liability company resembling the American corporation.

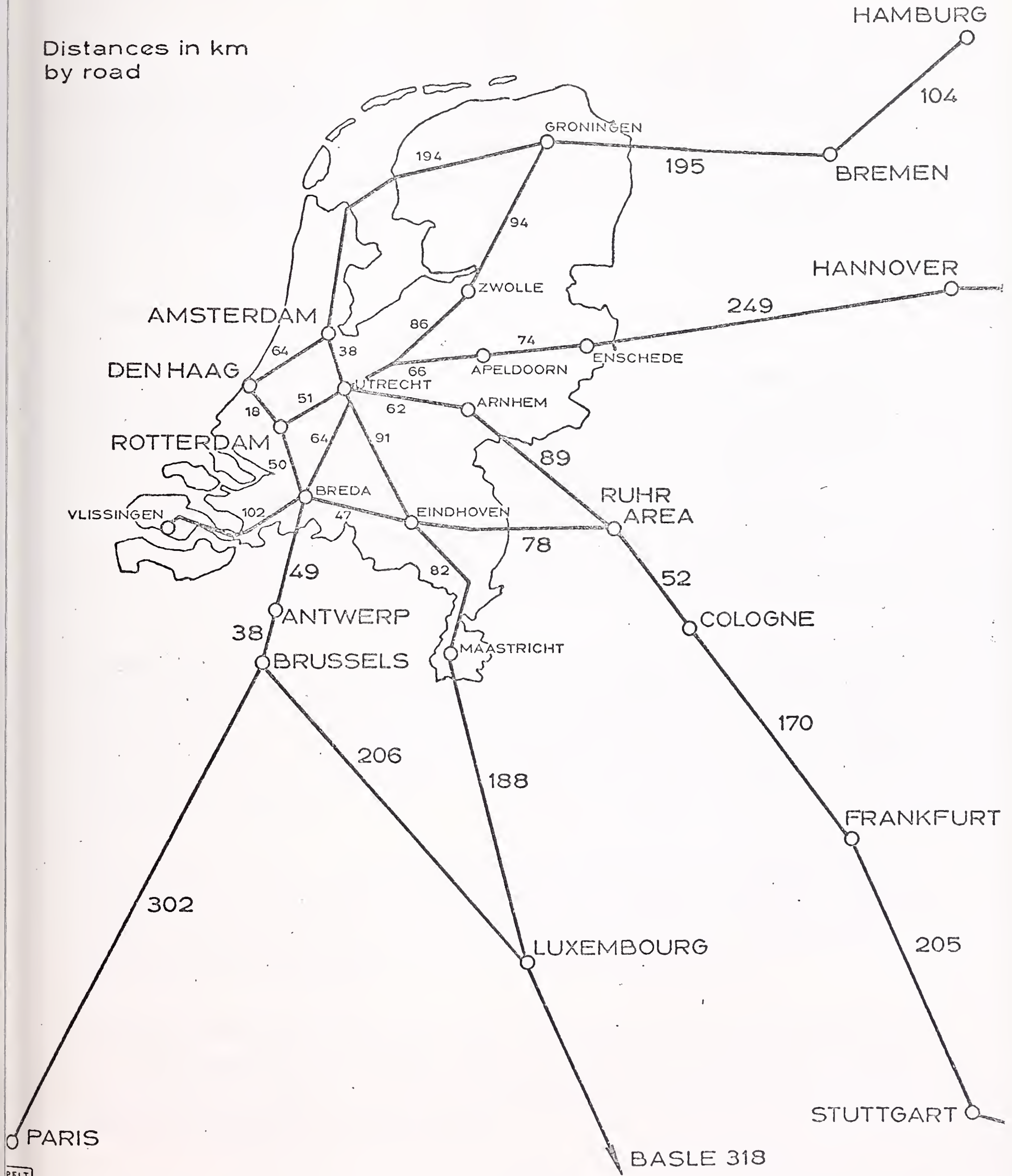
Founding a B.V. (also valid for a N.V.)

