Client Server Leadership Education Program

Managers' Guide

January 21, 1994
Brussels

d|**i**|**g**|**i**|**t**|**a**|**l**

January 21, 1994

Welcome to the Client Server Leadership Education Program.

We are pleased to have with us today at this important event, designed to prepare you for the announcements of new products that Digital will make on February 8th. The goals of today's sessions are to enable you to:

- ◆ Understand the Open Client Server message and the importance of the pre-announcement selling and product training that will begin on January 24th
- ◆ Articulate how this strategy and new product set will help us beat HP
- ◆ Be better able to motivate sales reps to action through:

  - Coaching and working with them
  - Involvement in the pre-announcement education, the process of proposal generation, and customer events
  - Communicating excitement to customers about how these announcements translate into customer business solutions.

This guide provides you with information that you can carry away about the sessions that are to take place today. It also contains a Fingertip Guide to competitive information about HP. Combined with the information you receive in today's session, it should ensure that you are well informed about the February announcements and that you are able to support them during the territory education sessions that will take place in the following two weeks and in the following months. Our goal is to continue to improve our competitive position as the leader in open client server computing.

Make good use of this guide and what you learn today. Good selling.

Regards,

Tony Craig

Table of Contents

Section 1
Session Materials

1. Digital's Open Client/Server Strategy and Concepts
2. Open Client/Server Capability
3. Open Client/Server Management Leadership
4. Beating HP

digital

Rick Frazier

Marketing Manager, Field Support
Open Client/Server

digital

Winning with
Open Client/Server

If Open Client/Server is the Answer

What's
the Question?

Assertion!

- **Your Open Client/Server**
  - Knowledge
  - Personal Customer Calls
  - Field Leadership
- **Can Materially Improve**
  - Revenue and Marketshare
  - Profitability
  - Customer Satisfaction
  - Employee Satisfaction

Today's Agenda

- **Open Client/Server Vision and Strategy**
  - Customer Business Requirements
  - Technology Environment
  - Vision
  - Strategy
  - Capabilities

Today's Agenda

- **Open Client/Server Capabilities**
  - Network Integration
  - Data Integration
  - Enterprise Objects
  - Messaging
  - Production Integration
  - Managing the Environment

Today's Agenda

- Open Client/Server Management Leadership

CUSTOMER REQUIREMENTS

Client / Server Market
Technology Investments

Europe		North America	
Client/Server	47%	Client/Server	47%
Open Systems	23%	Imaging Systems	29%
Imaging Systems	19%	CASE	17%
Object-Oriented Developement	19%	Open Systems	14%
CASE	17%	Electronic Data Interchange	14%

Source: CSC Index 1993

Top 5 CIO Concerns

Europe

1. Re-engineer Business Processes in Rough
2. Cut I/S Costs
3. Align and Consolidate Costs
4. Install Cross Functional Systems
5. Create an Information Systems

North America

1. Re-engineer Business Processes Through NT
2. Align I/S and Corporate Goals
3. Improve the Systems Development Process
4. Institute Cross Functional Systems
5. Organize and Utilize Data

Source: CSC Index 1993

Everyone Needs Open Client/Server

| IT Professionals | Developers | Users |

Everyone Needs Open Client/Server

| IT Professionals | Developers | Users |

Everyone Needs Open Client/Server

IT Professionals | Developers | Users
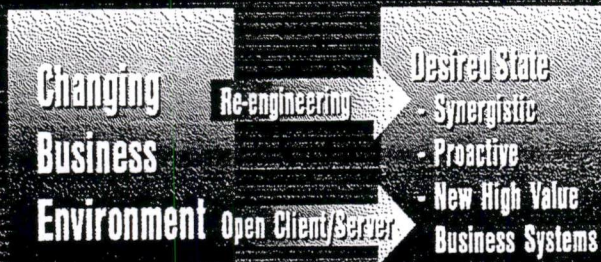
The Information System Challenge

- Software dependence
- Islands of information
- hard to integrate with corporate applications
- Data replication and synchronicity headaches
- management headaches
- Version control
- Limited scalability
- Requirements for multiple protocols of interfaces
- Different bus models

TECHNOLOGY ENVIRONMENT

Emerging Role of Open Client/Server

Changing Business Environment → Re-engineering → Open Client/Server → Desired State
- Synergistic
- Proactive
- New High Value Business Systems

Continual Process in Response to the Market!

Open Client / Server Environment

Communicate, co-ordinate and share information

Information flows through the organization

Access corporate information services

Applications co-ordinate the business process

Access external data services
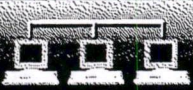
Typical Computing Environment

PCs networked

But groups of people are Isolated

Workgroups connected

But workflow is not automated

Corporate data and applications
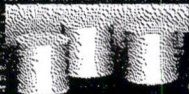
But limited access

Openess At All Levels

1980's VERTICAL INTEGRATION			1990's HORIZONTAL INTEGRATION WITH PARTNERS
IBM	Digital	HP	Solutions — Anderson, EDS, Cap Gemini,...
			Applications — Oracle, Lotus, Borland,...
			Peripherals — Conner, Seagate, MTI,...
			Solutions — Microsoft, Novell...
			Operating Systems — Compaq, Dell, Cray,...
			Semiconductor — Intel, Motorola,...

Object-Based Open Client/Server

Flexibility

Choice

While

Implementing Open Client/Server

A New Year's Resolution

Q. When Will Customers Deploy Their First Object Application?

%of Respondents

Year	%
92	
93	
94	
95	
96	
97+	
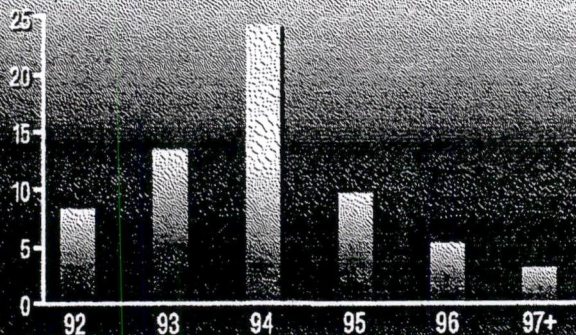
Object Lessons

Where Users Stand With Object Technology

- Investigating 38%
- Piloting 16%
- Developing Applications 8%
- Applications in Production 8%
- No Plans 30%
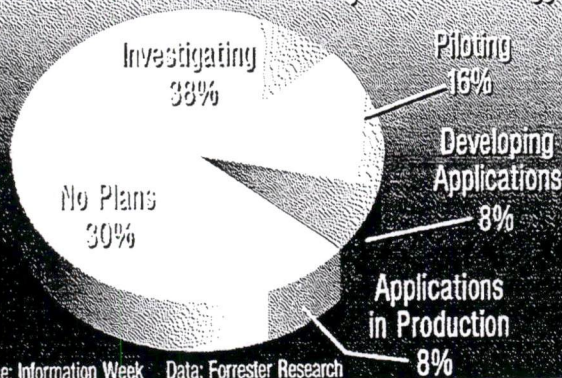
A majority of the information in this presentation was taken directly from a book entitled:

Object–Oriented Technology:
A Manager's Guide

David A. Taylor, Ph. D.
Addison–Wesley Publishing Company
Copyright 1990
ISBN # 0-201-56358-4

What's The Answer?

43 years after the invention
of the subroutine, we still
build systems
by hand
line by line
instruction by instruction

Modularization is an effective and essential programming technique

Sharing data is an essential element of staying in business

This is an Object

These are methods (Procedures)

Everything an Object can do

These are "Variables" (Data)

Everything "an Object knows"

Source: Objects. A Manager's Guide, Author: Brian Taylor

Potential Benefits

- Easier Maintenance
- Reduced Costs
- Increased Stability
- Information Flow
- Adaptability
- Faster Development
- Higher Quality

Source: Objects. A Manager's Guide, Author: Brian Taylor

Potential Benefits

- **Easier Maintenance**
  - Higher quality upfront - fewer things break
  - When they do break they are easier to find becuase of the way object map to each other
  - No "chain reactions" - one fix creates two new defects changes are more localized
- **Reduced Costs**
  - Programming - use existing components
  - System design - rapid prototyping tools
  - Administration -
  - Ability to buy standard "classes of objects" and "components"

Potential Benefits

- **Increased Stability**
  - Add new objects without modifying old
  - Large systems support - key benefit. Build - grow - not a constant redesign.
- **Information Flow**
  - Better represent complex information relationships - without compromising accessibility.
- **Adaptability**
  - Make local changes with no rebuilding
  - Add new objects - that were never part of the plan.

Potential Benefits

- **Faster Development**
  - Build from standard objects
  - Reusing existing objects
  - Replace conventional development with rapid prototyping
- **Higher Quality**
  - Programs are assembled out of existing, proven components - vs - being written from scratch
  - Modularity decreases (reduces) the interaction between components - easier to test / verify

Conversing in Object-Oriented Technology

- Object
- Method
- Message
- Class
- Subclass

- Instance
- Inheritance
- Encapsulation
- Abstraction
- Polymorphism

Business Requires

In A
Dynamic
World...

Flexibility

Business Process ■ Technology ■ Organization

Sustainable Competitive Advantage

Business Functions

Enterprise Operations
Business Operations
Multi Function Teams
Workgroups
Personal Productivity

VISION

Digital's Vision For Open Client / Server

Enable our customers to achieve a sustainable competitive advantage in a dynamic world through integrated open Client / Server technologies and services.

Vision

Business Focus
Account Team
Technology
Services

Open Client / Server Tomorrow!

Open Client / Server Today
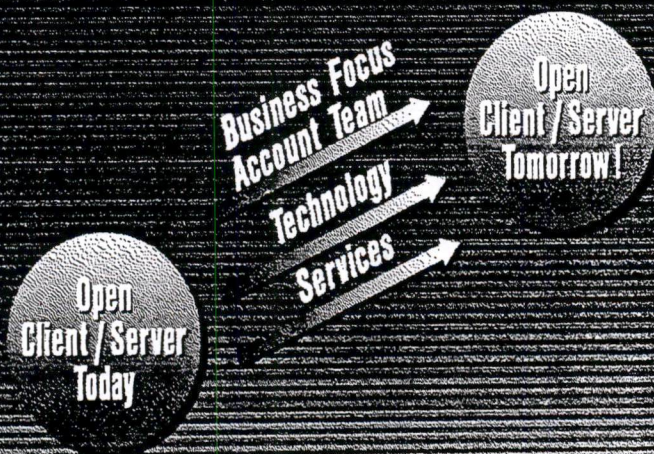
STRATEGY

Strategy
Support multiple Open Client / Server segments

Investment
and
complexity

Enterprise Integration

Distributed data
and applications

Entry Level

→ Time and scope

Open Client / Server Computing
Integrating the computing worlds...

OS 400
DEC OSF / 1   AIX
OpenVMS
MPE   SOLARIS
HP / UX   MVS

DOS
WINDOWS NT
WINDOWS 3.1 OS / 2
NETWARE
PORTABLE DB's

... with a single world view

Digital Brings OPEN To Client / Server

Industry Standards
Defacto Standards
UNIX
Desktop Empowerment
Legacy

OPEN
Client / server

Digital In The Distributed Computing Evolution

Distributed Applications
Application Integration
Multivendor Networking
DCE
Object Broker
Ethernet
Enterprise Computing

Microsoft In The Distributed Computing Evolution

Workgroup Information Sharing
Personal Information Sharing
Desktop and Personal Productivity Applications
Distributed OLE
DDE / OLE
Windows / Integrated Office
Information at Your Fingertips

Customer Leverage

Digital   Microsoft

Enterprise computing   Information at your fingertips

Common Object Model

Microsoft   Common Object Model   Digital

Windows NT
OLE
Mac   Windows

SunOS
ULTRIX
HP-UX
AIX
Object Broker   OSF/1
Open VMS   Other

Integrating The Worlds

Network Integration

OS 400
DEC OSF/1   AIX
OpenVMS
MPE   SOLARIS
HP/UX   MVS

Data integration

Enterprise Objects and Messaging

DOS
WINDOWS NT
WINDOWS 3.1   OS/2
NETWARE
PORTABLE DB's

Production software

Managing the environment

SERVICES STRATEGY

Scope Of Practice

Strategic Services

Distinctive Business Practices

Integration Services

Operations Management Services

Key Client/Server Capabilities

Business Transformation

Production Systems

Workgroup / End-User Computing

Application Integration

System / Network Management
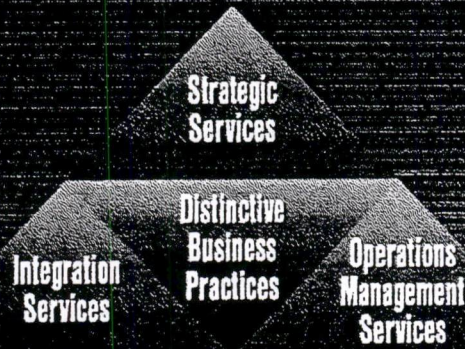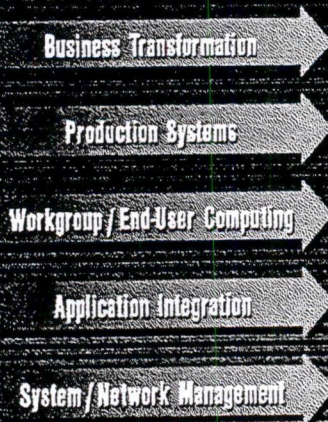
Comprehensive Multivendor Services
For Open Client/Server

ACCOUNT
TEAM
STRATEGIES

The VISION

A Primary World-Class, Consultative Value-Added Partner To Our Customers

Search For Value - Added

Focus on Customer's
- Business Strategy
- Business Problems

VALUE - ADDED BUILDING BLOCKS

- CONSULTATIVE SELLING
- SUPPORT SYSTEMS
- ORGANIZED FOR ACCOUNTABILTY
- COMPETITIVE KNOWLEDGE
- PRODUCT COMPETENCY

PRODUCT & SERVICE OPEN CLIENT/SERVER CAPABILITIES

Solutions Architecture

	APPLICATION		
	TECHNICAL INTEGRATION	PRODUCTION INTEGRATION	WORKGROUP INTEGRATION
	DATA INTEGRATION	MESSAGING INTEGRATION	
	ENTERPRISE OBJECTS		
	NETWORK		
	COMPUTER SYSTEM		

MANAGING THE ENVIRONMENT — SERVICES

Solutions Architecture

MANAGING THE ENVIRONMENT — SERVICES
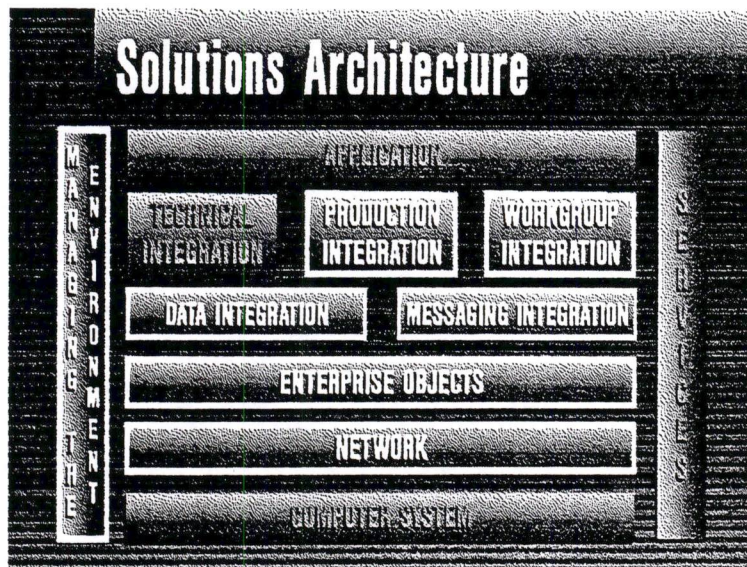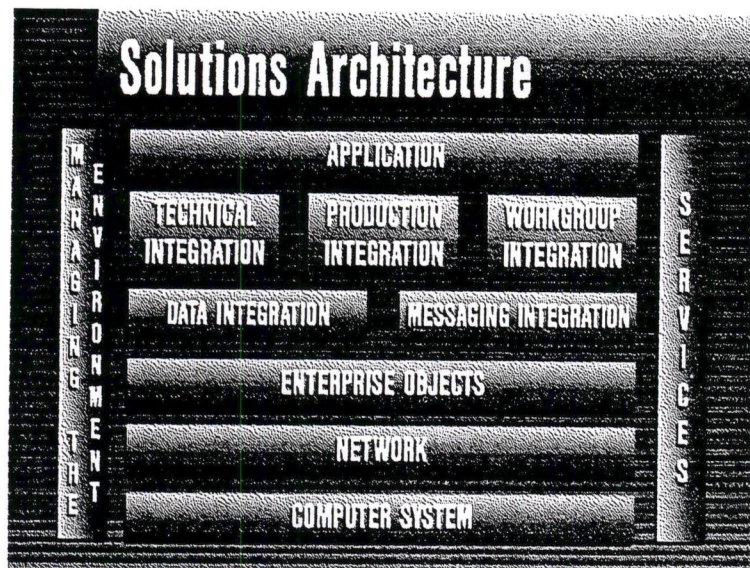
digital

John Anderson
Business and Technology

"Open Client Server Capabilities"

CSC/Index Survey of CIO's Top I/S Issues

Top Issues	1993	1992	1991	1990
Reengineering Business Processes through I/T	1	2	1	1
Aligning I/S and Corporate Goals	2	1	2	4

Business Issues

- Need to Respond to Continually Changing Business Conditions
- Need to Build on Existing Investments
- Need to Improve Information Flow Across the Organization

"New Opportunities"

New Playing Field

Open =
UNIX =

hp HEWLETT
PACKARD

Paradigm Shift

- Flexible I.S. Architecture
- Quickly Responsive
- Hierarchy ➡ Flattened Organization
- Empowering Customers and Employees

- VAX
- DECnet
- OC/S

Six Key Capabilities

- Network Integration
- Data Integration
- Enterprise Objects
- Messaging Integration
- Production Computing
- Management of Environment

Solutions Architecture
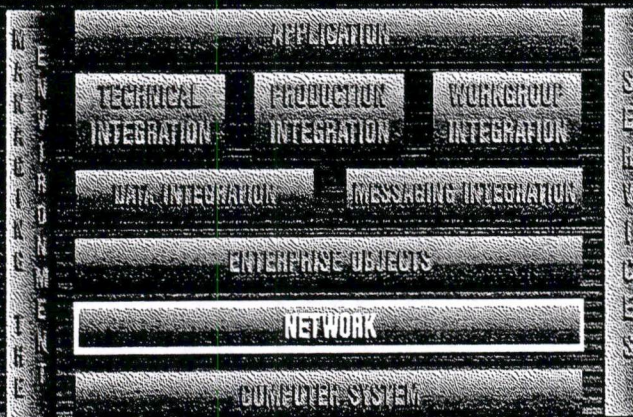
Poised to Regain Our Leadership Position

Digital is Making Major Investments in Networking!
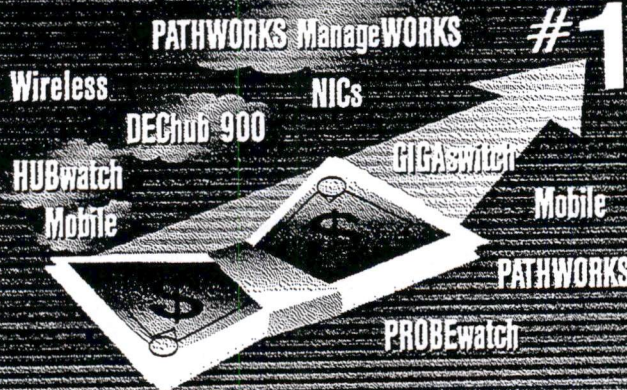
Network Interconnect

NEW

ATM Products

Public ATM Services

GIGAswitch | Premises ATM Switch | DECNIS Bridge/Router

ATM Switch LAN-to-ATM | DEChub 900

Mobile and Wireless

NEW

Mobitex ARDIS

X.25

Directional Antenna

BLD 1 | BLD 2

Remote Connect Software | Remote Connect Software

Remote About Access Point | Remote About Access Point

RemoteAbout Transport

Remote About Mobile IP

RoamAbout PCMCIA Ntwk Adaptor

WaveLan Adaptor

Selling Mobile and Wireless

- Opportunities
  - Users on the Move or Requiring Total Portability
  - Difficult or "Costly-to-Wire" Situations
  - Wireless Connections

Solutions Architecture

APPLICATION

TECHNICAL INTEGRATION | PRODUCTION INTEGRATION | WORKGROUP INTEGRATION

DATA INTEGRATION | MESSAGING INTEGRATION

ENTERPRISE OBJECTS

NETWORK

COMPUTER SYSTEM
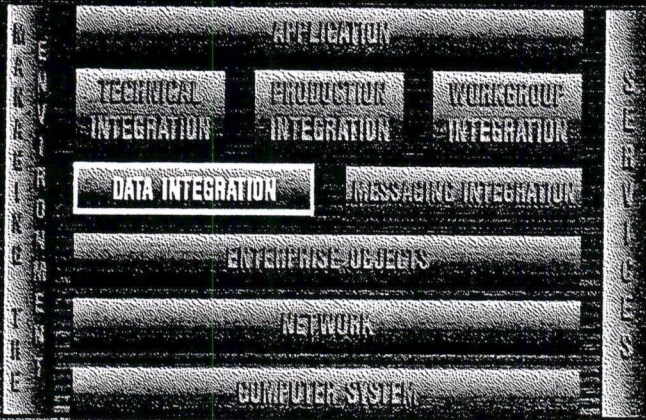
The Market for Data Integration Middleware

1995

Sybase 40M

Other 130M

Digital 30M

NDI 24M

1993   1995

28% Growth
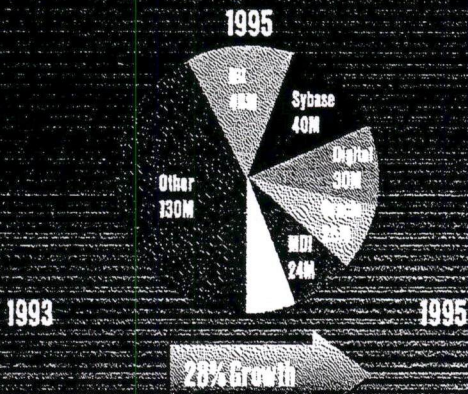
Customer Business Goals

Easy, Intuitive, Dynamic Access
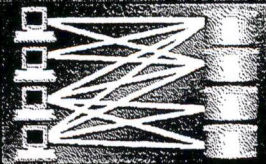
Reduce Complexity

Highly-Available Distributed Data

Manage & Monitor Distributed Data

A Three Tier Architecture

Generic SQL Protocol
Multiple Network Protocol

- Translation
- Administration
- Optimization
- Transparent
- Global Catalog

Desktop Client APIs

Remote Server Databases

Why Three-Tier?

