Objectives and Scope

Based on primary user research, INPUT perceives that users are generally dissatisfied with the customer technical support they receive in a multi-vendor and platform environment, and yet this issue is becoming an increasingly critical business differentiator.

In this context, IBM wishes to use INPUT market research to establish an independent assessment of the service offerings of Independent Software Vendors (ISVs).

The scope of the study will address the following issues:

- The provision of post sales software support
- The hours of support provided
- The geographical restrictions currently imposed by vendors across Europe
- The response times currently experienced
- The quality of support provided
- Additional services required such as installation and customisation of the products
- The breadth of support provided in conjunction with the platform and complex environment in which the software is to operate.

Based on existing INPUT research, specific reference will be made to the following:

(1) Users' perceptions that Equipment Vendors are perceived to offer a higher quality of service and better value for money than either third party channels or independent software vendors

(2) The importance of software support to users by platform vendor, for IBM versus non-IBM product users, which shows the major influence IBM has in establishing market demand

(3) INPUT's view that Vendors' breadth of service and geographic spread have a direct bearing on ability to provide quality of service and timeliness of delivery for software support services.

S1 CAGR

other mkts

Belgium — yes — CAGR for PS of 15%.
14%
— Part Dutch speaking — use NL leverage..
— US. parentage not an advantage.
leaders French extract — Bull
— Sema
— CGS.

E. Europe — CAGR for PS of 15% MARKOW
✓ 17%

A Proposal for
the Conduct of a Market Research Study

for

IBM United Kingdom Ltd.

Customer Perceptions of ISV Services

from INPUT, Ltd.

Cornwall House
55-77 Slough High Street
Slough, Berks SL1 1DZ

May 1996

County Summary

"The big four"

SI CAGR

[reasons]

UK – yes
14%

- Biggest market in Europe: 2x size of D by 2000.
- Relatively unfettered market
  - Gvmt perceives competition as a 'good thing'
- IT 5 yrs ahead of say D.
- CAGR 14%. 1995-2000. (for PS)
- US technol held in awe.

but need alliances: logica, ICL, Racal, BT.

need PFI understg.
- Politics driven

F – No
11%

- CAGR for PS 9%.
- foreign Co's @ disadvantage cf. Bullets.
- resistance to US. cultural imperialism.

D – maybe
12%

- CAGR for PS 12%.
- US. technol grudgingly respected, German nat's preferred.
- industrialist driven

I – No.
11%

- CAGR Respectable 12%.

but high 'cultural specificity' KOTLER

- low US Co penetration. (except IBM).

Deliverable

From our extensive database and research material, INPUT will create a 6 to 8 page pamphlet, comprising a combination of quantitative and qualitative analysis suitable for replication and distribution by IBM throughout the ISV marketplace and in various media. It is understood that nominated IBM personnel will be involved in report development and finalisation.

Timeline

If IBM UK Ltd. can authorise commencement of the study by Friday, 10 May, 1996, INPUT can deliver the results by Monday, 20 May, 1996.

Experience and Responsibility

INPUT feels well placed to conduct this study for IBM UK Ltd. as it is focused on an area already thoroughly researched by INPUT through its Software Support Programme. Chris Harris, INPUT's Senior Consultant for Custom Consulting, would be responsible for the overall conduct of the study and has direct software support experience.

Professional Fees

The professional fees for this research will be £4,000 (excluding V.A.T.) and excluding any expenses which would be unlikely to exceed 5% of the total project fee.

Authorisation

One-half of the professional fee is due and payable at the beginning of the project and the remainder, plus disbursements for telephone, travel and report production, will be billed at competition.

SICAGR

Other MKTS

NL — yes — CAGR of 14% for PS.
MAAP
13%.

Swe — maybe — CAGR (PS) of only 8%. MAAP 8%. but leading edge technol esp. in Cellular phones.
✓ 11%.
— Rel. low cultural specificity ← (all Scand. except Fin.)
— Bill gates rated Stockholm 'cite, of world importance for IT'

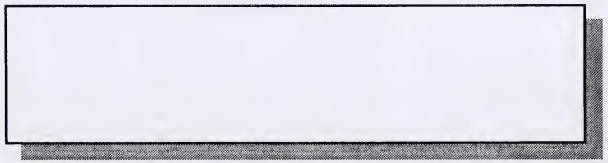
Fin — maybe — CAGR 13%. MAAP 7%.
✓ 14%.
Cellular phones — Nokia ..
— main players all local (1) Tetotedas
(2) ~~Nokia~~ KT-datacentre
(3) Nokia Data.
— BP "backward". ⟶ way into Russia??

Den — maybe CAGR 12%. MAAP 7%.
✓ 13%.
— 3rd biggest Kommunedata. 8% m/share.
— V. imp to get tve ref. site for credibility
Trewhas BG bank merger with Girobank.
(I) IBM
(II) computer resources.
— ↑ standardisation of s/w packages ∴ of high UNIX usage.

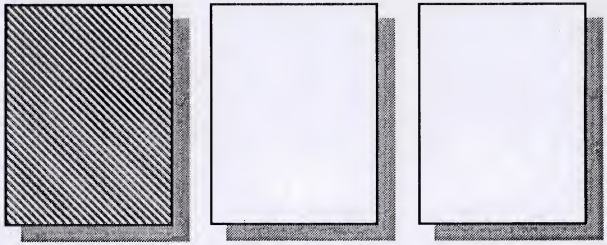
Nor — no CAGR 13%. 3%.
✓ 12%.
but IBM has 40% m/share!

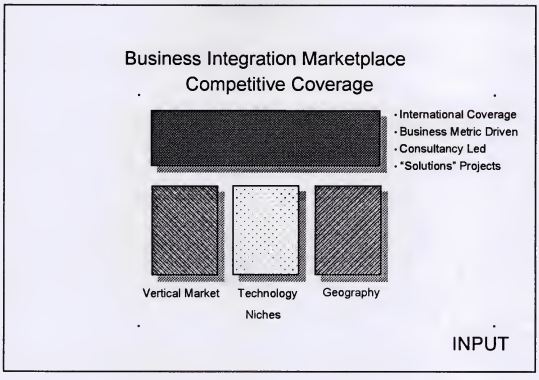
Business Integration Marketplace

Competitive Coverage



- International Coverage
- Business Metric Driven
- Consultancy Led
- "Solutions" Projects





INPUT understands TRW's main core business in the US to be car compenent manufacture, with a strong engineering and technological bias. Through diversification, IT skills have been gained and these were leveraged first in the home market and then in Europe. the question is - where to proceed from here?

? INPUT's view is that unless TRW has very large resources and is able to maintain a loss-leadership position in order to win European contracts, it should adopt a market niching strategy. The options are as follows:

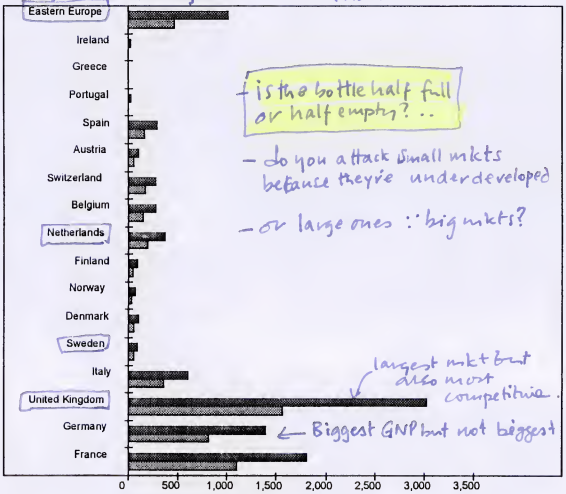
- specialising by vertical market,
- specialising by technology
- specialising by geography
- specialising by size of customer
- readjusting the marketing mix to provide a unique benefit.

Our analysis suggests a combination of the above.

Growth in the European Systems Integration Market 1995-2000 ($m)

CIS + Czech/Slovak rep. + Poland + Bul + Hun. + former Yugoslavia .. + Romania .. Baltic States.

ie central + Eastern Europe.



address issue:

(1) From current sales base of: NL UK Swe where to?

(2) if clean slate, where to?

+ is the bottle half full or half empty? ..

– do you attack small mkts because they're underdeveloped

– or large ones : big mkts?

largest mkt but also most competitive.

← Biggest GNP but not biggest SI mkt.

Economic

INPUT recognises that to assist TRW in identifying new European business opportunities, economic analysis of national markets is important. However, if GNP and economic growth were the only factors which determined the attractiveness of SI opportunities, then Germany would be the largest SI market - which it is not. Paradoxically, INPUT views greatest SI opportunities to occur in countries undergoing economic problems and restructuring. For this reason (among others) the UK has presented excellent opportunities for SI vendors.

To underline the point, Hamel and Prahalad note the following: *"Far from being a tribute to senior management's steely resolve or far sightedness, a large restructuring and reengineering charge is simply the penalty a company must pay for not having anticipated the future".* Extending this view into the future, INPUT believes that Eastern Europe offers considerable potential,although default risk is higher than in mature markets.

Political

Input perceives

Countries taking the political route towards *privatisation* and laissez faire government to be the ones offering best SI opportunities. These markets are exposed to increased competition and in turn, this often forces radical redesign of business practices and ITsystems.

Taking the UK as an example, many SI opportunities have resulted from the 'Thatcher revolution' - two typical examples are (1) the £68M NIRS2 Inland Revenue contract which is intended to reduce costs by shifting the tax system towards self assessment and (2) the electronic tollway project for motorways, guided by the 'user pays' principle.

INPUT believes the significant SI opportunities presented in the European telecommunications sector are largely the result of the same competitive trend - i.e. company level change forced by politically induced deregulation of the industry. Using the same argument, highly regulated (and therefore stable) industry sectors, such as the European airline sector, remain relatively unattractive.

Cultural

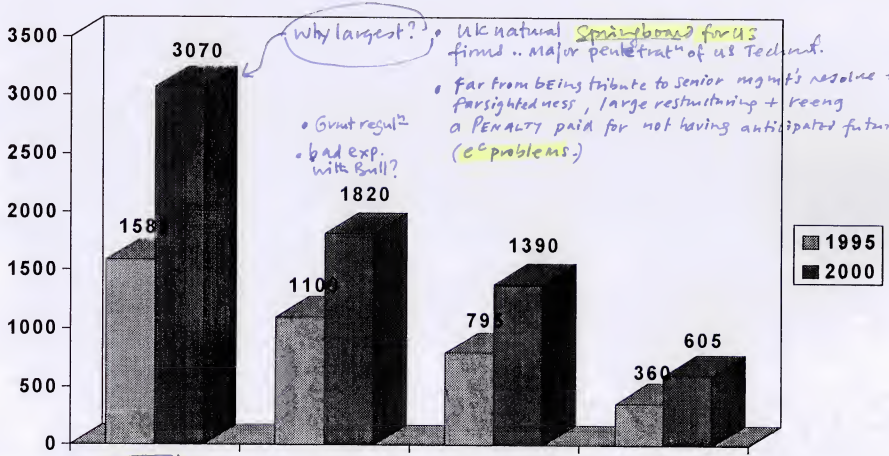
Cultural issues affecting business are possibly among the most difficult to analyse, given that any commentator has 'cultural baggage' to begin with. Yet it would be naive to say that culturally all of Europe operates in the same way. From INPUT's own experience, we perceive that TRW's American parentage is a distinct advantage in some countries and a distinct disadvantage in others:

- In the UK, the US is held in awe as a provider of IT and we believe that Andersen Consulting and EDS have marketed their American origins to maximum effect. TRW should do the same.

- In Germanic countries, and Scandinavia we believe that there is a grudging respect for American technology and whilst US companies are readily contracted, country nationals are expected to present in key positions.

- At the other end of the spectrum, we believe that French organisations are distinctly averse to adopting US technology. The consistent support of Groupe Bull by the French government is an indication of a desire to keep strategic technologies 'in-house'.

Major National Systems Integration Markets 1995-2000 ($m)



why largest?

- UK natural springboard for US firms .. major penetrat^n of US Technol.
- far from being tribute to senior mgmt's resolve + farsightedness, large restructuring + reeng a PENALTY paid for not having anticipated future. (c^o problems.)

- Govt regul^n
- bad exp. with Bull?

logica: footholds in UK, Swi, Nthlds, Belg.

✓ UK
- US technol held in awe
- privatisation

CAGR 14% for prof services:

France
×
- Internet 50% French content.

9%

Ecompetitive tendering Directive

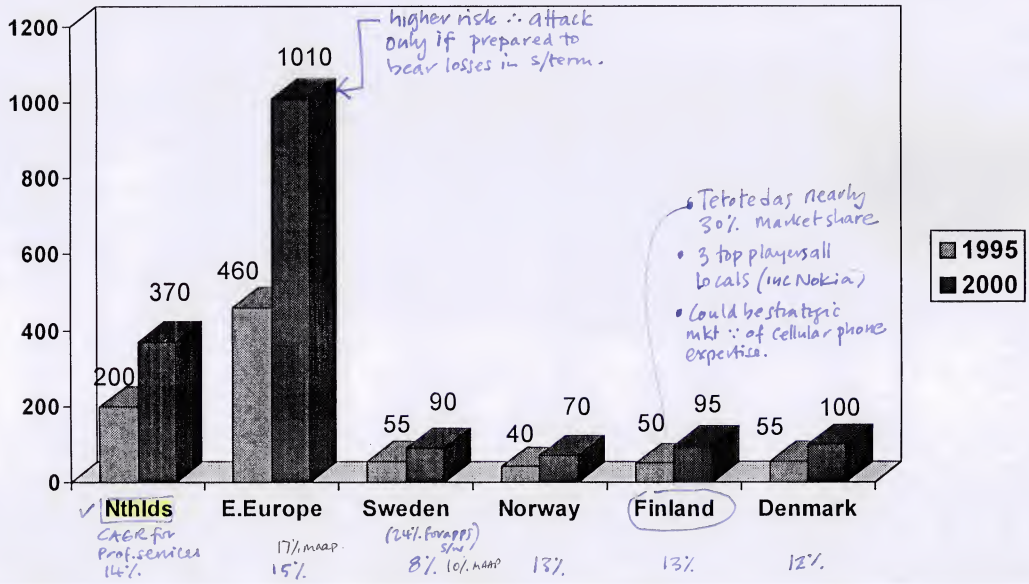
Germany
- grudging respect.
- telecbus seismic.

12%

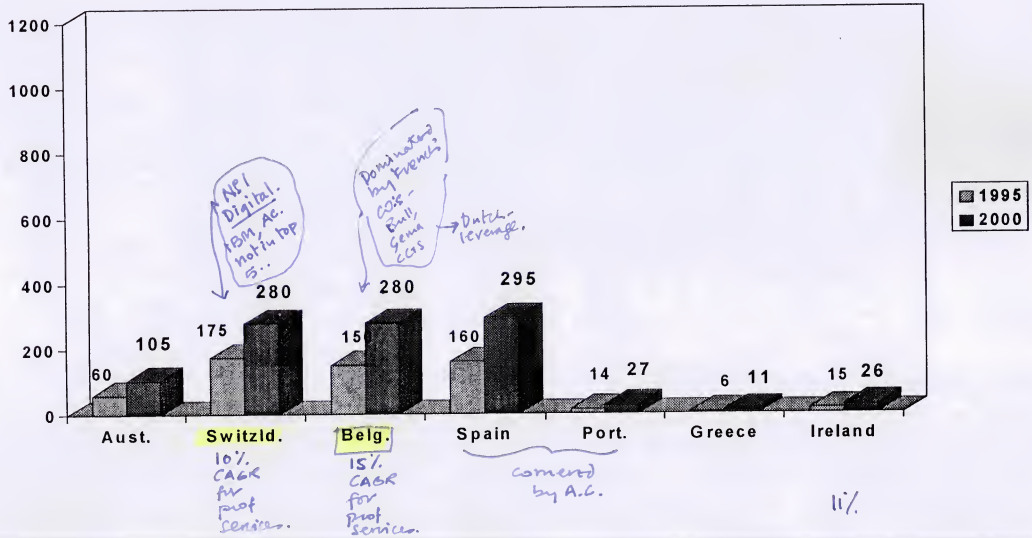
Italy
× IBM 30% mkt share.