- An instrument of incorporation which includes the by-laws of the corporation (Articles of Incorporation) is drawn up in Dutch and executed by a Government-appointed notary public.

- These articles are submitted to the Ministry of Justice in order to obtain the "statement of consent" which carries an indefinite validity unless otherwise required by the Articles themselves.

- It is advisable for the founder to be (even temporarily) a Dutch concern to avoid the delays inherent in the obtention of approval by a non-resident foreign entity. The full control of the company, once formed, can then pass to a foreign entity

Distances in km
by road



PELT

without hindrance.

● The company in formation can operate on a provisional basis pending completion of the formalities. However, during the course of this period, the liability for any acts of the corporation enacted lies with the founder(s) - who may be the company formation agents/accountants - so that care should be taken as to the level of commitment engaged in during the initial 2 month period.

Company Structure

● A Dutch company must have either a Managing Director or a Managing Board and "large" companies must also have a Supervisory board of at least three physical persons. "Large" means :

- (a) issued capital and reserves \geq 10M Guilders.
- (b) total company (i.e. all offices and subsidiaries together in Holland) staff $>$ 100 employees.
- (c) the company has a holding of 50 percent or more in a company of size (b).

● The supervisory board operates with a degree of independence from both shareholders and from the management of the company. The members of this board are appointed initially by the General Meeting of the Shareholders and vacancies are co-opted by the remaining members.

● In "large" Dutch companies the Supervisory Board appoints and dismisses the Managing Director and must approve certain resolutions (listed by the Commercial Code). Supervisory Directors need not be shareholders nor have Dutch Nationality.

● Dutch companies which are part of a group having the majority of staff outside of Holland (as in the case of TYMSHARE) retain the power to appoint and dismiss Managing Directors within the General Meeting of Shareholders.

Registration

● The Articles of Incorporation and amendments (as they are introduced) plus a description of

- company location
- powers given to the company officers
- authorized capital
- paid-up capital

- must be entered in the Commercial Register in Holland.

● As soon as the company is established, a two percent capital tax is levied, payable on the contribution of the capital. In the case of partly paid-up shares the levy applies to the capital paid-up.

● Notarial fees are determined in relation to the paid-up capital increased by the loans/reserves for more than one year (i.e. the long term capital). The going rate is 4.79% of the paid-up capital plus one per thousand of the excess capital authorised.

● Notarial fees are added to by the levy of the Social Economic Board, which amounts to 20% of fees. This is the Board that monitors mergers and acquisitions and lays down the procedure to be followed.

Issuance of Shares

● The minimum paid-up capital is shortly to become 25,000 Guilder adjusted according to inflation. At the time of writing, there is no minimum.

● Shares of no par value are not allowed in Holland, so that the Articles of Incorporation must state :

- capital authorized
- number of shares (total)
- nominal value of same
- number of shares issued to company founders.

The liability of shareholders is limited to the nominal value of their shares, which disappears when the shares are paid in full.

Each share has a value of one vote.

• B.V. shares are always registered shares, whereas N.V. shares can be either registered or bearer shares. Shares representing twenty per cent of the authorized capital must be issued on establishing the company.

3. FINANCING

This section can be conveniently divided into :

- local sources of finance
- direct foreign investment
- the Dutch Government's investment policy.

Local Sources of Finance

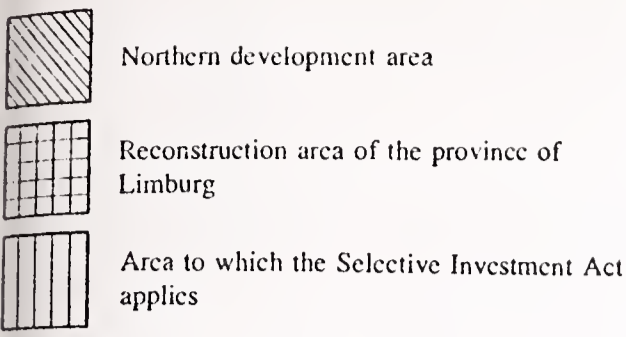
• For companies wishing to obtain public funds through debenture loans or the offering of shares, the main blocking point is the stipulation that a substantial part of the shares issued must be widely held. For a newly established subsidiary of a foreign company this is well nigh impossible.

