IBM Systems and Technology Group University 2005

ON DEMAND BUSINESS™

ISV partnering + pSeries performance = Won Revenue

Course #: pSeries Sales #12

Dave Davern & David Kinsey
pSeries ISV Sales Solution Executives

ON DEMAND BUSINESS™
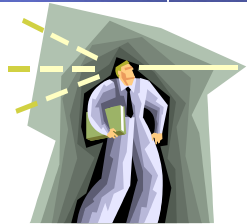
In 75 minutes you will walk away with:

A review of our Unix Market Today

How and Why to become a Power sales rep

Resources to Leverage when engaging with ISVs

Taking it to the next level with ISVs

Skilled Resources to assist you

A review of our Unix Market Today

BOOSTING THE POWER OF IBM's PARTNERSHIPS WITH ISV's.

★ *IT analysts at IDC rated IBM as the clear industry leader for ISV Alliances in both ability to gain share and execution aligned to opportunity*

★ *IBM has a strategic relationship with 83 of the top industry ISVs – for more information – ISV Solution Link*

IBM @server

1 2 3 4 5

ON DEMAND BUSINESS™

AIX Adoption and Series Revenue Growth

IBM pSeries Revenue   **Applications Available on AIX**
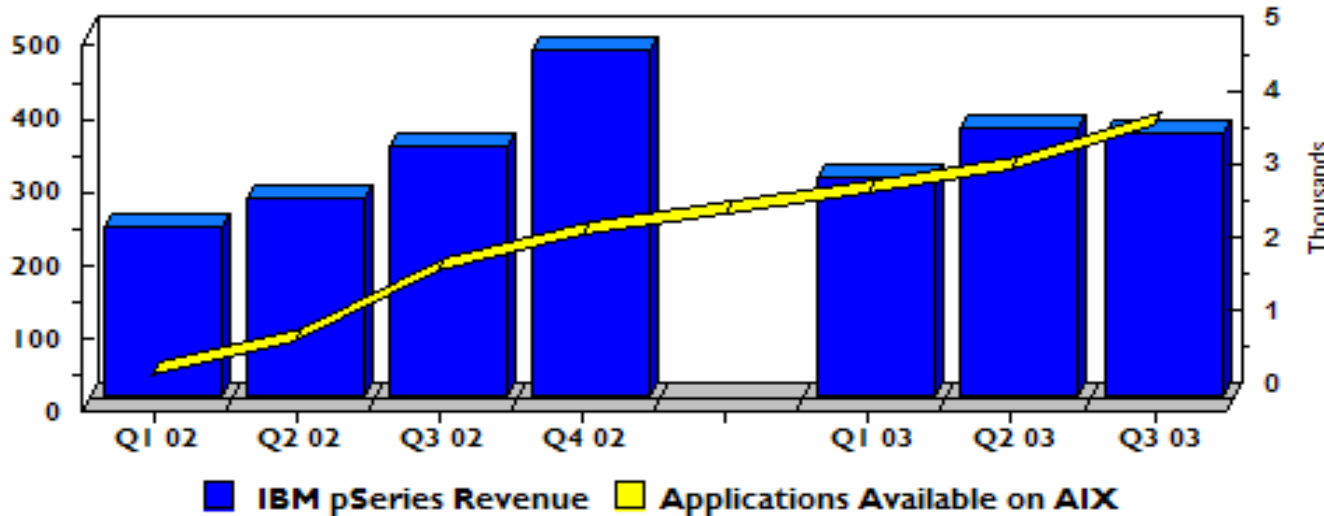
✓ *More than 4500 applications from 1300 ISVs now available for p5 Servers*

