RC9000 Business Case

FORTROLIGT

RC Marketing
August 1, 1986

Lars Winther

List of Contents

0. Abbreviations and Acronyms

CO3 ICL Communication Protocol

DA Directory Assistance

DP Data Processing

FT Fault Tolerant

IRS Information Retrieval System

LAN Local Area Network

MAP Manufacturing Automation Protocol

OLTP Online Transaction Processing

SNA IBM System Network Architecture

TPS Transaction Per Second

X.21 Standard for line-switching Networks

X.25 Standard for packet-switching Networks

1. Project Summary

The RC9000 is a strategically important new generation, high-end minicomputer. The RC9000 is designed to take over the role of the eight years old RC8000 as the powerful multi-user transaction processor in RC's total system concept.

As is the case with the RC8000, the RC9000 will provide high connectivity to multiple networks e.g. SNA, X.21 and X.25, and integration with other RC products via LAN.

Besides an RC8000 compatibility option, the key benefits include redundant architecture, modular design, low cost, low power consumption, high availability, high throughput, small footprint, std. operating system, std. compilers and productivity tools, 4th generation application building tools and re-use of RC890 and RC3502 communication options.

RC9000 will allow existing RC8000 applications to co-exist with std. UNIX applications. This will offer existing RC8000 users a migration path to higher performance and to a std. environment. At the same time new customers who want to use the fault tolerant UNIX environment are given the opportunity to benefit from the RC8000 software library.

2. Project Financials

The total project financials for the calculated period with development starting in 1986 and maximum sales expected in 1993 are as follows:

Sales	620 mill. DKK
Marginal Contribution	453 mill. DKK
Contribution before Investments	311 mill. DKK
Capital Investment	21 mill. DKK
Return on Investment	44%
Internal Rate of Return	28,6%

The financial analysis is found in appendix B.

3. Project Description

The RC9000 is a new generation supermini computer specially aimed at the on-line transaction processing and telecommunication markets. It is based on new, but known, technologies allowing high performance and functionality, and cost effective production. The technologies chosen allow RC to do all development work in-house. The benefit will be shorter development time and lower project risk. The main goals of the project are to enable RC to maintain its market in traditionally served areas, and to establish a vehicle for entering new market

segments. These are the major requirements that have to be met by the RC9000 product:

- The RC8000 compatibility option
- Fault tolerant configuration option
- OS supported database protection
- High transaction processing capacity
- Std. operating system (UNIX V)
- Low entry price
- Modular & extendable architecture
- Std. software tools for easy program porting and development
- High connectivity to multiple networks

4. Importance to Business

RC9000 is important to RC to protect the RC8000 customer base. More important, however, is the fact that RC needs a more powerful and less proprietary computer to enter new application areas.

The importance of RC9000 to ITT is centered upon the possibilities with "Fault Tolerant On-line Transaction Processing" at a very competitive price per transaction.

This allows ITT to expand Office 2000's market share, and enables penetration into new segments of corporate computing.

The fault tolerant minicomputer market is by far the fastest growing computer market at all. While the statistics from IDC state that the average annual growth rate in the business is about 18%, the fault tolerant market is expected to continue a growth rate of no less than 30%. According to Frost & Sullivan, the fault tolerant OLTP market in Europe is expected to grow from $123 mill. to $ 1922 mill. (1983-90). This corresponds to an increase in the total computer market share over the period from 0.6% to 3%.

As this trend is expected to continue, it is very important to both RC and ITT to penetrate this market and become known as supplier while there are still a limited number of competitors.

Besides the fault tolerant market, a much bigger, general on-line transaction processing market exists. RC is today positioned in this market with the Information retrieval and Library control software systems.

Even though a lot of opportunities exist in this market, the financial part of this business case only relies on RC's traditional application areas, giving the highest possible credibility.

5. Market Objectives

The prime aims of RC9000 are:

- To protect the installed base of RC8000 systems
- To allow further expansion in traditional RC8000 application areas
- To provide a product suitable for penetrating new market segments

RC9000 sales are expected to grow from 81 mill. DKK in 1989 to 162 mill. DKK in 1993.

6. Patent, Legal & Project Risks

The design approach is based entirely on known technologies and to a wide extent on industrial standards. This minimises the technical project risks and reduces the initial production costs.

The hardware philosophy is based on RC's proven approach using up-to-date standard components. The software architecture is derived from Tolerant Systems Executive (TX).