• Equally, investment funds from the banking community is a rare occurrence in that Dutch Banks do not participate in the share capital of non-banking enterprises.

• One possibility is the National Investment Bank and its offshoots the Netherlands Participation Company and the Industrial Guarantee Fund who provide medium and long term loans and in some cases share capital.

- The Dutch commercial banks provide :
- short-term, self-liquidating loans
 - fixed export transaction loans
 - fixed asset financing loans

Collateral ranges from a top class credit rating to receivables, inventories etc. Short term loans are normally treated as overdraft facilities (without compensating balances) for which a debit balance interest and a commission are charged.



* Enterprises which are transferred from a growth center to a development center cannot claim an investment premium.

** 1. premiums are available:
 - for industrial projects in Terneuzen, Helmond, Tilburg, 's-Hertogenbosch, Nijmegen.
 - for servicing ventures in Almelo, Hengelo, Enschede, Nijmegen.
 2. premiums are available if certain conditions are met:
 - for industrial projects in Vlissingen, Goes, Bergen op Zoom, Oss, Cuyk, Uden, Doetinchem, Zwolle, Kampen, Venray.
 - for servicing ventures in Goes and Helmond.

- Leasing facilities and hire purchase are available from many sources.

Direct Foreign Investment

- There are no restrictions or limitations on foreign funds being used to establish a Dutch subsidiary company. The movement of capital is unrestrained in the other direction also which enables capital repayments to be carried out without levies.
- For on-going requirements, loans from abroad require licenses which, at present, apply only to intercompany loans with a lifetime of at least five years.

The Dutch Government's Investment Policy

- Investment is being channeled into specific areas of Holland through investment premiums, on the one hand, and the Selective Investment Act on the other hand. Providing certain conditions are met, an investor may claim an investment premium of :
 - 25% (up to a maximum of 3.5M Guilders) for development centres.
 - a mixed premium of 15% of investment in fixed assets (up to 2.1 M Guilders) plus 10,000 Guilders for every worker employed (total mixed premium less than 4 M Guilders).

The ministry of Economic Affairs can decide to exceed the maximum premiums whenever he feels justified in doing so. Premiums are paid in one lump sum or five yearly installments.

- For projects which are of value to certain development areas, a limited participation in the share capital can be added, loans and long-term investment credits at favourable rates, aid for training workers etc.
- The Selective Investment Act allows the Government to curb the establishment and expansion of companies in a designated area through a system of levies and permits and, in the extreme, a compulsory notification system.

4. TAX CONSIDERATIONS

- All Dutch companies, be they domestic or foreign, operating through a permanent establishment are subject to corporate income tax on income derived from operations on the Dutch market at the rate of :
 - 45% on taxable profits of 40,000 Guilders or less
 - 15% of the next 10,000 Guilders, providing the total does not exceed 50,000 Guilders
 - 48% on total taxable profits if they do exceed 50,000 Guilders.
- The main deductible items are depreciation of fixed assets either at normal rates or accelerated for special items (e.g. buildings, within or outside a conurbation) maintenance reserves (for assets), self-insurance reserves, replacement reserves etc.
- Losses sustained during the first six fiscal years of a new company's existence can be deducted, without time limit, from profits made subsequently. Losses in the seventh and later years can be deducted from the profit of the two previous years and the balance carried forward for six years.
- Turnover tax is carried out through VAT (value added tax) in which all goods, services and imports are subject to tax, currently at 16%. Some products have a reduced VAT rate (currently 4% on food, fuel etc) and some export services are nil-rated. VAT paid by the company to suppliers is deductible from tax incurred from invoices. Negative balances are refunded.
- Individual taxes on persons are treated elsewhere in the report.