✓ *ISV's adoption of AIX 5.2 much more quickly than 5.1*

✓ *580 ISVs support over 1670 AIX 5.2 applications*

✓ *More than 200 ISVs have plans for more than 350 AIX 5.3 applications by 2Q05*

Worldwide Unix Y2Y Revenue Growth
According to IDC

Industry   IBM
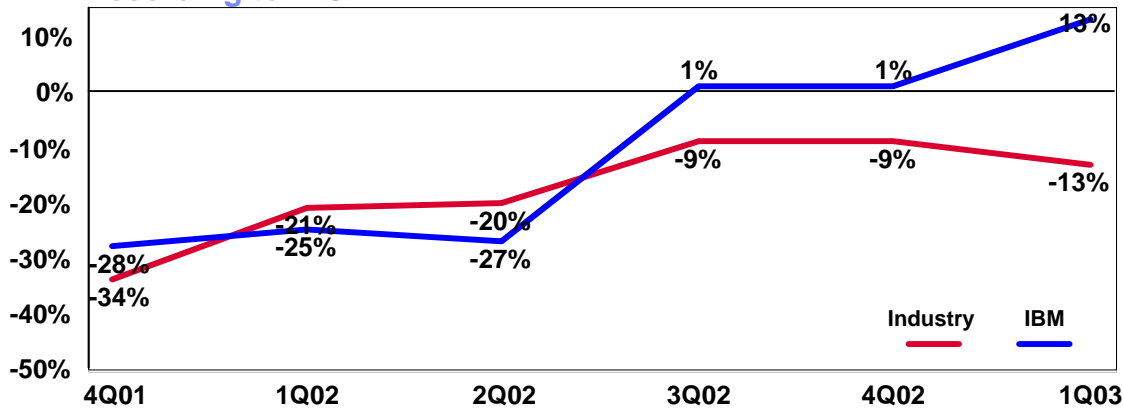
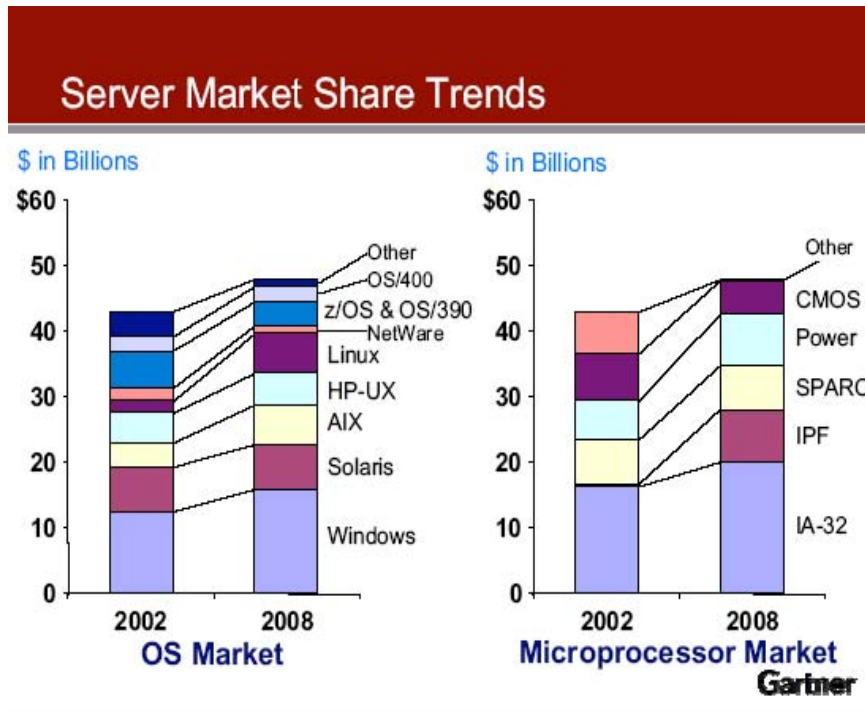**"....ISV support for IBMs AIX has increased recently and its portfolio is catching up with those for HP and Sun. Solaris used to receive as much support as Windows, but its position has weakened since 2001, leaving it just ahead of the other Unix variants. ..."**

Gartner Research Note, 'ISV Support is Key When Choosing a Server Operating System' September 17, 2003

1   2   3   4   5

Gartner sees AIX as leading growth Unix architecture

Server Market Share Trends

$ in Billions

OS Market — 2002, 2008: Other, OS/400, z/OS & OS/390, NetWare, Linux, HP-UX, AIX, Solaris, Windows

$ in Billions

Microprocessor Market — 2002, 2008: Other, CMOS, Power, SPARC, IPF, IA-32

Gartner

Source: Gartner Cannes Symposium November 2003

➤ Through 2008, the server operating system shakeout will continue, and the server microprocessor shakeout will accelerate. As a result of these shakeouts, we are predicting the following:

➤ There will only be three growth server operating systems (Windows, Linux and AIX) through 2008 (0.8 probability).

➤ There will only be three growth server microprocessor architectures (IA-32, IPF and Power) through 2008 (0.8 probability).

➤ Linux will grow market share significantly, but primarily in two different market segments

➤ massively parallel computing (supercomputing)

➤ single-function commodity servers.

