supermax

Supermax, the RISC Platform
Internal Release Letter

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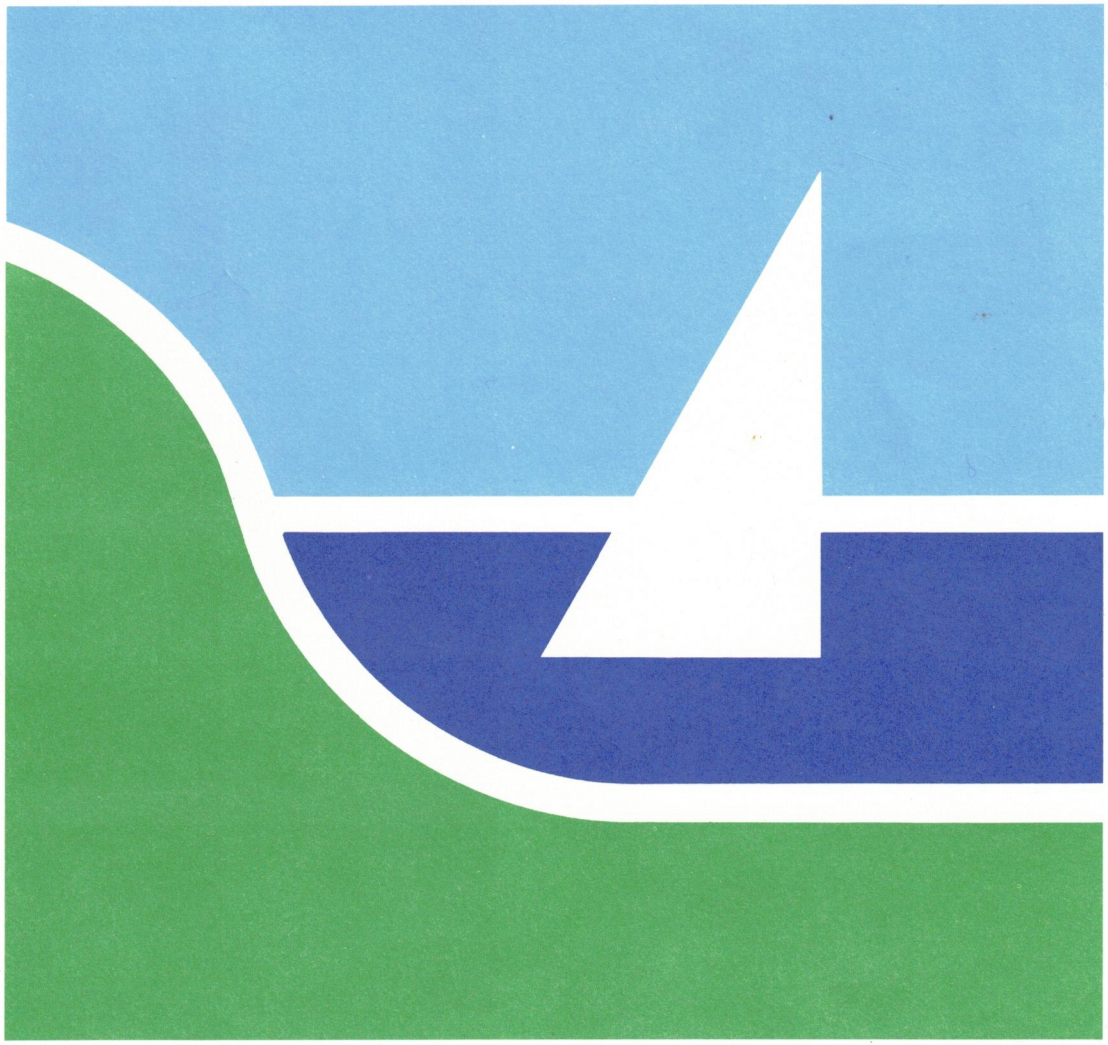

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1. BACKGROUND

This Release Letter is issued in connection with the formal release of the RISC Platform on 15.08.92. The purpose of the document is to supplement the sales material issued and the sales briefing held.

The Supermax RISC Platform has been denoted the "Pure RISC Platform" internally in DDE. However it has been decided to avoid the word "Pure" externally in order to prevent misassumptions regarding the purity of the Motorola Platform released earlier.

1.1 THE DDE SOLUTIONS STRATEGY AND PLATFORMS

This section discussses how the Supermax Platforms fit into the DDE solutions strategy. Here the concept of a "Platform" is to be taken generally meaning a computer or server with systems software etc. The next section will discuss the specific DDE definition of Platforms from Basic Development.

Vendors like DDE competing on the Open Systems marketplace have several options when positioning their product/service mix. These options may be viewed on the basis of the following Product Strategy Model composed from ideas by Gartner Group, Datapro, etc.