5. MATTERS REQUIRING SPECIAL ATTENTION

- For companies operated from outside the country, a number of special considerations apply.
- The Dutch market is small and good penetration is heavily dependent on a high level of intimate contacts. All of the major prospects and most of the medium-sized ones have been visited

by all of the competitors several times. The decision to try a newcomer may be prompted by availability of a new product or price-performance service, but will occur only if a number of psychological factors are satisfied.

- Credibility is vital. The operation of the new subsidiary is critical for the achievement of this, and there is no future for companies who attempt to "dabble" in an application or two to "see how it goes".
- The Dutch are fundamentally conservative in their attitudes. Thus, while it is acceptable in the short term to operate with English speaking staff, the ability to speak Dutch is mandatory for good penetration. For this reason it is highly desirable to start the operation with a Dutch national who has good business contacts (i.e. to do things "right" from the start).
- Closely coordinated operations are essential ; inconsistencies in product/service would suggest a lack of credibility. Rivalry between European operations would be certainly damaging.
- There is still a national prejudice against adversaries of the last war, thus German nationals are not adviseable for management or customer interface roles. British nationals, on the other hand, are quite acceptable, provided they speak Dutch.
- In all, it is preferable for the management to be well-connected Dutch nationals, with direct reporting to the corporate management. Partial ownership by one or more large Dutch companies would be a very useful asset, especially if they were banks.

S T A F F I N G

1. AVAILABILITY AND QUALITY

- In common with the rest of Europe good quality experienced staff are in short supply; but the situation is improving and staff can be found within two months if appropriate compensation (see next sub-section) is being offered.
- Dutch staff are faithful to one employer if well treated, and don't like to change companies. They are generally unwilling to re-locate within Holland and are very resistant to moving their residence outside the country. For projects, bachelors are willing to move temporarily whereas married people will only work away from home for highly important or critical work. Nevertheless, the multi lingual capabilities of Dutch staff (many speak English plus French and/or German) make them a valuable asset in international operations.
- Staff recruitment through advertising is usually disappointing. Agencies are more effective but very expensive as are head hunters who are good for top people. The most effective way to recruit is by recommendation and individual contact by existing staff members with well thought of staff elsewhere (e.g. in competitive companies).
- A significant external source of staff in the U.K. Staff from the U.K. are well accepted by the Dutch and they have the unique incentive of being able to double their salary in Holland. Their acceptability does depend on their ability to speak, or at least be willing to learn, the Dutch language.
- Other nationalities which have no historic conflict with the Dutch are also acceptable, for example Americans and Danes. German technicians are less well accepted but not salesmen. French staff also are less well accepted. The need to speak Dutch is important to acceptability - and to speak it particularly well if your nationality is in the "less well accepted" category.

2. COST

• The cost of labour in the Dutch computer staff market is comparable with the most expensive countries in Europe; only marginal differences exist between the cost of staff in Holland and Germany, France and the rest of Benelux. This high cost of labour results from the combined effect of:

- high salaries (e.g. U.K. x 2)
- employer social security contributions which are among the highest in Europe.

• The salary ranges given in Exhibit VI-1 are current and include additional payments to basic salary which are customary in Holland; these include holiday money, profit sharing, bonuses, overtime and irregular work compensation and, travelling and car allowances.

EXHIBIT VI-1
DUTCH D.P. STAFF SALARY RANGES (1978) *

STAFF CATEGORY	RANGE (\$ Kper annum)
Operator (trainee - experienced)	7.5 - 22.0
Sen. Operator (shift ldrs - ops. mgrs.)	12.6 - 31.8
Programmers (trainee-experienced)	9.8 - 22.0
Sen. Programmers (senior/chief/ prog. mgr.)	17.3 - 30.4
System Analysts/Senior Systems Analysts	14.9 - 25.7
Analyst/Programmers, Senior Anal. Progs.	19.6 - 31.8
Chief Systems Analyst/Systems Mgr.	21.5 - 36.4

* A more detailed table is presented in Appendix II

• Administration of social security contributions is complex and each employer has to deal with two separate authorities, these being the Collector of Taxes (Belastingdienst) and a general administrative office (usually the GAK). The social security grouping (known as BV25) which would apply to many computer services staff requires the employer to contribute up to 26% of basic salary. A breakdown of contribution to each fund is given in Exhibit VI-2.