- Translation
- Administration
- Optimization
- Transparent
- Global Catalog
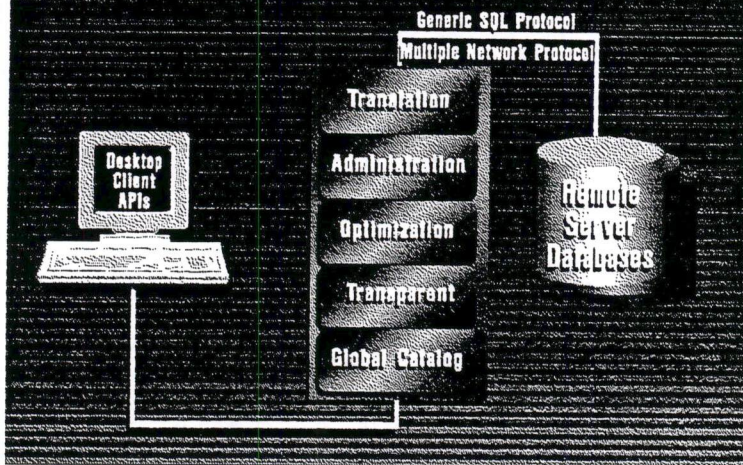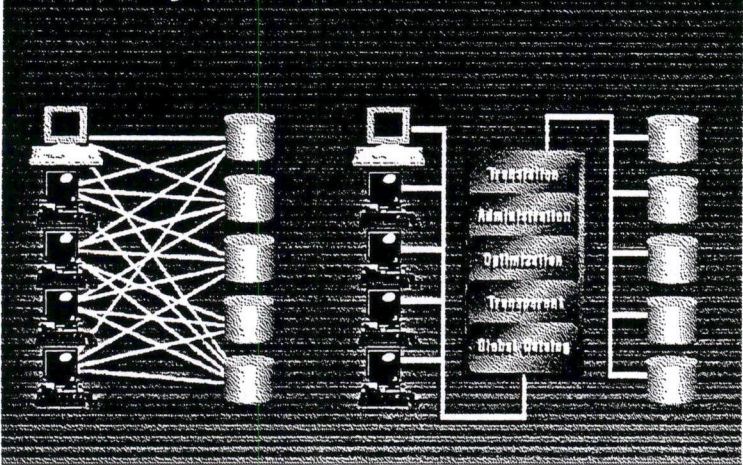
ACCESSWORKS

ACCESSWORKS OpenVMS for AXP V3.0

NEW

- Program Annc'ment -
  ACCESSWORKS OSF/1

DB Integrator

For Multi-database Integration

NEW

- Availability on OSF/1 AXP
- Enhanced Performance
- Sybase Catalog
- New gateways for Sybase, DSM, and DEC DBMS

Logical Database View

Physical Databases
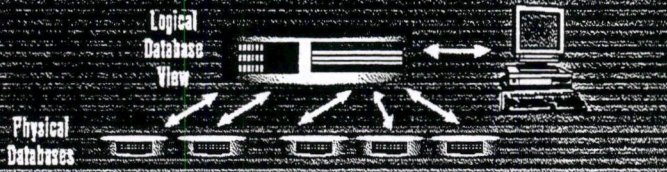
Platform Coverage

Tier 1 Client	Microsoft Windows		SUN	ULTRIX		OSF/1
	DOS	Apple Macintosh	OS/2		OpenVMS	NT
Tier 2 Interoperability Server	OpenVMS VAX & AXP		OSF/1 AXP	WIN-NT AXP		Other UNIX Non-DEC
Tier 3 Back-End Server	OpenVMS		AIX	SUN-OS		AS400
	MVS	HP-UX		Other UNIX		PC

Today 6/94 12/94 Future

Customer Business Goals

Distributed Applications

Oracle VAX/VMS   Rdb AXP/OSF-1   Sybase IBM/AIX   Ingres HP-UX
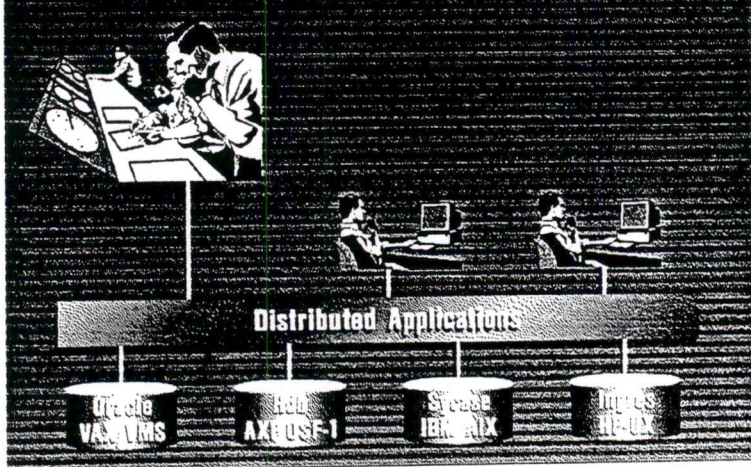
Key Points to Remember

There is an Opportunity in Each of Your Accounts

- ACCESSWORKS - No Other Vendor Offers More, and Soon on OSF/1

- DB Integrator is a Doer Opener - Lead with It!

- DBA WORKcenter - a Sophisticated Database Management Solution

- Selling Services Can Help You Make Budget

Solutions Architecture
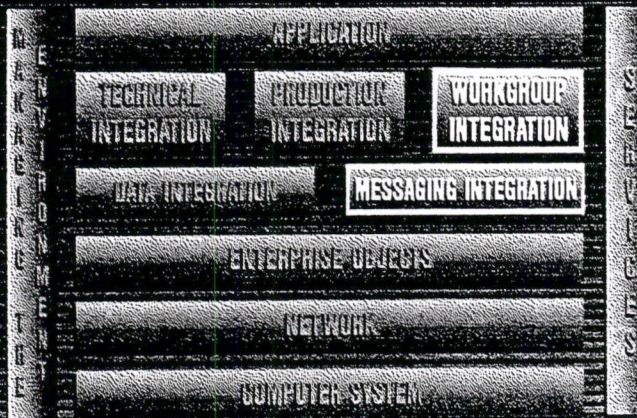
Application Integration
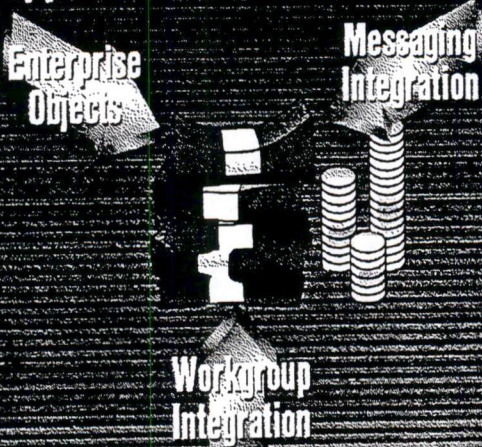
Integration Opportunities

Open Client Server

Messaging Integration

Workgroup Integration

Enterprise Objects
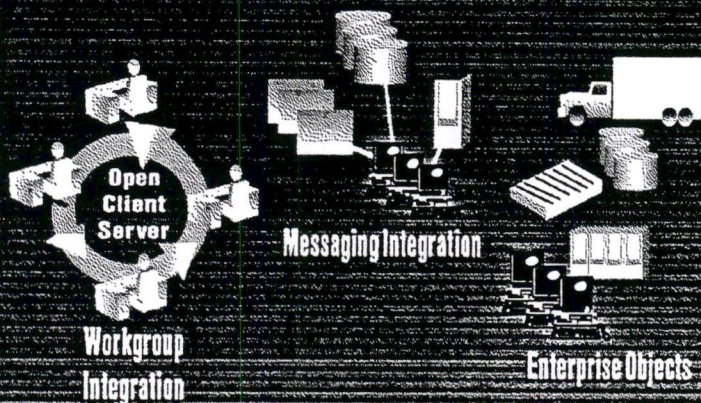
Bank of Montreal – Before LinkWorks

- Many Direct Connects
- Different Ways to Connect
- Expensive to Maintain Connections
- Sharing of Information by Hard Copy
- Delays in Meeting Customer Needs

Chicago

Montreal

44 Bank Databases
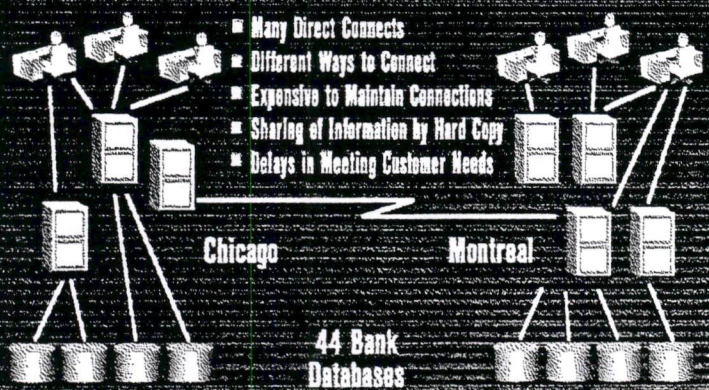
Bank of Montreal – After LinkWorks
Customer Relations Managers

LinkWorks Server

Chicago

Montreal

Workflow

Workflow

44 Bank Databases
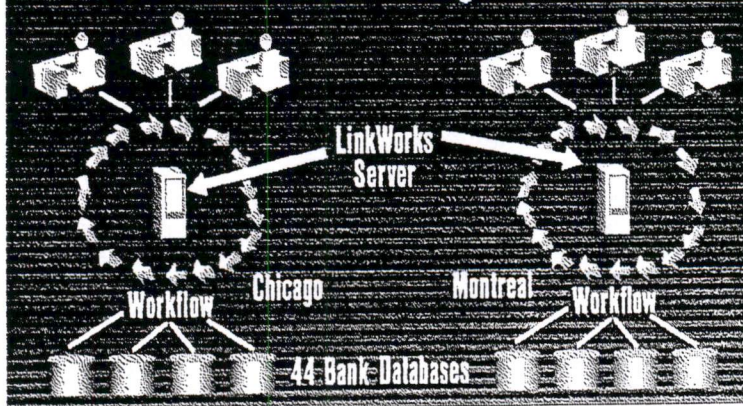
LinkWorks Sales Opportunity

Strategic Opportunity	Proof of Concept Pilot	Product Extension	Deployment
	- Train Workgroup	- New Design Spec - Acceptance Testing	- Project Plan for Deployment - Strategic Planning Services

LinkWorks - A Foot in The Door →

Sales Opportunity	$30K	$150-200K	$14M

Solutions Architecture

APPLICATION

TECHNICAL INTEGRATION | PRODUCTION INTEGRATION | WORKGROUP INTEGRATION

DATA INTEGRATION — MESSAGING INTEGRATION

ENTERPRISE OBJECTS

NETWORK

COMPUTER SYSTEM
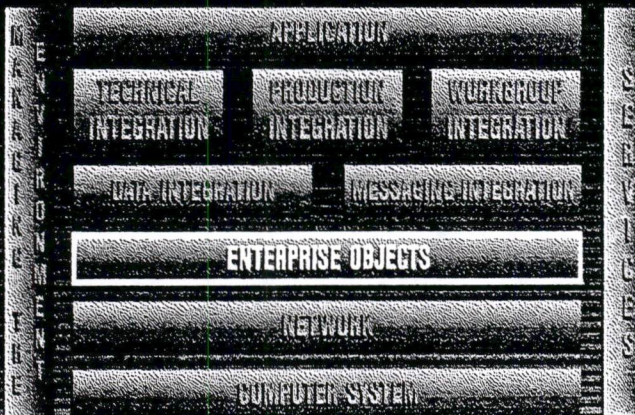
Manufacturing Example
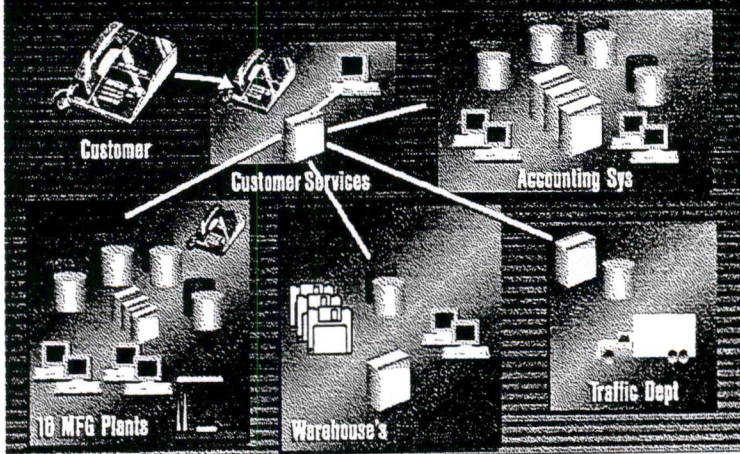
What's New: Framework - Based Environment

■ **Advanced Client Server Integration Capability**

- Operational Integration
- Full Model - to - Interface Design
- Wrapper Development Tools

What's New: Framework - Based Environment (FBE)

■ **Platforms**

- OSF/1	- Ultrix	- AIX
- SUN OS	- HP-UX	- DOS
- MAC	- VMS	- Windows

■ **Architecture**

- CORBA
- DCE Naming and Security

Common Object Model

Open Specification → Common Object Model ← Industry Input

Windows NT

Open VMS

Windows NT

SunOS
ULTRIX
HP-UX
AIX

Object Broker

SF/ OSF/1

OLE

Mac

Windows

Windows   Mac

Solutions Architecture

APPLICATION

ENVIRONMENT

TECHNICAL INTEGRATION

PRODUCTION INTEGRATION

WORKGROUP INTEGRATION

SERVICES

DATA INTEGRATION — MESSAGING INTEGRATION

ENTERPRISE OBJECTS

NETWORK

COMPUTER SYSTEM
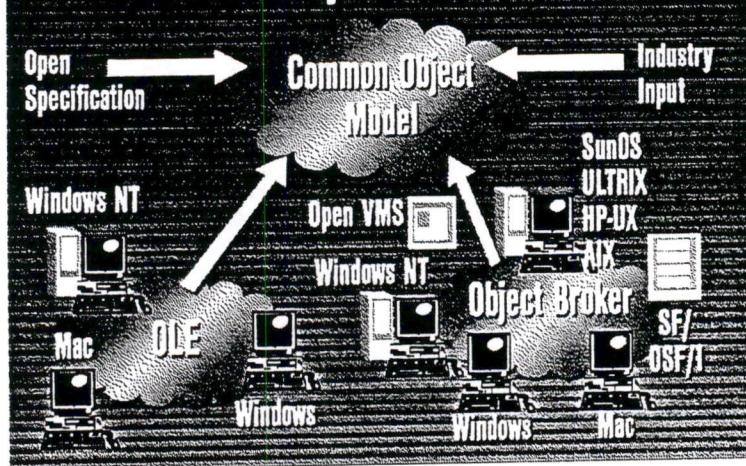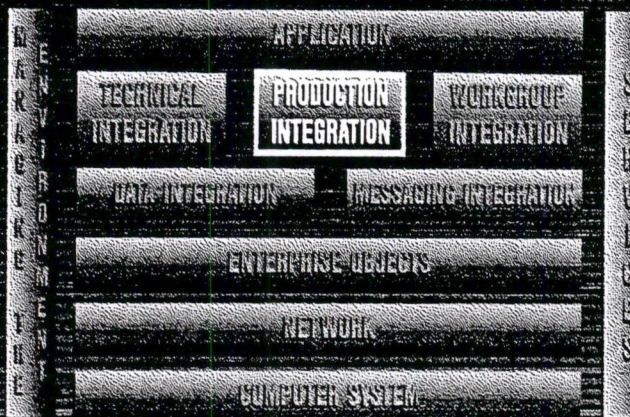
Client / Server Production Integration
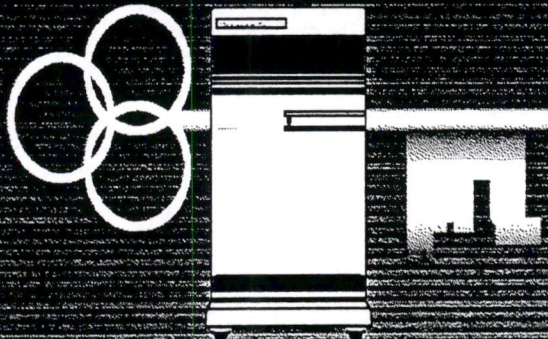
Production Integration Software

Products and Services

- $600M (Estimated) product and Service revenues in FY93
- $2.75B in Total FY93 Solution Sales
- Multiple Industry Opportunities

Short Term Pilots

Annuity Business

Planned Client/Server Applications

	0%	10%	20%	30%	40%	50%	60%	70%

Customer Service
Order Processing
Systems Development
Manufng/Operations
Delivery/Logistics
Mktng/Mkt. Research
Acctng,Billing,Fince
Sales
Inventory
Production Planning

■ North America
□ Europe
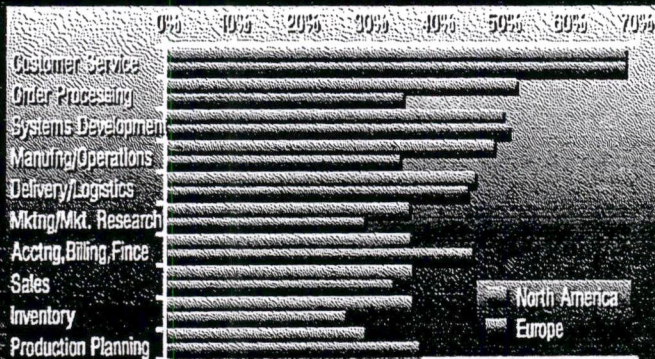
Top 10 CSC Index Emerging Technologies '93
Huge Planned Investment in Production Computing

