

From: BANANA::KLEIN "16-Dec-1987 1546" 16-DEC-1987 15:48
To: @MANSUP
Subj: More Strecker strategy stuff

From: TLE::VNX::KEATING "16-Dec-1987 1544" 16-DEC-1987 15:40
To: @KSTAFF.DIS
Subj: Strecker's current presentation. I believe we are consistent, although

From: KISWA::HEINEN "15-Dec-1987 1450" 15-DEC-1987 15:00
To: @DIS:HEFFS STAFF.DIS
Subj: FYI - strecker's new strategy presentation - given to First Boston

From: MORGAN::PALUMBO "15-Dec-1987 1159" 15-DEC-1987 12:07
To: @STFTHREE.LIS
Subj: DEC'S STRATEGIC DIRECTIONS PRESENTATION - FROM W. STRECKER

DIGITAL'S
STRATEGIC DIRECTIONS

W. D. Strecker

8-December-1987

OUTLINE

- I. Customer needs
- II. Competitive assumptions
- III. Computing environment model
- IV. DIGITAL'S product strategy, product architecture, and product directions
- V. Summary

I. CUSTOMER NEEDS

Information processing systems which enable an enterprise to accomplish its mission in the most effective way and give it the competitive edge

- o Complete information processing systems: computer products, communication products, service, and support - delivered with extreme attention to quality and customer satisfaction
- o Enterprise-wide distribution and sharing of information

CUSTOMER NEEDS (CONTINUED)

- o Applications
 - Access to outside applications
 - Productive environment for customer developed applications
 - Partnership relationships to develop new, complex applications
 - Integration of multiple applications - whatever the source

- o Preservation of H/W, S/W, and training investment (within and across vendors)

- o Cost effective information systems over system life cycle (... application development; system operation; system maintenance, upgrading and evolution ...)

II. COMPETITIVE ASSUMPTIONS

- o After IBM, DIGITAL is the only full-line designer, manufacturer, and supplier of complete distributed information processing systems
- o In many areas of contemporary interest (e.g. networks, distributed computing, ease of development, ease of use) DIGITAL has significantly superior technology and products to IBM
- o Most customers - because of their extreme dependence on information systems for their competitive advantage - will not risk trusting their information processing needs to a single supplier and will choose at least two suppliers
- o DIGITAL's size and relevant technological capabilities make it the clear choice as the first or second supplier

III. THE COMPUTING ENVIRONMENT

The means by customer competitive needs are met is a COMPLETE, FULLY DESIGNED, ENGINEERED, and TESTED computing environment with integration of APPLICATIONS and DATA

- o Across individuals and workgroups within departments
- o Across departments within the enterprise
- o Across an enterprise and ITS suppliers and customers

COMMON PROBLEMS WITH REALIZATION
OF THE COMPUTING ENVIRONMENT

- o Complex, inadequate, and inconsistent computer networking
- o Focus on 'connectivity' rather than distributed computing
- o Necessity to build solutions on multiple computer architectures when a single computer architecture would be simpler
- o Failure to consider all key architectures when multiple computer architecture solutions are necessary

IV. DIGITAL'S STRATEGY

1. Complete local- and wide-area networking products built to emerging OSI standards
2. Complete distributed information system architecture based on OSI networking, other externally defined standards, and DIGITAL developed standards
3. 'Desktop to the datacenter' implementation of the distributed information system architecture based on VAX and VMS
4. Integration into the distributed information system architecture of the key externally defined computing architectures