12%

Minor National Systems Integration Markets 1995-2000 ($m)

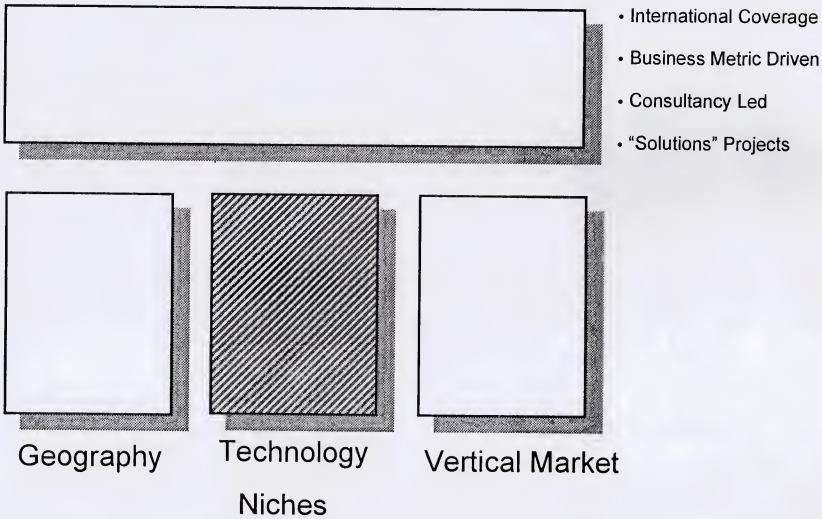


Minor National Systems Integration Markets 1995-2000 ($m)

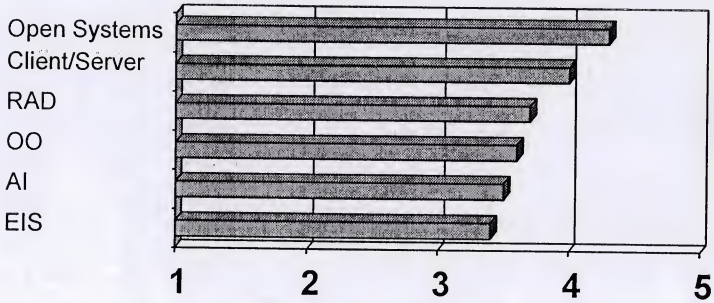


Business Integration Marketplace

Competitive Coverage



User's Current Technical Focus of IT Operations - Europe



1 = Not at all

5 = Very Strongly

Sample of 90 European IT user organisation

INPUT

Key Applications/Technologies

- Data Warehousing
- Neural Nets
- Groupware
- Workflow
- ISDN
- ATM
- Wireless LAN
- Structured Cabling

INPUT

Altering Groupware Opportunities

- Notes

1995 - 4.5

1996 - 8.3

2000 - 27.10

Notes '95 market share = 75%
Novell '95 market share = 20%

- Internet Groupware

1995 - 0.3

1996 - 1.5

2000 - 33.3

DEC, Action Technologies
Radnet, Bittco, Netscape,
UNAS 95 & 2000
market share = ?

INPUT

ERP Software - Service Opportunities

- SAP - 1995's major (non-Internet related) success story ... everywhere but France
- BAAN - coming strongly to challenge SAP
- Oracle Financials (+)
- JBA, SSA, JD Edwards

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May 1996

arial bold

Switch From Macro to Case Studies.

- UK -

Central Govmt projects [Main forces]

(I) political pressure → downsizing, spending cuts
(II) ↑ O/S, esp FM (similar trend in Swe)
(III) ideological bias for PFI.

(1) National Insurance Recording Scheme - A/C

- aim 10k staff to make on-line changes to NI records.
- need new dB.
- penalty clauses ∴ late.

(2) Computerised Environment for Self Assessment EDS.

- £200m computer project to support inc. tax self assess.
- ICL provides Front-end S/ware, Adabase (E) database.
  phases: (I) mgmt acct? info.
  (II) main sys for self assmt.
  (III) 'mgmt by exception' to screen forms.
- EDS 10hrs +/day - claw back profits.

(3) Dept. of Transport e^c tolling sys^tm.

[Tollstar] - Peek (leader)
- Uni of N'cle
- Racal
- Combitech
- etc.

- opp for TRW..

Objectives and Scope

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post office project (PFI)

For Royal Mail ~ £1bn over 8 years.
aim: automate counter services / benefits payments.
3 consortia:

A/C	ICL	IBM
· CardLink	Girobank	Racal
Citibank	Delarue	Thorn EMI
HP.	Irish P.O	FDR
BT.	Escher (U.S. s/w co.)	Logica
	Oracle.	C+L
		Olgilvy + Mather.

Banking + Finance

major phase of SS projects complete –
CREST (settlement of share dealing)
SEQUENCE (L.S.E. price Q^n sys^m)

opps: (I) overhaul of financial/acct^g systems for Euro.
- £500m of IT work if immediate changeover
- £750m " " " phased.

(II) Biggest banks ⟷ large mainframe sites
10yrs to deploy true enterprise wide client/servers
why? a) PC lans not designed for distib^d. computing
b) most s/w, inc. UNIX, not configured to cope with C/S envmts.

To authorise this research project as specified above, please sign and return a copy of this proposal to INPUT, Ltd. at Cornwall House, 55-77 Slough High Street, Slough, Berks SL1 1DZ.

Authorised by:

IBM UK Ltd.	**INPUT Ltd.**
_____	_____
Signature	Signature
_____	_____
Name	Name
_____	_____
Title	Title
_____	_____
Date	Date

SYSTEMS INTEG^N IND.
SECTOR ANALYSIS
1994

Like buying shares –
"The past is not necessarily a guide to the future."
– SEE SECTION 5 –

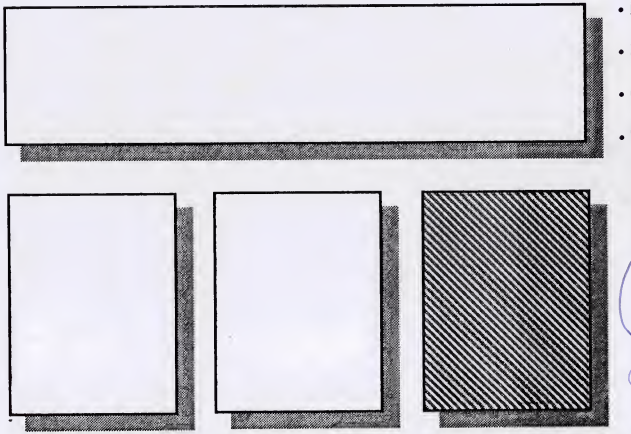
	Gvmt	Financial	Manuf.	Util	Telco	other.
Europe	38%	19%	13%	11%	10%	9%
(F)	40% big but protected.	17%	15%	8%	10%	10%
(D)	30%	29%	18% but declining	6%	9%	8%
(UK) Rem: this mkt nearly double size of others.	43% Privatisⁿ *	19%	11%	8%	10%	9%
(I)	36%	19%	16%	9%	16%	4%

Proportion of SI market.

* change of gvmt – shift of allegiances!?

Business Integration Marketplace

Competitive Coverage



Niches

- International Coverage
- Business Metric Driven
- Consultancy Led
- "Solutions" Projects

(1) overview of Europe + 4 main mkts

(3) Dig deeper - UK case studies P.O.C

(2) return to macro GAGR → 2000.

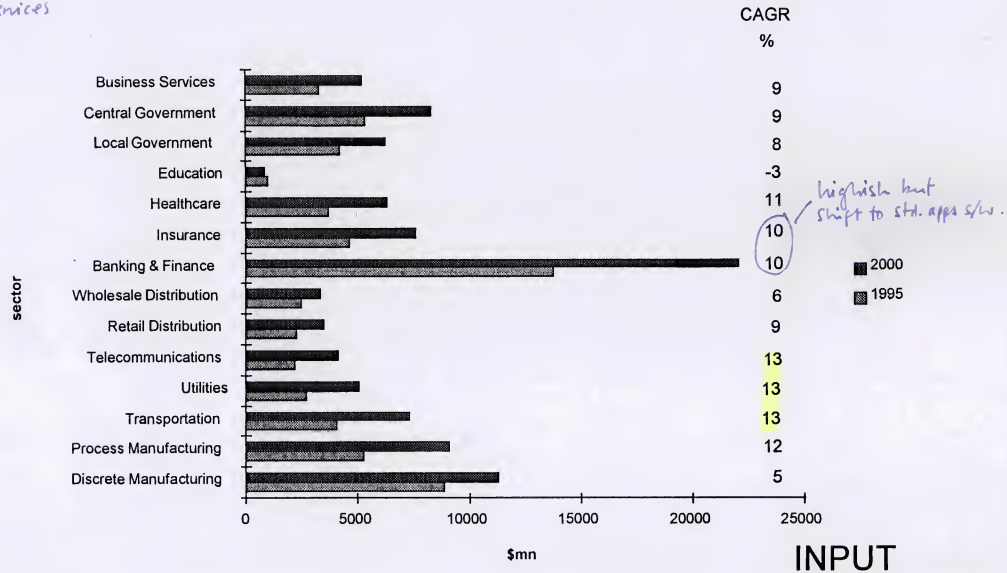
(4) Banking (trends)

(5) Telcos. "

FOCUS

format
① Postal Services

Vertical Markets, Europe 1995 - 2000



INPUT

Banking & Finance: Key Drivers

Fraud problem
- internal
- interception
- lost/stolen
- broken encryption codes ...

EPS - adding security to card, terminals.

- Reducing the costs of handling cash
  - ⇒ retail banks aim to cut costs thru' ↑use of e^c. com.
    ∴ avoiding branch n'wk.
- Improving customer service levels
  - a) Customer info facilities
  - b) ↑use of advanced ATMs 50% ↑in US by '97
  - c) use of auto. banking kiosks
  - d) ↑of 24 tele banking
  - e) shift to real time banking.
- Incresed international commmerce
  - need: Risk mgmt tools for 1) CREDIT/ CURRENCY RISK
    2) Control of int' lending.
  - How? ↑use of CIF databases, EXPERT SYSTMS.
- Moves toward 'virtual banking'
  - ↑use of smart cards, e^c purses
  - ↑use of commercial web sites ~~(79% of large Cies~~
  - Data encryption
  - Cable with ↑ bandwidths.

How to ident the cardholder:
- signatures
- photos
- PIN #s
- fingerprints
- handprints
- voiceprints.

Types of smart card:
- magnetic stripe card
- The SMART CARD
- The optical card

memory only
logic controlled memory
micro processor

Key European Banking Trends

Trend	Ranking By Banks
Expanding Retail Banking	4.1
Use of Electronic Banking	3.8
Cost Reduction	3.4
BPR	3.4

Sample of 15 Leading European Banks

INPUT

Top 5 World-Wide Technology Issues
Banking & Finance

Relative Importance to Bank Respondents

How fast to pursue Client/Server	4.0
Importance of Electronic Banking	3.8
Need for pre-project BPR	3.7
Need for Open Systems	3.5
Imaging	3.3

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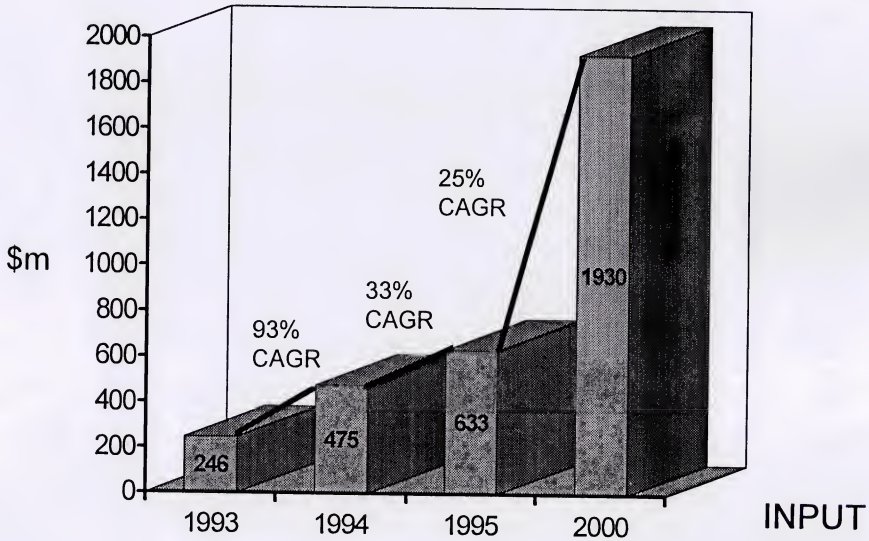
Virtual Banking

- ATMs, Interactive TVs, home PCs, multimedia kiosks
- First Direct: 0.5 million customers in 5 years, 10k a month
- Nine-to-five banking will wither away

Systems Integration Services Growth in the Telecommunications Sector Europe, 1993 - 2000

"The new City"



INPUT

Telecommunications Competitive Landscape

- IT/Telco partnerships
  - IBM - Stet
  - MCI - SHL Systemhouse
  - AT&T Solutions, NCR

- Growth of “alternative networks”
  - Utilities, Banks, Retailers

INPUT

Utilities Entering the Telco Market

Organisation	Country
Energis	UK
Norweb	UK
Generale des Eaux	France
RWE	Germany
Veba	Germany
Banverket	Sweden
Nederlandse Spoorwogen	Holland
GEB Rotterdam	Holland

INPUT

Обновление БД и АСУСД
IGCO L-ПОСЛЕДОВАТЕЛЬНОСТЬ - VGA

Telco Functional Areas - Key Opportunities for BI Vendors

- Business Management
- Network Management
- Service Management
- Content Provision Management

INPUT

Race for Riskless Electronic Payments

J/V bet BT Midland + N/West

China, Singapore, India, Thailand, Japan..

- Mondex - flegling w.w. alliances
- Citicorp's Electronic Money System (EMS)
- Visa USA/Microsoft scheme for secure processing of credit card transactions
  - Intuit to be usurped in U.S.

INPUT

See third page

The Economist

Going for Olympic gold cards

HONG KONG, LONDON AND NEW YORK

Trials of digital cash and smart cards seem to be going on everywhere. Who will win the race to control tomorrow's money?

AT THIS summer's Olympic games in Atlanta, the eyes of most of the world will be on the athletes seeking their moment of glory. The eyes of many bankers, however, will be on athletes' more mundane activities. For Atlanta will also be the site of one of the largest trials to date of electronic money. If the system performs well under pressure, its creators hope that it, too, will become a world champion.