Client/Server Production Integration

Framework Components

Clients

ACMSxp   XXX   XXX   Tuxedo

RTR-
Continuous
Computing
Services

Encina Toolkit

DCE

Rdb   DB Integrator   Oracle   Sybase   Informix   • • •
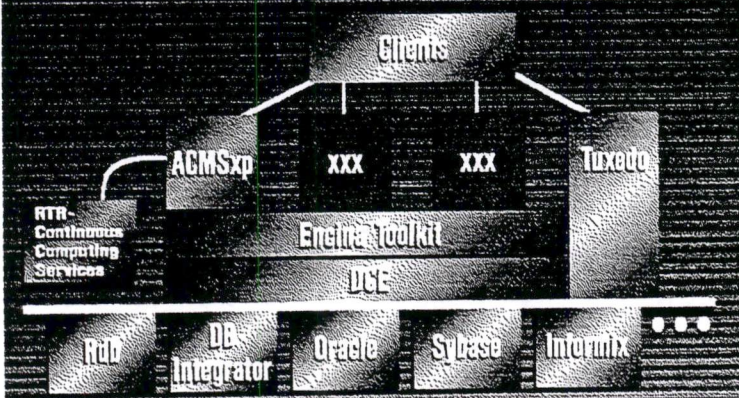
Technology Market Profile

Followers   Leaders

Leading Edge

Latest Proven Technology

I.T. Overhead   →   I.T. Efficiency   →   I.T. Competitive Edge
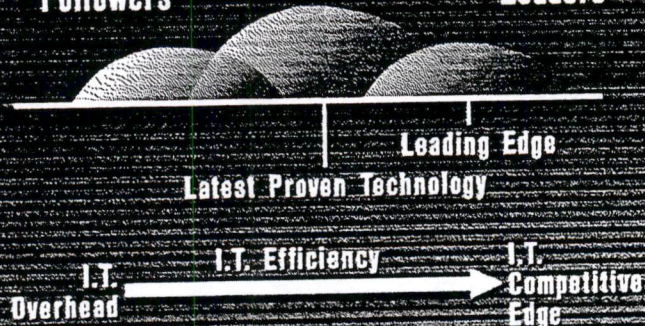
Centralized - Solutions

- Centralized Solutions
  - VIS / TP
  - CICS
- Client / Server TP Monitors
  - Tuxedo
  - ACMSxp
  - Encina

DECADMIRE - One Tool, One Price

Single Design

Application Design

Builder

Code Generation
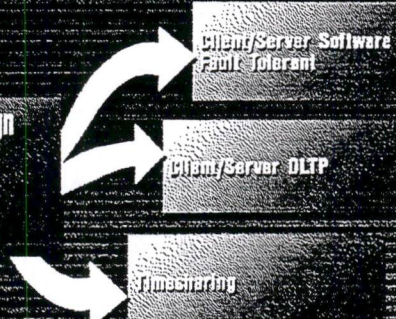
Client/Server Software
Fault Tolerant

Client/Server DLTP

Timesharing

Apple Computer

MACs

MACs

200 Users
40 tps
24 x 7 Operation

VAX

Rdb
ACMS

MACs

MACs
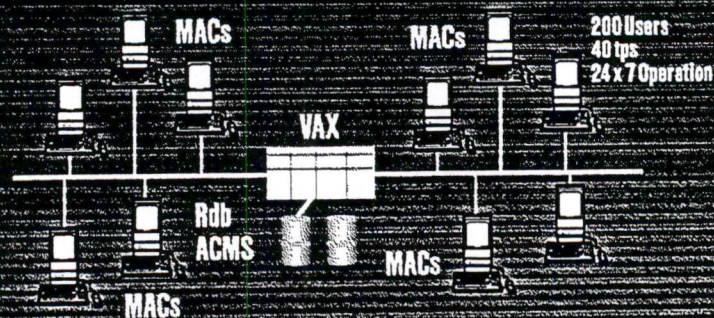
Microsoft SQL Server for NT on AXP
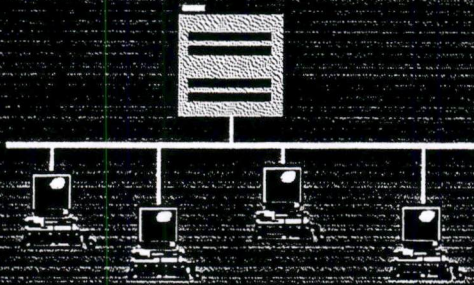
- Sell Alpha Servers for Upsizing Opportunities
- Simple Upsizing
- Shrink Wrapped Solution

Breakthrough - Opportunity
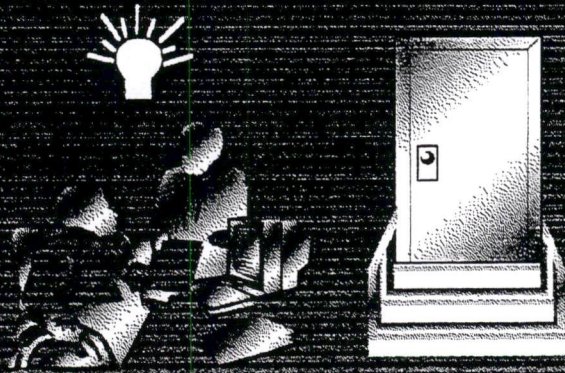
I.T. Becomes a Resource Instead of Overhead
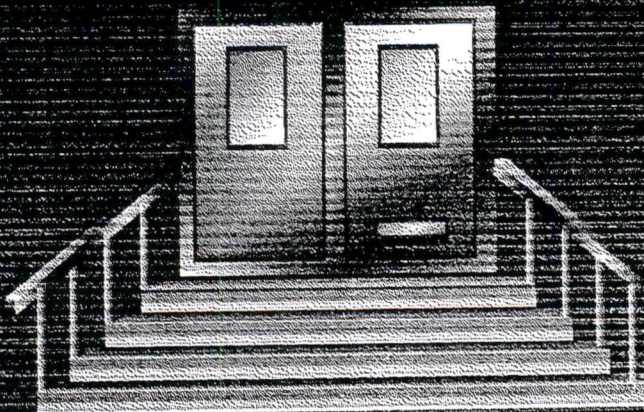
Breakthrough - Technology

- Forte
  - Application Partitioning
  - Independance
  - ObjectBroker Integration

Forte' - Cellular One (Beta Site)

Traditional

Forte'

Develop & Deploy

Develop & Deploy

Develop & Deploy

Develop

Deploy

Deploy

Deploy
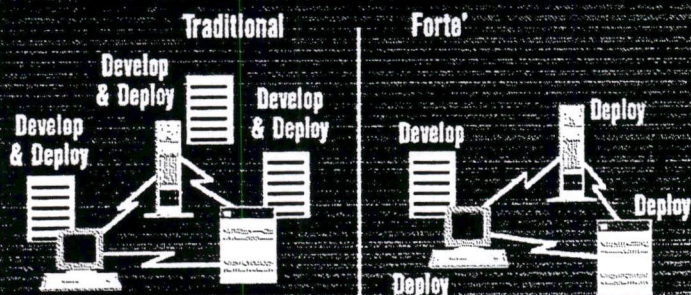
Technology Market Profile

Solutions Architecture

APPLICATION

MANAGING THE ENVIRONMENT

SERVICES

| TECHNICAL INTEGRATION | PRODUCTION INTEGRATION | WORKGROUP INTEGRATION |

DATA INTEGRATION | MESSAGING INTEGRATION

ENTERPRISE OBJECTS

NETWORK

COMPUTER SYSTEM

Management Challenges

Downsizing

Upsizing
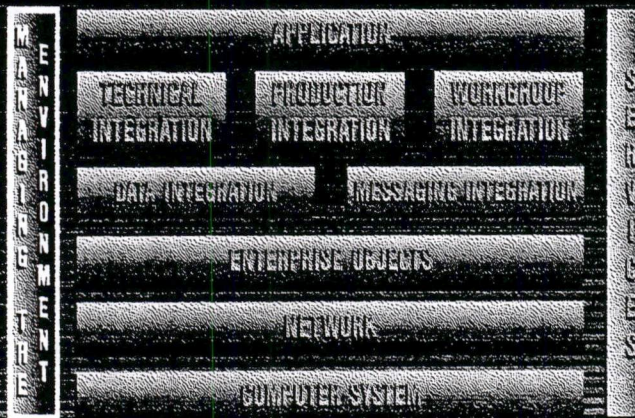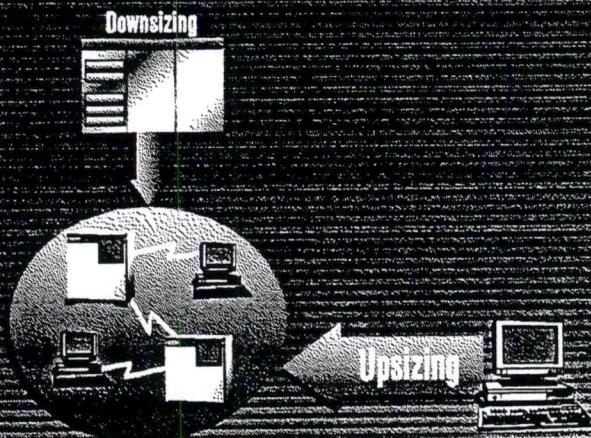
Management Challenges

- Control operational costs
- Manage assets
- Protect corporate information
- Provide optimal performance
- Provide continuous availability
- Re-training the work force

Client/Server Outsourcing

"Do what you do best ... and outsource the rest."

Tom Peters

Client/Server Outsourcing

Your Opportunity

- Account Control
- Long Term Revenue Stream

What is New?

- PATHWORKS ManageWORKS V5.0
- POLYCENTER NetView on OSF/1
- DECathena
- The Software Connection [tm]
- Client/Server Outsourcing

PATHWORKS ManageWORKS

- Manage multiple NOS:
  - native NetWare,
  - LAN Manager
  - PATHWORKS
- Most cost effective PC LAN management solution
- Windows PC application-independent of server platforms

PATHWORKS ManageWORKS and POLYCENTER NetView

- Complementary Management Solutions
- PATHWORKS ManageWORKS and POLYCENTER NetView Will Interoperate in the Future

POLYCENTER NetView ←→ PATHWORKS ManageWORKS
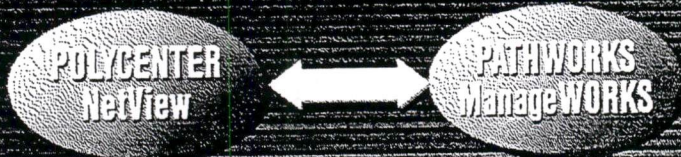
POLYCENTER NetView on OSF/1

Industry's top rated network management solution orderable NOW on OSF/1 !

- "Out of the box" Installation and deployment
- Integration point for Network and System Management
- Top rated GUI and basic features
- Hundreds of management applications
- Enhancement of HP OpenView technology

Polycenter DECathena

Highly Secure Client/Server Computing Solution for UNIX and PCs

- NEW Now Supports PC Clients
- NEW Network Computing Consulting Services
- Reduces System Admin Costs Up to 80%
- Scalable Up to 1000s of Clients
- Individual Access Through ANY Client

DECathena

Competition

PC LAN Cost of Ownership

Total Cost = $16K per User OVER 5 YEARS

Cost of Hardware and Software

Cost to Manage the Environment

30%

Direct   User Training   Admin.   Installation

Upgrade   User Support   Maintenance
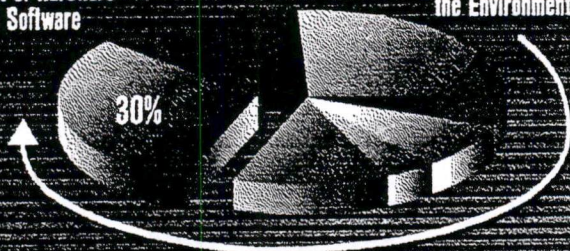
Source: Meta Group 1993

Outsourcing
What to Target!

Focus	Customers
■ Network Management and Operations	■ Are Migrating to Client/Server
	■ Are Downsizing
	■ Have VAX Datacenters
■ Systems Management and Operations	■ Medium or Large Contracts
	■ Mergers/Acquisition
	■ Focusing on Core Business
■ Information Protection (Disaster Recovery and Security Management)	■ Need Skills
	■ Require Network AND Systems Management

Client/Server Outsourcing

Keep Core — Outsource the Rest ▶ digital

Digital's Approach	Major C/S Sales Opportunity
Modular Outsourcing: The selective outsourcing of part or all of the IT funtion.	Transitional Outsourcing: Transition, "migration" of legacy systems to client/server.

What's Your Competitive Edge Now?

Outsourcing
↑
Client/Server Outsourcing
Software Connection
DECathena
POLYCENTER NetView DSF/1
PATHWORKS ManageWORKS
↓
Tools

Solutions Architecture

MANAGING THE ENVIRONMENT

APPLICATION			**SERVICES**
TECHNICAL INTEGRATION	PRODUCTION INTEGRATION	WORKGROUP INTEGRATION	
DATA INTEGRATION	MESSAGING INTEGRATION		
ENTERPRISE OBJECTS			
NETWORK			
COMPUTER SYSTEM			

Solutions Architecture

MANAGING THE ENVIRONMENT

APPLICATION			**SERVICES**
TECHNICAL INTEGRATION	PRODUCTION INTEGRATION	WORKGROUP INTEGRATION	
DATA INTEGRATION	MESSAGING INTEGRATION		
ENTERPRISE OBJECTS			
NETWORK			
COMPUTER SYSTEM			

Key Client/Server Capabilities

Business Transformation

Business Process Re-engineering
Strategy Development
Training

Key Client/Server Capabilities

Production Systems

IT Downsizing
Rapid Prototyping

Key Client/Server Capabilities

Workgroup / End-User Computing

PC-Lan Cost of Ownership
Team Production Solutions
Workgroup Computing Seminars

Key Client/Server Capabilities

Application Integration

Object Orientation Methods
Application Frameworks

Key Client/Server Capabilities

System / Network Management

Information Asset Protection
Legacy Application Support
Data Center Management

Key Client/Server Capabilities

Business Transformation	Business Process Re-engineering Strategy Development Training
Production Systems	IT Downsizing Rapid Prototyping
Workgroup / End-User Computing	PC-Lan Cost of Ownership Team Production Solutions Workgroup Computing Seminars
Application Integration	Object Orientation Methods Application Frameworks
System / Network Management	Information Asset Protection Legacy Application Support Data Center Management

Multivendor Computer Services

- Desktop Services
- PC LAN Design - performance - maintenance
- Local and Wide Area Network Support
- Multivendor Break Fix
- We Currently Service Over 14,000 products from over 1,300+ Different Vendors

Solutions Architecture
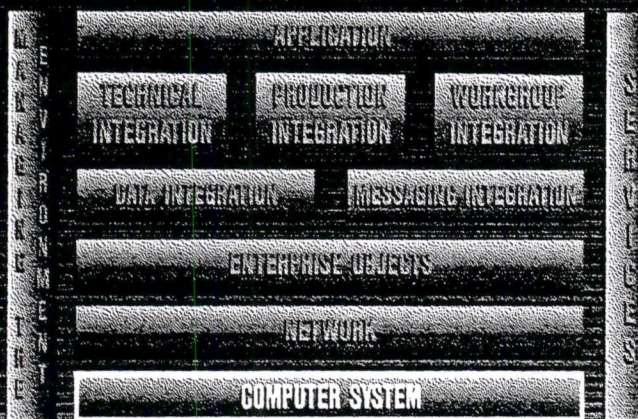
Computer System Capabilities

- Alpha AXP Systems
  - Scalable family with leadership price/performance
    - PC's
    - Workstations
    - Servers
- Intel PC's
- Components and Peripherals
- Mass Storage

Computer System Capabilities

- Alpha AXP Systems
  - UNIX
  - Open VMS
  - Windows NT
- Intel PC's
  - DOS/Windows/Windows NT
  - UNIX

Solutions Architecture

MANAGING THE ENVIRONMENT	APPLICATION			SERVICES
	TECHNICAL INTEGRATION	PRODUCTION INTEGRATION	WORKGROUP INTEGRATION	
	DATA INTEGRATION	MESSAGING INTEGRATION		
	ENTERPRISE OBJECTS			
	NETWORK			
	COMPUTER SYSTEM			
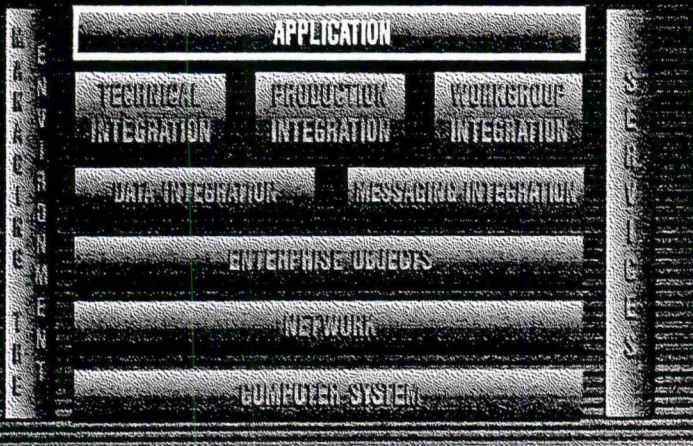
Applications

- **Continue Investment in the Intel and VAX Lines**
- **Intel PC's**
  - UNIX more than 2000 shipping
  - Open VMS more than 2000 shipping
  - Windows NT more than 200 shipping

Solutions Architecture

MANAGING THE ENVIRONMENT	APPLICATION			SERVICES
	TECHNICAL INTEGRATION	PRODUCTION INTEGRATION	WORKGROUP INTEGRATION	
	DATA INTEGRATION	MESSAGING INTEGRATION		
	ENTERPRISE OBJECTS			
	NETWORK			
	COMPUTER SYSTEM			
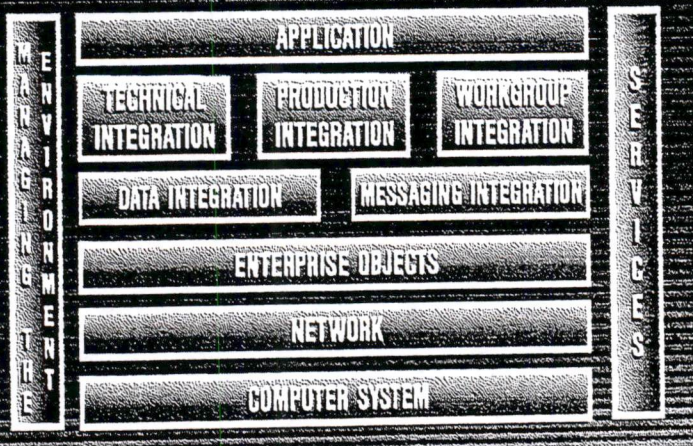
OPEN CLIENT/SERVER
MANAGEMENT LEADERSHIP

Lead Your People

- Your people are educated / prepared on Open Client / Server
- Account Teams viewed by customers as highest value at business level vs all our competitors
- Know the detail of products and services (to the capablities level)
- Set Open Client / Server buying criteria early

Understand the Market Opportunity

Multiple Open Client / Server segments

Investment and complexity ↑

Enterprise integration

Distributed data and applications

Entry Level

→ Time and scope

Open Client/Server Market Opportunity

Amount of
Business

↑

Entry Level   Distributed Data & Apps.   Enterprise Integration

---

Drive The Belief Change

- Through example

- Supportive educational process

- Your own testimonials

CUSTOMIZE Your Own Open Client Server Sales Plan

- Awareness
- Demand creation
- Earlier qualification
- Influence buying criteria
- Selling support
- Closing assistance

Announcement

Leadership

February
October
April

February 8, 1994

November 29, 1993

October 12, 1993

Open Client/
Server Strategy

Common
Object
Model

Implementing
Open
Client/Server
Now!

Open Client/Server

Announcement Summary

Implement Open Client/Server
Software Frameworks
Enterprise Object Strategy
Integration and Support Services
New Products and Services
February 8, 1994

Integrates PCs, NT, UNIX, Open VMS and Legacy Systems TODAY!

You Are The Competitive Coach

- Think like the competition

- Tune your account teams' sales plans

Open Client/Server Enablers

Perceptions: How do We Stand?