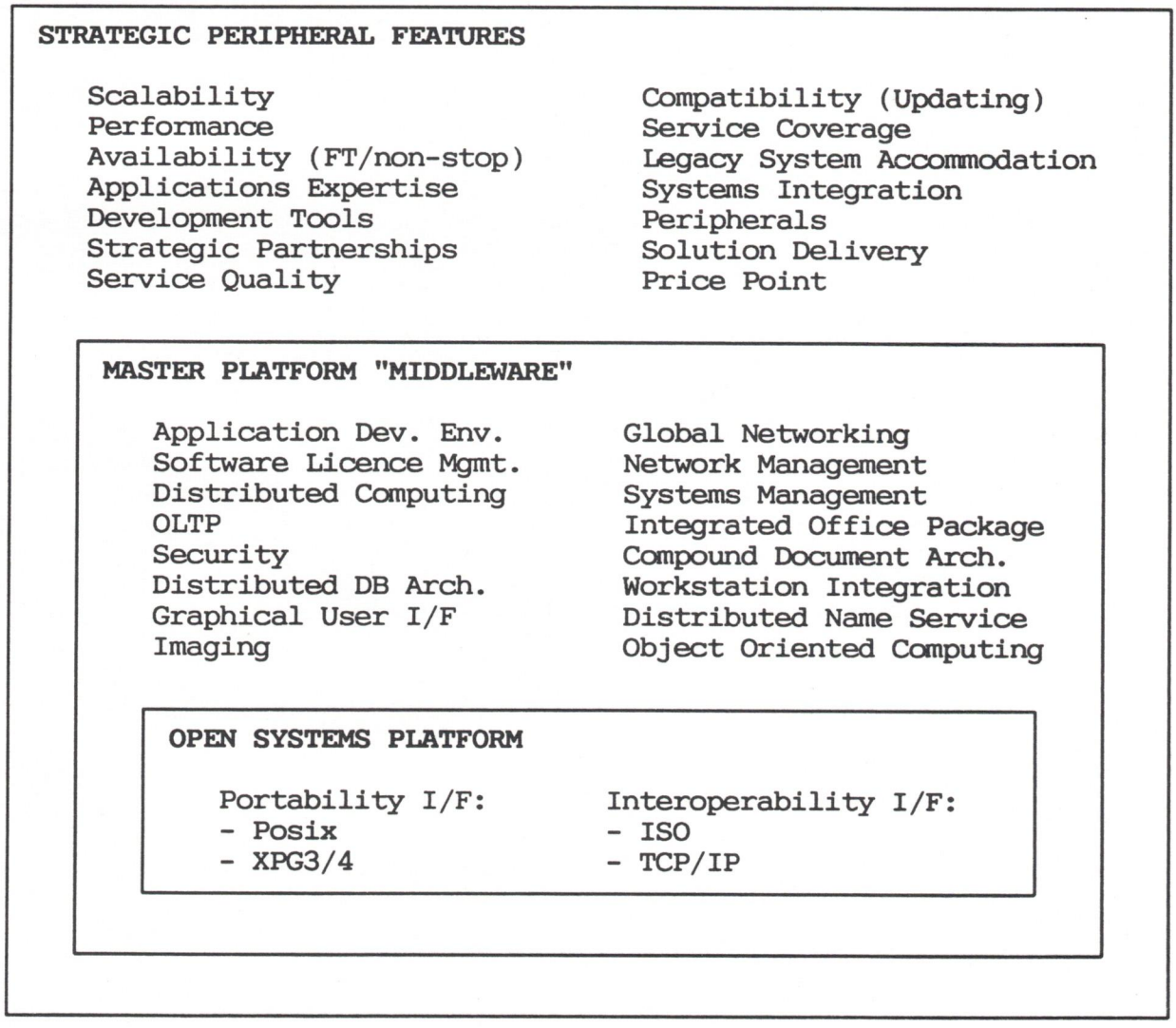

Figure 1. Product differentiation possibilities

Starting from the inner box on the figure:

The **Open Systems Platform** level includes the fundamental platform functions which secure portability and interoperability and which are well specified by de-jure and de-facto standards. Today the concept of the Open Systems Platform has become a commodity so widely spread and accepted that every vendor on the marketplace must offer open system compliance. Therefore DDE's new Platforms comply fully to these standards, but it is difficult for DDE to differentiate on this level of the Open Systems Platform. Selling UNIX no longer gives a competitive edge and now DDE simply *must* follow the evolution of the Open Systems industry as a necessity.

The **"Middleware"** box contains platform functions which are highly topical and in focus at the moment. These functions are not yet quite standardized and therefore not yet included in the Open Systems Platform. Large vendors battle trying to make their implementation of the function become the accepted standard. Examples are USL's ATLAS, DEC's NAS, OSF's DCE, USL's Tuxedo, MIT's Kerberos, HP's OpenView, and Microsoft's Lan Manager. Once a middleware-product has won the battle it becomes an Open Systems standard like TCP/IP, X, or SQL. XPG4 - the next set of standards from X/Open - will eventually include several "mature" middleware functions which are not included in XPG3 at present. However vendor differentiation will not disappear, but will shift to new highly topical areas like Multimedia and Object Oriented systems which will continue to appear as the standardization process evolves.

For obvious reasons DDE does not join the "middleware battle" and we do not attempt to position the Supermax Platforms among the best equipped on middleware. When a useful product seems like a winner we may choose to implement it. Examples of middleware in the RISC Platform are Motif and Lan Manager.

Strategic Peripheral Features are the vendors' remaining choices of ways to differentiate their offerings to the marketplace. If a company does not wish to be a vendor of standard platforms (a box-mover) it might base its marketing strategy on one or more of these features of which some are product oriented and some are organizational.

At this point it is interesting to consider, on which of all the features listed in the figure DDE is particularly strong? - -

As stated the Supermax Platforms are strong in complying to the Open Systems Platform standards, but this is no special issue anymore. Among the Strategic Peripheral Features DDE has several significant strengths:

Strong product features:

- Scalability of the platform
- Over Time (backward) Compatibility enabling updating of existing platforms

Strong organizational features:

- Systems Integration
- Solution Delivery and Applications Expertise

Which strategy does the model suggest for DDE?

The one we use – naturally: Marketing of unique solutions **combined** with marketing a perfectly competitive platform:

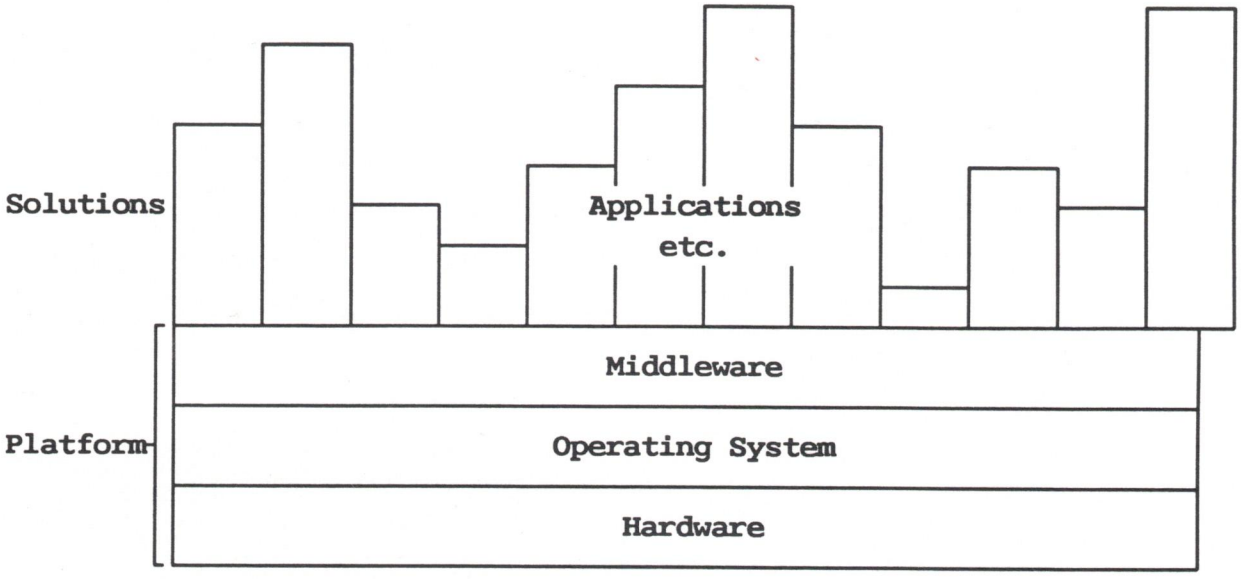

Figure 2. DDE's Total Solutions Strategy

About half of DDE–DK is occupied with developing, manufacturing and servicing a common Platform. The other half is organized into a number of Business Units each marketing a Solution. These solutions are all built on top of the common platform thereby achieving a lot of synergy between the different parts of the organization. (However – as implied on the figure – certain solutions are only partly based on the common platform).