A consortium including First Union, NationsBank and Wachovia, three big American regional banks, and Visa, a credit-card firm, will give each athlete a smart card (fitted with a computer chip and memory) that acts as an "electronic purse". The disposable cards can be used throughout the Olympic area to pay for everything from a meal to a masseur.

For the banks and for Visa, the Atlanta games represent a chance to grab headlines. But the scheme is serious. Consumers in Atlanta can already buy pre-paid cards and use them to make small payments at several local shops. By the summer, thousands of retailers will be connected to the network. The consortium is hoping to introduce rechargeable cards (already on trial in San Francisco) by mid-year, so that customers can simply visit an automated teller machine when they need more cash.

This is but one trial among many. Banks everywhere are rushing to embrace financial smart cards, which combine electronic cash with more traditional credit and debit functions. The case for such electronic purses (which is mainly that they make notes and coins redundant) has been strengthened by the success of experiments in other areas, such as pre-paid cards for public telephones and transport systems, particularly in continental Europe.

Banks have also spotted the need for a secure and convenient payment mechanism for use over the Internet and other computer networks. Smart cards could fit the bill. Small wonder that some analysts forecast breakneck growth in their use (see chart). The electronic purse's target market--people who use notes and coins to make small purchases--is huge. Cash transactions accounted for $8.1 trillion of the $14 trillion of total world personal spending in 1993, according to Visa.

Most digital-cash trials are single-currency projects run by groups of domestic banks. Some 24 countries have, or are planning, such schemes. Among them are emerging markets such as South Africa, Russia, Brazil and even Zambia, where a combination of high inflation and crime makes an electronic purse a particularly attractive alternative to huge wads of cash.

Digital Danes

But the longest trial to date is in wealthy Denmark, where Danmont, a joint venture between the country's banks and the national telephone company, has been running since 1992. Its cards have spread to over 60 towns and cities, where they are accepted at most outlets. Danmont has issued more than half a million disposable cards; a rechargeable version was introduced last August. The company, which hopes that half the Danish population will carry its purse within seven years, has attracted the attention of would-be global rivals; Visa has bought the rights to its technology.

Some markets even have competing projects. In Australia, MasterCard, Visa's biggest rival, announced on March 25th the start of a trial involving 10,000 consumers in Canberra to test a combined cash and credit or debit card issued by three of Australia's big banks. This could eventually compete with schemes sponsored by Visa in the Gold Coast area, and with Transcard, a locally developed pre-paid smart card for travel and shopping in Sydney.

The most ambitious projects are already competing for international acceptance. Trials organised by Visa and MasterCard are precursors of broader schemes. But the most advanced operation may be that of Mondex, a card-based electronic cash system developed by NatWest, a British bank. Mondex claims to be different from other purse schemes. Where they are, in effect, pre-paid debit cards, it is a purer electronic replacement for cash: money can be transferred direct from card to card via electronic readers without using a bank or other intermediary.

Tim Jones, Mondex's chief executive, has ambitious expansion plans, despite mixed results from a showcase

ie special telephones

trial in Swindon, England. Since last July some 10,000 locals have been testing cards that can be loaded with electronic cash from special telephones and machines. Although custom has been below expectations, and plans to charge a monthly fee for the cards have been postponed, Mondex's managers feel that they can justify a roll-out throughout Britain later next year.

Mondex has quickly gone global by signing regional franchising agreements. For instance, HSBC, a British banking group and one of the project's sponsors, has bought Mondex's Asian franchise, which includes China and India. Trials are under way in Canada and America, and are planned for Australia. A group of Japanese banks and technology companies is in talks to run the franchise there.

Mondex's marketing has aroused the competitive instincts of big credit-card groups such as Europay, MasterCard and Visa, each of which has thousands of member banks. Partly in an attempt to shut out Mondex, they have forged a common technical standard known as EMV for stored-value cards, so that merchants will be able to install a single terminal that accepts the banks' different cards. A final agreement between the companies is due soon. Mondex, however, remains sanguine about its prospects. It reckons that other firms are developing rival terminals that will be able to deal with several different standards at once, not just EMV's.

But, to Mondex's chagrin, Visa is working with some of NatWest's domestic competitors, including Barclays and Lloyds, on a possible rival British purse, to be called EPUK. According to one banker, Visa "is adding its badge to anything that moves as a spoiling tactic against Mondex."

Other banks are also hoping to cash in on the digital wave. A patented Electronic Monetary System developed by Citicorp, an American bank, is clearly behind Mondex if the yardstick is putting smart bank cards in people's hands. But when it comes to the technology involved, Citicorp's system rivals and in some respects surpasses Mondex's (see page).

How to predict which scheme will fare best? Richard Poynder, chairman of the Smart Card Club, an independent trade association, believes the big firms are, in effect, waging a "purse war" to decide an industry standard. He reckons that Mondex offers the best deal because, unlike most other schemes, it does not envisage charging merchants for every transaction.

There will be plenty of jockeying for position as the battle for customers grows. MasterCard, which declined a chance to buy Mondex when it was still an idea, might transform the race by renewing its interest in it. Financial firms are also forming alliances with technology and telecoms firms: in Japan, Visa has linked with Toshiba, and Mondex with Hitachi.

This interlinking of businesses and systems offers a clue about how digital money might develop. The problem is too large for one bank or institution to develop a winning scheme alone. Today's parochial trials, and perhaps even the global ones, may eventually lead to a few systems run by two or three networks of purse operators. Let the fun and high-tech games begin.

The Economist

Digitising dollars

NEW YORK

OUT came, on March 25th, America's redesigned $100 bill. But while Robert Rubin, the treasury secretary, oversees the roll-out of the new, harder-to-forge notes, Citicorp, one of America's biggest banks, is working to make these and all other forms of physical money redundant. In April 1994 the bank filed a patent application for its Electronic Monetary System (EMS). Although it is still developing the hardware for this, in conjunction with a big chip maker, its system is distinctive in several respects. If it wins broad acceptance, it could help to solve some of the financial industry's most intractable problems.

The main difference between EMS and other electronic-cash systems is that it is designed to work on a computer network and thus to allow secure, immediate transfers of cash. Its cards can be inserted into personal computers and contain their own tamper-proof security and transaction-processing software.

Another distinguishing feature of EMS is that, unlike Mondex, it allows banks to keep track of the money that they are issuing. As users fill their electronic wallets with cash, either by drawing down an existing balance or by borrowing, the bank creates digital banknotes that then travel around the electronic economy, splitting into smaller denominations as people spend their cash. Each note carries with it an electronic tag that allows the issuing bank to identify its money (although not necessarily to know who is using it).

What are the potential advantages of EMS? For one thing, Citicorp has already developed a version that provides a secure means of paying for goods and services on the Internet. It has even allied EMS with a clever software agent that enables users to seek out the best prices for a product. The bank's electronic tag should reduce the chances of on-line commercial disputes over whether payments have been made or received.

But the biggest impact could be on the banking industry itself. Citibank thinks EMS is an ideal way of making instant, riskless payments of large sums of money between banks, and is exploring the possibility of striking deals with other institutions to use the system. Better still, it can handle any number of foreign currencies and exchange them at an agreed rate--a function beyond the scope of Mondex, and one open to corporate users as well as to banks.

This system might also be a useful way of solving settlement risk in foreign exchange. This week, a report by a committee of central bankers called on the industry to make greater efforts itself to solve such problems. Citicorp is doing just that.

The Economist Home Page - Contents - Next article

Mondex

PRO's

- Pure form of e^c purse: money can be transferred from card to card via e^c readers — no need for bank or intermediary.
- Mondex "best deal" ∵ no plans for charging merchants for transactions
- Global spread - HSBC - Asian franchise
  Hitachi - Japan
  US/Canada trials.

VISA
EPUK
- JV with Barclays, Lloyds
"spoiling tactic"

Citicorp's EMS
Electronic Money System

PRO's

- Works on a computer network
- allows secure immediate cash transfers
- tamper proof security transaction processing software.
- e^c tag ⇒ clarity whether payments made / received.
- big mkt for riskless payments between banks
- Can handle forex.

Intranet Integration Set to Explode

- TCP/IP protocols increase Internet-enabled applications
- Java will draw applications onto the Net
- Intranet/Internet distinctions will fade
- Leading vendors face cultural challenges

INPUT

Potential Internet Benefits

Potential Internet Benefit	Average Rating
Delivering Information	4.4
Receiving Feedback	4.3
Enhancing Customer Service	4.2
Responding More Quickly	4.2
Adding New Sales Channel	4.0
Targetting Individuals	3.8

Sample of 90 Leading Eureopan IT Users

INPUT

World-Wide Value of Goods and Services Traded Using EDI ($M)

	Conventional EDI	Internet EDI
1995	130,000	5
2000	293,000	90,000

INPUT

Internet Host Distribution by Country

Rank	Country	Domains	Share (%)
1	US	4,268,648	64
2	Germany	350,707	5
3	UK	291,258	4
4	Canada	262,644	4
5	Australia	207,426	3
6	Japan	159,776	2
7	Netherlands	135,462	2
8	France	113,974	2
9	Finland	111,861	2
10	Sweden	106,725	2

INPUT

A Key Player in the Growth of the Internet

- Netmanage -

- Strategic position in the design of Internet systems software and middeware
- Currently the fastest growing software house in the U.S.
- Integrated applications include Web browsers and Internet newsreaders, supported by advanced protocols

INPUT

Reselling TRWs Intranet Expertise (1)

TRW's 'home grown' internal Web framework offers the following key attributes:

- A flexible medium to achieve a Notes solution at less cost
- A facility to convert native documents into HTML
- Tried and tested infrastructure applications including:-

INPUT

Reselling TRWs Intranet Expertise (2)

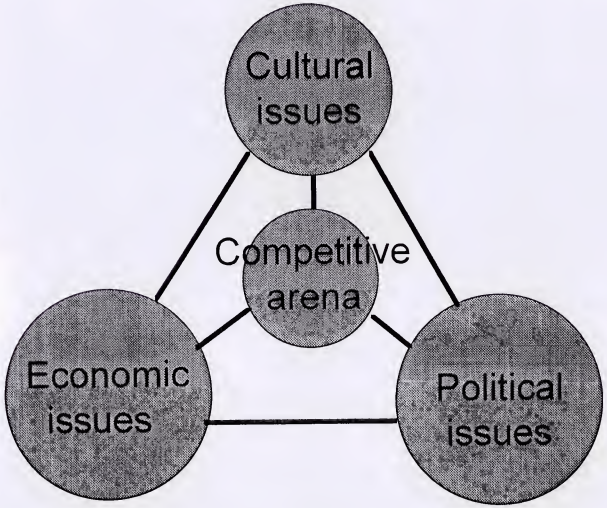
Infrastructure Applications:-

- Document sharing
- Corporate agreement database
- On-line telephone directories, company manuals
- Ability to transfer and install new software remotely using a simple client program

INPUT

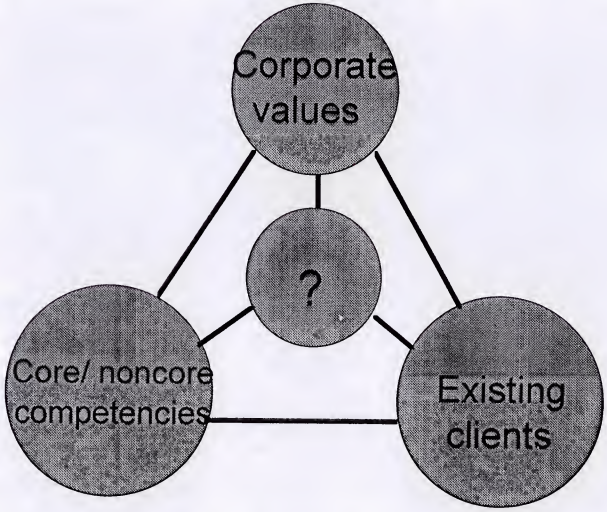
Which SI Markets Offer Best Prospects?

external interacting forces :



Which SI Markets Offer Best Prospects?

internal interacting forces :



European Market Entry - Potential Models

- American Management Systems (AMS)

- clear vertical and country market focus
- transferable international references
- well developed product and services set

- Cambridge Technology Partners (CTP)
- leading edge client/server based services
- growing US presence
- focus on “numerator” engagements

INPUT

Overview of European System Integration and Professional Services

For TRW Enterprise Solutions

Chris Harris - Senior Consultant
Custom Consulting

Ben Pring - Business Integration
Programme Manager

objectives

["Niche"] is gained by

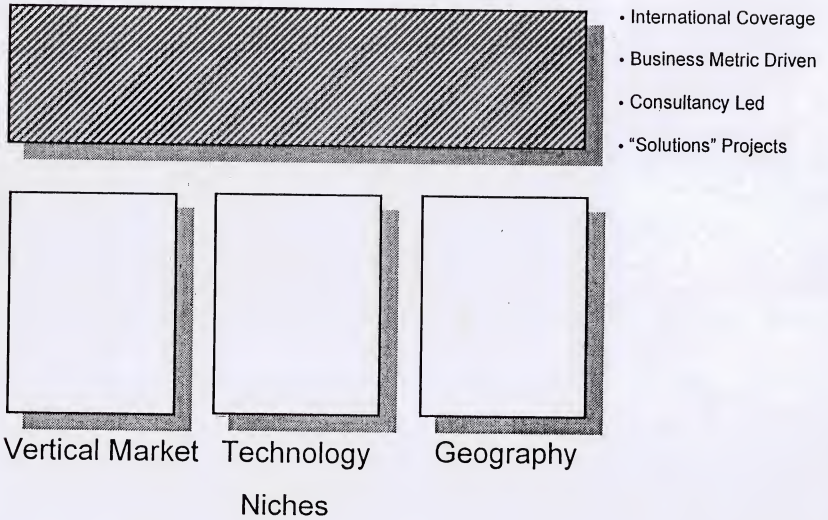
[Commercial presence in the US is small ... even smaller in E/C]

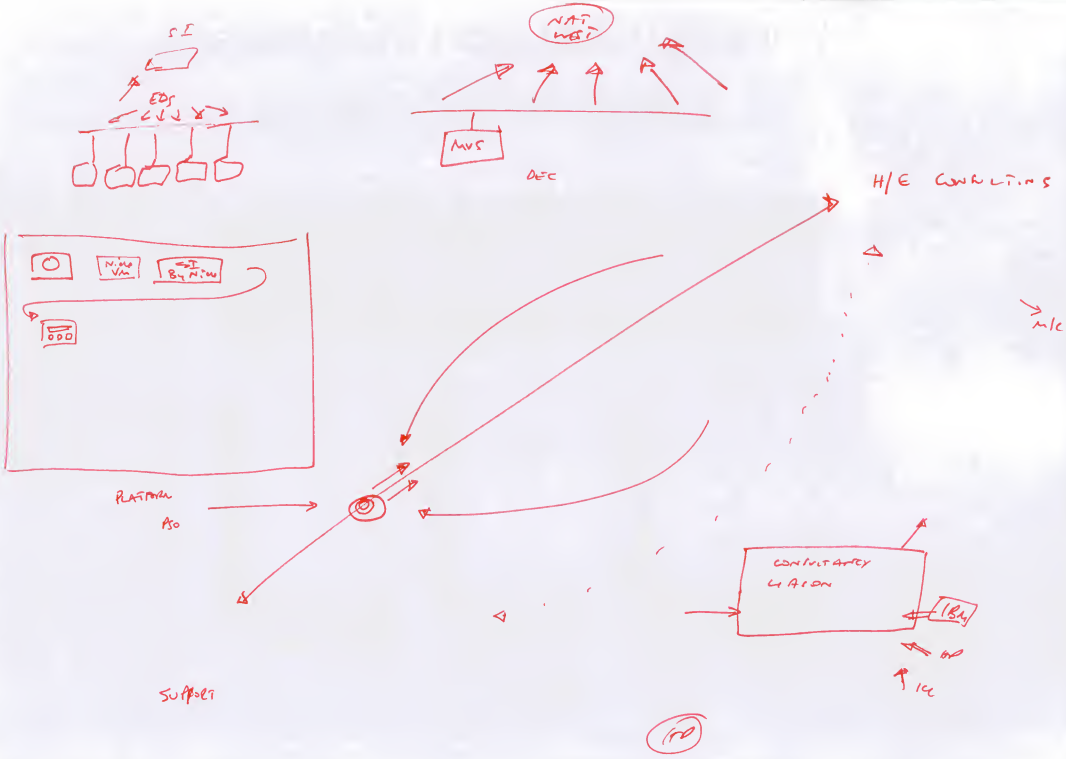
Frankfurt • London • New York • Paris • San Francisco • Tokyo • Washington

Amsterdam - 2 May 1996

Business Integration Marketplace

Competitive Coverage




NAT WBI
AWS
AEC
H/E CONSULTING
M/C
PLATFORM
ASO
CONTINGENCY
LIAISON
IBM
ICC
SUPPORT

Objectives

- Overview of SI marketplace in Europe
- Overview of competitive landscape
- Assessment of strategic alliances
- Opportunites across verticals, applications and geographic markets

Changing Nature of the European Marketplace

- Increasingly demanding user requirements - competitive pressures become more fierce
- Change in growth rates of vertical markets
- Communications centricity is key
- Growth of packaged based solutions

INPUT

Consolidation of Supply

- Emergence of first and second tier players
- Decline of local country market focus
- Growth of *co-opetition* within both tiers

KLAUS MANGOLD C OF DAIMLER BENZ INTERSERVICES

" IF WE WANT TO CHALLENGE OUR BIG COMPETITORS WE HAVE TO HAVE A EC RESPONSE ...