EXHIBIT VI-2
SOCIAL SECURITY CONTRIBUTIONS

Fund	Description	Contributions %		Total	Salary Limits (Guilders pa)
		Employer	Employee		
AOW	General old age pension act	-	10.4	10.4	38,800
AWW	General widows' and orphans' benefits act	-	1.5	1.5	"
AWBX	Exceptional medical expenses (compensation)	2.5	-	2.5	"
AKW	General family allowances act	0.8	-	0.8	"
KWL	Wage earners family allowances act	2.5	-	2.5	"
AAW	General disability act	1.9	-	1.9	"
ZW	Sickness benefits act	7.35a	1.25a	8.6a	51,220
WAO	Disablement insurance act	6.05*	3.65*	9.7*	"
WW	Unemployment insurance act	0.65a	0.65a	1.3a	"
ZFW	Health insurance act	4.1+	4.1+	8.2+	28,600
	TOTALS	<u>25.85a</u>	<u>21.55a</u>	<u>47.40a</u>	

Notes: * After deduction of 14 Guilders per working day
 + Only in the case of fixed wages not exceeding 33650 Guilders p.a.
 a Average figure

- All social security contributions are tax deductible unlike, for example, in the U.K. there is one exception to this rule, that being the employee's contribution to ZFW.

- There are some useful concessions available to foreigners, for example:
 - Certain foreign employees may be entitled to a special 35% reduction of gross salary for tax and contribution calculation purposes for a maximum of 60 months.

 - Reciprocal arrangements exist between members of the EEC whereby as long as an employee continues to contribute in one of the member states his benefit status in his home state is deemed to have been continuous and without loss of value.

 - U.K. employees seconded to work in an EEC state can continue (as can the employer in their cases) to pay U.K. contributions while being able to receive benefits in the other member state. This concession applies for periods of one year or less.

C O M M U N I C A T I O N S

SECTION VII - COMMUNICATIONS

- The Netherlands has the cheapest communications network of all of Western Europe and it is of excellent quality. In comparison with the other markets, public switched network (PSN) costs are negligible, being largely independent of distance.
- Leased line costs are one tenth of those of France and connection costs are equivalent to those of the UK.
- The low cost of communications and the central location of the Netherlands with respect to large industrial areas like the Ruhr-Gebiet (Germany) etc is attractive for RCS suppliers wishing to use the Netherlands as a processing centre for European operations, as well as servicing the Dutch market itself.

DOMESTIC LINE COSTS

- The intra-locality call costs are dependent on type of line (2-wire, 4-wire, superior quality) and distance :

<u>DISTANCE</u>	<u>MONTHLY CHARGE (\$)</u>		
	<u>2-wire</u>	<u>4-wire</u>	<u>superior quality</u>
0-10 km	77.1	92.5	145.4
10-25 km	110.1	132.2	185.0
25-50 km	176.2	211.5	264.3
50-100 km	220.3	264.3	317.2
> 100 km	242.3	290.8	343.6

- "Superior quality" refers to the ability of a line to handle 4800 bps while the normal quality is only valid for 2400 bps.
- In addition to the above tariff, a unit cost of from \$7.70 to \$16.50 (according to distance) is levied for local calls (or inter-locality calls).

● It is possible to tie up to three user special quality lines into a single PTT connection point for which the monthly rentals are :

- \$ 19.82 for the first line
- \$ 26.43 for the second line
- \$ 33.04 for the third line

● High speed (48 KHZ) lines is directly related to tariff for calls costs given above in that they are approximately eight times the cost.

INTERNATIONAL LINE COSTS

● It is not possible to provide a simple formula for the calculation of the international line costs to major cities. Originally (prior to 1972) these international tariffs held anomalies such that, for example, it was cheaper to call Brussels from London than London from Brussels. Following the Eurodata study, the various country tariffs were modified to eliminate these discrepancies (in effect by increasing the cheaper rates to the most expensive !) such that major differences no longer exist.