➤ By YE08, AIX will grow market share approaching or passing Solaris as the No. 1 Unix operating system (0.8 probability).

➤ The Itanium Processor Family (IPF) architecture will grow, but slowly. IPF server revenue will not cross the $1 billion revenue mark until 2005 (0.8 probability).
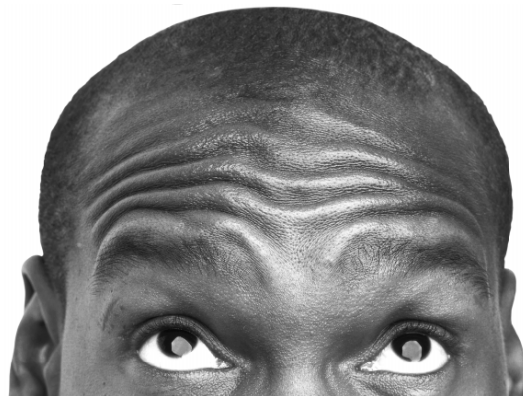
1 2 3 4 5

Why pSeries Sales reps need to Grow our Value?

➢ **UNIX market is in decline**

➢ **Cost of Technology is in decline**

➢ **Increased pressure from Intel space and Linux**

➢ **CUoD and Utility/Virtualization Direction**

➢ **Continued pressure to reduce expense (HC)**

➢ **HW platform environment is converging**

Get up and GROW

1   2   3   4   5

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Why Invest Now?

Today

IBM
- Only Unix vendor with growth in a declining market
- Strong product road map
- Increase ISV support of AIX Operating System

HP
- Printers driving 105% Profit – pressure from European Union on printer Cartridge
- 18 – 24 mos. of transition ahead to IA-64
- Attempt to Drive down Significant fixed costs (PA-UX chip, Alpha Mfg, R&D)

Sun
- High Variable and Fixed Costs
- Profit in decline
- New Approach in Development

Tomorrow

IBM
- **Continued Fixed cost to support product**
- **Pressure from IA-64/Intel environment**
- **Growing investment from ISVs for IA-64**

HP
- Low Fixed Cost HW Model
- Servers highly profitable
- Influx in cash to accelerate & buy transition
- Significant investment in Influencer & sales programs

Sun
- **Reinventing of product line**
- **Linux environment embraces technology**
- **SunOne SW investment takes hold**

1 2 3 4 5

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A review of our Unix Market Today

➢*pSeries embraced the ISV environment in '04 with significant returns*

➢*Unix Market in '05 requires growth through competitive replatform*

➢*Limited window of opportunity to take advantage of the Unix market*

How and Why to become a Power Sales Rep

2004 pSeries Sales Specialist added value to IBM and Customers…

✓Fully understand and engage in Unix sales to IBM Team and Customers

✓Constantly provides valuable insight of the Unix Market place, including trends and directions to Customers

✓Proactive efforts ongoing in competitive customer environments pointing out the strengths pSeries offers vs. competition.

pSeries Specialist

1 2 3 4

2005 pSeries Sales Specialist will grow value to IBM and Customers…

✓Fully understand and engage in Unix sales to IBM Team and Customers

✓Constantly provides valuable insight of the Unix Market place, including trends and directions to Customers

✓Proactive efforts ongoing in competitive customer environments pointing out the strengths pSeries offers vs. competition.

pSeries POWER Rep

➢Leverage ISV Resources: Engage ISV FP; use the sales kit: skill building/education to help OI and to progress/close YOUR deals.

➢Expose the customer's pain: Query the customer's application environment, challenge perceptions, and evangelize the business application value that pSeries enables

1   2   3   4

Growing our Value to IBM and Customers?
Power Reps **"Control their own Destiny"**
….Upgrading Value and Status in IBM

➢ **Look for 3 WAY PLAYS : Team with local SIs and ISV sales**

➢ **Identify and raise issues when an application Port is the spoiler**

➢ **Leverage & benefit from our business & technology value proposition**

➢ **Break into C-level. Don't abandon IBM relationships, leverage them.**

➢ **Educate eSMs, Client Teams,& BPs on Application based HW sales**

➢ **Close our <u>own</u> opportunities? Expose your customer's pain points.**

➢ **Get in on the Ground floor, flourish when the market grows**

1 2 3 4

ON DEMAND BUSINESS™

SOSWOS

ISV application

Tivoli

Lotus

IGF

DB2

IBM TotalStorage

ITS

IBM WebSphere

IBM Global Services

BCS

UNIX AND OPEN SYSTEMS
IBM eserver pSeries

- Understand the "Clothing Rate"

-Ask the solution content questions

-Be known as the "Solution Guy" not just the "Hardware Guy"

-Bring value to the Sale

This is how you get your Client rep motivated to help you sell ISV solutions on pSeries!