DDE started to implement the solutions strategy already in 1986 when the concept of "DDE–Concepts" was introduced and all selling departments were urged to form Business Units around these. Before that point a few solutions existed but Supermax was mainly sold as a platform – and with great success because of its pioneering technology at that time.

Now the total solutions strategy is fully implemented and very present in every employee's mind. This strategy places DDE in a superior position compared to traditional hardware vendors who lack the control of the applications and compared to traditional software houses who lack the control of the hardware platforms. At the moment many of our competitors are announcing their intentions and plans to transform to the same strategy, but DDE is one of the few who already has it well implemented.

By targeting our marketing at customer prospects for a specific solution we concentrate the primary attention on the unique features of our solutions. Still a secondary attention usually arises on the platform included in the total solution offered. Hence it is equally important that the platform is perfectly competitive as is the uniqueness of the solution. The advantage is that at the point in time when the attention is directed to the platform the prospect often already has a preference for DDE based on the uniqueness of the solution.

As illustrated on the above diagram some DDE solutions are more "shallow" than others. This implies that the platform itself accounts for a larger percentage of the total substance of the solution. In these cases the competitiveness of the platform is of course of even greater importance.

During the implementation of the solutions strategy the **focus** of the marketing efforts and the internal **attention** was naturally **turned away** from the **Platform** and **towards** the **solutions**.

As a natural consequence of the strategy process the focus of the marketing efforts and the internal attention must now be **partly guided back** to the platform thus resulting in the "bifocused" strategy desired where we promote **both** the solutions **and** the platform externally and internally.

To obtain this goal several initiatives have been taken:

- The Supermax series is re-launched as "Multiservers" in new cabinets and with RISC CPUs.
- The Product Marketing department has been formed.
- Basic Development was reorganized in May 1991 to achieve an improved service towards the Business Units.
- New brochures were issued at the public introduction of the RISC Platform in late 1991.
- A sales briefing is held - both for Danish and international Business Units.
- A Platform Handbook for sales is issued.
- A sales staff training program covering the Platform is being planned.
- An ad campaign is being run in Danish newspapers attempting to clear away certain misunderstandings about weaknesses in the Platform.

1.2 WHAT IS A SUPERMAX PLATFORM?

A Supermax Platform developed and manufactured by DDE is a computer- or server platform which has some specific attributes which are important for the internal "customer" of the Platform being the Business Units who build and sell total solutions based on the Platform.

Within DDE we use the term "Platform" to denote a certain release of the whole "product-package" from Basic Development including the Supermax range of computers/servers and more than 70 systems software products and other software products.

Beforehand BD would release one or a few hardware modules or one or a few software products at a time. As the complexity of the product mix increased this method resulted in some inconsistencies between the separate products.

In the new method all the modules and products are released in one big integrated bunch - called a Platform. This approach enables BD to equip the Platform with two important qualities:

1. Before its release a new Platform is put through a very thorough integration test where all parts are being tested to verify that they function in combination with all the other parts of the Platform. A test which is now possible since the contents of the Platform is constant.

2. Together with the quality of being well tested the Platform products also have the quality of matching well together. This means that all software is mutually compatible and that all software can be executed on all possible hardware configurations.

Hence the DDE Platform concept implies that a certain "guarantee" of integrity and high faultlessness is given by BD on products and product combinations within a Platform. A guarantee of this high level was impossible to give before Platforms were introduced.

There will still be a number of products coming from BD which are not included in the Platforms. These products are not second class products. Only, the Platform guarantee does not apply to these products. A reason to leave a product outside the Platform could be, that the product only works together with a limited number of the Platform products. By definition such a product can not be part of a Platform.

Important: The mission of the Platform is to be a stable foundation for the Business Units to build their solutions on top of. Hence the Platform is very much intended to be added onto. All parts which are added to the Platform will exist outside the Platform guarantee. Therefore the Business Units must be very aware that all additions made to the platform are done under the responsibility of the Business Unit itself. But this is quite acceptable, – even desirable.

Products which the Business Units may need to add to the Platform are:

- The Business Units' own solutions applications
- Peripherals needed and not included in the Platform
- Solution specific hardware
- Other BD products/features outside the Platform
- Customer specific software
- Etc.

Thus Business Units should not despair if a certain product or feature required is lacking within the Platform. As stated above it is perfectly legitimate to add both hardware and systems software on to the Platform. Only, the Business Units must be aware that the "BD guarantee" covers the Platforms insides exclusively and that all additions made should be carefully considered and QA tested by the BU itself.

1.2.1 The Platform Generation Process

The total process from a new Platform emerges as an idea until it runs in operation at customers sites spreads over several years. Basic Development operates with 3 generic Platforms:

The Strategic Platform is a future Platform which BD is planning and designing.

The Development Platform is the next new Platform platform to be released. Is is fully specified and BD is doing actual development work on it.

The Current Platform is the released platform which is delivered to customers by standard procedure. There can be more than one Current Platform if a number of incompatible Platform lines are sold. This is in fact the present case, since the Motorola Platform and the RISC Platform are both Current Platforms. Current Platforms are typically updated once or twice a year with a new version of the whole Platform including error–corrections and possibly new versions of certain products.

Before a new Platform is released as a Current Platform it is the Development Platform. At the release time, when a Development Platform becomes Current, a Strategic Platform becomes the new Development Platform. Thus the Platforms shift through the 3 stages over time.