MAY END UP WITH AN OLIGOPOLY

EC VENDORS % OF OVERALL BUS MARKET DROPPED FROM 40% TO 30% OVER LAST TWO YEARS

BUS + LOGICA ON "UNICOM" UK ARMY BUS

SEMA & CGS POST SALE HAVE BEEN TALKING OF TKS

INPUT

International Full Service Vendors

- Andersen Consulting
  - full lifecycle offering; “business integration”
  - movement towards *management services*
  - leveraging thought leadership

- EDS
  - development of high-end presence
  - focus on value based assignments
  - on-going depth of capital resource

INPUT

Home Market, Full Service Vendors

- Logica

- development projects based on quasi products
- high-end capabilities being lost
- strong sub-contractor ethos

- Celsius Information Services

- declining feasibility of home market focus
- urgent search for new market sectors
- well developed channels to market

INPUT

Pan-European Service Vendors

- CGS

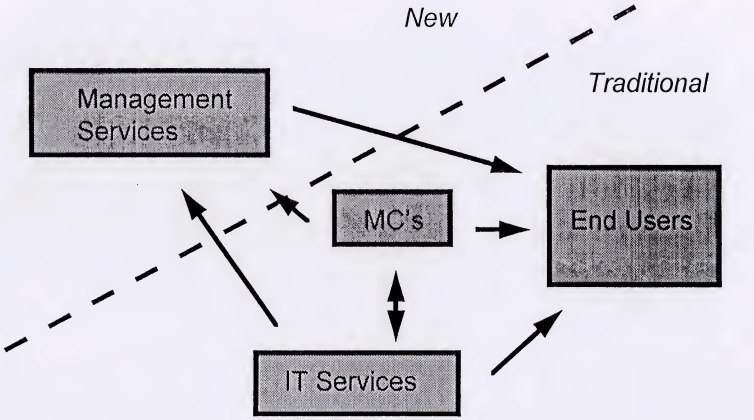
- still attempting to leverage Gemini
- international perceptions of French background
- market is moving away from body-shopping

- CMG

- imperative to develop more than a two country focus
- lower-level IT, non-business led, perception
- flotation increases vulnerability

INPUT

Developing Marketplace Model



INPUT

ANOTHER BIG ISSUE IS SO EATING INTO SO

Implementation/Integration Within Outsourcing Contracts - Europe ($m)

	1995	2000	95 - 00 CAGR
Systems Integration	5260	9600	13
Professional Services	23930	28860	4
Turnkey Systems	13530	19460	8
Outsourcing	4570	11180	20

INPUT

Leading European Systems Integration Vendors 1995

Rank	Company	1995 Estimated Revenue ($ Millions)	1994 - 1995 % Growth
1	IBM	1120	18
2	Andersen Consulting	600	25
3	Groupe Bull	420	15
4	CGS	360	5
5	EDS	350	30
6	ICL	250	8
7	DEC	235	3
8	Sema Group	215	* 12
9	SNI	155	2
10	Logica	150	15
	Total Listed	3855	14
	Total Market	5400	15

BACK FROM THE DEAD + CSC

DOING WELL IN FRANCE EUROSTAR & SNCF

OVERALL i/o IN FRANCE OF $200M BY END 97

TOTAL i/o WAS 13.7

ONLY MODEST GROWTH IN FRANCE (IN FACT NEGATIVE)

LS MOST GROWTH IN UK & SWEDEN

3 4 PM INCREASE ↓ RELATIVE IN SPAIN

Standard chartered NOT ELC but....

MARGINS IN PUBLIC IT ARE DIMINISHING

RECENT DOWNGRADING BY S & P 'CAI OF THE US COMPETITION.

* IS GENEROUS ... SHOULD BE 5% → 0/1 & 40%

INPUT

Leading European Systems Integration Vendors 1995

	Rank	Company	1995 Estimated Revenue ($ Millions)	1994 - 1995 % Growth
INT'L INSTALLED BASE	1	IBM	1120 ~~1120~~	~~18~~ 12
LEADING INDEPENDENT	2	Andersen Consulting	~~600~~ 540	~~25~~ 14
MERGER CHANGES	3	Groupe Bull	~~420~~ 425	15
HIT THE WALL	4	CGS	360	5
COMING STRONG BUT...	5	EDS	~~350~~ 325	30
DECLINING ONE COUNTRY FAV	6	ICL	250	8
GOING STRONG...	7	DEC	235	3
MINI MAJOR	8	Sema Group	215	12
...GONE	9	SNI	155	2
MAJOR MOVE	10	Logica	150	15
		Total Listed	69% 3855 3775	~~14~~ 11
		Total Market	5400	15

INPUT

1 Bn → CONTINUE

FRENCH COMES AT AN ALL TIME HIGH

Key European BI Acquisitions - 1995

ADP BOUGHT GSI

Buyer	Seller
CSC	Ouroumoff International
debis Systemhouse	Cap Volmac VFC
Wang	Bull Workflow
IBM	Lotus
CSC	Lucas
EDS	AT Kearney
Philips	BSO Origin
Getronics	Raet
Cambridge Technology	Systems Consulting
MCI	SHL Systemhouse
CSC	Ploenzke

SAGE BOUGHT SYBEL INFORMATIQUE

£250 m/w → £40 m in EC

ALSO ADD EUROPERT IN FRANCE

SYSECA BOUGHT THE SEMA SOFTWARE CO "SOFTWARE UNION"

SEMA

SEMA

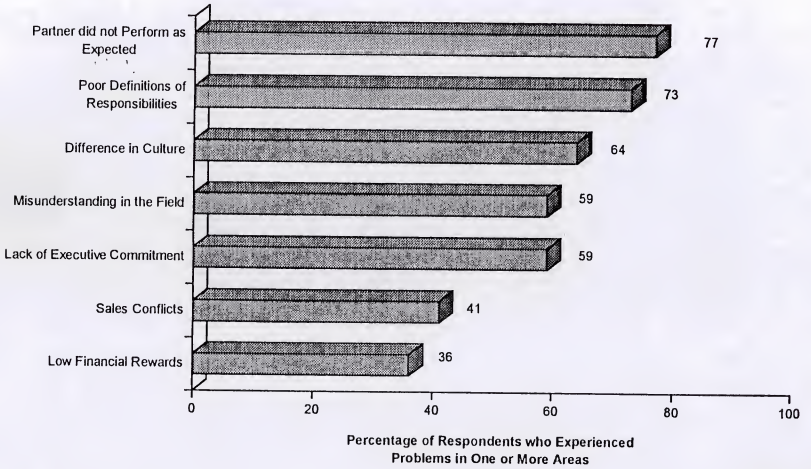
TIBET (FS S/W)

TS FM FROM PTLIS

INPUT

ALSO → SOPRA SA BOUGHT SEMA'S PLEIADES PAYROLL & PERSONNEL SOFTWARE SUITE

Reported Problems with Alliances



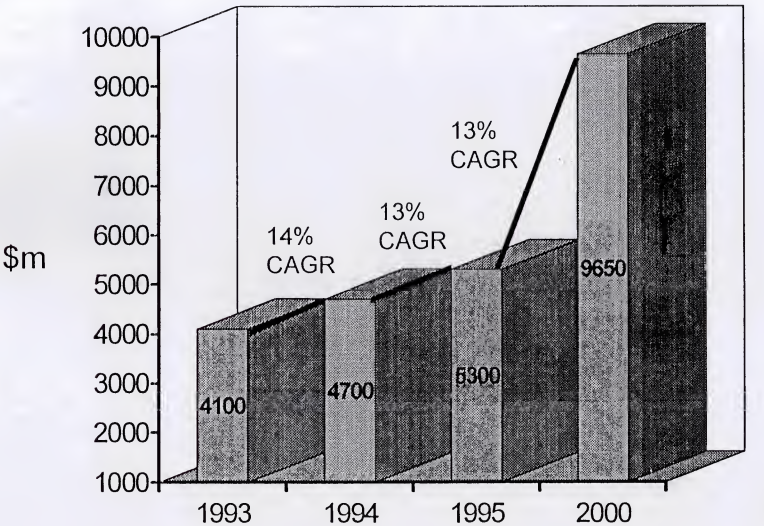
INPUT

Partner Selection: Most Important Factor

Importance Rating	Factor Mentioned
Most Important	Financial Stability Track Record Commitment Industry Knowledge
Secondary Importance	Process Knowledge Technical Knowledge
Low Importance	Management Expertise Sales Contacts Alliance Experience

INPUT

European Systems Integration Market
1993 - 2000



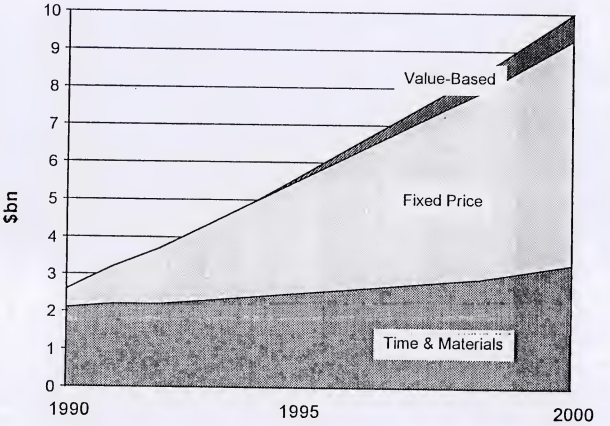
INPUT

Trends in IT Development and Integration Project Delivery

1991 - 1994		1994 - 1998
Lowest Based Unit Price	→	"Best Economics"
Cost	→	Value
Service Provision	→	Business Results