+

0

−

Enterprise Objects
Messaging
Data Integration
Network Integration

Managing the Environment
Production Integration

Applications

GET DOWN To The Specifics

- Competitive advantage is seldom gained by a better vision or a better strategy

- Our differences vs HP, IBM, SUN, and other competitors are revealed at the product and service capability level

Services   Acct Team Value   Product

Deliver The Message Yourself

- Elevator talk, whiteboard, visuals

- Your own examples, walk your talk

- Stay current

**Digital's Open Client/Server
Executive Presentation**

Business Requires

In A Dynamic World... Flexibility

Business Process ■ Technology ■ Organization

Sustainable Competitive Advantage
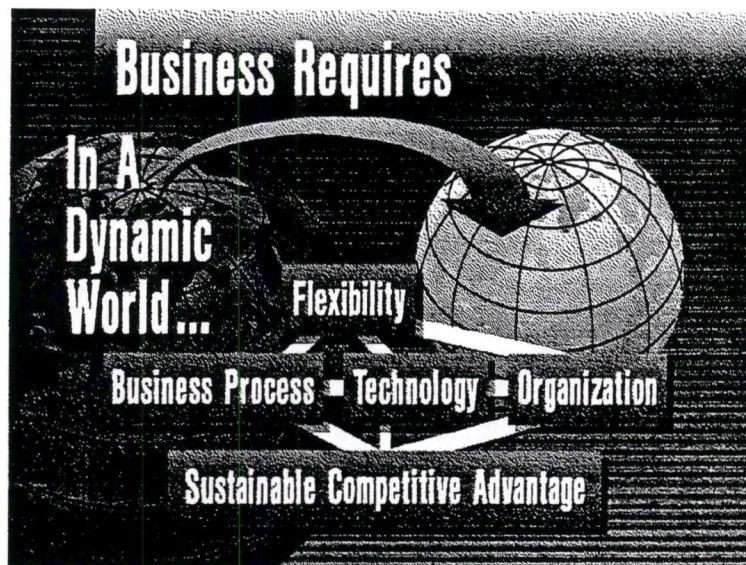
Today's world is rapidly changing.

The dynamic changes are requiring enterprises like yours to be flexible.

For your corporation/institution to survive and flourish you must be a flexible enterprise.

A flexible corporation/institution requires:
1) flexible business processes,
2) flexible organisation
and
3) flexible Information Technology.

All three must work together in harmony. You cannot have a flexible organisation if the information you need is inaccessible.

[Provide customer example]

A corporation/institution that does all three well will create a continuous advantage versus their competition.
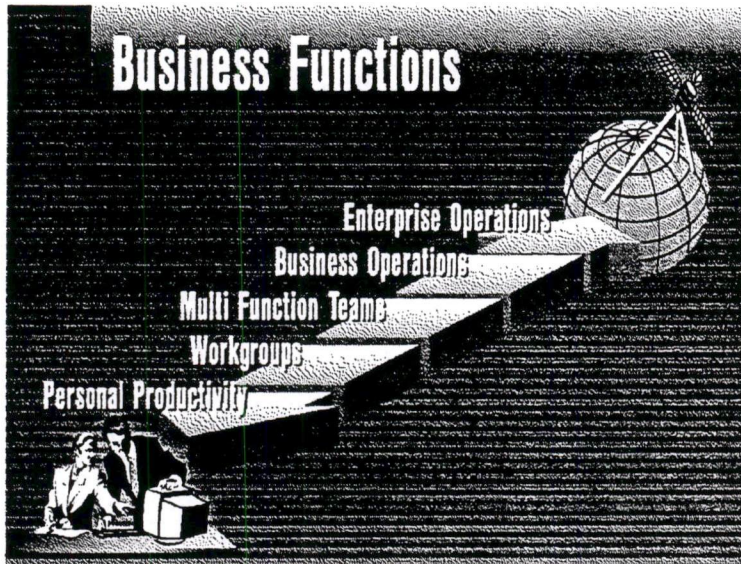
Flexible Information Technology enables you to get data when and where you need it. Open Client/Server is the enabling technology because it can span the entire business including:

Personal Productivity
Work groups
Multi-function Teams
Business Operations
Enterprise Operations

[Provide examples from the customer's environment]
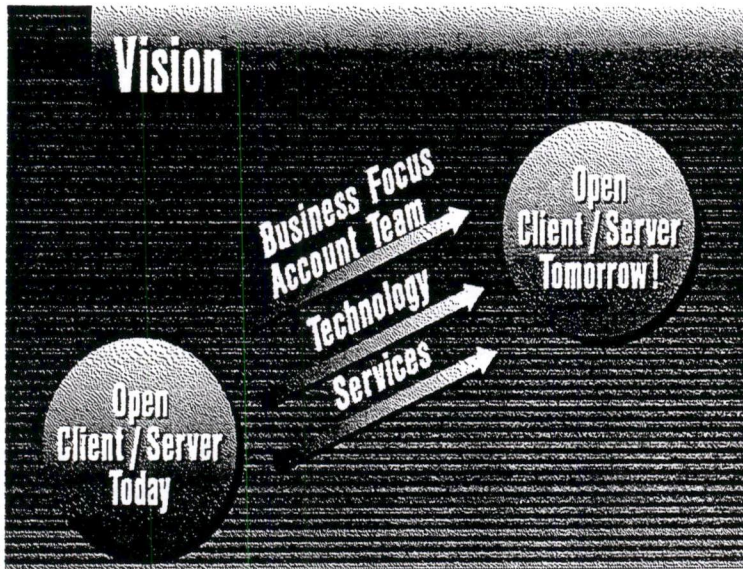
Digital's vision is to deliver this advantage to the customer, both now and in the foreseeable future, through the combination of:

1) A business focused Account Team, superior to the competition, able to add value by relating Digital Open Client/Server Product and Services to changing customer business processes.

2) A complete services capability for Open Client/Server to reduce customer implementation risk and provide high value services to implement Open Client/Server solutions Now.

3) A product portfolio for Open Client/Server that assures customers leading capabilities across the entire spectrum of technology.

Strategy

Support multiple Open Client / Server segments

Investment and complexity

Enterprise Integration

Distributed data and applications

Entry Level

Time and scope
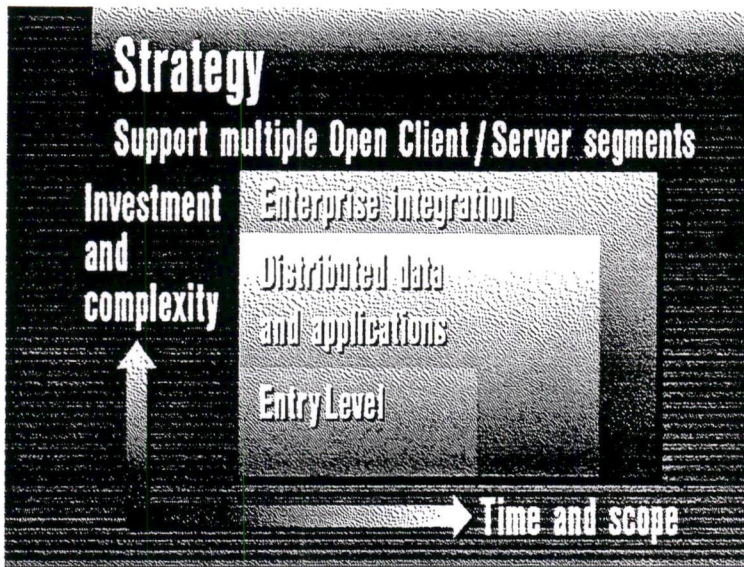
Digital's strategy recognises that there is a wide range of Open Client/Server Product and Service functions that meet the needs of the market. Digital's strategy is to invest in delivering the following capabilities:

1) Entry Level,
2)Distributed Data and Application
 and
3)Enterprise Integration

[Provide customer examples]

Solutions Architecture
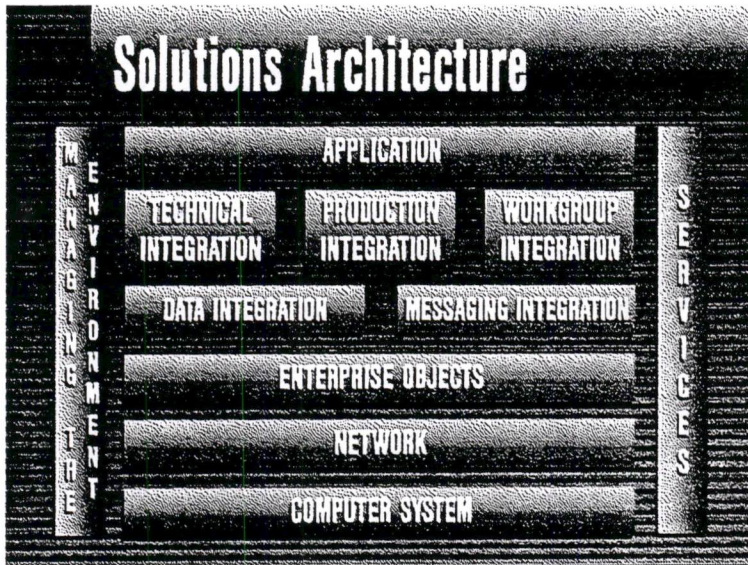
Digital's implementation is architecturally based providing you improved

1)protection of investment,
2)ability to add new technology
 and
3)flexible growth

The products and services that meet your initial needs are:

<list groupings and key specific Products, Applications and Services that are part of your customers solution, stressing our competitive advantage>
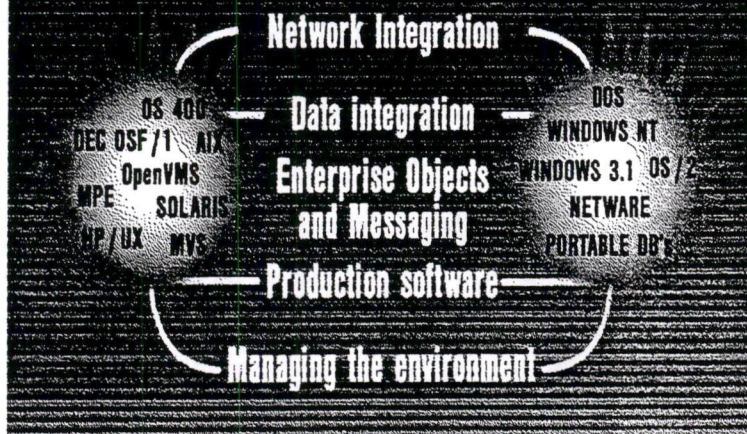
Your current IT environment has two key worlds:

1. [customer hardware or software list]
2.

Digital's products and services for

*Network Integration
*Data Integration
*Enterprise objects and messaging
*Production software
*Managing the environment

provide the key support for you to integrate those two worlds sooner and more completely, leveraging the emerging object technology.

Digital is ideally situated to deliver on the promise of its vision. Our heritage in peer-to-peer networking, departmental computing, innovative software and hardware technologies, and comprehensive services create a unique blend of skills, talents and products which combine to give you the edge against your competitors.

Commitment

"...Open Client/Server Computing is at
the Very Heart of Everything We Do...

...It is Our Vision and Our Future...

...It is How We Add Value to Our
Customer's Computing Environments..."

-Robert Palmer
President and CEO

digital

Skip Garvin

Competing Against

hp HEWLETT PACKARD

How Many Times Have You Heard HP Make These Claims About Digital?

- Lack a robust CPU Architecture
- Few Alpha end users
- No Alpha applications
- Weak UNIX; OSF/1 still with many bugs
- Focus on clock speed only; no system balance
- OSF/1 lacks full networking environment; SMP: neither available till late '94
- Ask your customer to question DEC's ability to deliver the applications

Our Objective Today

Provide you with an overview of the training your people will receive to enable them to compete and win against Hewlett Packard

Agenda

☐ Corporate Overview	10 min.
■ What They Will Sell Against Us	10 min.
■ How They Like to Come After Us	30 min.

Half Time

☐ What You Can Do To Help Your Sales People	30 min.
■ Summary	5 min.
■ Close	5 min.

What HP Likes To Say About Us

The Usual Stuff
- new-unproven architecture
- no commitment to unix
- no direction / vision
- no financial stability

"HP And The Unfair Art of War Against Digital"
- They (Digital):
  - don't know their own products
  - don't know their competitor's products
  - are abandoning their traditional markets
  - are unfocused / confused

What HP Likes To Say About Themselves

Their Visionary Message

$$HP = MC^2$$

{ Business Week
October 18th 1993 }

What HP Likes To Say About Themselves

Their Corporate Messages

- We are the #2 computer vendor in the world
- We are the fastest growing commercial UNIX supplier
- We are the preferred choice when downsizing a mainframe environment
- We offer leadership in standards based, open, distributed client/server computing

HP Company Profile

FY93 Revenue Breakdown

Computer products			$15.6B
Printers	$5.1B	(+40%)	
HP-UX	$4.2B	(+42%)	
MPE	$2.0B	(-38%)	
PC's	$.6B	(+24%)	
OEM disks	$.2B	(+100%)	
Services	$3.3B	(+10%)	
Elect. test, measurement		$2.3B	
Medical Electronics Eqm't		$1.2B	
Analytical instrument		$.7B	
Electronic components		$.6B	

Number of
Employees 96,200
Revenue/
employee $211 K

Total $20.7B

UNIX Workstations and Servers Shipments & Revenue

(Models 735 and 755) ← | 36% of Ship's / 61% of Rev. | 48% of Ship's / 34% of Rev. | → Models 715 and 725

They bundle Xwindow
terminals with these models

Key Points
- Shipped 105,000 units 11/92-10/93 (IDC)
- $2.2B in 700-Workstations; $2.0B in 800-Servers
- Half the 800-Server revenues are from IBM MF Downsizing
- UNIX systems orders double last year
- 80% of everything sold is new business
- 60% direct; 40% indirect (revenues)

What They Will Sell Against Us

- Detail product information will be provided to your sales people during the training (3-4 hours)

- Hand outs of performance comparisons available for you today

---

The HP ENVIZEX Station

9 Different Models

CD Quality Audio

Scanner

3.5" Floppy Disks

- First complete multi-media X station family
- Entria line in January (7100LC)

Digital Can Beat HP's 3-User Companion Computing Packages with the VXT2000+ Today!
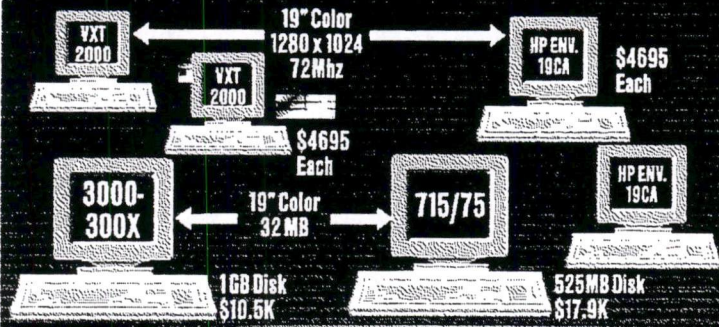
Vendor	Solution Cost	Cost/SEAT	SPECint92	SPECfp92	$/SPECint92	$/SPECfp92
Digital	$19.9	$6.7	84	100	125	104
H.P.	$27.3	$9.1	61.0	113	295	159

The HP Workstation Family
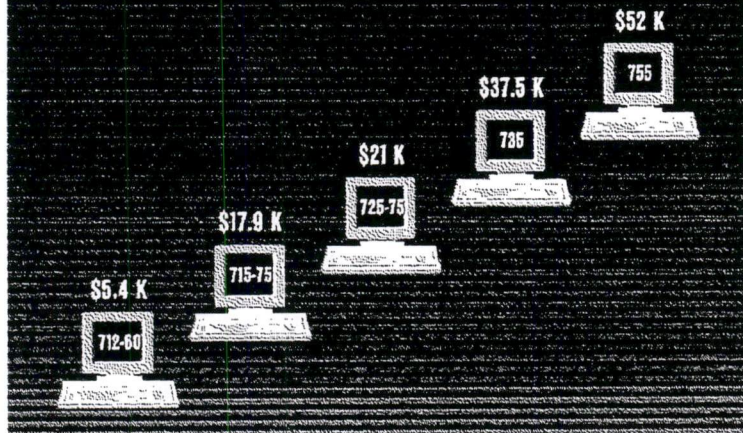
The HP Workstation Family
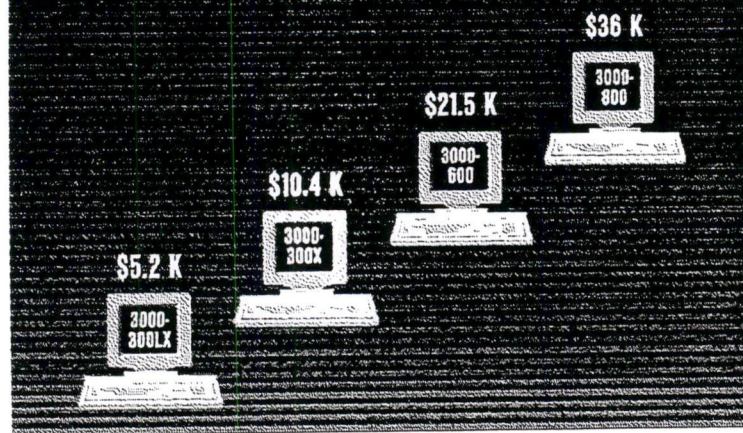
HP Server Family
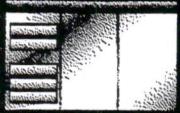
T500 Mainframe Class
- 12-Way SMP
- $165K - $660K
- 300 - 2,000 TPS
- All Board Upgradable

800 G.H. 1 Mid-Range
- 2-Way SMP
- $17K - $130K
- 60 - 411 TPS
- All Board Upgradable

800 F Low-End
- $8.7K - $15K
- 30 - 60 TPS

800 E Entry Level
- $5K - $10K
- TPS Not Available
- Announce Jan 94

HP Message:
Broadest Compatible Family Based on Leading
Architecture (PA-RISC) and Same UNIX OS
(HP/UX)

HP vs. Digital

What Will HP Announce (Jan 18, 1994):

7100-LC (Low-Cost)
- Bi-Endian
- 60 and 80MHz
- Two Workstation Models (M712); entry price @$4,000 Built-In Multi-Media
- Server Model (800-E @ $7,500)

7150 (High-End Workstation: "M775")
- Bi-Endian
- 125 MHz
- 200 SPECfp
- 110 SPECint
- $35,000

Service and System Integration Capabilities

HP professional services organization
- Total services revenue FY93 = $3.3B
- Consulting, Education, Open systems, Client / server; mainframe alternatives
- New offer to service SUN systems

HP Reality
The Yankee Group Conveyor, 6/93, describes
HP as having "Gaping holes in service."