The total "life cycle" of a Platform can be illustrated by major milestones and activities as follows:

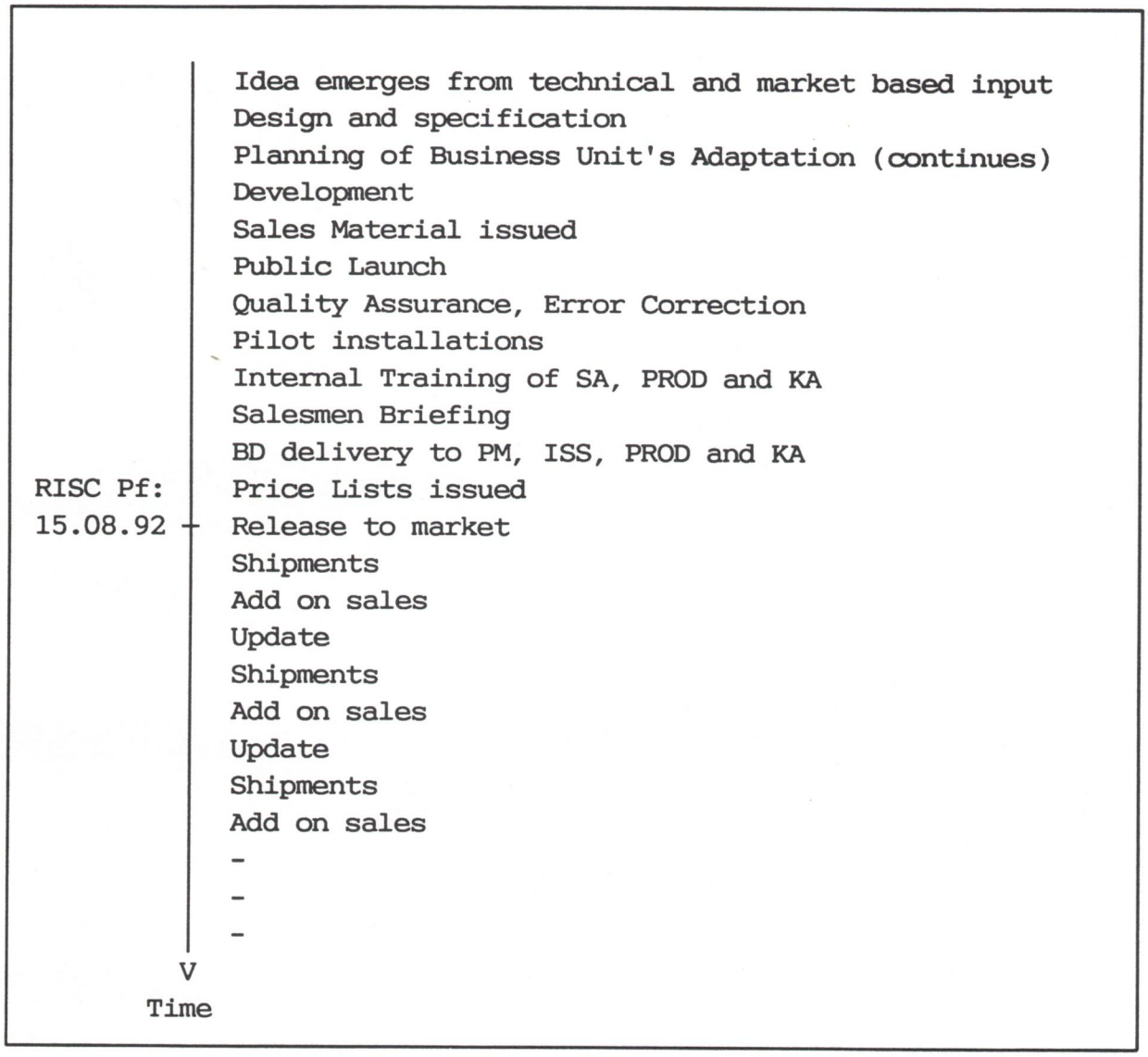

Figure 3. The Platform Life Cycle

The exact sequence and composition of the entries on the time line may vary in practice.

Who decides what to include and what to exclude when a new Platform is introduced?

It has been decided that the development of the Platforms should be even more market driven in the future. Consequently PM has been given the task to provide and communicate market requirements from the Business Units and from the marketplace itself (competitors, research bureaus, etc.) to Basic Development. For this to function it is important that the Business Units supply the appropriate input to Product Marketing.

Besides the market input new Platforms are based on new technology available in the computer industry. It is BD's job to watch and even predict the evolution of the technology.

The Platform life cycle shown above is reinitiated periodically so that at each point in time there are always at least 3 Platforms in cycle as illustrated below:

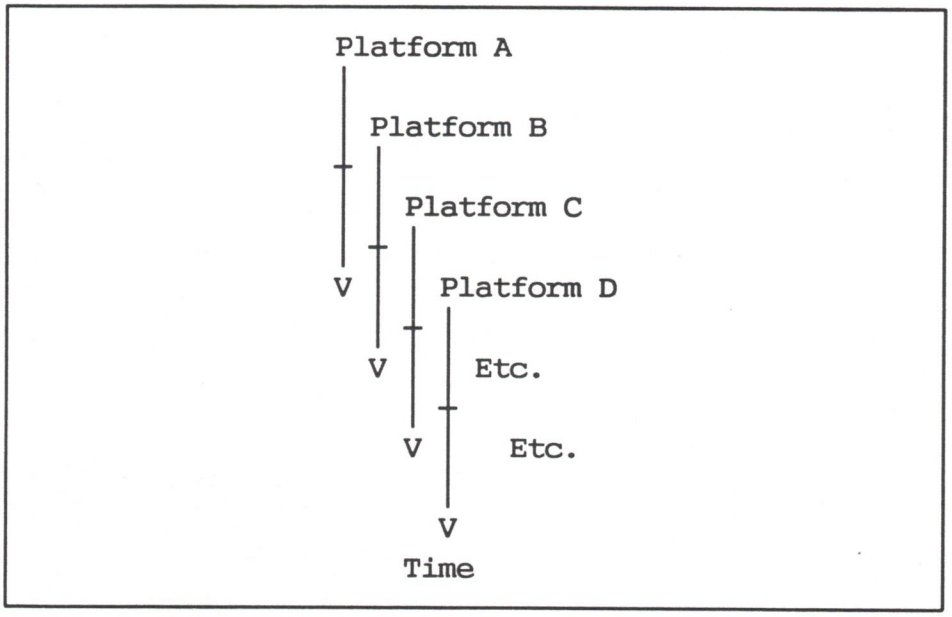

Figure 4. Overlapping Platform Life Cycles

1.2.2 Four Classes of Platform Products

In connection with the introduction of a new Platform a grouping of all products is done into the 4 classes:

- Strategic Products
- Frozen Products
- Lo Longer Supported Products
- Not Working Products.

Strategic Products (not to be confused with the generic Strategic Platform described above) include the primary product line of Platform products which is currently promoted to the market. These products all possess the qualities of integrity and high faultlessness as guaranteed by BD.

Products belonging to the remaining product classes are non strategic. They are included to obtain backward compatibility so that existing configurations including such products may be updated to the Platform.

Frozen Products are former Strategic Products which still satisfy the fundamental requirements of the Platform contents. However no future improvements or any other further development will be done. Errors reported are corrected, but in case of errors requiring a major effort a repair is attempted by substituting by a corresponding Strategic Product.