DUTCH P.T.T. CONTACT

● As and when the profile of TYMSHARE's exact requirements has been determined, it will be necessary to discuss them with the Dutch PTT, who can establish an accurate quotation for price, reliability and schedule of implementations for the network.

● The address for this is :

Dutch P.T.T.
Kortanaerkade, 12
's-Gravenhage

Telephone : (070) 753078

Telex : 31111

S T R A T E G Y

1. STRATEGY ALTERNATIVES ALREADY USED

● There are four basic market alternatives to a U.S./European based RCS supplier. These have been likened to and analysed as mini-case studies of U.S. vendors who have followed different approaches over the past 5 years:-

A. The "Comshare" Approach

● This approach is that of marketing external processing power (provided by transatlantic cable) and the leveraging of each of the national markets entered.

● It has been successful, in terms of revenue growth and profit expansion, but has been highly dependent on the early identification of local-need applications which are satisfied by a locally-developed package(s). These were then leveraged by heavy marketing emphasis and constantly expanded by improvements to the package(s).

● The success of such a venture is also dependent on competitive pricing which maintains the "edge" over local competition and on the presentation of a credible local image in spite of an off-shore approach.

B. The "ADP" Approach

● This is dependent on an aggressive acquisition program of companies that have a profile "fit" with the parent/acquirer in terms of equipment used, applications offered, services provided etc.

● The gradual accumulation of local processing capability is fed by transferring processing workloads from one group to another, eliminating centres, clients that do not "fit" (i.e., have non-standard requirements) and company activities that are germane to the mainstream activities (in this case batch, RB, T/S processing of payroll, general accounting and auto parts analysis).

- The sales/marketing groups are maintained and strengthened and, since other parts of the companies acquired are reduced or eliminated, the ratio of marketing to operations increases.

- This asset stripping approach has been very successful and, above all, profitable. ADP began with IEA in Holland (batch services), acquired European Timesharing services through Cyphernetics, expanded them with the TSL acquisition (Delos) and again with Management Dynamics (U.K.).

C. The "MCAUTO" Approach

- This is basically a joint venture, based on the provision, by the U.S. partner, of specialised applications that correspond to the profile and market image of the European partner.

- Using the joint resources of both the U.S. and European partner (particularly the marketing staff of the latter), an industry specialised market thrust is organised using the local processing capability of the European partner and the combined product catalogue of both.

- As the processing demand builds, the U.S. resources are brought into play, both in machine time and in specialised support staff.

- MCAUTO's ventures with Societe Nationale de Petroles Aquitaine never got off the ground through (a) a failure to clearly define the respective roles of each partner, (b) the inadequate size of SNP's RB services department, (c) the gradual disenchantment of MCAUTO as the months went by and little was achieved.

D. The "Rapidata" Approach

- This is based on the creation, from scratch, of a marketing and support operations in what is judged to be the best market (in this case the U.K.), with the hope of building from there as the client base grows.
- This approach is highly dependent on the people chosen, the rapid creation of a good market image and the existence of a well-monitored business plan.
- Rapidata had a sketchy business plan, chose inadequate staff (who spent most of the budgeted first year expenses without achieving much revenue) and provided little local guidance and support. They then tried, unsuccessfully, to back out of the market as fast as they had come in.

2. A PREFERRED COMPOSITE STRATEGY

- Since the approaches already described were taken, sufficient time has elapsed to enable newer contenders to benefit from their experience. A composite strategy utilising the best aspects of the foregoing and phasing their implementation is recommended.

- The largest bureau companies in Holland (Honeywell, IBM, CCN, ACD, CDC and RAET) were set up either from "square 1" (i.e. the Rapidata approach) or were created by hiving off large company or nationalised corporation computer operations. Setting up from "square 1" is expensive as Rapidata found and sufficient numbers of good staff would be hard to find within a reasonable timescale. The hiving off approach or some variation of this will be referred to later (sub-section 4).