INPUT

Contractual Approaches to European SI Projects 1990 - 2000



INPUT

% Of Revenues Derived From Value Based Pricing Contracts

Vendor	**%**
Andersen Consulting	20
Cap Gemini Sogeti	15
Logica	15
EDS	10
NCR	5

Telco

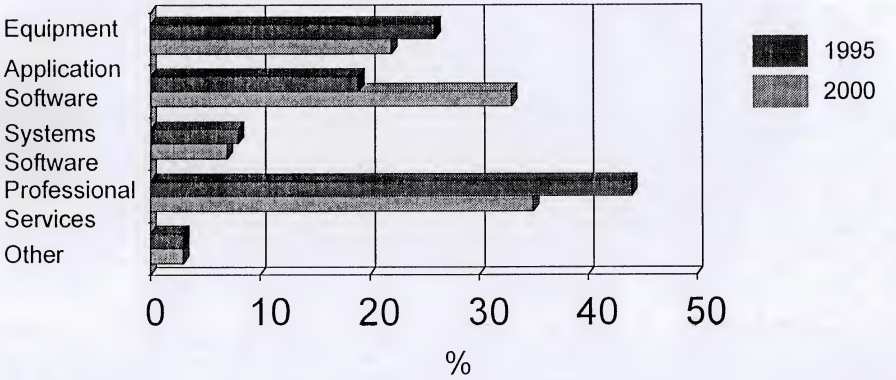
Pendant

EQUIM SPACES
INCLUDING SHARE PRICE
SPARKED MERGER/ACQUISITIONS

RETAILER COSTS CUT
IT BY 3%
COSTS IMPACT
THAN 1% IN PERMANENT
COST OF GOODS
SOLD

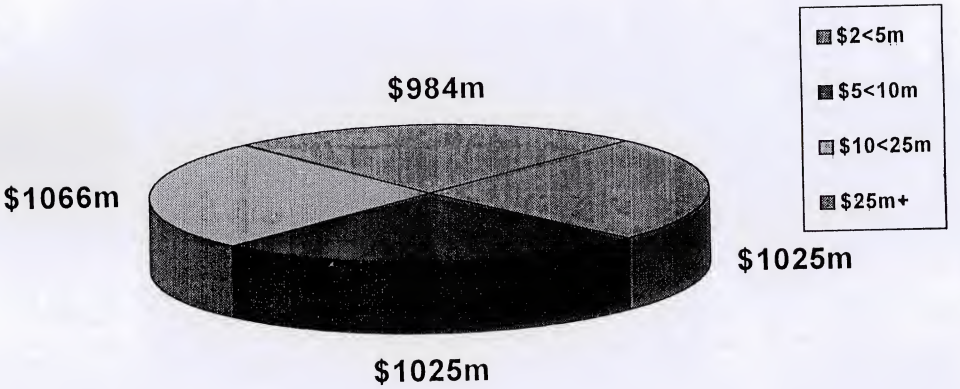
INPUT

Growth of Packaged Based Solutions
Europe, 1995 - 2000



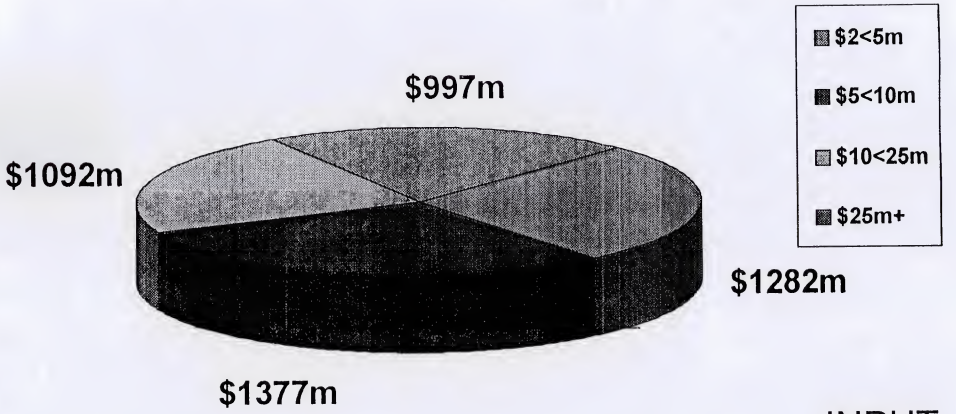
INPUT

European 1993 SI projects by Value



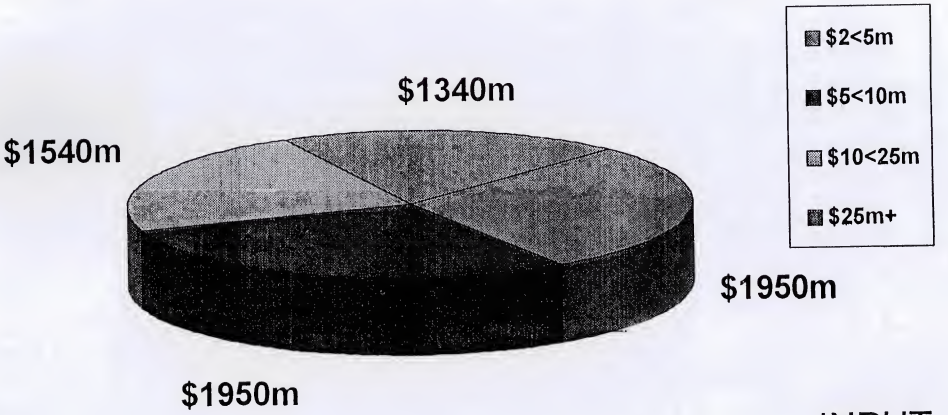
INPUT

European 1995 SI projects by Value



INPUT

Forecast European 1997 SI projects by Value

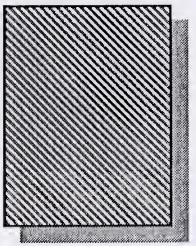


INPUT

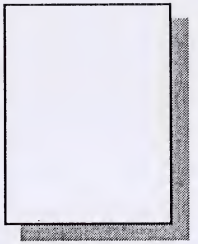
Business Integration Marketplace

Competitive Coverage

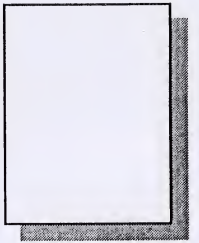
- International Coverage
- Business Metric Driven
- Consultancy Led
- "Solutions" Projects



Geography

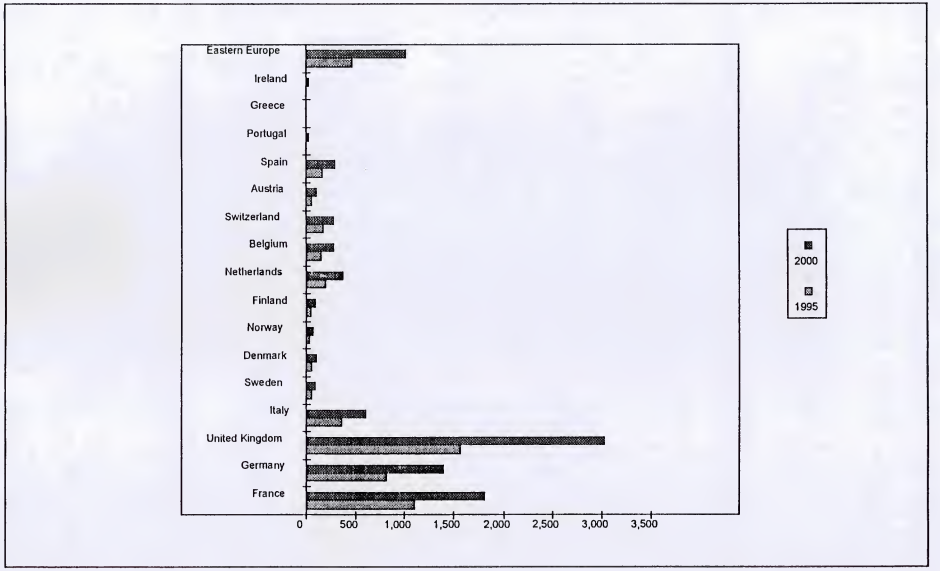


Technology Niches

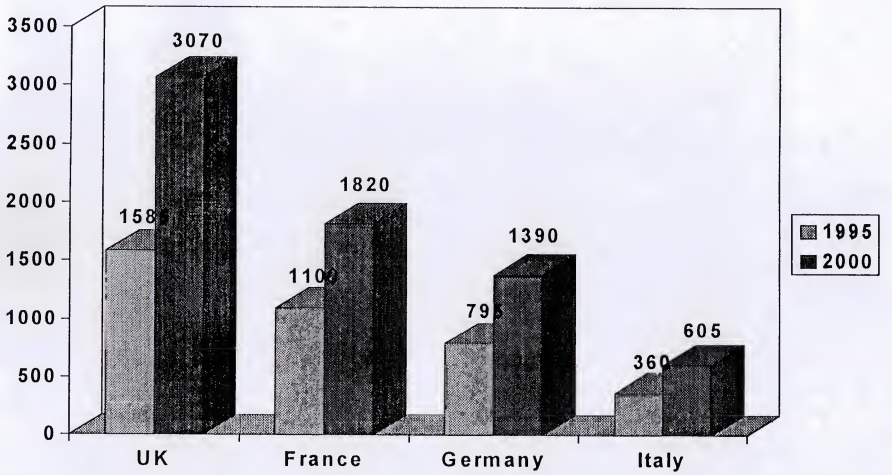


Vertical Market

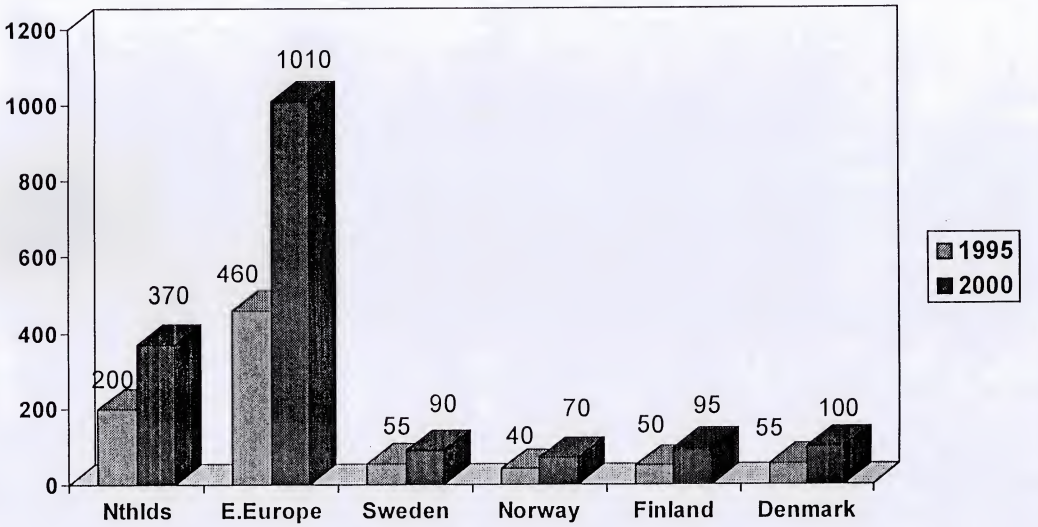
Growth in the European Systems Integration Market 1995-2000 ($m)



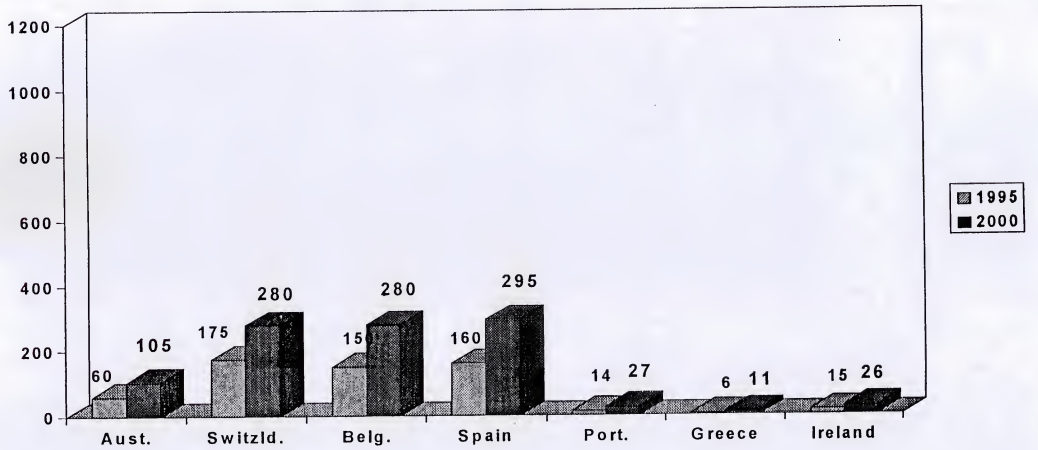
Major National Systems Integration Markets 1995-2000 ($m)



Minor National Systems Integration Markets 1995-2000 ($m)

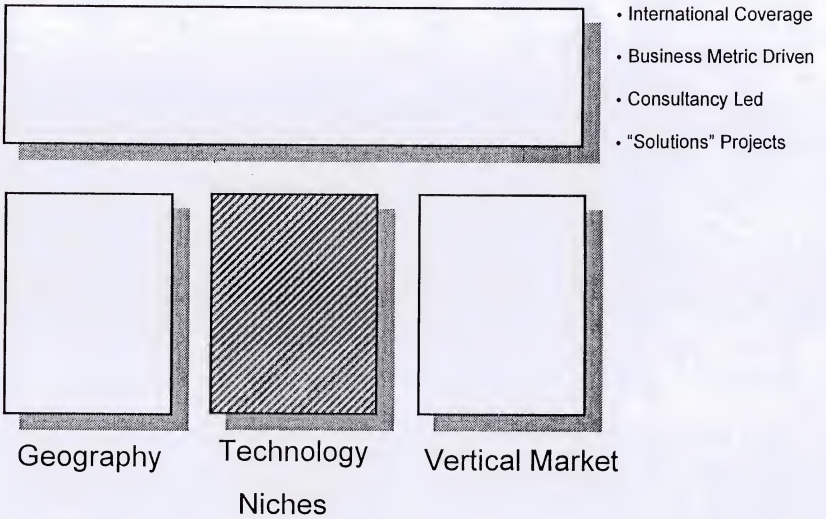


Minor National Systems Integration Markets 1995-2000 ($m)



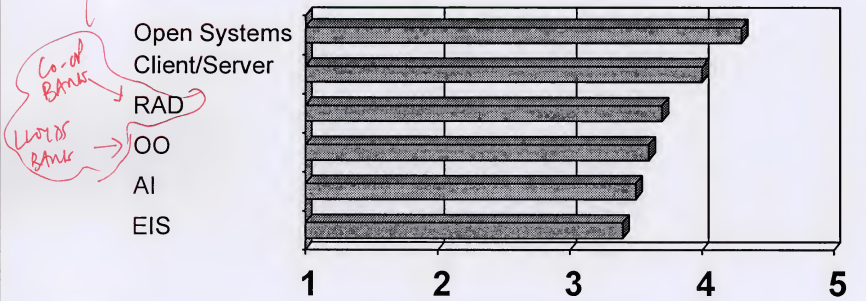
Business Integration Marketplace

Competitive Coverage



User's Current Technical Focus of IT Operations - Europe

IMPLICATIONS OF RAD



1 = Not at all 5 = Very Strongly

Sample of 90 European IT user organisation

INPUT

Key Applications/Technologies

PARADIGMS LIKE VARITY'S "INTEGRATED" DB STAR'S "MIGRATION ARCHITECT"

DATA MINING

OLAP ...CUSTOMER PROFILING

- Data Warehousing
- Neural Nets "STILL A BLACK ART" → TARGETTING CUSTOMERS
- Groupware →
- Workflow →
- ISDN
- ATM (HIGH SPEED VOICE + DATA TRANSMISSION OVER THE SAME NETWORK)
- Wireless LAN
- Structured Cabling

DECISION SUPPORT

+ MIDDLE WARE

BOLTING ONTO THE LEGACY

FRANCE TELECOM HELPED INVENT IT

ALSO IN BANKING

IMAGING

CALL CENTRES (CTI)

↓ CALL SCRIPTING

DELINQUENT ACCOUNT MANAGEMENT

...DAILBACK OF ~~AL ACCOUNT~~.

INPUT ~~$600K~~ in 60 DAYS

Altering Groupware Opportunities

- Notes

1995 - 4.5

1996 - 8.3

2000 - 27.10

Notes '95 market share = 75%
Novell '95 market share = 20%

- Internet Groupware

1995 - 0.3

1996 - 1.5

2000 - 33.3

DEC, Action Technologies
Radnet, Bittco, Netscape,
UNAS 95 & 2000
market share = ?

INPUT

Groupware

3 mkt share
↓
Lotus Notes | 4 (this yr) 60-70%.
(going towards that model?) will have shifted to that application by 1998-99. (2-3 window).

?

Novell. groupwise
groupwise XTTs.

link up with Rank Xerox

Lotus Notes
Microsoft Exchange
ICL's Teamware
Novell groupwise
Collabra Share
Apple PowerShare
[illegible] Exchange

Team Software
Action Technology
Forefront Grp.