No Longer Supported Products are older products which still function in the Platform, but in which the correction of errors is no longer practiced by BD. Hence maintenance contracts on these products if any should be cancelled.

Not Working Products are older products which have been dropped. Such products definitely can not function together with the Platform in question, – neither within or added outside the platform. Hence Not Working Products are not included in the Platform, however they are intentionally specified on the Platform product lists because they are subject to appear in configurations suitable for an update to the Platform, in which case they must be replaced.

As new Platforms are introduced certain products will be shifted downwards and degraded to a lower class on the above list. When the specification of a new Platform is approved – typically 6 – 12 months before it is released – PM will issue a list of products included in the Current Platform(s) which are to be degraded. It is the duty of each Business Units to adjust the expectations of its customers according to the classification of the products in operation at their site.

2. PRESENTATION OF THE NEW PLATFORM

This chapter gives the highlights of the new RISC Platform and an overview of its Strategic, Frozen, No Longer Supported, and Not Working Products together with a few useful facts on sales material available. The presentation is only intended as a short introduction. For detailed information on the Platform please refer to the sales documentation mentioned below.

2.1 NEW ADVANTAGES AND BENEFITS

As stated on the public launc of the RISC Platform in late 1991 the major highlights are:

- Multiservers well suited for the Client/Server model
- Conformance to Open Systems, XPG3, POSIX, RISCos, ISO/OSI.
- Backward Compatibility
- RISC Multi Processor Technology and Enhanced Performance
- New Cabinets
- Others: MIOC, X.11-5, Motif, Lan Manager, New Disks, Dual Hosted Disks, Service Computer.

The intention behind the naming of the new Platforms as "Multiservers" is to follow the market trend. Everybody talks about servers and nobody talks about minicomputers anymore. Nothing particular has been changed in the new Platforms to convert them to servers. They are already just as well suited as servers as they are as minicomputers. The change is only a marketing driven change of words.

The strength of the Platform as a server lies primarily in its being an Open System and in its complete and integrated line of server facilities such as:

- File Server
- Print Server
- Boot Server for Diskless Workstations
- Mail Server
- Communications Server
- Database Server
- Applications Server.

The combination and the two latter are the particularly strong features enabling the Platform to serve a complete network where some applications run on the workstations using the basic services and some applications run on the server itself. Furthermore distributed applications may be run partly on the server and partly on the workstations.

Further details on this topic are discussed in the internal document: "Supermax as a Multiserver in Client/Server Architectures" of 18.10.91. DDE sales personnel who have not yet taken the opportunity to read these 9 pages are advised to do so, since the argumentation on using Supermax in this context is new to everybody.

2.1.1 Open Systems / Standards

The Supermax RISC Platform conforms to the operating system standards XPG3, POSIX and RISCos4 plus a long list of other standards relating to communications, hardware etc.

POSIX stands for Portable Operating System Interface and the 'X' associates it somehow to UNIX. POSIX is a standard originally driven by IEEE the American Electrical Engineering association and later "elevated" to an International ISO standard (no. 9945-1). It specifies the interface between the basic operating system and the next layer of software. Being international and public POSIX suffers somewhat from being slow and reduced because of the public standardization process where everybody must agree upon everything.

XPG3 is the X/Open Portability Guide, issue 3. X/Open is a non profit international company working with users and vendors on defining standards based on international standards where such exist and de facto standards in other cases. XPG3 is X/Open's 7 volume document specifying the interface to the operating system as POSIX but covering more functions in the environment of the operating system too. XPG3 compliant Platforms and software require only basic recompilation of source code to achieve portability. XPG3 may be viewed as a superset of POSIX which is more operational in use.

X/Open offers a "Branding" - a paid certification of equipment and software conforming to XPG3. By using the trademark laws X/Open also attempts to prevent vendors who have not passed the branding test suite and paid the fee from even mentioning XPG3. Both the Supermax Motorola Platform and the RISC Platform do conform to XPG3 and the RISC Platform will soon become branded. Until then the claiming of XPG3 compliance should be done with a certain discretion.

RISCos4 is not an actual standard but a product. It is the UNIX operating system from MIPSco (MIPS Computer Systems). MIPSco has defined a binary interface between computers with MIPSco CPUs running RISCos4 and the software applications to be run on such computers. This applications binary interface (ABI) enables standard 3rd party software products to be put on the computer as binary modules and run immediately just like "shrink wrapped" DOS software is put on PCs and run. The supermax RISC Platform is compatible with RISCos4, thus enabling standard software for RISCos to be run without an actual porting but only requiring a simple adaptation and QA by BD.

2.1.2 Performance

An important requirement for the RISC Platform was enhanced performance over the Motorola Platform. BD issues a set of Benchmarks reports on the Platforms for internal use which can be delivered by Marketing. A comparison of an extract of benchmark results from two Platforms indicates that the goal has been achieved:

Benchmark \ CPU	68030	R3000
Dhrystone (one CPU)	12000	42700
Whetstone (one CPU)	1850	13000
SPECmark (one CPU)	2.4	17.2
SPECthruput		17 - 129

Figure 5. Comparison of Benchmark Results

These benchmarks indicate the computing power of the Platform CPUs. As can be seen the performance gain corresponds to a factor of 3 – 7.

However the total performance of a Platform also depends on several other factors such as the Input-/Output system (i.e. disks and network), the System Bus and the ability of the systems software to parallel tasks. These other factors have not been essentially improved since the former Platform. Still the Platforms were designed already from the beginning as powerful multiuser systems based on a unique Symmetric Multi Processor architecture which is a combination of the closely coupled and the loosely coupled SMP models and furthermore equipped with powerful I/O capabilities etc. Therefore the Platforms are still well balanced between CPU- and I/O performance.

2.2 PRODUCTS INCLUDED

The following overview tables list products of special interest in relation to the introduction of Platforms. The tables are not complete! For details please consult Product Marketing.