This UNIX V compatible product is modified by RC to fit the RC9000 hardware architecture. Existing application software and communication options are re-used, giving the wanted migration path. The RC8000 compatibility option allows existing RC8000 software to run without modification. The standard UNIX environment together with the fault tolerant option and the RC8000 compatibility option reduces the commercial project risk to a moderate and absolutely acceptable level.

7. Product Positioning

Competition

The competitive analysis is found in appendix A.

Key Marketing Advantages

- High availability and data security
- High processing power / footprint ratio
- Low price / transaction ratio
- Stepwise extension through modularity
- Compatible with traditional RC applications, as well as std. UNIX V
- Integrated part of RC product range
- High network connectivity

Unit Cost and Price Data

The entry price of a minimum non fault tolerant RC9000 will be around 500,000 DKK including one CPU and one disk.

An RC9000 configuration that meets the Tandem Nonstop TXP-level performance (i.e. 6 TPS) will be priced at appr. 1,5 mill. DKK, giving a TPS price of 250,000 DKK. This is half the price of what Tandem is currently offering, and by far outperforms any IBM system known today.

As the Tandem TXP like system is expected to be the average configuration, a unit price of 1,5 mill. DKK in 1989 is used in the financial analysis part of this business case.

The corresponding cost is expected to be 400,000 DKK.

An average cost and price reduction of 5% per year is expected, giving the following annual price and cost per unit:

(DKK '000)	1989	1990	1991	1992	1993
Price	1,500	1,425	1,350	1,275	1,200
Cost	400	380	361	343	326

8. Market Forecast and Sales

This market/sales estimation is made for the RC9000 minicomputer. The RC9000 belongs to the category "Transaction Processing" or rather "online transaction processing" as the RC9000 does not edit files for later batch updates of the central database.

Furthermore, RC9000 has a fault tolerant option, which is a hardware configuration ensuring complete availability and data integrity.

This business case focuses on the fault tolerant market because:

1) FT is a unique feature, addressing a niche market.

2) The general minicomputer market is expected to be "the battlefield of the 1980's".

3) If the FT market can justify the development of an RC9000, the online transaction processing market certainly can. (e.g. the library system is OLTP).

The following figures and statements are in other words cautious estimates.

Market Forecast RC9000 Denmark

Installed Base

At the moment, RC has installed 180 RC8000 computers in Denmark. By January 1, 1985, this gave RC the market leader position with a 16% share just after IBM with 19%. The applications are various, but the large areas incorporate directory assistance, technical/science small/large business and library systems.

40% of the customers are in the governmental sector - 60% in the private. Due to careful service and support throughout the years, RC's customer base is very loyal. Many of the customers have already expressed a need for a larger system, and RC would be the first for them to address.

Market Trend

The market trend for fault tolerant computers in Scandinavia shows an annual growth rate of about 40%. In value the total revenue is expected to rise from 19 mill. $ in 1983 to 190 mill. $ in 1990. Denmark is by far the largest RC market, which in general terms accounts for 22% of the Scandinavian market.

In 1985, RC had a shipment share in units of 5% on the medium scale market. See fig. 1.

Competition

Tandem had a healthy Scandinavian share of 65% in 1985, selling mainly to major banks, Scandinavian Airline System and SAAB in Sweden.

A local Danish vendor DDE has success with a resilient system delivered to Danish railways and utilities. DDE had a 30% share in 1985, and the leftovers going to Stratus with distribution in Finland by Nokia and Olivetti.

Market Opportunities and Segments

In order to penetrate a new market, one must offer a total solution, which means that application SW must accommodate the hardware product. The mix of SW being sold in Denmark is dominated by the finance sector, but also manufacturing and retail/distribution represent large sectors. Considering the size and resources of RC, it seems better to stay away from the finance sector with Tandem dominating it. The retail/distribution sector will demand "point of sales" hardware, which RC cannot and does not plan to deliver. This market is dominated by NCR and IBM.

Manufacturing seems to be an alternative, but requires major investments in application software and industrial protocol development (such as MAP). Tandem has not yet conquered this

segment in Denmark. A penetration study made by International Data Corporation reveals that this sector only has a 0.35 multi-user penetration rate, and is expected to put in more multi-user orders than any other sector. Furthermore, it has the biggest revenue (9 bill. $) and the highest growth rate (6% annually in fixed 1980 prices). Although these figures will change at the time of release, it proves a relative advantage.

In Denmark this sector includes 41,525 companies, but only 3% has the necessary size to demand an RC9000, giving a potential market of 1,250 companies. Giving RC an estimated 3-5% market share over 5 years, and 1,5 system average/customer, this sector will have 60-65 systems installed by the end of year 5.