How HP Likes To Come After Us

- An overview of their account and channels strategy
- Some general sales messages and tactics
  - The #1 sales tactic: Applications and Partners Low Risk
  - The #2 sales tactic: Commercial UNIX message
  - 64-bit message
  - 64-bit Message Client / Server message (come to the training)

Key Message
They seldom lead with Technology or with client / server - They lead with applications

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HP's Account & Channel Strategy
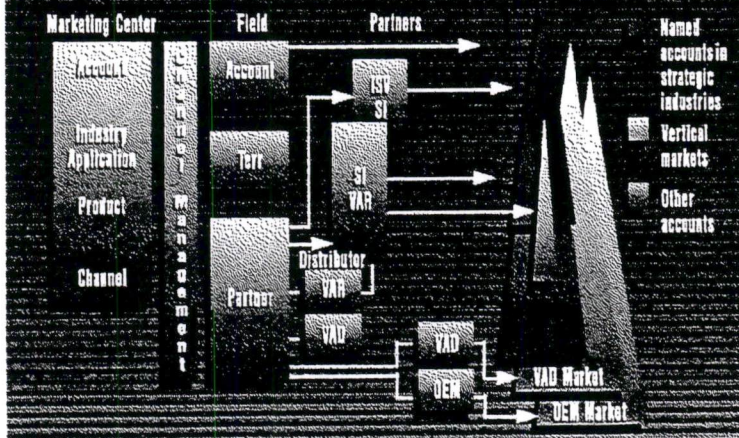
How HP Sells Against Us: General Messages

The Corporate messages from the company profile section

Plus	Plus
- Reference Sites	- Gartner Reports
- Their Applications	- Cambridge Technologies
- Their Partners*	- Their Relationships from Measurement/ Instrumentation/ Medical

*They will tell customers and partners that Digital sales people do not like to use 3rd party companies, we are not comfortable working with them

How HP Sells Against Us: Specific Tactics

How They Will Broaden the Attack

- Through their expertise in measurement equipment
    - FORD Motor Company example (IBM)
    - Telecommunications market (specialized test; measurement equipment for networks)
- Through their medical systems
    - Telemedicine experiment with Stanford University and the University of Pittsburgh
- Through key partners
    - Synon Corporation / AS/400 Software Development to attack AS/400 based

HP's Partners and Applications

#1 Sales Tactic

They Usually Have the Top 6-8 In Each Industry Segment

Key Message

HP will attempt to discredit ALPHA AXP/OSF/1 claiming it has no applications

This is GR256.044

HP's Partners and Applications

There are roughly 15 applications HP likes to lead with

AUTOCAD; PROENGINEER; UNIGRAPHICS II; ARC/INFO
SAP R/3; ORACLE FINANCIALS; ASK MANMAN X; MFG/PRO
ORACLE; UNIFACE; POWERSOFT; LOTUS; INTERLEAF
FRAMEMAKER; CADENCE

They will use Cambridge Technologies Group to set the rules for client / server computing

How HP Sells Against Us
Preferred Status with Industry Leading
RDMS Vendors

ORACLE	SYBASE	INFORMIX	INGRES
• HP the Sales Leader the Last 5 Years	• HP a Major Platform	• HP the #1 Revenue Generator	• HP the Fastest Growing Platform
• Expanded Marketing Partnering	• Leading Server Solution	• H/A Leadership	• Equity Partner

- Premier Porting Status
- Optimization Teams
- Co-Development on Base Technology

How HP Sells Against Us
Preferred Status with Industry Leading

HP Reality
Digital has Major Relationships with each RDMS Vendor, and All Have Been Ported to Alpha

---

You Can Neutralize Their Applications Message

Vendor	Application	OSF/1	HP/UX
	Unigraphics II (V9.1)	Shipping	Shipping
ORACLE	Allegro-XL V8; Concept V1.5		
	DRACULA 4.1, VERILOG-XL V1.7	JAN 94	Shipping
	Board Station V8.0, FALCON		
UNIFACE	Framework, IDEA Station	JAN 94	Shipping
	Pro-engineer	Shipping	Shipping
	R/3	Shipping	Shipping
Ross Systems	UNIFACE	Shipping	Shipping
	ORACLE	Shipping	Shipping
	ORACLE Financials	JAN 94	Shipping
INFORMIX	ARC/Info	Shipping	Shipping
	I-DEAS	Shipping	Shipping
	Aster**	Shipping	Shipping
SAP:AG	Renaissance, Promix MFG,		
	Gembase 4GL, Promix Dist	Shipping	Shipping
PeopleSoft	INFORMIX - SQL (V4.1)	Shipping	Shipping
	Progress 4GL	Shipping	Shipping
	PeopleSoft	Shipping	Shipping

Digital Wins Against HP at Barclays Bank

Barclays Bank

Business Objective:
- Provide multimedia retail banking services for their customers

Competition:
- Prototype on RS6000 and ULTRIX
- A prolonged "love affair with HP"
- Teaser for Rollout
  - AIX too expensive
  - HP and Digital short list
- DEC OSF/1 selected
  - convinced 64-bit was essential
  - member of OSF/1 and committed to it's technology
  - experience with HP-UX told them "MIGRATION"
  - excellent price performance

Other Key Wins over HP & a Few Others

Account	Competition	Value
Israeli Ministry of Defense	HP; IBM; NCR	$20M+
Banque Paribas Belgique	HP	N/A

HP's Messages to Digital's Customers

- Digital operating system strategy is confused and proprietary
- Digital can't afford to support three operating systems
- Digital has no commercial UNIX strategy
- What will happen to OpenVMS?

#2 Sales Tactic

Key Message
Discredit OSF/1 and ALPHA/AXP
Discredit our UNIX message

Who's Most Open?
Computerworld, 12/6/93 (Survey of 164 MIS Managers)

OSF/1	4.0
SCO/UNIX	3.7
Sun/Solaris	3.7
HP/U	3.7
MS/NT	3.6
OpenMS	3.3
Novell UnixWare	3.3
AIX	2.4

Criteria:
- Compatibility with std interfaces
- Application Portability
- Open Communications Stds
- Multi-Vendor Interoperability
- Multiple Suppliers
- Third-party applications
- Published public or de facto stds

If Digital Can't Support Three
What Makes You Think HP Can Support 10?

Domain HP-UX	UnixWare SCO-UNIX Next step MS-DOS Windows 3.1	HP-UX HP-MPEiX Next step
Motorola	Intel	HP-PA

- Much of this base has moved to 700 series
- Next step used to target banking and financial markets
- Netware 3.0
- Windows NT

What They Will Stress: Digital's Weak UNIX
Compliance to SPEC 1170

Standard API	DEC OSF/1	HP-UX
XPG4 base level branding	YES	YES
SVID 3	95%	NO
SVID 2	YES	YES
Bsd 4.2	YES	PARTIAL
OSF AES	YES	YES

Benefit
- SVR4 applications run on Digital's OSF/1. They do not run on HP-UX
- No other UNIX in the industry combines Bsd; SVR4, XPG4 base level branding and A.E.S.

Where is HP Commercial UNIX Installed?

- 50% Packages
  - SAP-R3, People Soft, Cincom, Ross Systems, ASK...
- 40% DataBase (Oracle, Sybase, Informix) with customer development
- 10% Decision Support (SAS, Red Brick, IBI)

65% Host Based	We have nearly ALL
35% Client-Server	of these solutions

Where is HP Commercial UNIX Installed?

- 50% Current IBM Mainframe Users
- 30% Mid-Range Competitive Replacement
- 20% HP Installed Base

We will continue to add existing and evolving industry standard interfaces to OpenVMS where appropriate:

- XPG Branding
- Motif (X Windows)
- TCP/IP
- DCE

Your Response: What will happen to HPMPEiX ?
Ask this question first!

HP's Published UNIX Strategy

HP/UX 9.0 →	UX 10.0 →	UX 11.0
– OSF/1 Features	– OSF/1 Features	– MACH
		– OSF/1
1993	1994	1995-96

Note: UX 10.0 is at least 12 months late.
UX 10.0 is supposed to offer a consistent
release for 700 Workstations and 800
Servers.

On Digital's OSF/1

Alpha AXP System (DEC 4000/610) running OSF/1 V1.2 on the INTERNET

Over 2400 users accessed the system

1	2	3	4	5	6	7	8	9	10

User rating from 1 to 10   91%
10 = Outstanding   22%
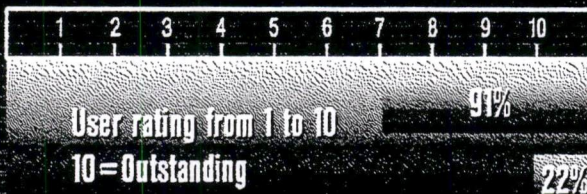
On Digital's OSF/1

Some Quotes

"The fact that Digital is sufficiently confident in the stability
of the hardware and the software of it's Alpha products to put a
publicly accessable machine on the INTERNET with only volunteer
support (or so I thought) says a lot."

Gregg TeHennepe
Connecticut College

Key Message
You Can Neutralize HP's
UNIX Message

How HP Sells Against Us: Strengths and Weaknesses

HP Tells Their Resellers:"Digital Has the Following Strengths:"

- Raw performance
- Price / performance
- Alpha architecture and 64-bit message
- Windows NT on Alpha
- Clusters (Alpha; mixed Alpha / VAX)
- Full range of migration services
- Large, loyal customer base

How HP Sells Against Us: Strengths and Weaknesses

HP Tells Their Partners and Resellers: "Digital Has the Following Weaknesses:"

- Lack a robust architecture
- Few Alpha end users at present
- Lack Alpha applications - not available till 1994
- Weak UNIX; OSF/1 still with many bugs
- Focus on speed only; no system balance
- Weak compilers and graphics
- OSF/1 lacks full networking environment; SMP; neither available till late 94

What We Say Are HP's Strengths

- Unix Perception
- Applications Availability - Perception
- Partnering
- Financial Position
- Reputation for Quality and Reliability of Hardware
- Reference Accounts and Industry Consultant Perception

What We Say Are HP's Weaknesses

- High-Availability / Continuous Processing
- Limited Experience in MIS Organizations for Production Systems
- PA-RISC is maxed out and faces a major migration
- HP/UX faces a major migration
- Limited multi-vendor services and SI

What We Say Are HP's Weaknesses

- Client/Server Middleware lacking
  - UX-Centric
  - What happened to New Wave
- Client/Server User Interface: WABI
- NT Strategy
- MPE: Limited capability in a large production environment

Neutralize HP on

- UNIX-Focus on unified UNIX / standards
- Applications-Focus on Partners

> Attack with Key Applications Partners like SAP-R3 Oracle, Sybase, MANMAN X, etc.

- Attitude is everything

Half Time!
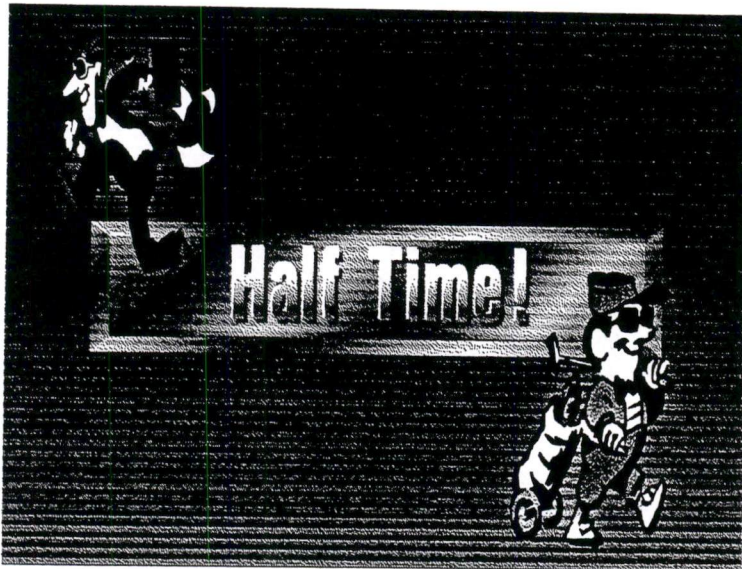
Some Questions to Have Customers Ask HP...

- What is HP's migration plan for HP-PA?
- What is HP's UNIX migration?
- Why is HP-UX 10.0 so late?
- What is HP's object oriented strategy?
- What is HP's clustering capability?
(as defined by The Gartner Group)
- What is the future of MPE?

but...I probably would not do this

Why Not?

#1 Reason - Those 6 questions give HP a minimum
of 6 appointments & 6 hours to be
in front of your customer

#2 Reason - HP can probably defend most of
those points

2nd Half

What can you do to help your sales people Focus and Win?

#1 Insist and encourage teaming with Application Partners

#2 Insist and encourage strong product knowledge

An HP Strength
A Digital Weakness

An HP Strength
A Digital Weakness

#3 Help Point Them At Opportunities Within Their Accounts

A Generic Organization

| Research & Development | Engineering | Manufacturing & Production | Sales/ Marketing | Services | Administration |

Two sets of question to help you

Alpha AXP

"Ten years ago I could have told you how Doritos were selling west of Mississippi."
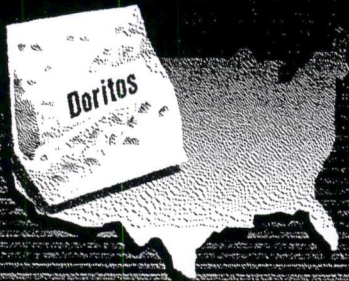
- And That's All -
D. Wayne Calloway
Pepsico

Today

"Not only can I tell you how well Doritos sell West of Mississippi...

...I can tell you how well they are selling in California, in

- Orange County
- In the town of Irvine
- In the local Von's market
- In the special promotion at the end of aisle 4

- on Thursdays"
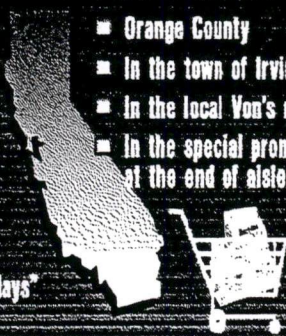
TOP Business / Technology Investments
- Europe 1993 -

Research & Development	Engineering	Manufacturing & Production	Sales/ Marketing	Services	Administration
		7 Manufacturing /Operations	8 Sales	1 Customer services	4 Accounting Billing Finance
		5 Order Processing & Handling Systems	9 Marketing Marketing Research		
		3 Delivery & Logistics			2 Information System Development
		10 Inventory			
		6 Production Planning & Scheduling			

Source CSC
INDEX 1993

The Most Critical Business Functions
- Europe 1993 -

Research & Development	Engineering	Manufacturing & Production	Sales/ Marketing	Services	Administration
		2 Order processing		1 Customer services	
		3 Inventory			
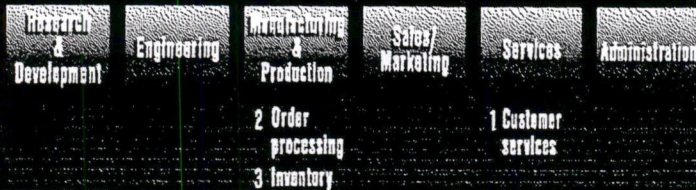
Key Message
Digital Has Strong Partners Who Build These Applications !

Source: CSC INDEX, 1993

The First Set Of Questions

Do your sales people:

- Know who the contacts are in each functional area?
- Know if their accounts will invest in the areas outlined by CSC Index?
- Know the application partners who supply? these solutions ?
- Call on any of these people?

The Second Set Of Questions

Help them build an account map

Research & Development	Engineering	Manufacturing & Production	Sales/ Marketing	Services	Administration
BEN RS/1	UNIGRAPHICS	SAP/R/3	inhouse		SAP/R/3
CHARM	BATMAN	ORACLE	development		ORACLE
INTERLEAF	MENTORGRAPHICS				UNIFACE
C++	CADRE				VSAM
ADA	IDE				DB2
	FRAMEMAKER				

First question: ☐ What applications run your business?
- bought outside
- developed in house

** This is what HP will lead with

The Second Set Of Questions
A Generic Organization

| Research & Development | Engineering | Manufacturing & Production | Sales/ Marketing | Services | Administration |

```
UNIX WORKSTATIONS ------->        PC's
PC's ------------------->        X WINDOW TERMINALS        <------> TERMINALS ------->
      <----- UNIX SERVERS ------->   <-----> INTEL BASED SERVERS   <------->

                                         <------ IBM / VAX BASED SERVERS ------->
                                         ORACLE; SYBASE; INFORMIX
```
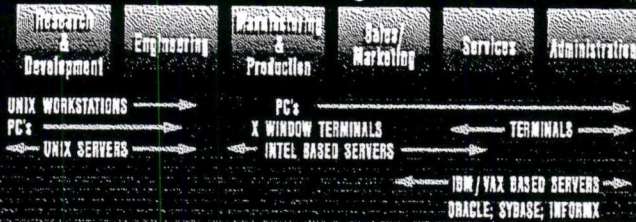
Second question: ☐ What are the desktop environments for each of these areas?
- whose are they?
- when will they buy more?

** Product knowledge (theirs and competitors) is a key HP strength

---

The Second Set Of Questions
A Generic Organization

| Research & Development | Engineering | Manufacturing & Production | Sales/ Marketing | Services | Administration |

Other questions:

- ☐ What applications / data bases need to work together?
- ☐ What are the standards / policies you have implemented?
- ☐ What are your downsizing plans?
  - ** HP asks this all the time

The Second Set Of Questions
A Generic Organization

| Research & Development | Engineering | Manufacturing & Production | Sales/ Marketing | Services | Administration |

What's the point?

We have to generate approximately $2.5B in proposals. This will not come from our installed base

The generic organization maps can help you and your people understand where investments are being made --- outside of the installed base

Remember what HP said --- 80% of everything sold is NEW business

Proposal Ideas

From the top five management
issues CSC Index 1993
"organizing and utilizing data."

A Proposal for Organizing and Utilizing Data

Customer client environment

Dos / Windows

Apple / Mac

UNIX

OS/2

OpenVMS

Question: Do you have
any of these
clients?
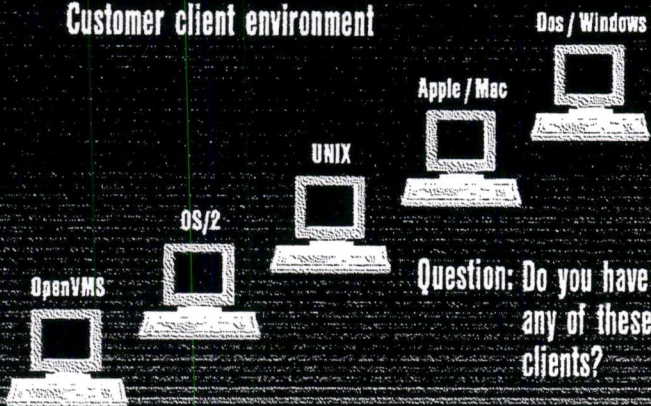
A Proposal for Organizing and Utilizing Data

Customer database environments

RMS

SYBASE

ORACLE

DB2

TEAM

IMS

Question: Do you have
any of these
data bases?
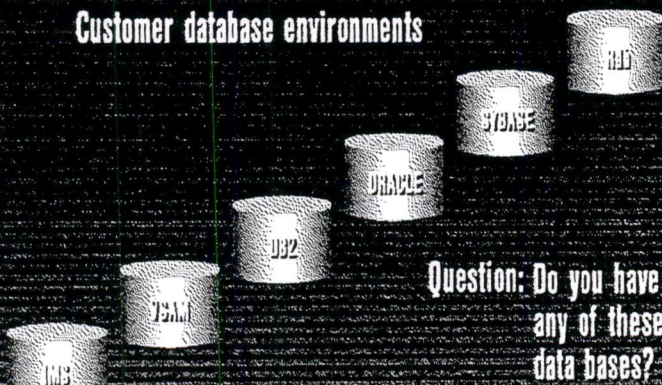
A Proposal for "Organizing & Utilizing Data"
How do you Connect them Together?
Like this?   or   Like this?

Access Works

ACCESSWORKS
Analyst's Perspective

"ACCESSWORKS' unique combination of hardware/software integration, price, flexibility, and support offers advantages to IS buyers, balancing user information access and CEO cost-cutting demands" Aberdeen Group, March 1993

HP Relies on a
Third Party for it's
open warehouse product
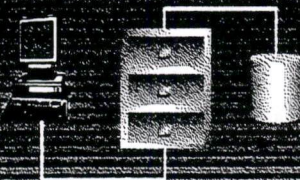
Other Proposal Ideas
- Client/Server Pilot with CTG/John Donovan
  (HP uses them all the time)
- Downsizing - This is One of HP's Major Areas of Focus
- LinkWorks
- ObjectBroker and the importance of COM (Pilot)
- Polycenter Netview
- Forte Pilot
- PathWorks
- The 3000-300X ÷ 300LX
- 3000 - 300X + VXT2000's
- StorageWorks
- Velocitor

Summary and Close

Key message
We have to know our
products and our competitors
Key HP Strength

Our Products

Summary and Close

Key message
Our service offering is
a real differentiation

Our Services

Our Products

Summary and Close

Key message
The applications add the
business value - the solution

Applications

Our Services

Our Products

Summary and Close

Key message
We need all of them -
You can't be good at just
one thing

Integration

Applications

Our Services

Our Products

Six Reasons for Losing a Customer

- 1% Die
- 3% Move away
- 5% Have other friendships
- 9% Competitive reasons
- 14% Dissatisfied with product or service
- 68% Attitude of indifference toward the customer

Reality
How we deliver our
products and services
may be more important
than what we
actually deliver

Service

Strategy
Make service
differentiation as
important as product
differentiation

80% of Success
is Showing Up

Section 2
HP Competitive Fingertip Guide

1. Digital Strengths
2. HP Strategies and Strengths
3. HP Weaknesses
4. ALPHA -AXP vs HP-PA
5. DEC OSF/1 vs HP/UX
6. General Selling Tactics
7. HP's product platforms
8. HP 9000/700 System Specs
9. HP 9000/700 Sample Pricing
10. HP Graphics
11. HP 9000/800 Servers
12. Old HP 9000/800 Specs
13. HP 3000/900 System Specs
14. Competing Against HP's PC's
15. HP Services
16. Quick Reference Line-Up

DIGITAL vs HEWLETT-PACKARD

Competitive Sales Team
1-800-DEC-ISIT

December, 1993

This document is for DIGITAL INTERNAL USE ONLY and is designed specifically for use by Hotline Consultants in assisting Digital's sales force. It is a compilation of HP competitive information from many internal and external sources.