	Motorola Platform	RISC Platform
Systems	Supermax 4, 6, 12, 24 Supermax Compact, Slim-line, Vertical cabinets Supermax Disk Cabinet Service Computer HW Clock	Supermax 4, 6, 12, 24 Supermax Compact, Slim-line, Vertical cabinets Supermax Disk Cabinet Service Computer HW Clock
Modules	68030 CPU. 25, 33 MHz RAM Modules DIOC III 4, 8, 32 MB MIOC - Ethernet submodule - 8 serial port submod. - 32 serial port s. - HDLC submodule 68020 68000 is Not Working NIOC NIOC-B is Not Working CIOC SIOC and SIOC II DIOC II DIOC	R3000 CPU RAM Modules DIOC III 4, 8, 32 MB MIOC - Ethernet submodule - 8 serial port submod. - 32 serial port s. - HDLC submodule
Disks etc.	3.04 GB Disk Array 1500 MB Disk 4.0 GB Streamer 3½" Floppy 5¼" Floppy Magnetic Tape Stations 3740 IBM Floppy format	3.04 GB Disk Array 1500 MB Disk 5.0 GB Streamer 3½" Floppy 5¼" Floppy
Other Hardware	NTC2 NTC No Break Power Supplies SGD	NTC2 No Break Power Supplies

Product Classes:	Strategic products Frozen Products No Longer Supported Products <BLANK> = Not Working

Figure 6, part A. Platform Products

	Motorola Platform	RISC Platform
O.S. etc.	SMOS 68030 (XPG3 compliant) Misc. Utilities *(NFS restricted)* X.11 Rel. 5 and Motif Mag. Tape Utilities SOS	 SMOS RISC (XPG3 compliant) Misc. Utilities *(NFS restricted)* X.11 Rel. 5 and Motif SOS
OSI TCP SNA & BSC	OSI Protocols X.25 X.3/X.29 X.400 FTAM TCP Protocols SNA Protocols BSC Protocols, 3270/3780	OSI Protocols X.25 X.3/X.29 X.400 FTAM TCP Protocols XIP SNA Protocols
Misc. comm.	OSI and TCP for NTC2 Protocol Object Manager	OSI and TCP for NTC2 Protocol Object Manager
PC integra- tion	Lan Manager/X PC Disk and Print Server Misc. PC Software DDE-Term DM PCTerm DOS DOS 3.2 & 4.01 Software PCs (FlatTop & DeskTop) Misc. PC Hardware PC UNIX (Interactive) X-Vision 4.0 MTools	Lan Manager/X Misc. PC Software DOS 3.2 & 4.01 Software PCs work outside Platform Misc. PC Hardware PC UNIX works outside Pf. X-Vision 4.0 MTools
Async. comms. prod.	TTY Emulator VT100 Emulator Kermit Broadcast Printer Server for LP	
Equipment	Misc. Modems and Muxes Misc. Bridges and Routers	Misc. Modems and Muxes Misc. Bridges and Routers

Product Classes:	Strategic products Frozen Products No Longer Supported Products <BLANK> = Not Working

Figure 6, part B. Platform Products

	Motorola Platform	**RISC Platform**
Compilers etc.	Screen Generator RM/Cobol-85 OCI Pascal SVS Pascal/Fortran DDE-Pascal Universal Basic MBP Cobol Comal80	Fortran (by MIPSco) Pascal (by MIPSco) C++ Screen Generator *(RM/Cobol postponed)*
RDBMSs & 4GLs	ORACLE 6 product line SQL*Forms 3 and 2.3 ORACLE 5, incl. Forms 2.3 Informix product line Progress product line Dataflex product line	ORACLE 6 product line SQL*Forms 3 and 2.3 SQL*Forms w. Motif *(Informix delayed)* *(Progress delayed)* *(Dataflex delayed)*
Office autom.	Uniplex 7.01 Supermax Tele Supermax EDIFACT Supermax Kontor prod. line	Uniplex 7.01 Supermax Tele Supermax EDIFACT Supermax Kontor prod. line
Finance appl.	Supermax Accounting Supermax Fixed Asset Ctrl.	

Product Classes:	Strategic products Frozen Products No Longer Supported Products <BLANK> = Not Working

Figure 6, part C. Platform Products

2.3 HINTS AND WARNINGS

This section gives a few hints and warnings concerning the configuration of the RISC Platform. Much more information on the subject is available in the product documentation.

2.3.1 RAM Memory Usage

The dimensioning of RAM memory should be done individually. The Business Units should make solution specific guidelines regarding RAM requirements per user etc. This may be done by experiment using the Sysdisp utility or by calculation using the memory information stated on each software release description, taking into account the reusage of the text segments of programs running on the same CPU.

In general RISC programs take up 2½ times the memory of 680x0 programs due to the reduced instruction set and resulting larger number of instructions. Contrary to that the RISC Platform operating system utilizes Memory Paging which reduces memory usage relative to the Motorola Platform. Consequently it is impossible to give a general or relative memory usage guideline.

2.3.2 Swap Disk Usage

The increased size of RISC software implies a larger swap area requirement on the RISC Platform compared to the Motorola Platform. However several other factors affect the swap area requirement to decrease, (paging and the omission of pre-reservation of swap area at program load time).

As with RAM the guidelines for Swap Disk should be created in the Business Units and based on experience. In the absence of such individual guidelines the following may be used:

1. A Swap Disk Area of 3 - 8 times the RAM memory is generally appropriate.

2. If the RAM memory is correctly dimensioned to hold all active programs, the lower end of the range should apply. If not, i.e. if RAM is dimensioned for a typical and not a peak situation of simultaneous users, more Swap Disk Area is required.

3. Extended use of windows increases the Swap Disk Area required significantly.

2.3.3 MIOC Protocols and Logical Ports

TCP and OSI-LAN should not normally co-exist in the same MIOC due to shortage of the internal MIOC memory space.

Each MIOC in a configuration supports up to 128 logical ports. Terminals, PCs running DDE-Term and printers may use one logical port only. However if windows are used terminals and PCs use one logical port per window plus one extra logical port for the controlling window. This MIOC limitation is likely to cause configuration restrictions in practice and should therefore be brought to general attention.

2.3.4 Floppy Disks

1.44 MB 3½" Floppy Disks are used for software distribution for the RISC Platform. This is necessary due to the increased size of the software modules. The DIOC III which is the only type of Disk Controller in the RISC Platform supports one Floppy Drive only. Consequently, if a 5¼" Floppy Drive is required, a second DIOC III must be installed. This is subject to cause a problem because of the disproportion between the price of a DIOC III and the benefit of a Floppy Drive.

2.4 SALES MATERIAL

2.4.1 Brochures

In connection with the public launch of the RISC Platform in late 1991 4 new brochures were issued. These brochures which should already be well known to all DDE sales staff constitute the brochure-level sales material of the RISC Platform.

"SUPERMAX COMPUTERS" issued in English and Danish is a luxury brochure signaling very high quality. The main topics of the brochure are: Scalability, Modularity, Compatibility over time, Multi server functions, Open Systems, Interoperability, Portability and ISO 9000 Quality Management. This brochure is intended for the customer prospects' management.