1 2 3 4

How and why to become a Power Sales Rep.

➤ *Our Value Proposition moving forward requires us to stretch our sales skills*

➤ *IBM Power Reps moving forward will have very strong Solution skills and have extensive Ecosystem that includes ISVs and SIs*

➤ *Through strong ISV relationships you will grow your pipeline and control your own destiny*

Resources to leverage when engaging with ISV's

A Review of our Resources

pSeries Specialist
"Historical"

pSeries Specialist
"Future"

1　2　3　4　5　6　7　8　9　10

Resources TODAY

AIX Availability

1) Which ISV's are ported on AIX? **"Check the IBM Systems Sales Site"**

General Availability <u>by Sector & Industry</u> for AIX 5.1, 5.2 <u>and 5.3</u> applications is posted weekly on the IBM Systems Sales Web Site.

Search for "AIX5LAVAIL"

► **AIX 5L overviews and ISV value proposition**

► **Porting Roadmaps to assist support and migration to the latest versions of AIX**

► **Marketing resource guide for ISVs that support AIX**

1 2 3 4 5 6 7 8 9 10 ON DEMAND BUSINESS™

Leverage TODAY

AIX Availability

2) Regatta ISV Teamroom – Highly Confidential -- For Pre-Sales and Sales Leads. If you have a need to know, request access by sending a note to.... AIX5LDB/Austin/IBM or 5ldb@us.ibm.com

Regatta ISV Teamroom on D01DBM06
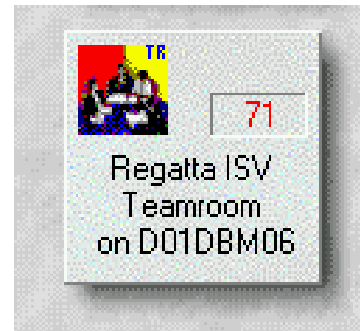
For general inquiries on ISV application availability, send a note to: AIX5LDB/Austin/IBM or 5ldb@us.ibm.com

NOTE= if urgent and no access- contact Kevin Norris and he will respond with planned confidential date and the TSM for you to work with to get your ISV to talk to the customer directly, or certify binary compatible if applicable.

1 2 3 4 5 6 7 8 9 10 D BUSINESS

Leverage TODAY

AIX Availability

* Can't Find your ISV listed with AIX port (e.g. "new to AIX")

* Then Contact Developer Relations Rep. assigned to that ISV/Sector

* How do I Find Out who is Assigned?

3) Contact: ISVSolutionLink

Scorecard: IBM's Performance
IBM STOCK (IBM) **90.69** **+1.33**
Quoted at 4:07 pm EST on Nov 12
→ EXPAND   → REFRESH

ISV SolutionLink
The single IBM source for information about selling with ISVs

ISV SolutionLink allows you to identify ISVs and their solutions to drive incremental IBM revenue.

Use ISV SolutionLink to search for specific developers based on a specific ISV name or solution name. Or, you can perform advanced searches based on criteria such as industry, solution area, platform or geography. Contact lists are included to help you engage quickly with teams that can help you close business.

Search by ISV name: [ ] GO Advanced search by ISV characteristic

Search by solution name: [ ] GO Advanced search by solution characteristic

1 2 3 4 5 6 7 8 9 10 O___D BUSINESS™

Leverage TODAY

Digging Deeper

4) Visit the ISV's Web site. Such as: **www.PeopleSoft.com**

Home

Products
About PeopleSoft
Customers
Enterprise Strategies
Assess Your Needs
Implementation
Consulting Services
Hosting Services
Support Services
Education Services
Partners

Search

PeopleSoft Guardian

Enable first responders to plan, prepare, respond, assess, and communicate in real time.