- The companies which have entered (Atkins, Comshare, UCC) or are trying to enter (Scicon) the Dutch market by the Comshare (off-shore) approach have not so far achieved significant size nor, in some cases, much, if any profit. The economics of such an approach particularly when based in the UK are appealing; however, the Dutch market is very sensitive to local presence and commitment and prefers to buy from companies that can support them from local resources.

- The preferred composite strategy utilising the ADP (acquisition) and/or MCAUTO (joint venture) approach combined with the Comshare approach. The acquisition and/or joint venture would be used to establish an adequate local presence in the form of premises, equipment, staff, contracts and in effect the all important market acceptability. A joint boost to performance would come from integration of products and services, particularly with synergy and local requirements in mind. Subsequently, the facilities and capacity of another Tymshare centre in Europe may be required to accelerate growth. This could arise from having a wider range of equipment, software and technical support available; it could also arise in the

case of a U.K. centre from price advantages gained from a lower cost base. Small acquisitions might also be made to establish a branch network and with it more thorough national coverage; the candidates need not be bureaux but could very objectively be communication orientated systems or software houses. To summarise, the major phases would be:

1. Commission search for Dutch acquisition or joint venture partners, negotiate with those which are compatible.
2. Establish a Dutch Tymshare subsidiary and (as referred to in Section V) a Dutch holding company for all European interests.
3. Integrate the acquired and Tymshare products and services to increase sales potential in the Dutch market. Re-train sales and support staff, hit the market with more power in Dutch clothing.
4. Establish data links with the U.K. and possibly French and German Tymshare operations. Avoid de-motivating the Dutch operation by charging too much from the U.K. French and German ends!
5. Acquire small bureaux and systems or software houses in significant provincial Dutch towns and cities to build a network.

3. PRICING

- Prices for bureau services vary considerably depending on whether the bureau has covered its costs with captive work (e.g. state owned bureaux such as CCN and CCG) or is a large and reputable operator without such advantages (e.g. Honeywell, IBM).
- Subsidised bureaux are charging one third less than a good quality U.K. bureau (e.g. Scicon). However, it is a considerable advantage to charge on a U.K. price book in competition with the other bureaux; the discount (or surcharge!) achievable ranges from 20% to 40% assuming the same task and operating solution.
- The prices being charged for software and consultancy are:

programmers)	\$26 - \$40 per hour
analyst/programmers)		
consultants		\$40 - \$48 per hour
management consultants		\$660 - \$880 per day

- Bureaux and staff charges are on a similar level with those being charged in Germany and France.

4. A SECOND STRATEGY

- o The 'composite strategy' already described depends on the availability of existing service bureaux which are both suitable and available for acquisition. Such a requirement may not be achievable, particularly if the time scale is limited.

- o One alternative could be based on the acquisition of in house computer departments, that is equipment and staff. The objective would be to offer the client continuity of computer services whilst releasing excess staff and equipment capacity for commercial operations; if a good number of such situations were amalgamated, a substantial data centre with a viable proportion of captive clients would be formed.

- o A second alternative could be based on the provision of a back up and peak off load data centre for some of Holland's largest corporations; this would form a base revenue to be supplemented by bureau services to a wider market. Banks, insurance companies and others are increasingly concerned about their reliance of computer systems and their consequent vulnerability to equipment breakdown and to major disasters or terrorist action. Most of the large corporations are heavily invested in IBM 370 hardware and are approachable with solutions to this problem. Any sound proposal which could offer a real opportunity for reduced (rate of) hardware investment and guaranteed insurance for the quality and availability of their computer systems would be well received. In fact, several prospects have been qualified during market study work recently carried out in Holland by a member of INPUT's staff.

- o The 'second strategy' would involve the creation of a new Dutch service bureau from existing inhouse equipment, staff and work loads, using alternatives one or two, or a combination of these. Since IBM has around 70% of the market and there is a real gap in the Dutch market for a large IBM equipped bureau, then a new service bureau must be IBM equipped.