SECTION 1

DIGITAL STRENGTHS

ALPHA   ALPHA-AXP is the industry's leading architecture. Don't complain because every application in the world hasn't ported to it yet, sell the vision--industry leading performance with full 64-bit addressing. Not only is it revolutionary technology, it's the future of computers. We have it today.

The ALPHA platform will support three operating systems--OpenVMS, OSF/1, and Windows NT. Our customers will be free to choose the operating environment that's right for them--not because it's the only offering that the vendor has.

Digital's ALPHA-ready VAX systems have leadership TPC-A benchmark results. The new ALPHA workstations already have price/performance leadership and mainframe-class DEC10000 has the highest SPEC performance in the industry. ALPHA-AXP performance begins where HP-PA ends.

OSF/1   OSF/1 is a vendor-neutral UNIX operating system. HP-UX is a UNIX variant which HP alone produced. It is a hybrid of the Berkeley and System V kernels. OSF software is being developed by members of the industry with open input from all vendors. It will be based on modern microkernel technology and fully competitive with any UNIX operating system on the market.

OpenVMS   OpenVMS is the most robust commercial operating system in the computer industry. It is the only non-UNIX operating system to become XPG3 branded. Our clustering technology and software is second to none. It is the only operating system which offers continuous high-availability distributed processing. Digital also offers industry leading multivendor service and support.

Investment Protection   Digital maintains one of the strongest balance sheets in the industry with over $1 billion in cash reserves. Digital is undertaking a major restructuring in order to serve our customers better. Remember, other vendors in the industry are feeling the pinch too.

SECTION 2

HP'S STRATEGY AND STRENGTHS

HP's product strategy has been simple and successful. Its three main elements are (1) provide leading systems performance, (2) lead the drive to Open Systems with UNIX and PA-RISC, (3) offer superior customer service. Replace PA-RISC with ALPHA-AXP and we are well postioned to win in all three areas. When you add that the customer has a CHOICE of several different operating systems we have a clear advantage.

Expect HP to continue to...

increase system raw performance and price/performance.

leverage UNIX as the operating system of the future with strong relationships with leading 3rd party solution providers such as Oracle and Tivoli.

attempt to convince the customer that 64-bit addressing isn't needed today. They will position the PA-RISC architecture, with its thousands of applications, as a more realistic option than ALPHA.

do a full court press against Digital the next few months while ALPHA and OSF/1 are porting applications. They'll be highly visible in every major account.

disparage OpenVMS and NAS as proprietary and undermine Digital's commitment to UNIX.

question Digital's viability by suggesting that Digital's recent quarterly losses will be a long-term trend and imply a lack of investment protection for the customer.

effectively use positive statements from industry consultants and the media to validify their vision.

actively seek new relationships with Value Added Resellers and Independent Software Vendors to position the sale with an HP solution.

offer competitive trade-ins for Digital equipment.

SECTION 3

HP WEAKNESSES

64-bit Processing HP's architecture is still 32-bit technology. Though they claim some 64-bit processing, they clearly do not have full 64-bit addressing. Gartner Group considers only ALPHA and the MIPS R4000 chip to be full 64-bit architectures today.

UNIX Strategy HP's operating system strategy could be a liability. HP is putting all its eggs in a UNIX basket. What if the market changes and Windows NT is successful? Where does it leave HP-UX users?

Distributed Computing HP does not have as many large networked distributed computing reference sites as Digital. We have the advantage in complex projects and enterprise-wide, especially global, business management and consultancy. To obtain comparably functional systems, HP often has to include various add-on line items.

MPE/iX When selling HP-UX in commercial markets, HP tries to claim that VMS is dead. At the same time they are still actively selling MPE-based systems (even though OpenVMS is far superior to both MPE and HP-UX in nearly every category of Gartner's Enterprise System Platform report.) Per HP, MPE is for the installed base, HP-UX for growth (Computer World, 11/2/92).

PC Integration The HP 3000/900 only supports MS/DOS PC clients. Current Macintosh use is limited to terminal emulation (future plans are to support Macintosh through PACER.) HP-UX systems are also limited to MS/DOS. Native NetWare is not available yet.

High Availability There are limitations on HP SwitchOver/UX. The product is only supported on certain HP9000 systems. Those that support it must be of the same category and have identical I/O configurations. Downtime to a failed primary system can be as much as 15 minutes before the standby reboots. During this period the applications on the primary system cannot be accessed. In progress transactions will be lost. Since there is only one standby system, multiple failures to primary systems will greatly impact availability of mission critical applications.

SECTION 4

ALPHA-AXP vs HP-PA

A common HP tactic is to downplay the need for 64-bit addressing and the ALPHA-AXP chip. They do this by pointing out that initial SPEC performance was less than anticipated, and that technically ALPHA-AXP is no better than their own HP 7100. If there is any question who has the world's fastest computer chip, refer to the Guiness Book of World Records as proof.

Some facts to keep in mind...

A 64-bit architecture means faster computational speed as well as nearly unlimited memory addressing. HP will claim that few businesses need 64-bits today and they can support that point with references to trade articles. The performance enhancement alone makes 64-bits beneficial to the customer right now! Use trade articles that show the speed advantage of 64-bit systems.

ALPHA uses a 400MHz external clock, a 200 MHz internal clock and internal cache. The HP 7100 at 96 MHz is less than half the clock speed.

Digital has experience with RISC architectures. ALPHA is the third Digital RISC design. The first two were MicroTitan and MicroPrism. The latter ran at the same clock speed as the HP 7100 two years earlier!

HP may claim ALPHA has an untested new systems design. Does it have balanced CPU, graphics and I/O? The DEC 3000 has a 200 MB/sec. memory bandwith, 100 MB/sec. I/O bandwith. The DEC 4000 has 300 MB/sec. memory and 185 MB/sec. I/O. And the DEC 7000 has 750 MB/sec. memory and 400 MB/sec I/O!

HP may claim more experience because they are implementing the seventh generation of PA-RISC. After seven generations they are about even with ALPHA's first-time performance. ALPHA can only get better. HP-PA is constrained by 32-bit technology.

HP has claimed that they've had 64-bit architecture since 1986 because HP-PA RISC supports a segmented addressing scheme. Using their logic so did we with our VAX microprocessors because they had 64-bit floating point data paths. PA-RISC has 32-bit addresses and some segment extenders which the software can't use. You need 64-bit addressing to be a true 64-bit architecture.

DEC OSF/1 vs HP-UX

Competing with DEC OSF/1 V2.0

Brenda Lee-Kang
DTN: 381-6053
E-mail: xirtlu::kang
M/S: ZK03-2/X07

Unified
- The leadership UNIX with support for industry standards: POSIX, XPG, IEEE, FIPS, etc and all UNIX standards: System V (SVID2 & SVID3), BSD, and OSF/1. No other UNIX vendor can match this today.

Modern
- Modern 64-bit UNIX operating environment.

Complete
- A modern UNIX implementation supported with hundreds of applications providing a robust production environment for technical and commercial computing.

The purpose of this article is to describe Digital's competitive strengths to assist in competing with our major competitors, Solaris 2 from Sun, HP-UX from Hewlett-Packard, AIX from IBM, IRIX from Silicon Graphics, and System V Release 4.2 (SVR4.2) from UNIX Systems Laboratories (bought out by Novell).

The Digital UNIX Advantage

Unified

Customers never have to chose which UNIX environment they want, because with DEC OSF/1, they get OSF/1, BSD, and System V (with DEC System V Environment). And with the recently announced Common Interface Specification for UNIX-based operating systems, Digital is well-positioned to offer one of the most complete offerings of these API's with near 100% support TODAY.

Modern

DEC OSF/1 is modern UNIX implementation designed from the onset to take advantage of the latest technologies, including leading edge price/ performance ALPHA AXP systems.

DEC OSF/1 on ALPHA AXP is the industry's first 64-bit operating environment. The benefits of 64-bit systems are:

- Improved scalar arithmetic precision and performance
- Increased memory addressing space
- Increased maximum file size

If your customer does not feel that 64-bits is needed today, emphasize that they most likely will require systems with greater than 32-bit capacity soon, if not already, as applications become more sophisticated, taking advantage of advanced software technologies, demanding advanced systems architecture (like ALPHA AXP) to handle the system resources required. Remind customers how some people thought they would never need 32-bit systems when those were first introduced. With DEC OSF/1, they get both a modern kernel and 64-bit system, and they don't have to worry about migrating to 64-bit architecture later or to a modern UNIX kernel.

Complete

Digital offers a state-of-the-art UNIX environment supported by hundreds of applications addressing a wide range of computing needs:

- A robust DEC OSF/1 production environment with:
  - 64-bit file support for virtually unlimited file size for supporting large, mainframe-class files and databases
  - Data integrity and availability, fast system restarts, on-line storage managment tools with POLYCENTER AdvFS and POLYCENTER AdvFS Utilities
  - Failover capability with DECsafe Available Server ensuring data availability and integrity
  - Hierarchical storage system with Storage Server 100 providing high capacity, cost effective storage while ensuring data accessability

- For technical and commercial environments, Digital's distributed computing products for connectivity and network/system management in a hetergeneous environment.
  - Complete support for network protocols and tools: TCP/IP, X.25, DECnet/OSI, SNA tools
  - Under POLYCENTER Netview framework, DEC FullSail and POLYCENTER Networker Save and Restore provide integrated, distributed, and heterogeneous system management

- Digital's leadership distributed client/server development/deployment software and tools:
  - Distributed computing software
    - ObjectBroker, DEC MessageQ, and DCE
    - Tuxedo, ACMSxp, VIS/tp for proven, leadership TP monitors
    - 3rd party databases

- For realtime requirements
  - DEC OSF/1 V2.0 leadership realtime extensions are based on POSIX 1003.4 Draft 11

- Digital offers customers the most open, modular, and cross-vendor approach to service in the industry. Digital is the only computer vendor to support a complete range of products and applications from other vendors: IBM, COMPAQ, Apple, HP, Novell, and many others. In fact, Digital currently services 14,000 products from 1,000 vendors -- including 80% of the most commonly used applications in business today. IBM and HP do a good job at servicing their own equipment, but not those from other vendors. Sun does a poor job of servicing even its own products.

Competing Against Hewlett-Packard

- HP claims HP-UX is based on System V Release 3.2 with some (not all) BSD enhancements, plus a good deal of proprietary code. Our researchers have determined that HP-UX is actually BSD-based with System V added. Either way, HP-UX is an old, monolithic proprietary UNIX kernel. Compare HP-UX to Digital's modern UNIX implementation:

  DEC OSF/1: SVR4, BSD, OSF/1

  Also note that HP-UX is on its ninth major release with maybe only one more release before expiring, another sign of an operating system on it's "last leg".

- HP-UX currently lacks a product that can provide a log-based file system (also referred to as a Journal File System). A log-based file system eliminates the need for UNIX file system checks (*fsck*) performed on *every* partition on *every* disk *everytime* the system restarts after a system failure. UNIX utility, *fsck*, can take as long as 30 minutes or more, depending upon the amount of disk space (the more disk space, the more *fsck*'s required, the longer it takes.) In addition, *fsck* does not guarantee complete recovery of data that may have been lost during the system failure. Data integrity is an issue with traditional UNIX systems like HP-UX (one of the reasons why, historically, UNIX was not a practical operating system for commercial/production environments). DEC OSF/1 includes POLYCENTER Advanced File System (AdvFS) product providing a log-based file system that ensures data availability and integrity. With POLYCENTER AdvFS, system restarts takes only about three minutes (no *fsck*'s required). Customers concerned with system downtime (and what customer isn't?) can feel secure in knowing that with POLYCENTER AdvFS, downtime is not an issue. Combined with DECsafe Available Server (failover software), failovers can happen immediately. HP CANNOT claim this.

  SUGGESTED CUSTOMER DEMO: Place a DEC OSF/1 ALPHA AXP system with POLYCENTER AdvFS turned on next to any HP-UX PA-RISC system (with lots of disk space). Simulate a power outage by unplugging both systems. Then turn both systems back on and see how long it takes for them to come back up. The DEC OSF/1 system should come up in no time. Let the customer wait and wait for the HP-UX system to come up. (See section on IBM on Journal File System. The information on POLYCENTER AdvFS Utilities applies here also.) [Note that HP is planning to offer log-based file system from Veritas sometime in 1994. If your customer should ask about Veritas, refer to Sales Update March 15, 1993 for comparison of Veritas and POLYCENTER AdvFS and POLYCENTER AdvFS Utilities.]

- HP workstations are not 100% binary compatible with their servers. Some server functionality are not available on their workstations (high availability, LVM), and some workstations features that are not available on their servers (memory mapped files, OSF AES compliance). Applications using memory mapped files will not run on server systems, and those that are written to OSF AES are not guaranteed to run on server systems. Workstations cannot be used interchangeably as servers without difficulty, especially if LVM is used, as HP workstations don't support LVM.

- HP's SMP has been limited to its high end server, 890. More recently, HP has released more SMP servers in their 800 product line. It appears that there are no SPECrates for these new servers which leads to the query of whether HP is trying to hide something - Perhaps these SMP servers are not scaling well?

- HP customers can expect to face at least one migration if not two. One to a modern UNIX kernel and one to 64-bit architecture. HP agrees that they will have to move to 64-bits in the future, but have yet to announce their plans. They recognize that once they make an announcement, they are liable to lose new business, as the threat of a major migration is a deterrant for new purchases; Why should a customer purchase a system only to have to go through a migration in the next two or three years? HP has been especially quiet about these things for this very reason. With DEC OSF/1, customers don't have to worry about future migrations.

- All the major UNIX competitors are working on modern kernels and 64-bit systems. IBM has PowerPC, initally a 32-bit system, later 64-bits. Their modern kernel will be WorkPlace OS due out later this year. Sun is starting to promote 64-bit UltraSPARC with SpringOS in the works. Digital is in the lead with 64-bit ALPHA AXP systems today with DEC OSF/1 and is the only UNIX vendor to offer both 64-bit systems and modern UNIX implementation today. When will HP make the move? How long will HP continue to force their customers to stay with their prehistoric UNIX implementation when Digital has already made the leap and others are working on it?

For Additional Information:

- Competitive material can be obtained from:
  xirtlu::/public/competition

- To get on distribution list for current competition news and announcements, send mail to kang@decvax.dec.com.

UNIX Software Competition Information:

At-Your-Fingertips: UNIX Competition (Up-to-date UNIX software competition information)
  xirtlu::/public/competition/finger_compete.ps

UNIX Competition Guide (text file providing information on how to obtain the latest Guide)
  xirtlu::/public/competition/guide_instruct.txt

HP information:
  HP-UX V9.0 - xirtlu::/public/competition/hp/hp_uxV9_oct92.ps
HP Sales Guide
  xirtlu::/public/competition/hp/hp_salesguide.ps

SECTION 6

GENERAL SELLING TACTICS

- Avoid simple performance comparisons with HP systems unless there is a clear advantage. Use price/performance for workstation postioning and total cost when selling client/server solutions. Broaden the playing field to include systems integration, multi-vendor services, and application availability.

- Leverage Digital's advantage in serving the enterprise. Show the multivendor and client/server superiority of OpenVMS using the Gartner Enterprise Server Platform report.

- Negate HP's claims of being the one and only UNIX standards leader. Show that Digital is fully commited to UNIX by being first to deliver an OSF/1 product. Don't overlook our contributions to Motif and DCE.

- Sell the vision of 64-bit computing. Express it as a normal progression of engineering technology--the 60's were 8-bit, the 70's were 16-bit, the 80's 32-bit, and the 90's and beyond will incorporate 64-bit computing.

- Prepare professional presentations. HP will. Use tools like Product Navigator. HP likes to use market data and reports by industry analysts to establish themselves as the industry leader.

HP's PRODUCT PLATFORMS

Product line	Description
HP3000/900	RISC (HP-PA) machines using the MPE operating system. Sold as a commercial OLTP machine and competes directly with VAX.
HP9000/800	RISC (HP-PA) machines running Unix (HP-UX). It is sold as a commercial machine and general purpose file server.
HP9000/700	RISC (HP-PA) based High powered workstations. Aimed at the mid to top end of the market, they run HP-UX. They are also sold as servers to workstations where compute power is required
HP9000/400	Motorola based workstations. Volume products at the low to mid range of the market. They run either HP-UX or Domain from Apollo.
HP9000/300	Motorola based workstations. They are the HP predecessor to the 9000/400's. Still sold, as they are rackmountable and can be used by HP's intrument customers. It runs HP-UX or special BASIC and PASCAL operating systems
DNX5XX	Motorola based workstations. The Apollo predecessor to the HP9000/400. Run's only the Domain operating system.
DN10000	Apollo RISC (PRISM) machine. It is a multiprocessor machine sold as a compute intensive server. It can only run the Domain operating system.
HP1000	Real Time machine running HP's RTE operating system. Sold to OEMS and in embedded systems.
Vectra	HP's own IBM compatible PC range.

SECTION 8

HP 9000/700 SERIES SYSTEMS

MODEL	MHz	MAX MEMORY	MAX DISK	MIPS	PERFORMANCE SPECint92	SPECfp92	SPECmark
Desktop							
715	33	192MB	69GB	41	24.2	45	45.9
715	50	192MB	69GB	62	36	72	69
715	75	192MB	69GB		61	113	
725	50	256MB	69GB	62	36	72	69
725	75	256MB	69GB		61	113	
735	99	400MB	125GB	124	80	150	147
Deskside							
755	99	768MB	297GB	124	80	150	147

WORKSTATION COMPARISON CHART

HP MODEL	SPECint92	$	ALPHA	SPECint92	$
715/33	24.2	10K	3000/300	66	12K
715/50	36	14K	3000/300	66	12K
715/75	61	18K	3000/300	66	12K
			3000/400	75	18.8K
725/50	36	20.5K	3000/300	66	12K
			3000/400	75	18.8K
725/75	61	21K	3000/300	66	12K
			3000/400	75	18.8K
735	80	37.4K	3000/400	75	18.8K
755	80	59K	3000/600	114	21.4K

HP WORKSTATIONS AND SERVERS VERSUS ALPHA AXP SYSTEMS

A1. ENTRY DESKTOP

	AXP3000-300L	HP715/33
SPECint 92	45.9	24
SPECfp 92	63.6	45
ENTRY $	$4,995	$5,695
$/SPECint 92	109	237
$/SPECfp 92	79	127

A2. LOW-END DESKTOP

	AXP3000-300	HP715/75
SPECint 92	67	61
SPECfp 92	91.5	113
Configured	$12,995	17,995
	19" Col,32,1GB	19" Col,32,525MB
$/SPECint 92	194	295
$/SPECfp 92	142	159

B. MID-RANGE DESKTOP

	AXP3000-600	HP725/75	HP735
SPECint 92	114	61	80
SPECfp 92	162.1	113	150
Configured	$21,465	20,995	37,395
	19" Col,32,1GB	19" Col,32,525MB	
$/SPECint 92	188	344	467
$/SPECfp 92	132	186	248

C. MID-RANGE DESKSIDE WORKSTATION

	AXP3000-800	HP755
SPECint 92	130	80
SPECfp 92	184	150
Configured	$36,000	52,000
		(64MB)
$/SPECint 92	277	650
$/SPECfp 92	196	347

SECTION 9

HP 9000 MODEL 700 SAMPLE PRICING

HP 9000 MODEL 705

- 19" grayscale, 16 MB RAM, diskless $6,180

HP 9000 MODEL 710

- 19" grayscale, 16 MB RAM, diskless $9,860

HP 9000 MODEL 715/33

- 19" grayscale, 16MB RAM, diskless $5,590
- 17" color, 16 MB RAM, 525 MB disk $7,700
- 19" color, 16 MB RAM, 525 MB disk $8,200
- 19" color, 32 MB RAM, 525 MB disk $9,800

HP 9000 MODEL 715/50

- 19" grayscale, 16 MB RAM, 525 MB disk $11,490
- 19" color, 16 MB RAM, 525 MB disk $13,390

HP 9000 MODEL 715/75

- 19" grayscale, 32 Mb RAM, 525 MB disk $15,395
- 19" color, 32 MB RAM, 525 MB disk $17,995

HP 9000 MODEL 720

- 19" grayscale, 16 MB RAM, 420 MB disk $14,965

HP 9000 MODEL 725/50

- 19" grayscale, 32 MB RAM, 525 MB disk $16,845
- 19" color, 32 MB RAM, 525 MB disk $19,445

HP 9000 MODEL 725/75

- 19" grayscale, 32 MB RAM, 525 MB disk $18,395
- 19" color, 32 MB RAM, 525 MB disk $20,995

HP 9000 MODEL 730

- 19" grayscale, 32 MB RAM, 420 MB disk $24,450

HP 9000 MODEL 735

- 19" grayscale, 32 MB RAM, 525 MB disk $34,690
- 19" color, 32 MB RAM, 525 MB disk $37,290

HP 9000 MODEL 750

- 19" color CRX (8pl), 64 MB RAM, 1.3 GB disk $52,890

HP 9000 MODEL 755

- 19" color CRX (8pl), 64 MB RAM, 2 GB disk $37,290

OPTIONS:

    $100/MB RAM
    525 MB DISK-- $2,200
    replace 525 MB with 1 GB-- $1,650
    1 Gb disk--$3,850
    CDROM--$1,050
    Powershade 3D software--$2,100
    add CRX-24 board--$4,000
    add CRX-24Z board--$9,000
    add CRX-48Z board--$14,000

SECTION 10:

HP GRAPHICS

Graphics

Graphics has always been an HP strength. Digital should not be intimidated by HP's reputation.
HP's unique strengths are only relevant at the low volume, high cost end of the 3D market. It is
always very difficult to compare graphics performance by such measures as vectors and polygons
per second as vendors do it differently.