"SUPERMAX COMPUTERS, TECHNICAL INFORMATION" issued in English only is a thorough presentation of all modules and products in the Platform described by the "Feature, Function, and Benefit" method. This brochure has a more conservative layout and the production costs permit updates to be made regularly when new Platforms are released. The information contained is meant primarily for EDP managers, OEM dealers and I.T. consultants and corresponds much to the information usually written into DDE's major proposals describing the Platform part of the solution offered.

"The Supermax Computer Range" issued in English is a two page datasheet on the Supermax series of Multiservers. It describes the basic models available and the configuration possibilities of these and shows colour pictures of the cabinets.

"Supermax as a Multiserver in Client/Server Architectures" issued in English, Danish and German is a low-budget brochure printed on the standard DDE sheets. It discusses the advantages of the Supermax Platforms when used as servers in networks.

All DDE sales staff ought to study these 4 brochures thoroughly in order to know the primary arguments that can be used when presenting the Supermax Platforms.

2.4.2 Overhead Foils

A set of overhead foils was prepared for the public launch of the RISC Platform in late 1991. A copy of this set is available in the Marketing department together with other overhead foils on the Platforms, the solutions and the organization.

2.4.3 New Supermax Platform Handbook

A new Supermax RISC Platform Handbook is issued by Product Marketing. If not previously provided or enclosed with this release letter the Platform Handbook may be ordered with Inge Margaard (IM), Product Marketing.

The purpose of the Platform Handbook is to supply the DDE sales staff with knowledge about:

- What the RISC Platform contains
- Product descriptions
- Advantages/benefits of the products
- Disadvantages/limitations of the products
- Good answers to objections and tricky questions.

The Platform Handbook will be continuously updated. Subscriptions are made with Inge Margaard (IM). At the present state information on peripherals, PCs and ORACLE is missing. Please note that the Platform Handbook is a strictly internal document and not to be handed to customers etc. Please also give all relevant feed-back on the Platform Handbook to PM.

2.4.4 Price Lists

All subscribers to the DDE price lists have received an update set dated 15.08.92 including a cross reference list of software products for the RISC Platform relating RISC- to 68030 products.

2.5 COMPETITIVE INFORMATION

Product Marketing keeps records of relevant competing products on the market. It is not possible to give a useful survey of this matter here. Please contact Product Marketing if a particular competitor information question occurs.

3. ANSWERING OBJECTIONS AND TRICKY QUESTIONS

Often we are met with the same objections to our Supermax proposals and the same tricky questions. Some of these are caused by actual weaknesses in the product and some are caused by myths and misunderstandings. Product Marketing will gather such frequent issues and attempt to compose and publish useful answers for the sales staff to use if wished. The following issues are the first examples. Please send other similar frequent objections/questions to Product Marketing if you have or meet any.

3.1 UNIX SYSTEM V RELEASE 4

UNIX System V Release 4 (SVR4) is not yet included in the Platform. Supermax Operating System is based on Release 3.1.

The reason is a choice of priority made in 1991 and based on an internal survey among the Business Units, which showed that conformance to POSIX and XPG3 is far more important generally, because these are the formal standards and SVR4 is just a product from one vendor.

Furthermore we already have most of the features included in SVR4 such as POSIX, XPG3 and the BSD Sockets – a certain Application Programming Interface which has been missing in UNIX System V beforehand. The only SVR4 features really missing in the RISC Platform are the Application Binary Interface (ABI) which however has not become a market standard, and the rarely used Special File Systems.

3.2 THE ACE INITIATIVE

At the public launch of the RISC Platform in late 1991 it was announced that DDE had joined the ACE Initiative. However very recently ACE has been dropped by its major participants.

The purpose of ACE was to create a common platform including two processor architectures: Intel x86 and MIPSco R3000/4000, together with two operating systems: UNIX and Microsoft Windows New Technology (NT). For DDE the dissolvement of ACE has little affect since we only aimed for the MIPSco + UNIX combination and since this still is a good choice.

By joining ACE DDE demonstrated awareness of new strategic possibilities. ACE's dissolvement could not be foreseen by any of the members including the large companies. Now we just have to stop talking about ACE and remove ACE from our sales material.

3.3 THE HETEROGENEOUS SUPERMAX

The Heterogeneous Supermax was designed and introduced as a natural consequence of DDE's policy of securing backward compatibility whenever a new Platform is released, thus preserving the customers' investments in existing installations.

The idea was presented at the public RISC Platform launch in late 1991 as a bridge enabling a smooth migration from the Motorola 68030 product line to the MIPSco RISC product line.

Two major benefits may be achieved by upgrading a 68030 based system to a Heterogeneous:

- New RISC based applications may be utilized at the same time as existing 68030 based applications not yet ported to RISC.

- A significant performance enhancement of applications – particularly ORACLE based.

There should be no doubt that the Heterogeneous Supermax is a unique and perfectly well suited product for the purpose of maintaining DDE's existing customer base. As such the Heterogeneous Supermax is a very valuable commercial factor.

However, not everybody turned out to like the Heterogeneous Supermax!

Apparently many new customer prospects reject the model of combining RISC and CISC in one computer and characterize it as "impure". In fact one might admit that customers really do not need the Heterogeneous facility if they do not have a CISC Supermax already. In this case only DDE's interest in a gradual adaptation of applications justifies the idea of the bridge. And this sometimes causes objections and tricky questions from customer prospects.

In addition to the resistance on the new customer market a resistance to the Heterogeneous Supermax has emerged within BD. This is actually quite understandable because the idea conflicts directly with the idea of Platforms, where everything should be able to run on or together with everything else. Hence the Heterogeneous Supermax can not become a Platform.

To preserve the opportunity to update existing customers by use of the Heterogeneous Supermax a differentiated policy must be conducted with great elegance in order not to send the wrong signals to the two parts of the market, the existing base and the new business area.

The policy chosen for the **new business** area is not to promote the Heterogeneous Supermax at all. Therefore the Motorola CPU necessary in the first RISC systems delivered was "hidden" and denoted a "Communications- and Utility Processor with Cache Memory" in the price lists.

The policy chosen for the **existing customer base** is to allow a number of RISC CPUs to be added to the Motorola Platform. This enables the Business Units to sell Heterogeneous systems based on a BD Platform provided that they take the responsibility of the RISC CPU and its software themselves.

The only software delivered by BD for the RISC part of a Heterogeneous Supermax is the ORACLE kernel and the C development environment. Incidently these products should be considered as Frozen Products even though they are not even part of a Platform. Therefore the Business Units should attempt to switch Heterogeneous Supermax customers to pure RISC Platforms as soon as possible.

4. EXTERNAL INVESTIGATIONS

4.1 THE GARTNER GROUP PLATFORM EVALUATION

In connection with the public launch of the RISC Platform an evaluation of DDE and the RISC Platform was made by the international computer research bureau Gartner Group. The evaluation was required and paid by DDE but Gartner Group is broadly accepted as one of the most serious, neutral and un-biased in the business. Therefore the evaluation was presented and accepted as not influenced by DDE.