Groupware [illegible]

Notes needs a proprietary client

(web browser)

does it work? if it just runs with web browser, big virtue.

interface (thru Java, Forms..)

run totally within small core of product (like [illegible]) Action Technologies. (Action workflow metro.)
Why is still done [illegible] which need proprietary client using windows etc

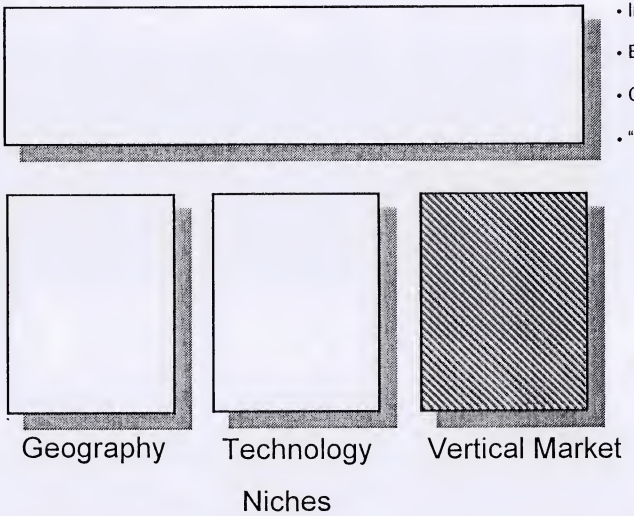
ERP Software - Service Opportunities

- SAP - 1995's major (non-Internet related) success story ... everywhere but France
- BAAN - coming strongly to challenge SAP
- Oracle Financials (+)
- JBA, SSA, JD Edwards

INPUT

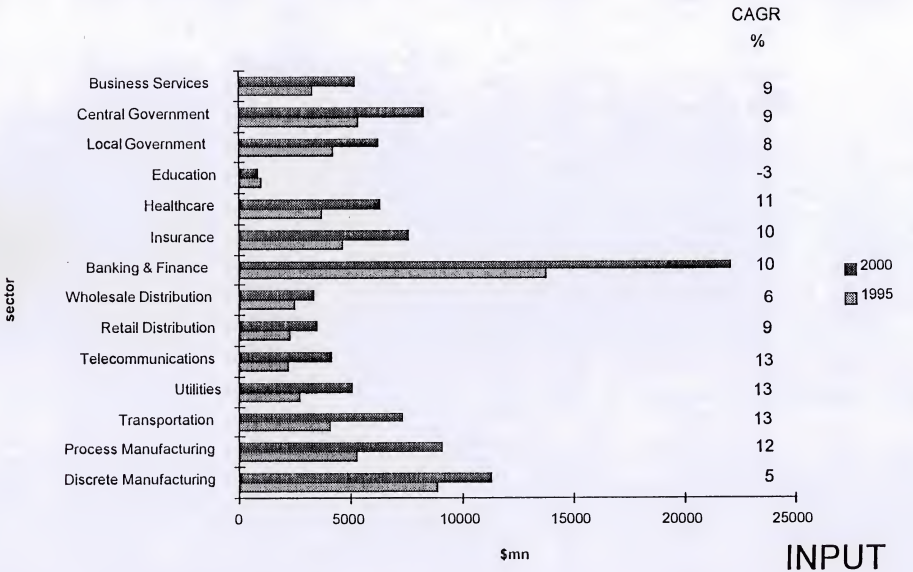
Business Integration Marketplace

Competitive Coverage



- International Coverage
- Business Metric Driven
- Consultancy Led
- "Solutions" Projects

Vertical Markets, Europe 1995 - 2000



INPUT

Banking & Finance: Key Drivers

- Reducing the costs of handling cash
- Improving customer service levels
- Incresed international commmerce
- Moves toward ‘virtual banking’

EDS TARGET EC FS AS A "HIGH STRATEGIC AREA"

EFFICIENCY OF SPENDING IS MORE IMPORTANT THAN LEVELS

OUTSOURCING OF CHEQUE PROCESSING
- STILL LOTS OF CASH - LOTS OF RETAILERS STILL CASH

Key European Banking Trends

NOT A TREND BUT A DESPERATE RESPONSE

MONDEX — NATWEST, MIDLAND, BT — SWINDON, HONG KONG — WALES FAILED IN CA

BANKS IN RUSSIAN

DANMONT IN DENMARK (1991)

Trend	Ranking By Banks
Expanding Retail Banking	4.1
Use of Electronic Banking	3.8
Cost Reduction	3.4
BPR	3.4

M/M + KIOSKS — RELATIONSHIP WITH ATM'S

AUTO WORKING WITH AMEX

SEMA WORKING WITH IBM AT CAISSE D'EPARGNE TO INTEGRATE COMMON PLATFORMS

CGS "JANUS" MESSAGING SYSTEM FOR CREDIT COMMERCIAL DE FRANCE

SEMA WORKING WITH CEPAC THE SOUTHERN FRENCH SAVINGS BANK

BULL WORKING WITH OPTEL IN FRANCE + CRCA

Sample of 15 Leading European Banks

"EASY OPEN" PACKAGE

INPUT

TELEPHONE BANKING + PAYMENTS WITH BANKS

HUGH McCOLL OF NATIONAL BANK
" BANKS FACE THE SAME THREATS
AS THE RAILROADS!"

Top 5 World-Wide Technology Issues
Banking & Finance

GATE → INDUSTRY

1. RISK
2. COST
3. SECURITY

Relative Importance to Bank Respondents

How fast to pursue Client/Server	4.0
Importance of Electronic Banking	3.8
Need for pre-project BPR	3.7
Need for Open Systems	3.5
Imaging	3.3

INPUT

Virtual Banking

FRENCH MARKET LAGGING BEHIND US, UK, GERMAN & SWITZ

... NEW CONSORTIUM
CREDIT AGRICOLE, CREDIT LYONNAIS, CREDIT DU NORD
BARCLAYS

PORTFOLIO MANAGEMENT SYSTEM "TIGER" CREATED BY FRANK

- ATMs, Interactive TVs, home PCs, multimedia kiosks
- First Direct: 0.5 million customers in 5 years, 10k a month
- Nine-to-five banking will wither away

WORKING WITH CGS

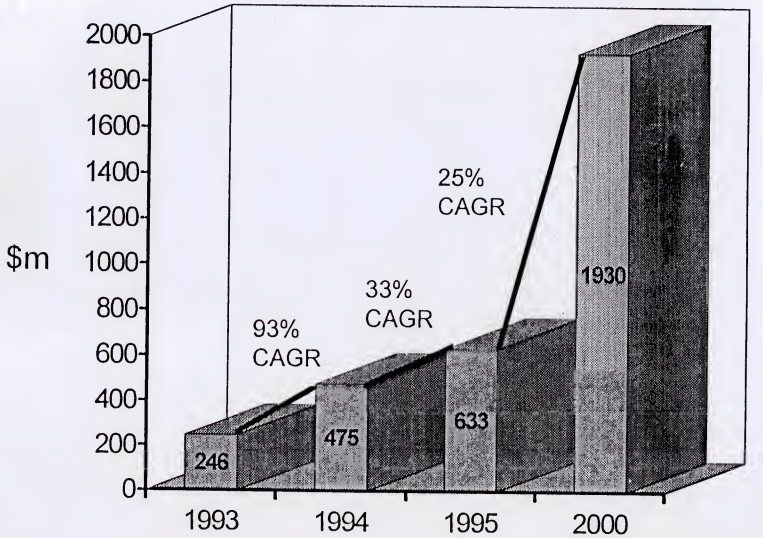
SYSTEM WILL ALLOW BANK TRANSFERS BETWEEN THE 6 TO BE HANDLED ELECTRONICALLY

AT PRESENT 20,000 DOMESTIC TRANSACTIONS OF AMOUNTS ABOVE FF 5m

INPUT

ALSO
OTHER THINGS ... "SMART CARDS"
USING BUILT 1 CPS TRAVEL PRODUCTS
" AIMED AT REDUCE 1-WAY TRANSACTIONS"
VISA & M/CARD ARE BOTH MOVING THIS WAY

Systems Integration Services Growth in the Telecommunications Sector Europe, 1993 - 2000



INPUT

Telecommunications Competitive Landscape

- IT/Telco partnerships
  - IBM - Stet
  - MCI - SHL Systemhouse
  - AT&T Solutions, NCR

JEAN-MARIE ON THE BOARD AT FRANCE TELECOM

- Growth of "alternative networks"
  - Utilities, Banks, Retailers

NEW ONES
BT & CBW
SBC + PACIFIC TELESIS
(SOUTHWESTERN BELL)

RWE
VIAG
General des Eaux

INPUT

Utilities Entering the Telco Market

Organisation	Country
Energis	UK
Norweb	UK
Generale des Eaux (SFR)	France
RWE	Germany
Veba	Germany
Banverket	Sweden
Nederlandse Spoorwogen	Holland
GEB Rotterdam	Holland

PHILIPS LOOKING AT TAKING 76% STAKE IN SDE'S CABLE TV UNIT

UUNET (INTERNET ISP) BUYING BANDWITH FROM HERMES - AMI CONSORTIA

OTHERS INCLUDE EDF-GDF (FRENCH ELECTRICITY/GAS UTILITY) WORKING WITH CCTS ... CUSTOMER MANAGEMENT SYSTEMS

INPUT

HERMES PUTTING TOGETHER A PAN EUROPEAN FIBRE OPTIC LINK

Telco Functional Areas - Key Opportunities for BI Vendors

- Business Management
- Network Management
- Service Management
- Content Provision Management

INPUT

BIG PAINS

+ TURNKEY INTEGRATION SERVICES

Intranet Integration Set to Explode

- TCP/IP protocols increase Internet-enabled applications
- Java will draw applications onto the Net
- Intranet/Internet distinctions will fade
- Leading vendors face cultural challenges

CONVERGENCE

NOW ON DIGITAL

INPUT

VIDEO TO BE
PHONE CO's " VOICE
PUBLISHING CO's " TEXT
CABLE CO's " VIDEO
COMPUTER CO's " DATA
PHOTOGRAPHIC CO's " IMAGES

Potential Internet Benefits

Potential Internet Benefit	Average Rating
Delivering Information	4.4
Receiving Feedback	4.3
Enhancing Customer Service	4.2
Responding More Quickly	4.2
Adding New Sales Channel	4.0
Targetting Individuals	3.8

Sample of 90 Leading Eureopan IT Users

INPUT

World-Wide Value of Goods and Services Traded Using EDI ($M)

	Conventional EDI	Internet EDI
1995	130,000	5
2000	293,000	90,000

COMMON TRADING PLATFORM

BILLING SYSTEMS COMING ON STREAM

+ VISA + WITH CO MSICASH / MORE THAN BANK IN ST. LOUIS/MISSOURI

+ EUNET - LAUNCHING IN FINLAND

| ELECTRONIC COMMERCE | BANKING

BARCLAYS SQUARE → BUT, ARCOS...

INPUT

96% of Pages in English

MINITEL
US/ISRAELI
↓
SOME MODELS

Internet Host Distribution by Country

Rank	Country	Domains	Share (%)
1	US	4,268,648	64
2	Germany	350,707	5
3	UK	291,258	4
4	Canada	262,644	4
5	Australia	207,426	3
6	Japan	159,776	2
7	Netherlands	135,462	2
8	France	113,974	2
9	Finland	111,861	2
10	Sweden	106,725	2

FRANCE TELECOM IS NOW OFFERING INTERNET ACCESS THROUGH GLOBAL ONE

Minitel has 15 million regular users.

LANGUAGE PROBLEMS WILL EASE
"ACCENT SOFTWARE" - ISRAEL
LANGUAGE TRANSLATION

EARTHNET OWN CYBERIA ... NOW IN THE PROVIDED

INPUT

A Key Player in the Growth of the Internet

- Netmanage -

- Strategic position in the design of Internet systems software and middeware
- Currently the fastest growing software house in the U.S.
- Integrated applications include Web browsers and Internet newsreaders, supported by advanced protocols

INPUT

Reselling TRWs Intranet Expertise (1)

TRW's 'home grown' internal Web framework offers the following key attributes:

- A flexible medium to achieve a Notes solution at less cost
- A facility to convert native documents into HTML
- Tried and tested infrastructure applications including:-

INPUT

Reselling TRWs Intranet Expertise (2)

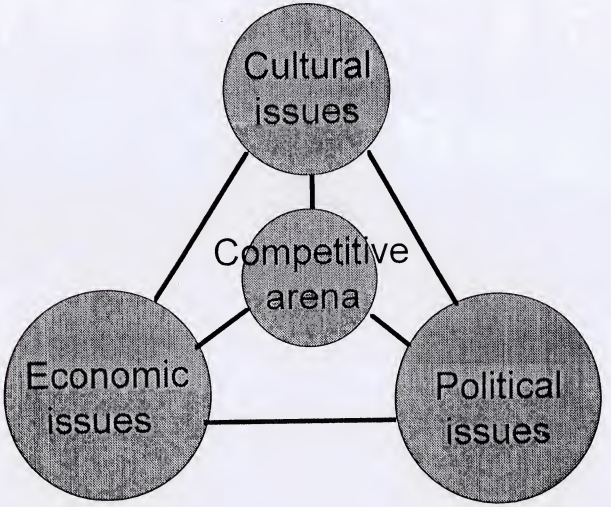
Infrastructure Applications:-

- Document sharing
- Corporate agreement database
- On-line telephone directories, company manuals
- Ability to transfer and install new software remotely using a simple client program

INPUT

Which SI Markets Offer Best Prospects?

external interacting forces :



Which SI Markets Offer Best Prospects?

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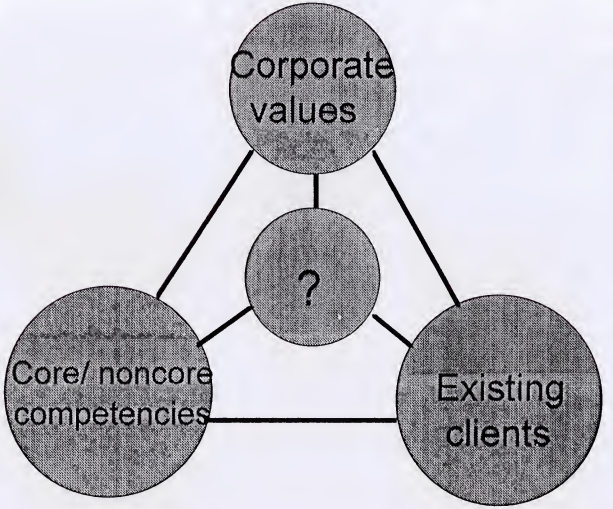

European Market Entry - Potential Models

- American Management Systems (AMS)

- clear vertical and country market focus
- transferable international references
- well developed product and services set

- Cambridge Technology Partners (CTP)
- leading edge client/server based services
- growing US presence
- focus on “numerator” engagements

INPUT

FRANCE TÉLÉCOM ATM IS DEVELOPING ATM & TO REDUCE INVESTMENT IN THE LOCAL LOOP THROUGH FIBRE OPTIC IN THE TRUNK NETWORK.

— ALSO INTERESTED IN GSM

Europe - Telecom Liberalisation

FRANCE V. BEHIND IN MOBILE

IN SWEDEN 4M PORTABLE PHONES

TOO, OK IN FRANCE

DUOPOLY SUBSCRIBER RATE IN 95

FRANCE TELECOM NEW PARTNER "HERMES" SPECTRUM

BOUYGUES TELECOM AWARDED FRANCE'S 3RD MOBILE LICENCE

SOMA ALSO THEIR SI

Country	Fixed	Cable	Mobile	Leased
France	M	LM	C	R
Germany	M	M	C	R
Japan	C	LM	C	R
US	LM/C	LM	LD	U
UK	C	LM	C	U

FT + DT + SPRINT "GLOBAL ONE" — TARGET $5BN BY 2000

TARGET OF 1988

FRANCE TELECOM SPLITS ON AND ||

DEVITALISATION HAS TO COME ... THOMSON;

Key: M= Monopoly D= Duopoly
C = Competition L= Local R = Restricted U= Restricted

INPUT

Home Market, Full Service Vendors

- Logica

- development projects based on quasi products
- high-end capabilities being lost
- strong sub-contractor ethos

- Celsius Information Services

- declining feasibility of home market focus
- urgent search for new market sectors
- well developed channels to market

INPUT

Pan-European Service Vendors

- CGS

- still attempting to leverage Gemini
- international perceptions of French background
- market is moving away from body-shopping

- CMG

- imperative to develop more than a two country focus
- lower-level IT, non-business led, perception
- flotation increases vulnerability

INPUT

International Full Service Vendors

- Andersen Consulting
  - full lifecycle offering; “business integration”
  - movement towards *management services*
  - leveraging thought leadership

- EDS
  - development of high-end presence
  - focus on value based assignments
  - on-going depth of capital resource

INPUT

European Market Entry - Potential Models

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- clear vertical and country market focus
- transferable international references
- well developed product and services set

- Cambridge Technology Partners (CTP)
- leading edge client/server based services
- growing US presence
- focus on “numerator” engagements

INPUT

European Systems Integration and Professional Services 1996 Market Review & Growth Prospects

Ben Pring - Business Integration
Programme Manager, Europe

Paris - 3 April 1996

Frankfurt • London • New York • Paris • San Francisco • Tokyo • Washington

INPUT

Red = 97
6710.