HP Graphics
What HP announced
==================
From a graphics hardware point of view, HP announced only 1 new product: the HP CRX48Z.
This product represents the new high end of their graphics product line, replacing the TurboVRX
T4 A comparison of their old and new lineups:

	Old	New
Entry level 2D/ wireframe 3D	CRX/GRX	CRX/GRX
True color 2D	CRX24	CRX24
Entry level 3D	CRX24Z	CRX24Z
Mid-range 3D	TurboVRX T4	CRX48Z

HP is now supporting the CRX24Z on lower cost members of the family, starting with the
715/33, which allows them to be more price competitive in low end 3D applications.

Analysis

The CRX48Z addresses a major flaw in HP's products: true color double buffering. Until the CRX48Z, they could not offer a competitively priced true color double buffered solution (the Turbo VTX T4 was their only solution and it was tremendously overpriced and had sub-par performance).

Note that Digital has been shipping 3D graphics accelerators with full 24-bit double buffering since 1990 with the PXG and PXG Turbo and we will shipping the "+" versions of these products on ALPHA AXP workstations in Q3FY93.

The performance that HP is quoting for the CRX48Z is HIGHLY MISLEADING. HP is quoting 600K triangles and 1.9M 3D vectors/sec on the CRX48Z in their press releases.

In HP's performance brief, they fully describe how they measured the 600K triangles: 50 pixel triangles in strips, CONSTANT COLOR, random orientation, transformed, clip checked and Z-buffered. In other words, THESE ARE NOT SHADED TRIANGLES!!!

Any comparisons of the HP CRX48Z to any Digital 3D product, current or future, based on their 600K triangle number is TOTALLY APPLES TO ORANGES.

In fact, HP even admits in their performance summary that it is not clear how any application would use constant color 3D triangle strips.

The real gouraud shaded triangle performance is probably closer to 200K which puts it in the same performance class as the low end PixelVision which we expect will be approximately 200K.

There is also a rather dramatic drop from unlit tristrip performance to lit quads: 600K->150K on the 735 CRX48Z and 600K->80K for the 715/50 CRX48Z. This is due to the fact that HP does most of their geometry calculations on the host.

The vector performance looks legitimate. PV-mid should come close to this number, but it looks as though HP might have a lead here.

GPC PLB comparisons:
The table below shows how the HP platforms stack up relative to the PXG+/24/Z on a DECstation 5000 Model 133 (numbers in parentheses are relative to that configuration).

	cyl_head	head	shuttle
DS5000/133 PXG+	16.7(1.0x)	21.9(1.0x)	21.0(1.0x)
HP715/50 CRX48Z	39.6(2.4x)	66.7(3.0x)	28.3(1.3x)
HP735 CRX48Z	78.7(4.7x)	121.1(5.5x)	58.5(2.8x)

Our next generation products will be very competitive with this performance.

Features:

The CRX48Z does not support any of the more advanced features such as texture mapping or stereo viewing, which makes sense because none of their APIs can support these features. In his analysis of the HP graphics announcement, Ted Krum from D.H. Brown states: "As competitors rush to complete their OpenGL implementations by next spring, HP may find itself in the minority lacking support for the features, of which texture mapping remains the most potentially important."

PixelVision and Kubota's Denali will both support more features in hardware than the CRX48Z.

Graphics Summary

- Challenge HP's performance claims with your customers. PixelVision should provide more than competitive performance to the CRX48Z, with hardware support for more features such as texture mapping and stereo, all at competitive prices.

- Ask how important OpenGL is to your customers. HP's OpenGL strategy is to use a third party. Is that good enough?

SECTION 11
HP9000-800 SERVERS VS. ALPHA AXP

HP9000 MODEL	PRICE	SPEC INT 92	$/SPEC INT 92	SPEC RATE INT 92*	ALPHA AXP MODEL	PRICE	SPEC INT 92	$/SPEC INT 92	SPEC RATE INT 92*
F10	8,7000	22.0	396	523	2000-300	9,675	70	138	
F20	13,500	34.1	396	816	2000-300	9,675	70	138	
F30	15,000	37.8	396	890	2000-300	9,675	70	138	
G30	17,000	37.8	450	890	3000-400	16,630	74.8	222	1,763
G40	22,000	50.5	436	1201	3000-600	21,190	114	186	2,490
G50	33,000	78.3	421	1854	3000-600	21,190	114	186	2,490
G60	50,000	82.8	604	1944	3000-600	21,190	114	186	2,490
G70	76,000	N/A	N/A	3757	4000-710	70,865	113	627	2,900
H20	26,500	34.1	771	816	3000-400	16,630	74.8	222	1,763
H30	34,500	37.8	913	890	3000-400	16,630	74.8	222	1,763
H40	44,500	50.5	881	1201	3000-600	21,190	114	186	2,490
H50	68,000	78.3	868	1854	3000-800	32,275	130	248	2,835
H60	83,000	82.8	1,002	1944	3000-800	32,275	130	248	2,835
H70	109,000	N/A	N/A	3757	4000-720	90,865	N/A	N/A	5,742e
I30	60,500	37.8	1,446	890	3000-400	16,630	74.8	222	1,763
I40	73,000	50.5	1,446	1201	3000-600	21,190	114	186	2,490
I50	93,000	78.3	1,118	1854	3000-800	32,275	130	248	2,835
I60	108,000	82.8	1,304	1944	3000-800	32,275	130	248	2,835
I70	129,500	N/A	N/A	3757	4000-720	90,865	N/A	N/A	5,742e

HIGH-END SERVERS
HP/UX vs. DEC OSF1

HP-T500 MODEL	PRICE	SPEC RATE INT 92	$/SPEC RATE INT 92	DEC AXP MODEL	PRICE	SPEC RATE INT 92	$/SPEC RATE INT
T500-1	165,000	2,310	71	7000-610	140,500	3,061	46
T500-2	210,000	4,609	46	7000-620	167,500	6,060*	28
T500-3	255,000	6,826	37	7000-630	194,500	8,968*	22
T500-4	300,000	9,017	33	7000-630	194,500	8,968*	22
T500-5	345,000	11,211	31	7000-640	221,500	11,875*	19
T500-6	390,000	13,290	29	7000-650	248,500	14,629*	17
T500-7	435,000	15,253	29	7000-650	248,500	14,629*	17
T500-8	480,000	17,114**	28	7000-660	275,500	17,383*	16

NOTE: All HP T-500 and DEC7000 Systems are configured with 256MB memory.

* DEC7000-610 (OSF1) SPECrate integer results are published by the SPEC Council. The multi-processor results are estimates. Digital will ship SMP for DEC OSF1 in July, 1994, with an early release available in March, 1994. The 7000-610 is SMP enabled and supports 6-way SMP now with OpenVMS. Digital will support 12 way SMP in 2H, 94.

For each SMP board upgrade, DEC7000 costs $27,000; HP T-500 costs $45,000.

** The T-500 supports 8-way SMP with HP/UX 9.X. When HP 10.0 ships sometime in 1H, 94 CY, the T-500 will support up to 12-way SMP. HP has issued results for the T-500-12 at 23,717 SPECinteger for $660,000.

HIGH-END SERVERS
HP/UX vs. DEC OpenVMS

HP-T500 MODEL	PRICE	SPEC RATE INT 92	$/SPEC RATE INT 92	DEC AXP MODEL	PRICE	SPEC RATE INT 92	$/SPEC RATE INT
T500-1	165,000	2,310	71	7000-610	140,500	2,900	48
T500-2	210,000	4,609	46	7000-620	167,500	4,741	35
T500-3	255,000	6,826	37	7000-630	194,500	7,014	28
T500-4	300,000	9,017	33	7000-640	221,500	9,076	24
T500-5	345,000	11,211	31	7000-650	244,270	11,268	22
T500-6	390,000	13,290	29	7000-660	275,500	13,351	21
T500-7	435,000	15,253	29	7000-660	275,500	13,351	21
T500-8	480,000	17,114**	28	7000-660	275,500	13,351	21

NOTE: All HP T-500 and DEC7000 Systems are configured with 256MB memory

OLD HP 9000/800 SERIES SPECIFICATIONS

NOTE: HP revamped the server product line in December 1992. The product specifications for the new line follows those shown below. It is expected that these older models will still be sold but at drastically reduced prices.

Server Systems

MODEL	NOTES	MEMORY	DISC	TPC-A	PERF EST MIPS	PERF EST USERS	$K
807S	PA-RISC 32MHz	8-64MB	11.0GB	30.4	34	16	12
817S	PA-RISC 48MHz	16-192MB	28.5GB	51.4	53	32	20
827S	PA-RISC 48MHz	16-384MB	101.3GB	51.8	53	64	25
837S	PA-RISC 48MHz	16-192MB	28.0GB	60	53	64	40
847S	PA-RISC 48MHz	32-384MB	101.3GB	60.1	53	96	48
857S	PA-RISC 48MHz	64-384MB	130.0GB	60.1	53	160	63
867S	PA-RISC 48MHz	64-384MB	101.3GB	74.9	71	200	63
877S	PA-RISC 48MHz	64-384MB	130.0GB	74.9	71	200	79.5
887S	PA-7100 MHz	64-768MB	144.0GB	184	(136)	1800	92
897S	PA-7100 MHz	64-768MB	144.0GB	184	(136)	1800	112

DataCentre Machines

MODEL	NOTES	MEMORY	DISC	PERF EST TPC-A	PERF EST MIPS (SPEC)	USERS	$K
850S	PA-RISC	48-128MB	42GB	15	14 (9.2)	70	125
855S	PA-RISC	48-128MB	42GB	24	22 (13)	120	190
860S	PA-RISC	48-256MB	42GB	30	23 (14)	150	230
865S	PA-RISC	64-512MB	342GB	45	56 (36)	200	275
870S/100	PA-RISC	96-768MB	342GB	58	53 (36)	250	340
870S/200	PA-RISC	128-768MB	514GB	95	100 (70)	400	438
870S/300	PA-RISC	160-768MB	514GB	N/A	168	600	551
870S/400	PA-RISC	192-768MB	514GB	173	224	800	699
890S/1	60MHz	128MB-2GB	600GB		65(e)	1000	335
890S/2	60MHz	128MB-2GB	600GB		130(e)	1000	440
890S/3	60MHz	128MB-2GB	600GB		195(e)	1000	545
890S/4	60MHz	128MB-2GB	600GB	710	260(e)	1000	650

NOTE: Please use the benchmark numbers shown above for general positioning only. Call the Competitive Hotlline at 1-800-DEC-ISIT for updated performance information on HP products. For the full Digital and Hewlett Packard TPC benchmark results, see Attachment C.

HP DISKS

HP has three ways to connect discs to the 9000/800's - HPIB, SCSI, HPFL or some combination. Disk capacity is severely restricted if the HPIB option is chosen. The maximum number of discs come with SCSI, but you can only do disc mirroring and high availability with HPFL. This confusing approach to disk connections means the customer has to make decisions about the future as well as the current needs.

HP3000 (HP's OLTP machine)

HP3000 Product Detail
(prices are for base systems: Minimum memory, disk and MPE Operating System)

MODEL HP3000'S	NOTES	MEMORY	DISC. (MAX)	PERFORMANCE TPC-A	PERFORMANCE USERS	PRICE $K
Entry Level Systems						
917LX	PA-RISC 32MHz	24-192MB	24GB	33	8	14.5
927LX	PA-RISC 32MHz	24-192MB	24GB	33	20	21
937LX	PA-RISC 32MHz	32-192MB	24GB	33	24	40
937RX	PA-RISC 32MHz	32-384MB	66GB	33	32	33.5
Mid Range Systems						
947LX	PA-RISC 32MHz	48-192MB	24GB		48	70
947RX	PA-RISC 32MHz	64-384MB	66GB		100	88
957LX	PA-RISC 48MHz	64-192MB	24GB	65.5	100	100
957RX	PA-RISC 48MHz	64-384MB	66GB		160	103.5
967LX	PA-RISC 48MHz	64-192MB	24GB	65.5	100	140
967RX	PA-RISC 48MHz	64-384MB	66GB		250	123.5
977	PA-RISC 48MHz	96-384MB	66GB	150.6	250	245
Data Centre Machines						
955	PA-RISC NMOS	64-192MB	85GB	27	225	340
960	PA-RISC NMOS	128-256MB	85GB	38.2	300	440
980/100	PA-RISC CMOS	192-512MB	85GB	60	850	6755
980/200	PA-RISC CMOS	256-1000MB	85GB	100	850	1050
980/300	PA-RISC CMOS					
980/400	PA-RISC CMOS					
990/100	60MHz	192-512MB	600GB		1000	440
990/200	60MHz	256-1GB	600GB		1000	645
990/300	60MHz	320/1GB	600GB		1000	785
990/400	60MHz	384-1GB	600GB		1000	925

COMPETING WITH THE HP 3000/900

1. Promote High-Availability solutions, which guarantee security, reliability, and flexible growth at an applications level. This is offered by our proven VAXcluster technology, which is built into the VMS operating system (thus removing any coding and maintenance from the application programmer). Use the Gartner Group Mid-Range Enterprise Systems Evaluation results to show our advantage. I have attached the results for MPE and VMS at the end of this document.

2. Promote our Open Systems capability as industry leadership. We are the only vendor to receive XPG3 branding for a non-UNIX operating system. XPG3 branding (which is the execution of POSIX calls using the X/Open suite of tests) make it much easier to port applications, thus giving customers flexibility of platforms.

3. Promote ALPHA AXP, the first 64-bit systems architecture in the industry. How and when will HP catch up??

4. Promote ALPHA Ready VAX systems as an investment protection easy and inexpensive upgrade from VAX OpenVMS to ALPHA AXP Open VMS. Digital provides industry leading business practices (including the transfer of software licenses with no additional cost) which protect the customers investment.

5. Promote the idea that MPE is dead. HP's Roelandts said recently that HP MPE is for HP's installed base but HP/UX is for growth. (Computer World, 11/2/92).

6. Question HP's strategic direction , and promote the idea that Windows NT may supersede UNIX. If it does, HP will suddenly be poorly positioned. HP may be hot now with its HP/UX (UNIX), but they have all their eggs in one basket. The Gartner Enterprise Systems model shows that UNIX is weak in providing mission critical, production quality systems solutions. Although UNIX is growing now, it is not taking over the work (it only represents about $16B in overall computer systems revenues), and NT is generating lots of excitement.

    HP does not have anything like our PAL code for ALPHA. Therefore, even if they did end up supporting NT, it will take them extra time and effort to do so, and they would have to change their entire direction to implement an integrated NT software solution.

SECTION 14

COMPETING AGAINST HP PCs

Competitive Hotline
1-800-DEC-ISIT
September, 1993

Table of Contents:

HP Product Line Overview:

HP's desktop and floorstanding PC's and servers are called Vectra's.

Within the Vectra line, products are classified as follows:

"386N" models are positioned as LAN clients, and are desktop devices.

"486N" models are positioned as LAN clients or LAN servers, and are "slimline" (although not portable) desktop devices.

"486M" models are positioned as LAN clients or LAN servers, and are midsize desktops.

Models ending in "U" are positioned as workstations for graphics, CAD, and windows applications, and are desktop devices.

Models ending in "ST" are positioned as file servers, and are floorstanding.

"RTU/n" means "ready-to-use" server, configured for n users.

HP also sells portable PC's, called OmniBooks, which will not be covered within this document.

HP models, specs, and prices

STATIONS:

Model	Chip	Clock MHz	Memory min-max	Disk MB	Bundled O/S	
386/25N	386sx	25	4-32M	80	DOS, Windows	$1,309
486/25N	486sx	25	4-48M	120	DOS, Windows	$1,429
486/33N	486sx	33	4-48M	120	DOS, Windows	$1,549
486/33N	486dx	33	4	120	DOS, Windows	$1,729
486/66N	486dx2	66	4-48M	240	DOS, Windows	$2,479
486s/25M	486sx	25	4-	120	DOS, Windows	$1,519
486s/33M	486sx	33	4-	120	DOS, Windows	$1,639
486/33M	486dx	33	4-	170M	DOS, Windows	$1,909
486x/330M*	486sx	33	4-	170M	DOS, Windows	$2,159
486/330M*	486dx	33	4-	170M	DOS, Windows	$2,409
486/500M*	486dx2	50	8-	240M	DOS, Windows	$3,219
486/660M*	486dx2	66	8-	240M	DOS, Windows	$3,379
486/25U	486sx	25	4-64M	120M	DOS, Windows	$2,489
486/33U	486dx	33	4-64M	120M	DOS, Windows	$2,849
486/50U	486dx2	50	4-64M	240M	DOS, Windows	$3,409
486/66U	486dx2	66	4-64M	240M	DOS, Windows	$3,659

* = includes Ethernet

Note: All stations are also available diskless.

Note: All models on this page come with a 1 year warranty.

SERVERS:

Model	Chip	Clock MHz	Memory min-max	Disk MB	Bundled O/S	
486/33ST	486dx	33	4-64M	240M	none	$3,999
486/66ST	486dx2	66	4-64M	240M	none	$4,899
486/33ST RTU/20	486dx	33	4-64M	240M	DOS,Netware	$8,949
486/66ST RTU/50	486dx2	66	4-64M	240M	DOS,Netware	$12,199
486/66ST RTU/100	486dx2	66	4-64M	240M	DOS,Netware	$13,899

486/33ST RTU/20 is a 486/33ST "Ready-to-use" server, preconfigured and easy to install, to support 20 users.
486/66ST RTU/50 is a 486-66ST "Ready-to-use" server, preconfigured and easy to install, to support 50 users.
486/66ST RTU/100 is a 486/66ST "Ready-to-use" server, preconfigured and easy to install, to support 100 users.

NetServer 4s/33LE	486sx	33	4-	240M	none	$2,649
NetServer 4/33LE	486dx	33	8-	530M	none	$3,549
NetServer 4d/66LE	486dx2	66	8-	530M	none	$4,049
NetServer 4/33LM	486dx	33	16-	530M	HP NetServer	$4,849
NetServer 4d/66LM	486dx2	66	16-	530M	HP NetServer	$5,499
NetServer 5/60LM	Pentium	60	16-	530M	HP NetServer	$7,099

The difference between ST's and RTU's vs NetServers:

ST or RTU	NetServer
MS-DOS 5.0 preinstalled	No O/S preinstalled
NetWare 3.11 preinstalled	HP NetServer Assistant software
Ethernet adapter	SCSI ports and EISA busses
Not upgradable to Pentium	Upgradable to Pentium
One year warranty	Three year warranty

Note: All models except NetServers come with a 1 year warranty.
        NetServers come with a 3 year warranty.