A P P E N D I C E S

APPENDIX I

CONVERSION RATES USED IN THIS REPORT

One Dollar Equals :

<u>COUNTRY</u>	<u>RATE</u>	<u>UNIT</u>
● FRANCE	4.74	Francs
● FEDERAL REPUBLIC OF GERMANY	2.11	Deutschmarks
● UNITED KINGDOM	0.51	Pounds Sterling
● NETHERLANDS	2.27	Guilders
● SWEDEN	4.65	Swedish Krone
● NORWAY	5.13	Norwegian Krone
● FINLAND	3.98	Markka
● DENMARK	5.72	Krona
● BELGIUM	32.70	Belgian Francs

APPENDIX II

1978 DUTCH COMPUTER STAFF SALARIES

FUNCTION	MID RANGE (\$K p.a.)
Trainee Operator	7 - 15
Junior Operator	10 - 16
Operator	11 - 18
Senior Operator	14 - 22
Shift Leader	12 - 20
Operations Supervisor	17 - 26
Operations Manager	18 - 31
Trainee Programmer	10 - 15
Programmer	12 - 17
Senior Programmer	14 - 22
Systems Programmer	15 - 25
Chief Programmer	17 - 27
Programming Manager	18 - 30
Chief Systems Programmer	20 - 31
Junior Systems Analyst	15 - 22
Systems Analyst	17 - 25
Analyst Programmer	19 - 31
Senior Analyst Programmer	22 - 31
Chief Analyst Programmer	22 - 33
Systems Manager	25 - 36
Salesmen	23 - 35
General Manager	28 - 46

APPENDIX III: DEFINITIONS

● COMPUTER SERVICES

These are services provided by vendors which perform data processing functions using vendor computers, or assist users to perform such functions on their own computers.

The following are definitions of the modes of service used in this report:

● REMOTE COMPUTING SERVICES (RCS)

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:

1. INTERACTIVE (timesharing) is characterised by interaction of the user with the system, primarily for problem solving timesharing, but also for data entry and transaction processing; the user is "on-line" to the programme/files.
2. 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.
3. DATA BASE is characterised by the retrieval of information from a vendor-maintained data base. This may be owned by the vendor or a third party.

o BATCH SERVICES

This includes data processing performed at vendor's sites of user programmes and/or data which are physically transported (as opposed to electronically by telecommunications media) to and/or from those sites. Data entry and data output services, such as keypunching and COM processing, are also included. Batch services include those expenditures by users which take their data to a vendor site which has a terminal connected to a remote computer used for the actual processing.

o FACILITIES MANAGEMENT (FM)

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

o PROFESSIONAL SERVICES

Management consulting related to EDP, systems consulting, systems design and programming, and other professional services are included in this category. 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.

o SOFTWARE PRODUCTS

This category is for users' purchases of systems and applications packages for use on in-house computer systems. The figures quoted include lease and purchase expenditures, as well as fees for work performed by the vendor to implement and

maintain the package at the users' sites. Fees for work performed by organisations other than the package vendor are counted in professional services. The two sub-categories are:

1. SYSTEMS PACKAGES are operating systems, utilities, and language routines that enable the computer/communications system to perform basic functions. This software is provided by the mainframe manufacturers with their hardware; other vendors provide improved versions of this and special-purpose routines. This classification includes compilers, data base management software, communications packages, simulators, performance measurement software, diagnostic software, and sorts.
2. APPLICATIONS PACKAGES are software which perform processing to serve user functions. They consist of general purpose packages, such as for accounting and inventory control, and special purpose packages, such as personal trust, airline scheduling, and demand deposit accounting.

o PROCESSING SERVICES

Processing services encompass FM, RCS, and batch services: they are categorised by type of service, as distinguished from mode of service, bought by users as follows:

- GENERAL BUSINESS services are processing services for applications which 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.

- INDUSTRY SPECIALITY services provide processing for particular functions or problems unique to an industry or industry group. The software is provided by the vendor either as a complete package or as an application "tool" which the user employs to produce its unique solution. Speciality 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 industry speciality 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.



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