On the above background this sector shows the biggest potential of them all, also since RC has some experience in developing proprietary applications to the manufacturing sector. Although RC has this know-how, a cooperation with a software house is necessary. Several possible software partners have to be investigated.

Within the manufacturing sector, process control and production control could be an interesting niche, since IBM has determined to dominate "factory automation" as a whole.

Due to a limited penetration rate and large order expectations, the transport companies could be a second area of interest to RC. The transport sector has the following characteristics:

- A large amount of data input
- High vulnerability by system failure
- Large amounts of paperwork (customs, freight, etc.)
- Need for quick response to incoming inquiries

Therefore the transport companies represent an interesting segment.

In Denmark there are 17,246 companies within this sector. In order to be a potential RC9000 customer, the company must maintain a yearly revenue of a minimum of 5-10 mill. DKK. 625 companies meet this requirement.

58% of these companies are not using DP of any kind at year-end 1985.

The application areas could be route and freight accounting, and several of these companies will require more than one system.

Therefore, a sale of 58 units over 5 years seems a sensible estimate, with the current knowledge, equivalent to appr. 10% market share.

Another area where RC9000 proves great performance is as a general information retrieval system (Document handling). This applies to very large accounts as an internal information system. This need goes across all sectors, including governmental organizations and unions. Setting the revenue limit for a potential private customer at 100 m.$, there are 160 companies in Denmark. Assuming an increasing need for instant updated information and data integrity, RC can achieve a 10-15% market share or appr. 20 companies. The estimated number of systems/customer is 1,25.

In the governmental sector RC has 16 IRS installed. The majority of these customers will expand with an RC9000 system, plus some newcomers. Within the 5 year period the current installed base should be doubled.

Due to a large and loyal customer base in Denmark, a certain amount of reselling is guaranteed. The competitive situation does not indicate large threats. Starting with release year 1989, the sales forecast is:

Year	89	90	91	92	93
DA	1	1	2	2	1
Library	2	3	5	6	7
Business	5	5	7	8	9
Technical/ Science	2	3	5	8	10
Transport	5	8	10	15	20
Information IRS	6	7	8	10	10
Manufacturing	6	8	12	17	20
Total units	27	35	49	66	77

To check these figures, one could estimate the market share required to achieve theese sold units. At an HW price per unit of 1.5 mill. DKK, these figures would be equivalent to market shares in the range of 10-12%. In 1984 the RC-share of medium size multi-users was 1.4% (5% in units) which was, however, achieved with a 6 year old product.

The DA figures indicate a doubling of the current base over the 5 year period. Since both the large telephone companies KTAS and JTAS already have capacity problems, and the number of subscribers and inquiries are increasing, this does, however, seem to be a reasonable forecast.
The library system has a potential of 23 large and 17 smaller libraries in Denmark. The RC library solution is, however, the best in the market - and is still improved - and it is therefore expected to obtain orders from a minimum of 75% of the potential market. These figures are based on the condition of the RC9000 offering full text database.

The business applications are primarily administrative tasks. RC9000 will not perform these tasks at a top competitive level. However, the current installed base of 44 systems will ensure reselling because this will be the only offer of system compatibility. Due the the already developed large SW-systems, 75% is expected to expand with an RC9000 over the analyzed period.

The technical/scientific sector largely consists of universities and research institutes. This used to be RC territory (24 installations), but Digital's Microvax has taken over large parts of the market. In this aspect figures are based on the assumption that RC can remain in "touch" with these organisations and regain its market share after releasing the RC9000.

The sector "Manufacturing" has been mentioned earlier, and the only comment would be that if a good RC9000 SW-package is developed, the estimates will be too low.

Scandinavia (excl. DK)

Market trend

Described in connection with the DK market.

Competition

The competitive situation is much like the Danish. However, the presence of L.M. Ericsson in Sweden, Norsk Data in Norway and Nokia in Finland has to be considered, especially on the governmental market.

Market Opportunities and Segments

The RC8000 installed base in Scandinavia is limited to a few DA installations in Norway and a few library installations in Sweden. However, in Sweden each community (len), a total of 43, has a large library. These libraries are seen as potential customers.

Concerning the DA system the total market is no bigger than 15 systems, but the unique RC system justifies a total share of 33%. One DA system is currently installed in Norway.

The IRS can be sold in Sweden as well, in both the private and the governmental sector. The amount of private companies exceeding an 100 m.$ revenue is 200 in Sweden. The achieved market share will be lower than the Danish, and depends very much on the development of the Swedish RC8000/9000 sales force. As of now the RC8000 sold in Sweden have been handled by the Danish sales force.