The Platform evaluation followed Gartner Group's model for "Strategic Analysis Reports of Midrange Computers" - a model including 190 check items grouped into the 14 most important areas of "strategic functionality". The same evaluation has been made for 31 of the most successful competing midrange computer vendor's newest systems. The conclusion is that Supermax has a better strategic functionality than the average of these 31 other systems on 12 areas out of the 14.

This quite impressing result confirms that DDE is still at the forefront of the technological evolution in the midrange computer industry.

Copies of 2 overhead foils from Gartner Group illustrating the evaluation model and the result including the comparison with the average of the competitors are available from Marketing.

4.2 MARKET SHARES ACCORDING TO IDC

IDC, another international computer market research bureau, has analyzed the Danish 1991 UNIX market and issued a report among others stating the vendors' market shares.

On DDE's main target market the "Medium Scale - UNIX Based" market (100 - 1000 k$ systems) DDE holds a 62% market share counting 1991 year-end installed base by units and a 32% market share counting 1991 shipments by units. Both figures are top rankings.

Looking at the entire UNIX market including "Small Scale" and Workstations DDE ranks 3rd after NCR and Sun followed by HP and IBM counting 1991 shipments by value.

5. ACTIVITIES SUCCEEDING THE RELEASE

This chapter addresses the questions: When shall we sell the RISC Platform and what happens to the Motorola Platform all taken into account the readiness of the solutions and the customers?

The RISC Platform was formally released on the 15th of August 1992 and may be delivered within the standard time of delivery (5–6 weeks).

5.1 HOW WELL IS THE NEW PLATFORM TESTED?

Earlier it used to be wise not to install newly released products with customers running a critical system before all the children's diseases were cured at somebody else's customers site. With the introduction of Platforms BD claims that the new Platforms released can be trusted to work perfectly. This is of course due to the very thorough test which is new conducted by the Basic Quality Assurance BQA group in BD and due to the Platform idea proper.

A proof that this is in fact the case is that since the RISC Platform was passed by BD on 03.07.92 no errors have been found and all installations have been completed very smoothly without any problems.

5.2 UPGRADING FROM THE MOTOROLA PLATFORM

A particular Motorola to RISC Platform "Upgrade Kit" can be required from PROD. This is a tool for DDE technicians and supporters and contains the necessary documentation together with a tape and some floppy disks with scripts and parameters.

5.3 THE PLANS FOR THE PORTING OF THE SOLUTIONS

A survey has been conducted on the actual development stage of the individual DDE Solutions regarding the adaptation of the RISC Platform. In general the solutions are not quite ready for the RISC Platform. However most solutions have RISC plans and will soon offer this Platform. The following table shows the immediate and subjective impression of the present situation as understood by Product Marketing:

Development Stage	Solution
Shipments already executed	ICS Library Education Management
Specific dates in 1992	E-CAD PTT CIM
Quick if decided, or Proposals given, or Contract 1993	Technical Solutions Central Government Euromax
Soon to be planned	Local Government
Waiting	Retail Education APEX

Figure 7. Development Stage of DDE Solutions

To prevent the evolution of new Platforms from outrunning the development of the DDE solutions in the future Product Marketing will attempt to coordinate all development plans in due course.

5.4 WHAT ABOUT THE MOTOROLA PLATFORM IN THE FUTURE?

The Motorola Platform is presently the basis of DDE's mainstream business. Our customers have it, – our solutions are built on it, and DDE earns the money on it! Therefore the Motorola Platform is certainly not outdated and we must be very careful not to miscredit it.

The evolution of RISC technology has offered the opportunity to shift the processor architecture which we chose to do in order to stay in front performance-wise. This decision implied one big compromise in that we now have two Platform lines which are only partly compatible.

Consequently the Motorola Platform is still current – like the RISC Platform – and new releases will be released of both eventually. Since we can not just update all customers from Motorola to RISC we do not consider the RISC Platform to be the successor of the Motorola Platform.

However the RISC Platform is the newest and best Platform and the one which future development is based on. Therefore new sales should whenever the solution permits it be RISC Platforms.

All existing customer installations made previous to the release of the Motorola Platform should be updated to the Motorola Platform if at all possible. Only 68000 CPUs and NIOC-Bs in such pre-Platforms must be replaced to enable the hardware configuration to be updated.

Furthermore it is desirable to replace all "Frozen" and "No Longer Supported" products with "Strategic" products in existing customers' Motorola Platforms - such as 68020. But as stated above this is not a condition to make an upgrade from a pre-Platform to a Motorola Platform.

6. THE NEXT PLATFORM

This chapter gives a brief orientation on the next Supermax Platform to be released. The information is strictly confidential and should be used only in the internal planning until the next Platform has been publicly launched.

The name of the next platform is not yet decided. Good suggestions sent to Product Marketing are very welcome.

The highlights of the next Platform are:

- New CPU
- Enhanced performance
- Larger configurations
- More features.

The new CPU is a 50 MHz MIPSco R4000 SC RISC processor, - the successor of the R3000 in the RISC Platform. It is 100% backward compatible and no software conversion is necessary when upgrading from R3000. The performance enhancement is around a factor of 3 when measuring pure computing power of the CPUs. Hereby the Supermax range of Multiservers will reach well over the the 500 MIPS level.

DDE will probably be the first vendor in the world to release a Symmetric Multi Processor R4000 based system. MIPSco will make a special multi processor version of R4000 at a later state, but we have managed to build our multi processor system around the regular R4000.

In the next Platform the R3000 CPU from the RISC Platform can still be used. However R3000 CPUs can not be mixed with R4000 CPUs in a heterogeneous configuration. This corresponds to the 68020/68030 situation.

Furthermore the next Platform will be tested with 400 simulated simultaneous users, and its system- and network management tools will be improved.

On the PC side some new software will be included such as: MS PowerPoint, MS Mail, MS Words, MS Works, and Q+E - a software product coupling Windows applications to a database such as ORACLE via SQL*Net.

On X-terminals new software products included will be Uniplex Windows, X.Desktop from IXI, and SQL*Forms under Motif.

A public launch of the next Platform is being planned in late September 1992 at the world's fair: EXPO'92 in Sevilla, Spain where DDE is official sponsor for the "Vision Danmark" pavilion and at the "Kontor & Data 92" exhibition in Copenhagen.

The formal release of the next Platform to the market is planned for 01.04.93. Orders taken from the public launch to the release will be delivered as RISC Platforms and subsequently converted.

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