Euro level

o/s

1995

Systems Integration 1993 Projects by Value

The "Mega" deal is in decline

30 24%.

26%.

25%

25%.

Project Size $m

INPUT

07.
4,100 V

$997 ie 33 contracts.

$1092 21% 20

ie 60 contracts 23% 22

$1281 27% 430 contracts 29

24

29% $1377 ie 172 contracts 24

100

4,750 35 $260

1995 # of contracts

25+ 33 33 ← Av Contract $30 M

10 < 25 60 $18 M

5 < 10 172 662 contracts $8 M

2 < 5 430 $3 M

700

6 PC's → 6 + [illegible]

[25 June (sat) all week]

Objectives

- Overview of leading BI vendors
  - Competitive initiatives
  - M&A, Partnering + INPUT Research
- European market sizing and forecasts
- Key application areas in financial services and telecommunications
- Internet related developments
- Technology, applications, and Enterprise Planning Software - services opportunities

INPUT

Changing Nature of the European Marketplace

- Increasingly demanding user requirements - competitive pressures become more fierce
- Change in growth rates of vertical markets
- Communications centricity is key
- Growth of packaged based solutions

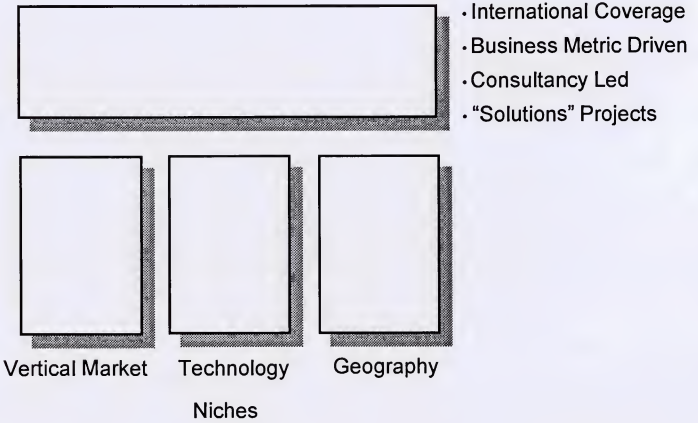
INPUT

Consolidation of Supply

- Emergence of first and second tier players
- Decline of local country market focus
- Growth of *co-opetition* within both tiers

INPUT

Business Integration Marketplace Competitive Coverage



INPUT

Leading European Systems Integration Vendors 1995

Rank	Company	1995 Estimated Revenue ($ Millions)	1994 - 1995 % Growth
1	IBM	1120	12
2	Andersen Consulting	540	14
3	Groupe Bull	425	15
4	CGS	360	5
5	EDS	325	30
6	ICL	250	8
7	DEC	235	3
8	Sema Group	215	12
9	SNI	155	2
10	Logica	150	15

INPUT

% Of Revenues Derived From Value Based Pricing Contracts

Vendor	***%***
Andersen Consulting	20
Cap Gemini Sogeti	15
Logica	15
EDS	10
NCR	5

INPUT

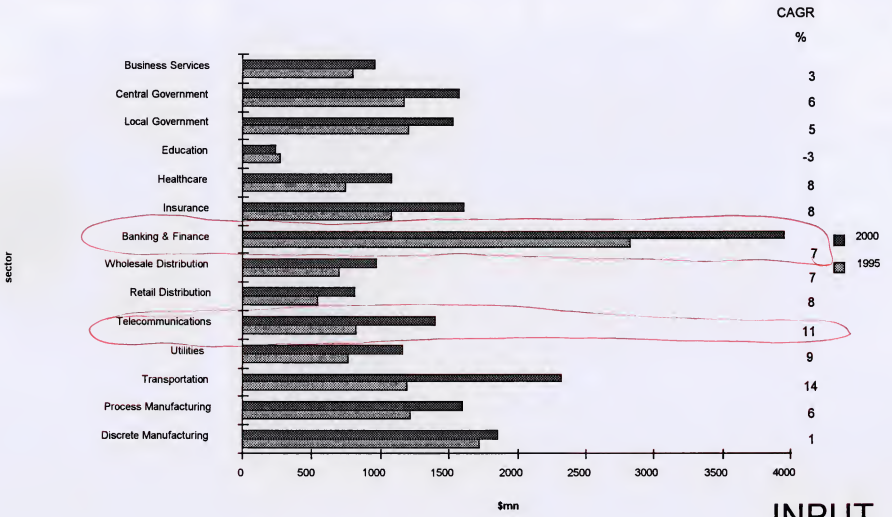
Top 5 World-Wide Technology Issues
Banking & Finance

Relative Importance to Bank Respondents

How fast to pursue Client/Server	4.0
Importance of Electronic Banking	3.8
Need for pre-project BPR	3.7
Need for Open Systems	3.5
Imaging	3.3

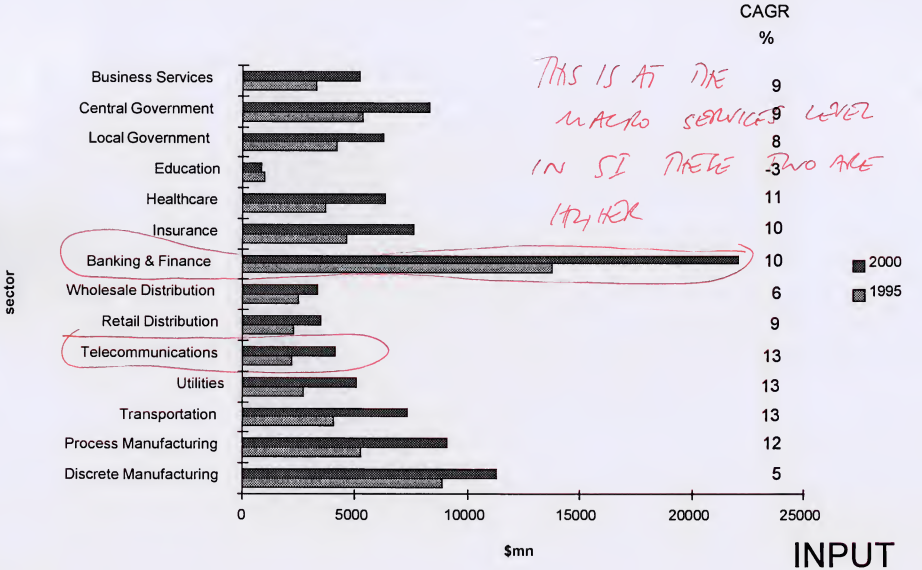
INPUT

Vertical Markets, France 1995 - 2000



INPUT

Vertical Markets, Europe 1995 - 2000



THIS IS AT THE MACRO SERVICES LEVEL IN SI THERE TWO ARE HIGHER

INPUT

Key European Banking Trends

Trend	Ranking By Banks
Expanding Retail Banking	4.1
Use of Electronic Banking	3.8
Cost Reduction	3.4
BPR	3.4

Sample of 15 Leading European Banks

INPUT

Virtual Banking

- ATMs, Interactive TVs, home PCs, multimedia kiosks
- First Direct: 0.5 million customers in 5 years, 10k a month
- Nine-to-five banking will wither away

Utilities Entering the Telco Market

Organisation	Country
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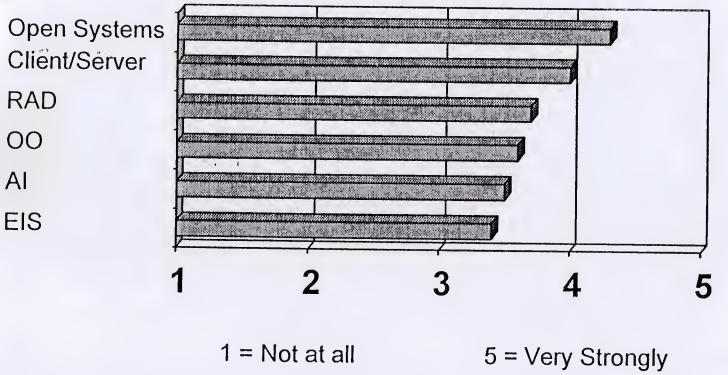
Norweb	UK
Generale des Eaux	France
RWE	Germany
Veba	Germany
Banverket	Sweden
Nederlandse Spoorwogen	Holland
GEB Rotterdam	Holland

INPUT

User's Current Technical Focus of IT Operations - Europe



Sample of 90 European IT user organisation

INPUT

ERP Software - Service Opportunities

- SAP - 1995's major (non-Internet related) success story ... everywhere but France — CGS ... EURODIF → R/3 on HP
  ↳ GRAVITY SLOWING...? RISKS OF "HOLISTIC APPROACHES"
- BAAN - coming strongly to challenge SAP
- Oracle Financials (+)
- JBA, SSA, JD Edwards

ALSO BULL LAUNCHED SAGISTER, AN INNOVATIVE STRENGTH UNIX SYSTEM TO SUPPORT ERP'S SUCH AS R/3 & ORACLE

INPUT

Summary

- Pan-European consolidation shows no signs of ending
- “Best of breed” products increasingly dominate
- Vendors must establish “premium, differentiated positions”
- External Services Vendors face enormous challenges but a period of tremendous opportunity

INPUT

Key Applications/Technologies

- Data Warehousing
- Neural Nets
- Groupware
- Workflow
- ISDN
- ATM
- Wireless LAN
- Structured Cabling

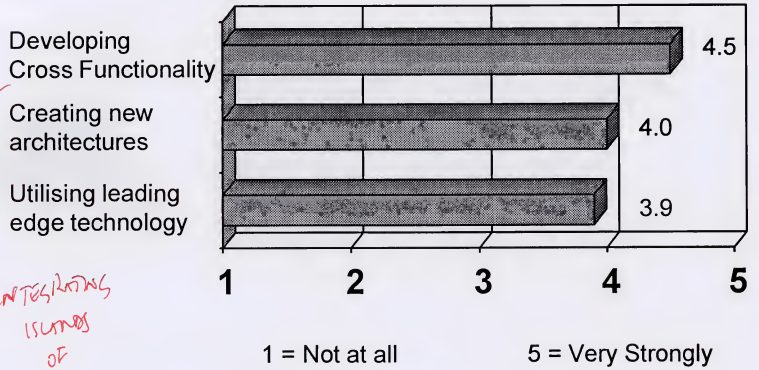
INPUT

Intranet Integration Set to Explode

- TCP/IP protocols increase Internet-enabled applications
- Java will draw applications onto the Net
- Intranet/Internet distinctions will fade
- Leading vendors face cultural challenges

INPUT

User's Current Technical Focus of IT Operations - France



INTEGRATING ISSUES OF INFO

Sample of 30 French IT user organisation

INPUT

World-Wide Value of Goods and Services Traded Using EDI ($M)

	Conventional EDI	Internet EDI
1995	130,000	5
2000	293,000	90,000

INPUT

Potential Internet Benefits

PROCESS WILL COME – R/3

Potential Internet Benefit	Average Rating
Delivering Information	4.4
Receiving Feedback	4.3
Enhancing Customer Service	4.2
Responding More Quickly	4.2
Adding New Sales Channel	4.0
Targetting Individuals	3.8

ZENITH DID THE WEB PAGES FOR CANNET

Sample of 90 Leading Eureopan IT Users

INPUT

Internet Host Distribution by Country

Rank	Country	Domains	Share (%)
1	US	4,268,648	64
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5	Australia	207,426	3
6	Japan	159,776	2
7	Netherlands	135,462	2
8	France	113,974	2
9	Finland	111,861	2
10	Sweden	106,725	2

INPUT

Telco Functional Areas - Key Opportunities for BI Vendors

- Business Management
- Network Management
- Service Management
- Content Provision Management

INPUT

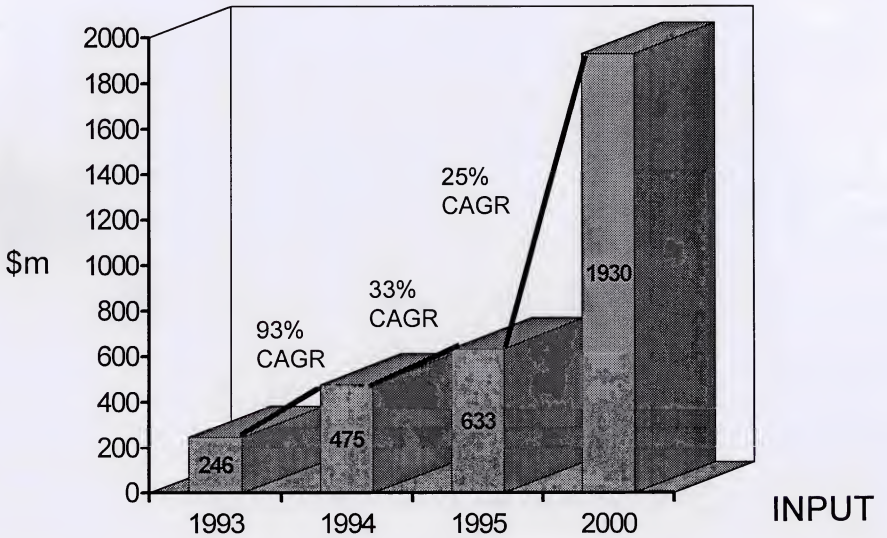
Telecommunications Competitive Landscape

- IT/Telco partnerships
  - IBM - Stet
  - MCI - SHL Systemhouse
  - AT&T Solutions, NCR

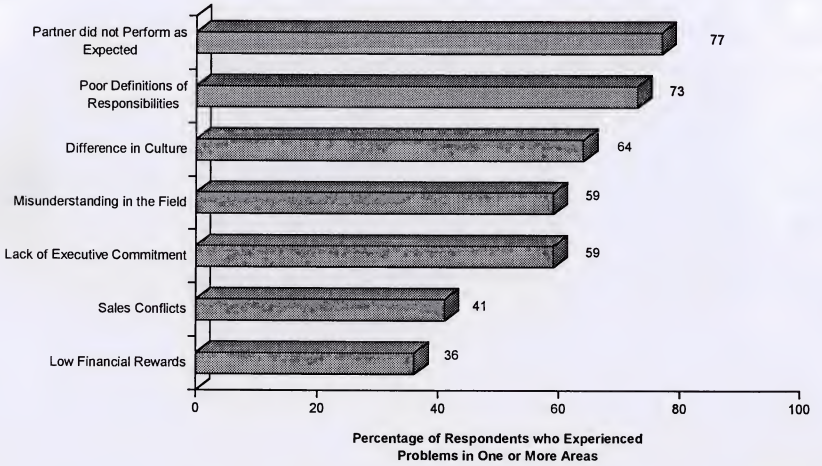
- Growth of “alternative networks”
  - Utilities, Banks, Retailers

INPUT

Systems Integration Services Growth in the Telecommunications Sector Europe, 1993 - 2000