Since the RC-strategy emphasizes on export, a 5-7% market share is achievable.

In the governmental sector the 43 lens and 5 larger unions represent the total potential market. As mentioned, Ericsson will cover a large part of the supply to this sector, probably 50%. The remaining will be dominated by RC with a 30-40% share. Reference to Danish installations will support these efforts.

The Swedish transport sector should be penetrated with an SW-package similar to the one planned for DK. This sector is very large in Sweden, and the bottleneck will be the resources of the sales force. The total potential market is over 1000 companies, but the organization would only be capable of selling appr. 20 systems in the period.

Taking a cautious approach, sales are only expected in the areas already covered by RC, namely DA and library plus transport and IRS, which are described under 3.3.

Year	89	90	91	92	93
DA	1	1	1	1	1
Library	1	2	2	2	2
Transport	2	3	4	5	6
IRS	3	4	5	6	7
Total units	7	10	12	14	16

German Market

Market Trend

Germany is the second largest European market and it is showing yearly growth rates of appr. 50% starting at 29 mill. $ in 1983 and rising to 435 mill. $ in 1990. See fig. 1.

Fault tolerant options will become increasingly important on the German mini market over the next 2-3 years. In 1990 3% of all hardware sold in Germany will be fault tolerant.

Competition

Tandem is by far the dominant vendor on the German market, with a share of 66% in 1985. Stratus, Nohalt and Parallel have approached this significant European market in 84/85, which is expected to open up in 1986 with Nixdorf as another newcomer.

Market Opportunities and Applications

In Germany no RC8000 installed base exists. In the following the different segments are evaluated, existing as well as new markets.

The dominating fault tolerant market areas in Germany are industrial and manufacturing applications. Tandem has set the trend in manufacturing by their first sale to Thyssen Steel. Tandem has already installations in large German banks, and package sales are expected to increase rapidly after 1987 in

these companies together with communication companies. The communication companies could very well be a target, since RC has great experience in this area with the RC890 and RC3500.

Furthermore, RC-Germany already uses a communication concept in selling micro systems, this allows RC-Germany to represent one coherent concept, to unite and strengthen the corporate image.

Transportation companies also represent an area where little is being done, although fault tolerance is a necessity (e.g. shipping, container management).

If RC-Denmark decides to enter the transport computer market, the SW must be adjusted to German.

The experience and know-how obtained in Denmark could be of great use before entering the German transport sector, especially since this sector is 10 times bigger than the Danish.

To estimate the market for directory assistance (DA), one starts by analysing the number of subscribers with this facility compared with product capacity. These calculations indicate the following European potential markets (excl. DK).

Year	89	90	91	92	93
Units	33	35	37	39	41

The current share is 5%, but if a cooperation with World Directories is established, a 20% European share is expected. However, it is impossible to divide the figures by country, so the ones listed cover all of Europe.

The IRS can also be sold in Germany. 1000 very large companies are the potential market. The penetration again depends on sales forces resources.

Looking at the library systems potential, there is a big barrier, namely the big loyalty towards Nixdorf in the library sector. Political pressure makes it very difficult for RC to enter this market.

As mentioned above, the communication segment appears to have opportunities for RC. Apart from the reasons mentioned earlier, the telesector has experience in this area. In connection with selling RC's PAXNET, the RC9000 can be sold as network management system. Figures from the public sector show a potential of appr. 200 RC9000 for Europe. No country break down is possible.

The success of competing in this market is highly dependable on cooperation with a strong partner - e.g. BTM in Antwerp.

However, large shares are not expected due to the presence of ITL and Tandem, but if a cooperation with e.g. BTM is obtained, a 5-8% share over the 5 years is likely.

The German transport sector shows great sales potential as earlier mentioned. The final sales figures depend rather on the sales effort than the potential customers. Although a bigger market the figures will not reach DK level or even half. A total of 25 is likely, with a slow start awaiting the experience from Danish installations.

To evaluate the IRS market in Germany, one must again look at the number of very large accounts, (over 100 m.$ revenue), and that is appr. 1000. Final sales figures are hard to estimate, but more than a total of 20 is unlikely.

The above-mentioned gives the following sales forecast in Europe:

Year	89	90	91	92	93
DA	6	7	7	8	8
Library	-	-	-	-	-
Communication	2	2	3	3	3
Transport	0	2	5	8	10
IRS	2	3	4	5	6
Total units	10	14	19	24	27

UK Market

Market Trend

Being the largest and oldest European fault tolerant market, UK still expects an annual growth rate of appr. 40% going from 46 mill. $ in 1983 to an expected 456 mill. $ in 1990. The fault tolerant share of the total UK hardware sales will go from 1% in 1983 to 3% in 1990. See fig. 1.