Digital PC Models, Specs, and Prices:

SL's   = mono portables
SLC's = color portables
LPv's = desktop clients
LPx's = desktop clients which are "Pentium-ready"
MT's   = floorstanding clients
ST's   = floorstanding servers

Portables

Model	Chip	Clock	Mono/Color	Min Mem	Max Mem	80M Disk	120M Disk	200M Disk
325SL	386	25Mhz	mono	4M	20M	$2099	$2299	
325SLC	386	25Mhz	color	4M	20M		$2899	
425SL	486	25Mhz	mono	4M	32M		$2499	$2699
425SLC	486	25Mhz	color	4M	32M		$3999	$4199

LP's (desktop clients)

All include DOS, Windows, keyboard, mouse, and 14" color monitor

Model	Chip	Clock	4M Mem & 170M Disk	8M Mem & 245M
LPv 425sx	486sx	25Mhz	$1049	$1421
LPv433dx	486dx	33Mhz	1399	1769
LPv450d2	486dx	50Mhz	1599	1969
LPx 433sx	486sx	33Mhz	1149	1519
LPx 433dx	486dx	33Mhz	1399	1719
LPx 450d2	486dx2	50Mhz	1599	1969
LPx 466d2	486dx2	66Mhz	1799	2169

MT's (floorstanding clients)

All include DOS, Windows, keyboard, mouse, and 14" color monitor

Model	Chip	Clock	Memory	127M	245M	426M	1G Disk
433dx	486dx	33Mhz	4-64M	$2249	$2449	$3199	$3599
450d2	486dx	50Mhz	4-64	2399	2599	3349	3749
466d2	486dx	66Mhz	4-64	2699	2899	3649	4049

ST's (floorstanding servers)

All include DOS, Windows, keyboard, mouse

Model	Chip	Clock	Memory	245M	426M	1G Disk
433ST	486dx	33Mhz	4-32M	$2749	$3449	$3849
450ST	486dx	50Mhz	4-32	3149	3849	4249
452ST	486dx	50Mhz	4-32	2799	3499	3899
466ST	486dx	66Mhz	4-32	3199	3899	4299
560ST	Pentium	60Mhz	8-192		10195	11106

ALPHA PC's

Model	Chip	Clock	Memory	245M Disk
AXP PC	ALPHA	150Mhz	16-128M	$6795

HP vs. Digital positioning:

	HP Model	HP Price	Digital Model	Digital Price
Clients:	386/25N	$1,309	N/A	
	486/25N	1,429	LPv 425sx	$1,049
	486s/33N	1,549	LPx 433sx	1,149
	486/33N	1,729	LPx 433dx	1,399
	486/66N	2,479	LPx 466d2	2,169
	486s/25M	1,519	LPx 425sx	1,049
	486s/33M	1,639	LPx 433sx	1,149
	486/33M	1,909	LPv 433dx	1,399
	486x/330M	2,159	LPx 433sx	1,149
	486/330M	2,409	LPv 433dx	1,399
	486/500M	3,219	LPx 450d2	1,969
	486/660M	3,379	LPx 466d2	2,169
	486/25U	2,489	LPv 425sx	1,049
	486/33U	2,849	LPv 433dx	1,399
	486/50U	3,409	LPx 450d2	1,969
	486/66U	3,659	LPx 466d2	2,169
486 Servers:				
	486/33ST	3,999	DECpc 433ST	2,749
	486/66ST	4,899	DECpc 466ST	3,199
	NetServer 4x/33LE	$2,649	DECpc 433ST	$3,742
	NetServer 4/33LE	3,549	DECpc 433ST	3,742
	NetServer 4d/66LE	4,049	DECpc 460ST	4,192
	NetServer 4/33LM	4,849	DECpc 433ST	4,328
	NetServer 4d/66LM	5,499	DECpc 433ST	4,328
	NetServer 5/60LM	7,099	DECpc 560ST	10,781

Note: All comparisons use the most similar, least expensive configurations possible for both HP and Digital.

Spotlight on Pentium:

	486dx2	Pentium	ALPHA PC
SpecInt'92	32	65	70*
SpecFP'92	16	56	105*

*The ALPHA AXP PC runs NT at these performance levels. It will run DOS and Windows at equivalent performance levels as a 486dx.

Both Digital and HP have announced one Pentium model.

The HP model comes in 4 configurations:

HP NetServer 5/60 with

> 16M memory, diskless = $6,049
> 16M memory, 530M disk = $7,099
> 16M memory, 1G disk = $7,649
> 16M memory, 2G array = $12,549
>
> All come bundled with HP Net Server Assistance software (sever mgmt software, similar to OpenView).
>
> NetWare can be installed optionally on NetServers.
> DOS can be installed optionally on NetServers.

Sample comparison:

> DECpc 560ST w/16M memory, 1G disk, DOS = $11,692
>
> vs.
>
> HP Netserver 5/60 LM w/16 M memory, 1G disk,
> and HP NetServer Assistant   = $7,649

How to compete? Consider bidding ALPHA AXP PC's against HP's Pentium. This will bring you into a better price/performance position against the HP Pentium. Or, contact Andy Kozak or Calvin Dowling, product managers for Digital's Pentium product.

Items available from the Competitive Team Weapons Center, 1-800-DEC-ISIT.

"Vectra Microcomputers"   Datapro, 3/93
Abstract: Description, specs, and prices for
            Vectras.

"HP Vectra PC's"   HP, 9/93
Abstract: Chapter from the HP price book,
            including prices for options.

HP SERVICES

Author: BERTRAM MANDEL
Date: 03-Nov-1993
Posted-date: 02-Nov-1993
Subject: I: HP Professional services division

Subj: SI COMPETITIVE FYI: GARTNER ON HP SYSTEMS INTEGRATION SERVICES

HP's goal is to become one of the leading services providers during the next several years.
Although late entering, their Professional Services Division has several strengths: HP's 3,500
people committed to services, expert in networking (the backbone of client/server systems), and
can provide customized education solutions based on client's needs analysis. HP's challenges: HP
is still a technical company (most PSD employees are former systems engineers), HP is not good
at visioning or helping clients develop business requirements, and HP is not capable of developing
on-line transaction processing systems. Their rates, in many cases, are twice the industry average.
HP field people cannot claim understanding beyond their own product lines, understanding from a
business and application perspective is lacking, and the transition to solving clients business needs
is slow. HP's services organization is difficult to understand externally and internally and there is
little marketing of commercial success stories...Alan

Hewlett-Packard's SI and Services Strategy

Section: - (Abstract and Definitions)
Hewlett-Packard is one of the last major hardware vendors formally to take the SI and services
plunge. Entering the market this late leaves no room for error.

Definitions

Professional services providing services on a time and materials, or fixed-price, basis to include:
consulting, software development, education and training, and outsourcing.

Outsourcing a contractual relationship with an outside vendor to assume responsibility for one or
more IT functions. It is usually characterized by the transfer of assets, e.g., facilities, staff or
hardware.

Systems integration (SI) a large (multimillion dollar), customized IS project with multiple
components, e.g., hardware, professional services, software and communications, that addresses a
significant problem for the organization.

Section: - (HP Announces Commitment to Professional Services)
In mid-1991, Hewlett-Packard Co. (HP) announced its commitment to professional services by creating a separate group with profit and loss responsibility (which HP calls its Professional Services Division PSD, in Mountain View, Calif.). The following 18 months were wisely spent assessing skills, retraining and hiring key project talent, creating methodologies and targeting market segments. In 1993, after refining its corporate services strategy and developing references in select markets to substantiate its capability claims, HP announced it was open for business. This is not to say that HP was not doing services work up to that time. A significant number of SI and consulting projects had been done in Europe prior to 1993, including Texaco, Schlumberger and the Barcelona, Spain Chamber of Commerce. However, it does say HP did not, until recently, formally recognize services as a key to success for corporate survival in a world of decreasing hardware prices and users demanding IT business solutions from their suppliers.

Section: - (Strengths)
HP's strategy has a number of significant strengths:

1)First and foremost, HP is committed to the services market. With 3,500 people delivering services, significant yearly financial investments in the business and a reasonable industry-people and project-manager hiring pace, HP will be a visible services player in the near future.

2) HP is an expert in networking the backbone of client/server (C/S) systems. Thus, HP accounts for networking issues better than many services competitors when planning and designing C/S architectures. It also can provide outsourcing services for remote enterprisewide local-area network (LAN) management.

3) HP educates. Many clients are asking for recommendations of vendors that can train an IS shop on C/S and open systems issues so internal IS can then develop its own applications. HP can provide customized education solutions based on a client's needs analysis. Few vendors other than HP (with the exceptions of American Management Systems and IBM's Skills Dynamics) have this service.

Section: - (Challenges)
HP's challenges for commercial services success include:
1) HP is still a technical company; the transition to solving clients business needs is slow. In services, HP generally competes in the upper-middle of the development life cycle (with IT architecture, pilots and proof-of-concept projects). HP is not good at visioning or helping clients develop business requirements (historically, there has been a leap from the client's problem to we have a box to solve that), and is not capable (except in select regions) of developing on-line transaction processing systems.

2) To be a success in services, a vendor must: a) have competitive rates (HP s, in many cases, are twice the industry average); b) have a large percentage of employees on projects (HP, targeting a 70 percent consultant utilization rate, is far from its goal); c) hire people who are serious about SI and will look for the best solution, no matter whose hardware (HP field people cannot claim understanding beyond their product lines); and d) have people with an understanding from a business and application perspective that are good project managers (as previously mentioned, HP is on the right track, but is not there yet). Note: HP is not losing business due to the issues referred to in preceding points a and b because it is easily securing contracts from pent-up demand in its installed base. In the near future, however, HP needs to look to higher utilization rates and lower hourly rates to be truly competitive.

Section: - (Goals)

HP's goal is to become one of the leading services providers (judged by revenue and quality of service delivered) during the next several years. We believe this goal is ambitious since HP is late to market and must contend with capable services competitors, e.g., Andersen Consulting.

However, we do believe HP will:

1) continue to grow its services business with growth rates above the industry average of about 15 percent;

2) gain services credibility in regions of the world in addition to Europe;

3) and be a viable contender in HP's telecom, manufacturing, and banking/finance accounts. Even though today we would not recommend HP for all types of services engagements, we do believe that it should be considered as one vendor option in its target markets for offerings, e.g., open systems and C/S architecture consulting/planning, outsourcing of support for C/S systems, and C/S education and training. During the next three to five years, we believe HP's capabilities will be more robust and consistent across geographies. The company then should be considered for a wider breadth of projects.

Section: - (Examples of HP's Services Contracts)

Swedish Telecom Purpose ongoing projects in C/S architecture and SI (contract value of about $100 million)

GTE Corp. Purpose open systems consulting and C/S architecture (ongoing)

Orient Oversees Container Lines Purpose C/S architecture and planning (contract value of more than $10 million)

Section: - (HP's Professional Services)

Strategy

Target historical HP clients in finance, manufacturing and telecommunications

Stress C/S and open systems expertise

Target C/S and PC-LAN outsourcing opportunities (networked systems management)

Capitalize on computers, test equipment and services expertise (all from the same vendor) for developing customized hardware and software modifications easily

Capitalize on the trend in downsizing with a mainframe-alternative strategy and services offering

Focus on integrating off-the-shelf (or existing) applications vs. specifically developing the applications

Strengths

Expertise in C/S consulting

Full-service provider capability

$200 million telecom practice

Size of corporation and reputation of hardware products

Services references in Europe and the Pacific Rim

Challenges

Late to market

HP's services organization is difficult to understand externally as well as internally, i.e., who should a user go to and how does a user find available resources?

Most PSD employees are former systems engineers (SEs) how many are qualified now to sell and deliver services? How many unqualified SEs can be retrained for the future? How many unqualified SEs should be dismissed?

Gain market awareness presently there is little marketing of commercial successes

Consistency of service across all regions, e.g., lack of project management and business expertise for large projects in the United States

HP's channel partner program is touted as one of the best in the industry, yet PSD directly competes with channel partners. How will HP resolve this?

See accompanying Research Note C-915-1015 for HP's education and training strategy

GartnerGroup

SECTION 16

POSITIONING QUICK REFERENCE LINE-UP

"HP WORKSTATION LINE-UP"

MODEL	LINE-UP		STATUS/Comments
HP 9000-705	AXP	3000-300L	EOL
	DECsta 5000-50		
	DECsta 5000-150		
HP 9000-710	AXP	3000-300L	EOL
	DECsta 5000-260		
HP 9000-715/33	AXP	3000-300L	1 EISA slot
	DECsta 5000-50		
	DECsta 5000-150		
HP 9000-715/50	AXP	3000-300L	1 EISA slot
HP 9000-715/75	AXP	3000-400	1 EISA slot
HP 9000-720	AXP	3000-300L	1 EISA slot
	AXP	3000-300	
HP 9000-725/50	AXP	3000-400	4 EISA slots
	AXP	3000-600	
HP 9000-725/75	AXP	3000-400	1 EISA slot
HP 9000-730	AXP	3000-400	1 EISA slot
HP 9000-735	AXP	3000-500	1 EISA slot
	AXP	3000-600	
HP 9000-750	AXP	3000-400	4 EISA slots
HP 9000-755	AXP	3000-500X	4 EISA slots
	AXP	3000-800	

NOTE: CRX-24, CRX-24Z & CRX-48Z utilize 1 EISA slot

"HP TECHNICAL SERVER LINE-UP"

MODEL	LINE-UP		STATUS/Comments
HP 9000-720	AXP	3000-300	1 EISA slot
	AXP	3000-400S	
HP 9000-725/50	AXP	3000-400S	4 EISA slots
	AXP	3000-600S	
HP 9000-730	AXP	3000-400S	1 EISA slot
	AXP	3000-600S	
HP 9000-735	AXP	3000-500S	1 EISA slot
	AXP	3000-800S	
HP 9000-750	AXP	3000-500S	4 EISA slots
	AXP	3000-800S	
HP 9000-755	AXP	3000-500S	4 EISA slots
	AXP	3000-800S	

"HP COMMERCIAL SERVER LINE-UP"

MODEL	LINE-UP	STATUS/Comments
32 MHz		
HP 9000-F10	AXP 3000-300 AXP 2000-300	2 HP-PB slots, MEM-384MB, Disk 42GB
48 MHz		
HP 9000-F20	AXP 3000-300 AXP 2000-300	2 HP-PB slots, MEM-384MB, Disk-42GB
HP 9000-H20	AXP 3000-400S	4 HP-PB slots, MEM-512MB, Disk-100GB
HP 9000-F30	AXP 3000-300 AXP 2000-300	2 HP-PB slots, MEM-384MB, Disk-42GB
HP 9000-G30	AXP 3000-400S	4 HP-PB slots, MEM-512MB, Disk-100GB
HP 9000-H30	AXP 3000-500S	8 HP-PB slots, MEM-768MB, Disk-186GB
HP 9000-I30	AXP 4000-610	12 HP-PB slots, MEM-768MB, Disk-228GB
64 MHz		
HP 9000-G40	AXP 3000-400S	4 HP-PB slots, MEM-512MB, Disk-100GB
HP 9000-H40	AXP 3000-500S	8 HP-PB slots, MEM-768MB, Disk-186GB
HP 9000-I40	AXP 4000-610 AXP 4000-710	12 HP-PB slots, MEM-768MB, Disk-228GB
96MHz		
HP 9000-G50	AXP 3000-500S	4 HP-PB slots, MEM-512MB, Disk-100GB
HP 9000-H50	AXP 3000-500S	8 HP-PB slots, MEM-768MB, Disk-186GB
HP 9000-I50	AXP 4000-610 AXP 4000-710	12 HP-PB slots, MEM-768MB, Disk-228GB
HP 9000-G60	AXP 4000-610 AXP 4000-710	4 HP-PB slots, MEM-512MB, Disk-100GB 2MB Cache, TPC-A 40% > 50's

HP 9000-H60	AXP 3000-500S	8 HP-PB slots, MEM-768MB, Disk-186GB
	AXP 4000-610	2MB Cache, TPC-A 40% > 50's
HP 9000-I60	AXP 4000-620	12 HP-PB slots, MEM-768MB, Disk-228GB
	AXP 4000-710	2MB Cache, TPC-A 40% > 50's
HP 9000-G70	AXP 4000-710	4 HP-PB slots, MEM-512MB, Disk-100GB
	AXP 4000-720	Model 70 - 2 CPU's, TPC-A 45% > 60's
HP 9000-H70	AXP 4000-710	8 HP-PB slots, MEM-768MB, Disk-186GB
	AXP 4000-720	Model 70 - 2 CPU's, TPC-A 45% > 60's
HP 9000-I70	AXP 4000-710	12 HP-PB slots, MEM-768MB, Disk-228GB
	AXP 4000-720	Model 70 - 2 CPU's, TPC-A 45% > 60's

"HP COMMERCIAL SERVER LINE-UP"

MODEL #:	890S/1	890S/2	890S/3	890S/4
PRICE:				
(Server)	$165K	$230K	$295K	$360K
(MF Alt)	$319K	$442K	$546K	$669K
MIPS (est.):	65e	130e	195e	260e
TPC-A:	120e	185e	275e	578-AB
				710-O7
SPEC_RATE_int:	1215	2253	3306	4301
SPEC_RATE_fp:	1180	2360	3529	4685
LINE-UP:	VAX 7000/610	VAX 7000/620	VAX 7000/630	VAX 7000/640
	AXP 4000/610	AXP 4000/610	AXP 4000/710	AXP 7000/620
			AXP 7000/610	AXP 10K/620
			AXP 10K/610	

MODEL	INTERNAL SCSI	MAX DISK	MAX MEMORY
890s/1-4	none	1 TB	2.0 GB
VAX 7000	24.0 GB	10 TB	3.5 GB
VAX 10000	24.0 GB	10 TB	3.5 GB
AXP 4000	25.6 GB	1 TB	2.0 GB
AXP 7000	56.0 GB	10 TB	14.0 GB
AXP 10000	112.0 GB	10 TB	112.0 GB

KNOCK-OFFS

General:

- PA-RISC is 32 bit and 6 years old.
  ALPHA is new and 64 bit.

- PA-RISC only supports HP-UX O/S.
  ALPHA supports OSF/OpenVMS/NT.

- HP-UX is proprietary.
  OSF/1 is open.

- HP-UX is compliant with SVR3 API's.
  OSF/1 is compliant with SVR4 API's.

- HP is having difficulty implementing user-based licensing.
  Digital already offers it.

- HP's workstation "clusters" are basically a LAN with FDDI.
  Digital's Workstation "Farms" have better performance with GIGAswitch.

- HP-UX does not support disk striping.
  OSF/1 and Open VMS do.

- HP Salesperson on HP.

- HP Users gripes.

- HP product delays try User's patience.

9000-700:

- 700's are weak servers and do not offer SMP.

- HP uses EISA bus, sustained I/O of 30 MB/sec (ALPHA - 90MB/s).

- 735 has only 1 EISA slot, could be a problem in high graphics and/or networking applications.

- 755/735 are cached-as workload increases, they may run out of cache then ALPHA will overtake them in performance.

- HP/UX migration (called transition) to a micro-kernel technology base will force HP customers into 2 migrations..

- HP cannot ship 735 or 755 with reasonable lead times....

- HP 735 / 755 cache out & performance drops drastically.

- HP 715 thrown out of Breed's.

- HP/UX --- kernel migration emminant.....

- Workstation "Farms" or "clustering" -- HP no good.

9000-800:

- F, G, H, and I Servers use "HP PRECISION" bus with a peak rate of 32MB/sec and a sustained of 21 MB/sec. Disk interface to the system is SCSI-2 interface rated at only 10 MB/sec.

- DECsystem 5000-240 (Genroco/IPI) beat a HP 827S.

- AXP win over HP 800 Servers.

- TPC-A on HP 800 I50 suspect (ADABAS db).

General:

#2733 5/11/93	Ex-HP Salesperson on HP.
#2731 5/21/93	14 week lead times.
#2515 4/28/93	HP admits "MFG" process issues.
Hardcpy 4/12/93	CW: HP User's Gripes.
Hardcpy 3/29/93	CW: HP product delay's try User's patience.
#2093 3/29/93	HP/UX migration necessary.
#1823 3/11/93	HP kernel migration.
#1272 2/04/93	13 Points to fight HP.

Workstations:

#3123 5/28/93	HP 715 thrown out of Breed's.
#2539 4/29/93	Countering HP / Farms.
#2510 4/28/93	Delivery issues on HP-725/735/755.
#1732 3/9/93	AXP 3000/500 wins over HP730.
#1547 2/26/93	Workstation Farms / Clustering.
#1399 2/18/93	AXP win over HP 735/755.

Servers:

#2954 5/21/93	AXP win over HP 800 Servers (clustering an issue).
#2681 5/07/93	HP's upset --- AXP @ 302 TPC-A.
#2313 4/13/93	HP Precision "BUS" used on NEW Servers.
#1234 2/02/93	DECsystem 5000-240 (Genroco/IPI) beat HP 827S.
#547 12/10/92	TPC-A on HP 800 I50 suspect (ADABAS db).

MPE:

Hardcpy 4/12/93	CW: MPE causing backup problems.
#1379 2/12/93	Knock-offs against HP's failover & clustering.
# 615 12/16/93	Combating HP/MPE.