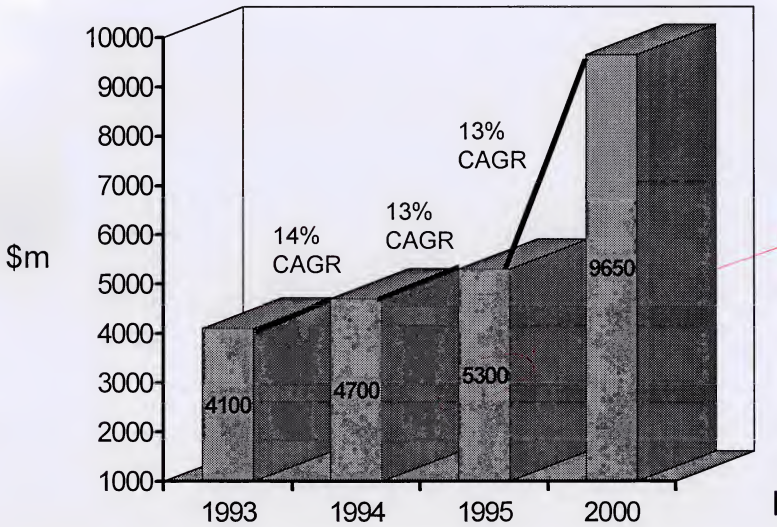


Reported Problems with Alliances



INPUT

European Systems Integration Market
1993 - 2000



INPUT

ON PREVIOUS SLIDE

5450

MARKET GROWING, SLIGHTLY MORE STRONGLY THAN HAD EXPECTED

Implementation/Integration Within Outsourcing Contracts - Europe ($m)

	1995	2000	95 - 00 CAGR
Systems Integration	5260	9600	13
Professional Services	23930	28860	4
Turnkey Systems	13530	19460	8
Outsourcing	4570	11180	20

INPUT

Implementation/Integration Within Outsourcing Contracts - France ($m)

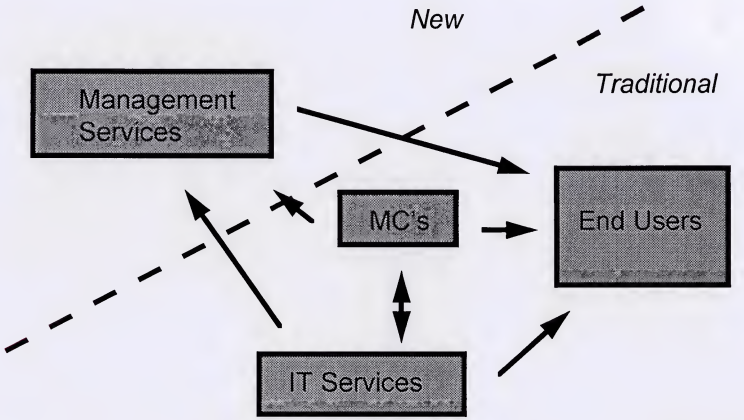
	1995	2000	95 - 00 CAGR
Systems Integration	1096	1807	11
Professional Services	7380	7940	1
Turnkey Systems	2135	2959	7
Outsourcing	1038	2294	17

INPUT

Developing Marketplace Model

PFI

BUL - UK COURTS



INPUT

VENDOR SELECTION

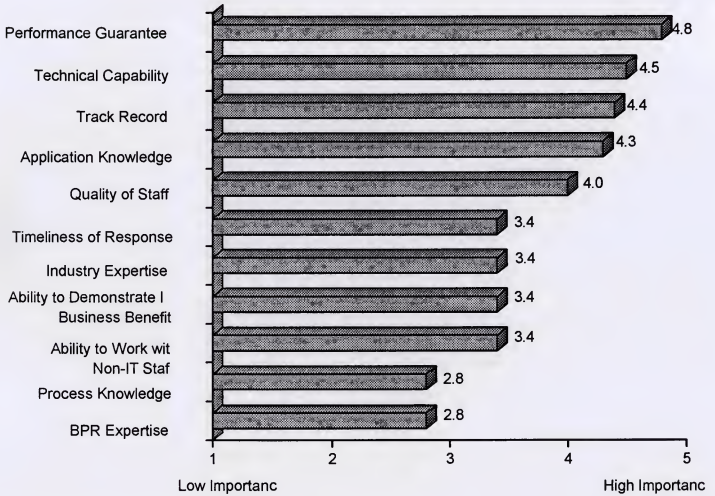
Comparison Between European and US IT User's Key Selection Criteria

Europe		United States	
Performance Guarantees	4.8	Vendor Reputation	4.8
Technical Capability	4.5	Technical Capbility	4.7
Track Record	4.4	Application Knowledge	4.6

Criteria ranked on a scale of 1 -5, where 5 is most important

INPUT

BI Vendors - Key Selection Qualities

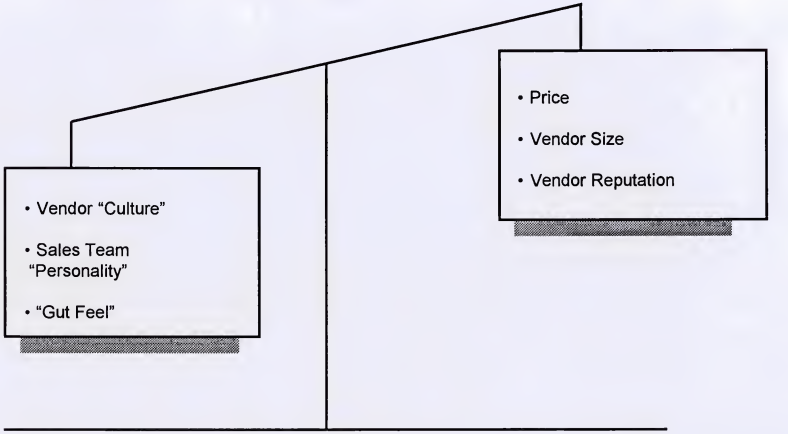


Sample of 90 Leading European IT Users

INPUT

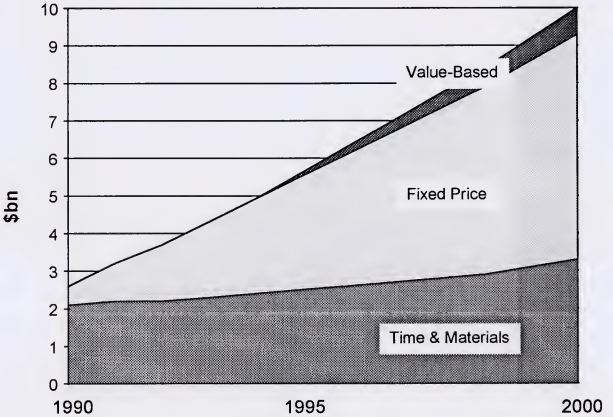
PRICE IS NOT KING

Relative Weightings of "Soft" and "Hard" Issues in Selection Process



INPUT

Contractual Approaches to European SI Projects 1990 - 2000



INPUT

ONE OF THE BIG COMPETITIVE DEVELOPMENTS

Trends in IT Development and Integration Project Delivery

1991 - 1994		1994 - 1998
Lowest Based Unit Price	→	"Best Economics"
Cost	→	Value
Service Provision	→	Business Results

INPUT

ALLIANCES ARE IMPORTANT BUT DIFFICULT

CO-OPETION

Partner Selection: Most Important Factor

Importance Rating	Factor Mentioned
Most Important	Financial Stability Track Record Commitment Industry Knowledge
Secondary Importance	Process Knowledge Technical Knowledge
Low Importance	Management Expertise Sales Contacts Alliance Experience

INPUT

Key European BI Acquisitions - 1995

Buyer	Seller
CSC	Ouroumoff International
debis Systemhouse	Cap Volmac VFC
Wang	Bull Workflow
IBM	Lotus
CSC	Lucas
EDS	AT Kearney
Philips	BSO Origin
Getronics	Raet
Cambridge Technology	Systems Consulting
MCI	SHL Systemhouse
CSC	Ploenzke

INPUT

BI Vendor's Key Challenges in 1996

- Groupe Bull; new organisation model aims at profitability
- CGS; leveraging Gemini
- Sema Group; relaunching into financial services

INPUT

INPUT
Cornwall House, 55-77 High Street, Slough, Berkshire, SL1 1DZ, England

Tel. +44 (0)1753 530444
Fax +44 (0)1753 577311

FAX TRANSMITTAL FORM

Date: 3 May 1996

Name: Bob Goodwin

Location:

Company:

Fax:

Tel:

From: Ben Pring

Subject: **TRW**

Dear Bob

Peter L mentioned you were interested in getting some feedback from our meeting with TRW yesterday in preparation for your meeting with them today.

I hope the attached is of some use.

If you'd like to discuss it further, do give me a shout.

Regards

Ben

001 415 961 - 3966

BW

Contact Report

Presentation to TRW - Amsterdam (2.5.96)

Present: TRW - see attached list of business cards

INPUT - Ben Pring, Chris Harris

This presentation was part of a custom assignment providing TRW with information on the European SI market (see attached Proposal copy).

TRW are interested in developing their European commercial SI business and are attempting to develop a market entry strategy.

This appears to be at an early stage; they appeared unclear as to whether immediately targeting major SI $25m+ deals (i.e. their background in the US), was feasible in Europe, and if so what were the potential investment costs and timescales.

TRW are currently in negotiations with the Dutch electronic money company, DigiCash, and are set to announce a contract/deal/JV in the next couple of weeks. No further details of this are yet available.

Lex Kwee was the original point of contact for this assignment. However, Stephen Patay drove the meeting from the TRW side. He has used PAC in strategy meetings in the US to help TRW develop the commercial SI business.

I gained the clear impression that TRW were more comfortable with the idea of custom rather than programme research.

Ben Pring (3.5.96)

INPUT

CONFIDENTIAL—Property of INPUT

CONTACT REPORT

☐ MAIL LIST - SEE BACK

Non Client/Prospect File: ☐ Media ☐ Financial ☐ Other _____

Contact Date: / /

INPUT Staff: Init. _____ Init. _____ ☐ INPUT office ☐ Client Office ☐ Other _____ Date Written: / /

DISTRIBUTION:

Prog./Proj. ID _____

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Title

Addr

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ction

TRW Enterprise Solutions
Systems Integration Group

Suite 700
301 E. Ocean Boulevard
Long Beach, CA 90802-4834
Office 310.764 6553
Fax 310.764.3216
steve.pataya@ trw.com

Stephen A. Patay
Director of Technology
& Strategic Planning

TRW Financial Systems, Inc.
A Unit of
TRW Systems Integration Group

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The Netherlands
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Jan G.M. de Bruijn
Vice President
+31 (0)172 53 80 69 (Phone/Fax)

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United Kingdom

Nicholas W Stone
Director

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+44 (0) 385 729709 Mobile
Fax +44 (0) 1793 459084 Office
+44 (0) 1962 734214 Home

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Roderick Annandale, M.A.
Client Executive

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Fax +44 (0)1793 45 90 84
Mobile +44 (0)831 54 75 87
email rodann @ tfs.com

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United Kingdom

Tom Ripley
Business Consultant

Mobile +44 (0)385 22 79 32

+44 (0)1372 46 02 31 (Phone/Fax)

TRW Financial Systems Nederland B.V.

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Hoekenrode 2
1102 BR Amsterdam (Zuid-Oost)
The Netherlands
Phone (31)20-6975345
Fax (31)20-6975835
Internet lex@tfs.com

drs A.Y.L. Kwee RI
Marketing Manager Europe

TRW Financial Systems, Norway A/S
A Unit of
TRW Systems Integration Group

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0978 Oslo, Norway
Phone +47 22 21 70 25
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Mobile +47 92 03 76 58

Erik K. Sagen
Manager
European Customer Service

TRW Financial Systems-Denmark
A Unit of
TRW Systems Integration Group

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☐ Continued over

M&S 300/01 6/94 (R)

A Proposal for
the Conduct of a Market Research Study

for

TRW Enterprise Solutions

European Enterprise Infrastructure Integration

from INPUT, Ltd.

55-77 Cornwall House
Slough High Street
Slough, Berks SL1 1DZ
United Kingdom

April 1996

Objectives and Scope

TRW Enterprise Solutions wishes to develop a detailed short-term and long-term plan for positioning the company within the European Systems Integration and Outsourcing markets.

This proposal relates to TRW's immediate objective, which is to generate a strategic overview of the European SI market, with a view to identifying TRW priorities for 1996 R & D spends and sales budgets. INPUT's analysis will include the following components:

1. Analysis of European trends in SI pricing and movements in average project sizes.

2. Analysis of trends towards increased use of packaged software, with company examples.

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   - equipment
   - applications software
   - systems software
   - professional services

4. SI market sizes across 14 countries and the following vertical markets:

   - government (defence, central and local)
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   - manufacturing (process and discrete)
   - utilities (telecommunications).

5. Leading business integrators across 16 countries (top 10 by market share/revenue for major markets, top 5 by market share/revenue for minor markets)

6. INPUT précis of top six international SI players active in Europe, with reference to each company's:

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7. Analysis of TRW potential takeover targets (for regional SI players) and potential strategic alliance partners in individual vertical market sectors.

8. This study will include reference to Internet opportunities where standard INPUT programme material is available.

Methodology

The research study would reference INPUT's existing European SI research, last revised in a comprehensive fashion during January 1996. In addition, this data would be augmented with specific (unpublished) market intelligence to assist with TRW's immediate strategic objectives.

The aggregated output of the study could be made available in both printed and electronic form, as required.

The highlights of this material would be formatted into a series of slides, for a presentation to take place in TRW's offices in Amsterdam, to be given by Chris Harris, Senior Consultant for INPUT's European custom research, and Ben Pring, Programme Manager for INPUT's European Business Integration Programme.

Timeline

If TRW can authorise commencement of the study by Friday, 12 April, 1996, INPUT can deliver the SI research report by Monday, 29 April 1996 and the presentation by Thursday, 2 May, 1996. A telphone meeting 'checkpoint' will take place on the afternoon of Friday, 19 April to discuss progress and key findings.

Professional Fees

The professional fees for this research will be £8,000 (excluding V.A.T.) and excluding any travel expenses incurred during the day of the presentation.

One-half of the professional fee is due and payable at the beginning of the project and the remainder, plus travel expenses will be billed at completion.

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Director

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M&S 300/01 6/94 (R)

Mail List Change Order ☐ Update ☐ Correction ☐ Deletion ☐ Addition* Serial Number _____

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* No names will be added without a completed change order and program manager approval.

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CONTACT REPORT

Continuation

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Authorised by:

TRW	INPUT, Ltd.
_____	_____
Signature	Signature
_____	_____
Name	Name
_____	_____
Title	Title
_____	_____
Date	Date

INPUT

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e-mail. info@input.co.uk

Mr. Lex Kwee
Marketing Manager Europe
TRW Enterprise Solutions
Hoekenrode 2
1102 BR Amsterdam-ZO
The Netherlands

11 April 1996

Dear Lex

Proposal for Custom Consulting - European SI Markets

Further to my telephone conversation today, I am pleased to provide an amended proposal for INPUT to offer custom consulting.

As agreed, given that I only have eight consulting days available until your May planning meeting, I have tailored the deliverables in a format to be both achievable and relevant, whilst offering your company value for money.

The overall package costs £8,000, not including expenses, of which £6,000 is attributable to in-house data gathering, culminating in the issue of a European SI market report. The remaining £2,000 is a fee for myself and Ben Pring (European SI Program Manager) to give a presentation of the report findings in your office commencing 3.0pm. in the afternoon of 2nd. May. These prices do not include V.A.T. at 17.5% and travel expenses.

I feel that we can offer useful strategic directions for TRW Enterprise Solutions and thank you for giving INPUT the opportunity to discuss your research needs. We trust that we can be of assistance.

Yours sincerely

Christopher Harris
Senior Consultant INPUT Ltd.

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Registered in England No.: 1470416.
Registered Office: Rolls House,
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VAT Registration No.: GB 340 3422 04

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