Competition

Many U.S. vendors have chosen UK as their first European base. Again Tandem was first, followed by Stratus and UK's own ITL. In 1985 Tandem had a market share of 56% followed by ITL with 20%. Again Stratus Nohalt and Parallel have entered the UK market in 84/85, with Stratus (IBM) being one step ahead. The UK-software houses have at an early stage recognized the fault tolerant segment, resulting in a large and growing mutual business between software houses and vendors.

The UK market is highly competitive, since all major US vendors are present, but at the same time open to foreign vendors.

Tandem has again established a large customer base in banking, but also Stratus is going for the banking and financial market, since Stratus needs 3rd part SW-packages which predominantly are being made for this sector.

ITL is the old English supplier, who has been in the market since 1966. The general ITL strategy is direct sales, which means it is not in direct competition with other fault tolerant vendors.

The ITL model could be of interest to RC. ITL seems to have acknowledged the necessity of SW, and has therefore linked with some software houses to produce application packages which are particularly suited for the specific market segment. "Investor", "ideal" are examples of such packages.

Market Opportunities and Segments

There is no installed RC8000 base in UK. Turning to our prime application areas DA and library systems, the DA sales have been forecast for Europe in general.

The library sector in UK is very large, but many solutions have been - and still are - available. The CLSI system running on Digital, the DCLC running on IBM with a private line to a huge base in Ohio, and GEAL with their own 8000 HW are dominating this market. But not only libraries and potential library system buyers. In the governmental sector the Ministry of Defence has a need for systems within the army, navy and airforce.

Again the very large accounts are potential users of the IRS. The RC9000 would typically work as an IRS "black box" in a larger IBM or ICL environment. For this integration SNA and CO3 communication is necessary. IRS for councils in the governmental sector offers these opportunities as well. The earlier identified segments Manufacturing and Transport are also possibilities in UK. The outcome would be depending on competitive advantages with DEC, SPERRY and Bull.

The library sector in UK is well covered by the vendors mentioned above. The efficiency and penetration of these systems leaves very little hope for RC library installations. Efforts in other areas like IRS for large private accounts and local councils would prove more fruitful. The number of very large accounts in UK is 775 and the number of local councils appr. 300. The limitations in the sales forecast are therefore rather in sales force resources than in the market potential. If assumed that RC-UK by 1989 has a sales force of 6 rising to 12 by the end of the period, that one third was dedicated to RC9000 sales, and that each person would be able to sell 4 systems a year, then the sales forecast would be 8 in 1989 going up to 16 in 1993.

In order to achieve this RC-UK would have to start selling RC8000 now to get some experience and installed base reference. The RC image would have to be improved as well during the 1987-1989 period.

The application mix of the areas mentioned would be in favour of the IRS, due to its general purpose and good communication facilities.

The transportation sector would also be penetrated, especially shipping, since this segment is uncoverd as of now.

DP in the manufacturing sector is already a fast growing market in UK, and competition will be tough.

Sales forecast:

Year	89	90	91	92	93
DA	-	-	-	-	-
Lib	-	-	-	-	-
Transport	2	2	3	3	4
Manufacturing	2	2	2	2	2
IRS	4	5	5	6	7
Total units	8	9	10	11	12

U.S. Market

All the world's fault tolerant vendors are from the U.S.A. At a first glance, the U.S. market may therefore seem impossible to penetrate at all. This is true with the one exception that RC maintains an installed base of 35 DA systems, 20 in New York Bells System, and 15 in Michigan. Apart from this reselling opportunity, the undecided negotiations with Tolerant Systems Inc. in California or other distribution representative will show to be very decisive for RC's success in U.S.A. As of now, only the expected sales to the existing base will be calculated for:

Year	89	90	91	92	93
DA	2	2	2	2	2

Far East

The expectations to this market only relies on the 6 installed bases of DA systems in Oman, Kuwait and the United Emirates. Having this reference, service and a specially designed arabic keyboard, RC will be able to expand to other countries.