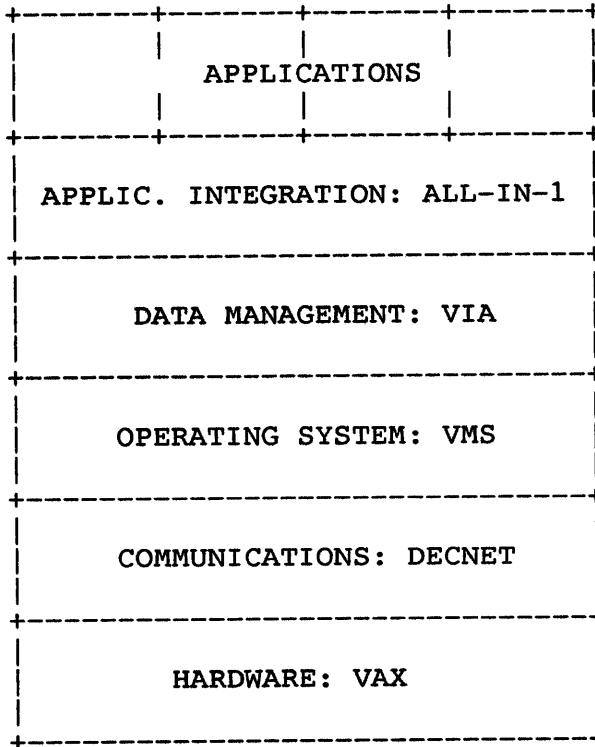
1. OSI NETWORKING

- o Peer to peer
- o Non-proprietary
- o Essential to cross individual, workgroup,
department, enterprise, extended enterprise
distributed computing

2. DISTRIBUTED INFORMATION SYSTEM
ARCHITECTURE ELEMENTS

- o Interconnection - DECNET/OSI, Ethernet
- o Database - ANSI SQL
- o Language - ANSI FORTRAN ...
- o Printing - Postscript
- o Document content - DDIF
- o User interface - X-windows
- o Mail - X.400
- o End User application integration - ALL-in-1
scripting and flow control
- o ...

3. DIGITAL'S VAX AND VMS ARCHITECTURE:
ARCHITECTURAL LAYERING



VAX HARDWARE ARCHITECTURE

- o Large virtual address space: 32-bit virtual memory addresses (fully supported by all S/W from the beginning)
- o Broadest range of totally compatible (identical) hardware systems in the industry: \$5k workstations thru multi-million \$ VAXclusters

DECNET COMMUNICATION ARCHITECTURE

- o Peer-to-peer (non-hierarchical, non-tiered)
- o Transmission technology independent
 - Circuit- and packet-switched WAN
 - LAN
- o Simple, yet comprehensive network management
- o In transition to OSI protocols

DECNET LOCAL AREA NETWORKS: ETHERNET

- o Mature, proven technology supported by multiple vendors
- o Fully and completely supported by all DIGITAL H/W and S/W products
- o Performance needed for LAN based computing environments (10 mb/sec and very high performance bridges)
- o Complete range of Ethernet media available: baseband, 'thin wire' baseband, broadband, fiber optic
- o Complete Ethernet communication environment: terminal servers, print servers, routers, X.25 gateways, IBM SNA gateways

VMS OPERATING SYSTEM ARCHITECTURE

- o Timesharing, batch, transaction, and single user workstation usage modes
- o Fully integrated with networking to provide application transparent use of remote files and other operating system resources
- o Cluster multi-computer O/S technology
 - Common Cluster-wide file system
 - Common Cluster-wide resource queues
 - Common Cluster-wide system management
 - On-line Cluster reconfiguration

Clusters allow a set of computers to be MANAGED and USED as a SINGLE system

VIA DATA MANAGEMENT ARCHITECTURE

- o Codasyl (DBMS) and relational (RDB) data models
- o Common data dictionary (CDD)
- o Local and transparent remote database access
- o Standard (SQL) and high function interfaces (DSRI) to RDB
- o Distribution of database extracts and replicates (VAX Data Distributor)
- o 4GL for application and end-user access (VAX Teamdata and Rally)

ALL-IN-1 APPLICATIONS
INTEGRATION ARCHITECTURE

Architecture for providing multiple DIGITAL and third party applications

- o A common user interface
- o Data interchange
- o Application oriented data models
- o Scripting and flow control

VAX AND VMS FAMILY FUTURE DIRECTIONS

- o Medium to large scale VAX processors
 - ECL technology
 - Multiprocessing
 - Vector processing
 - Larger VAXclusters