Year	89	90	91	92	93
DA	-	1	1	1	1

Conclusion

Adding up the above-mentioned sales forecasts gives the following total unit shipment:

Year	89	90	91	92	93	Total
DK	27	35	49	66	77	254
GER	10	14	19	24	27	94
UK	8	9	10	11	12	50
SCAN	7	10	12	14	16	59
U.S.A.	2	2	2	2	2	10
Far East	-	1	1	1	1	4
Total units	54	71	93	118	135	471

The Danish market represents 65% of the total estimated market. In one aspect this is good, since the Danish expected sales are almost certain to come through. On the other hand RC has to seek to export markets in order to expand their total market. In this aspect the export share of RC9000 should be higher. However, a great deal of uncertainty covers the export markets. Surely, new markets such as Benelux, France and Italy should be taken into consideration. The above listed sales figures could be considered as a minimum, also since the total on-line transaction processing market has not been included. The OLTP market is 9 times the size of the fault tolerant market.

Furthermore, a considerable amount of add-on sales is expected i.e. discs, terminals, CPU extensions, etc. The above listed numbers refer to a basic configuration.

9. Product Marketing & Strategy

The RC9000 product profile shows a very high capacity transaction processor, offering high availability and database integrity protection.

In addition, the system offers an information retrieval "blackbox option" that allows the user to handle unstructured data in a structured way. Tools will be available for system builders to combine information from both databases in new applications.

The RC8000 compatible part of the product must be launched mid 1988 to gain revenue as early as possible, with the fault tolerant UNIX environment (TX) to follow one year later.

The marketing strategy depends to some extent on the new company business strategy, which has not yet been published.

For that reason, the following product strategy must be regarded as preliminary.

The key marketing advantages are listed in chapter 7. The rest of this chapter is focused on how to market the product.

RC is not a big company and has limited resources available for promoting RC9000, as well as for direct sales activities. It is therefore necessary for RC to analyse very carefully what market segments can be expected to buy a product like RC9000. The promising segments will then have to be further analysed to discover the most profitable application areas from which RC must decide on three or four. Software systems for the selected application areas have to be made available by RC. In order to reach that goal, RC must select application software vendors, and agree with them that they or RC port the software to RC9000, and that both parties are allowed to promote and sell the solution.

RC's sales efforts must be concentrated on seminars, direct mail campaigns and promotion through the appropriate trade organizations.

As examples of application areas, this business case has pointed out Transport and Manufacturing as potential markets.

Besides the need to attack vertical markets, the competitive edges of RC9000 indicate good possibilities in selling business systems and in setting up an OEM program.

The main problem in selling to the horizontal markets is that RC does not have a well and widely known company profile. For that reason it is important that RC already in 1987 starts to manifest itself, especially on the export markets.

Besides new market development, RC has an installed base in traditionally served application areas. It is reflected in the RC9000 architecture that it is the intention to protect this base. The problem in this is that the time is running out. This is the reason why the product will be launched already when the RC8000 compatible part of the system (RC8500) has been developed.

10. Estimated Project Investment

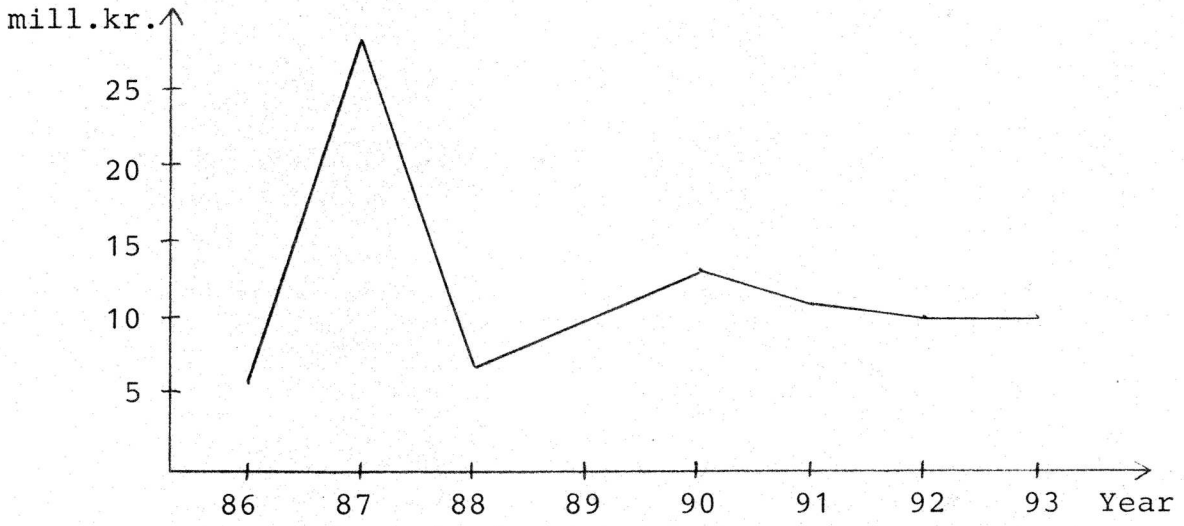
(DKK mill)	86	87	88	89	90	91	92	93
R&D	6	7	5	5	5	5	5	5
Mkt. dev.	0	0	2	5	8	6	5	5
Capital inv.	0	21	0	0	0	0	0	0
Total inv.	6	28	7	10	13	11	10	10