- o Small to medium scale microVAX processors and workstations
 - MicroVAX chip development tracking with semiconductor industry
 - Multiprocessing
 - Dedicated fault tolerance

VAX AND VMS FAMILY FUTURE
DIRECTIONS (CONTINUED)

o Networks

- Complete transition to OSI
- FDDI backbones

o Software

- High performance transaction processing
- System and storage management for very large configurations
- Graphic, window-based user interface

4. INTEGRATION OF KEY EXTERNALLY DEFINED COMPUTER ARCHITECTURES

- o Current targets
 - MS-DOS (and OS/2) (personal computers)
 - UNIX(tm) (technical workstations)
 - IBM (corporate data)
 - [Cray (supercomputing)]

- o Approach depends on nature of external architecture
 - Limited product line
 - Full product line
 - Gateway

MS-DOS INTEGRATION

- o Hardware - MS-DOS based, Ethernet connected computing terminal: VAXmate
- o Software
 - Full MS-DOS based implementation of DECnet
 - Full VMS based server for MS-DOS: VMS Services for MS-DOS
 - Support of both VAXmate and IBM PCs
- o Future directions - 386 VAXmate

UNIX INTEGRATION

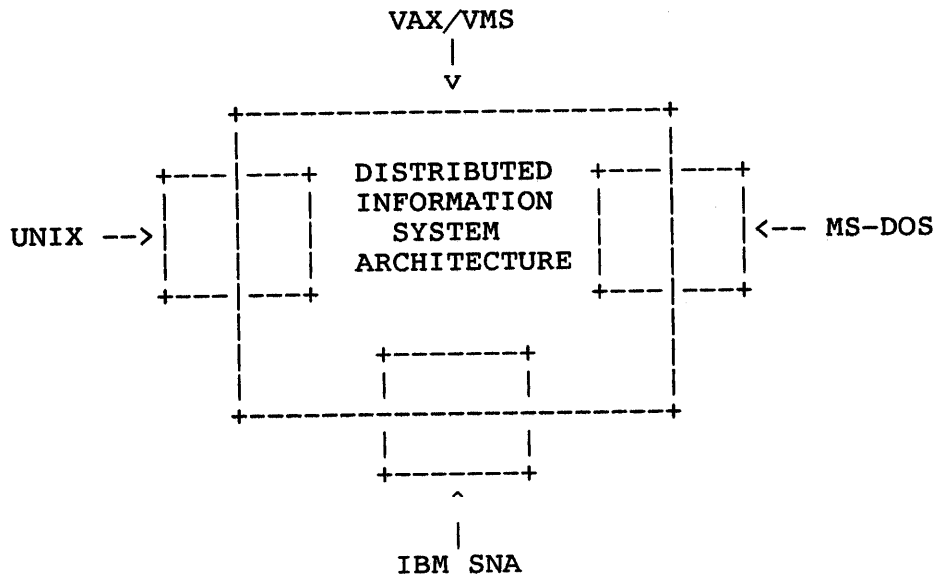
- o Hardware - full range of VAX systems: workstations thru large scale computers
- o Software: ULTRIX
 - Berkeley 4.2 based, supports SVID, and (as defined) POSIX
 - Full implementation of DECnet
- o VAX/ULTRIX is
 - A strategic product for DIGITAL
 - Exploits DIGITAL's investment in VAX and DECnet
 - Will be much more aggressively marketed in the future

IBM SNA INTEGRATION

Large number of complex, incompatible, proprietary IBM computer architectures makes direct DECnet implementation impractical. IBM SNA Gateway product implements a bi-directional conversion between SNA and DECnet with (example) functions

- o 3270 terminal emulation
- o 3287 printer emulation
- o VMS system access - distributed host command facility
- o SNA application programming interface
- o SNA/RJE workstation
- o DISOSS document exchange
- o Bi-directional file transfer

DIGITAL'S DISTRIBUTED
INFORMATION SYSTEM ARCHITECTURE



V. SUMMARY: DIGITAL'S STRATEGY

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