11. Critical Evaluation Checkpoints

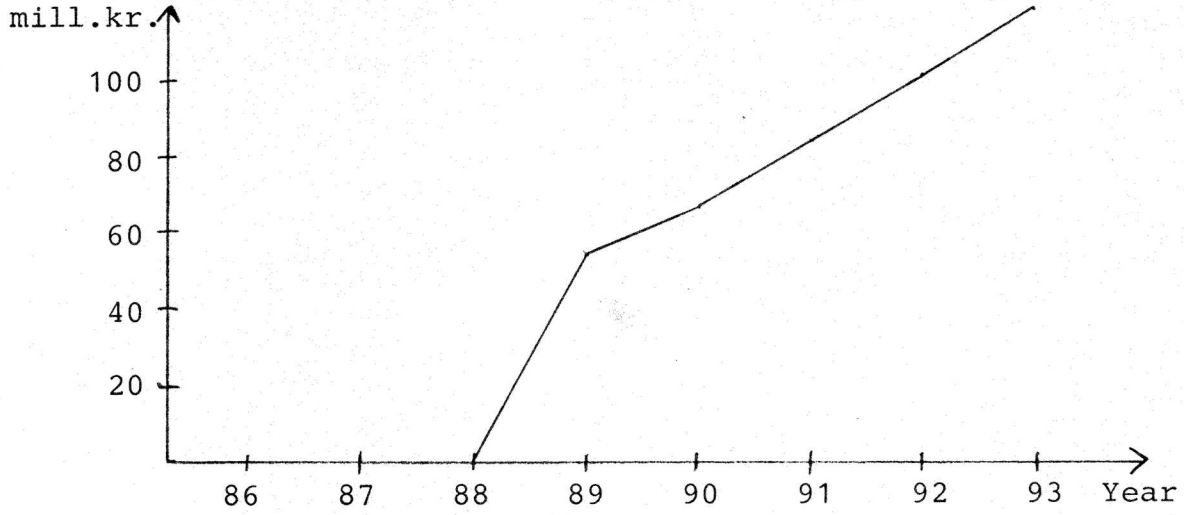
	RC8500	RC9000
System requirement specification	9/85	9/85
Product specification	4/86	10/86
Hardware engineering complete	7/87	10/87
Core software complete	1/88	9/88
Alpha test complete	4/88	12/88
Beta test start	7/88	1/89
General customer shipment	10/88	4/89

12. Appraisal Indicators

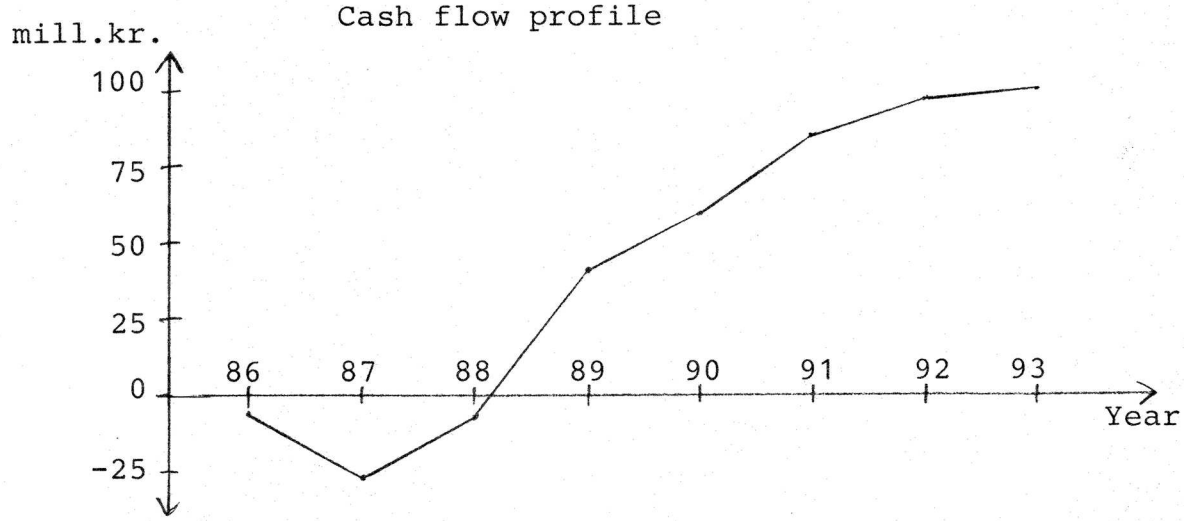
Strategic investment profile



Sales profit (Marginal contribution - sales and support expenses)



Cash flow profile



13. Product Development Objectives

The objectives of the RC9000 project are to develop a computing resource engine with optionally redundant architecture.

The RC9000 product must be highly competitive in the OLTP market in the years 1989 - 1995. The major requirements for that are listed in chapter 3.

A detailed specification of system requirements and development objectives is found in the "RC9000 kravspecifikation".

Competitor Overview Fault Tolerant European Market

Competitor	Models	World Mkt. Share	Intro Date	Revenue Mill. $	Key Selling Points	Application Areas	European Coverings
Tandem	Nonstop - I - II - TXP - EXT	60%	1976	532,620	1) Well established 2) Large selection of SW 3) Easy expansion path	- Banking - Finance - Manufacturing - General - Commercial & - Communications	UK Germany France Scandinavia Italy Benelux
Stratus (IBM)	Stratus 32 - FT 200 - XA 400 - XA 400	5	0282	42	1) Lower running costs 2) HW intensive approach 3) Remote maintenance at low cost	- Banking - Office systems - Networking - Hospitals - Airlines	UK, Germany France Scandinavia Italy Benelux
ITL	Momentum 9000	4	81	30	1) Low price HW and SW 2) 32 bit architecture 3) Large UK Governmental Loyalty	- Business/Finance - Communication - Hospitals - Scientific - Administration	UK, Germany
Nohalt	NH 1000 NH 2000	2,5	0782	20	1) Low entry price 2) Fast response time 3) Remote diagnostic display	- Banking - Finance - Data management - Medical & Accounting - Word processing	UK Benelux

Competitor	Models	World Mkt. Share	Intro Date	Revenue Mill. $	Key Selling Points	Application Areas	European Coverings
DDE	Supermax MC 68000	1,5	1982	12	1) Remote diagnostics 2) Easy expansion	1) Word processing 2) Spreadsheet 3) General Business package	UK Scandinavia France
DEC	VAX 8600				1) Large third part SW offerings	1) Air traffic 2) Finance 3) Industry	UK, Germany Scandinavia France Benelux
Parallel	300/30 300/40		0484		1) Starting price under $ 100,000	1) Manufacturing 2) Data Communications 3) Non transaction processing 4) Industrial Automation	UK

Appendix B

Financial Analysis

The development cost used in this analysis is calculated in the development department and included as received.

The sales and support resources are estimated by RC Marketing as follows:

Manyears	88	89	90	91	92	93
Sales	2	7	8	9	10	11
Support	0	4	8	12	16	16

The rates used are those published in guidelines for Business cases 24.05.85.

Bilag 4

Regnecentralen | PRODUKTGRUPPEANALYSE

PRODUKTGRUPPE RC9000

UDARBEJDET AF: Lars Winther DATO: 28.07.86

Tekst	PLAN ÅR 1989	%	PLAN ÅR 1990	%	PLAN ÅR 1991	%
Salg - DK, EXPORT, TELE, ANDRE (BILAG 2) mill.kr.	81		101		126	
VAREFORBRUG - DK, EXPORT, TELE, ANDRE (BILAG 2)	22		27		34	
DB - DK, EXPORT, TELE, ANDRE (BILAG 2)	59	73	74	73	92	73
MARKEDSFØRING	5		8		6	
MARKEDSFØRINGSBIDRAG	54		66		86	
RESSOURCEFORBRUG (AFLEDTE)						
. UDVIKLING - MANDÅR x RATE	5		5		5	
. SALG - MANDÅR x RATE	3		4		4	
. SUPPORT - MANDÅR x RATE	1		2		3	
. INDIR. PROD. OMK. - 20% af VF	4		5		7	
. PRODUKTIONSVARIANCER	1	4,5	1	3,5	1	3
RESSOURCEFORBRUG - IALT	14		17		20	
BIDRAG TIL RC - FØR INVESTERINGER	40		49		72	
INVESTERINGER						
BIDRAG TIL RC-OVERSKUD	40		49		72	