» **Get More Information and View the Online Demo**

» **Read More in PeopleTalk Online**

1 2 3 4 5 6 7 8 9 10

D BUSINESS™

Porting **HELP!** Getting Applications on AIX
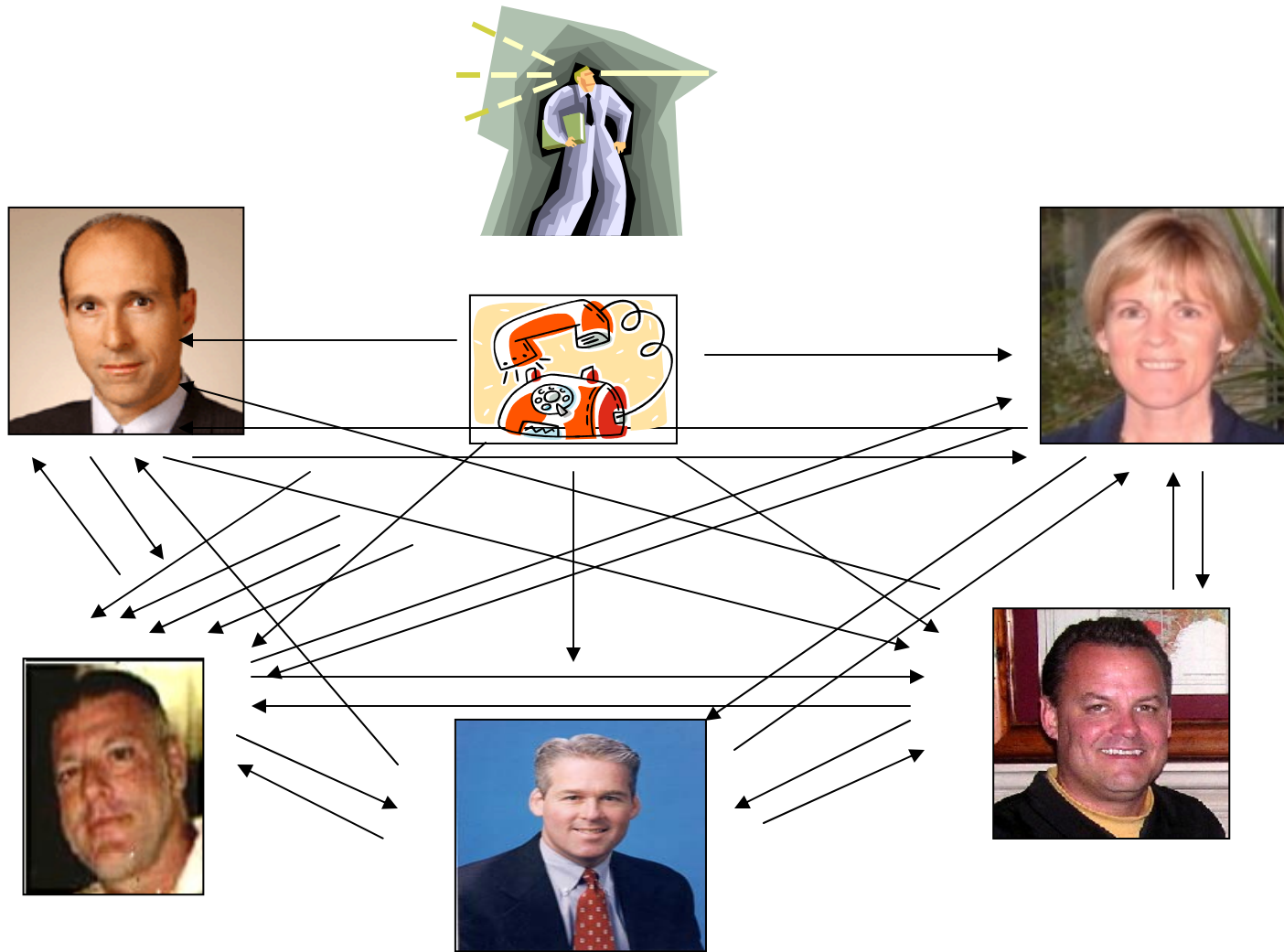
Americas Critical List

"I can't close current quarter business if this application isn't ported or on the latest version. Is there some way to put this on a 'CRITICAL LIST' and give my application a higher priority?"
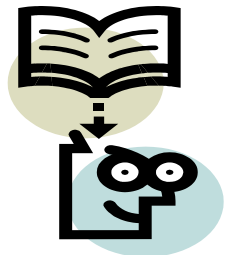
Open a Rapidport request if SC3 and 50% active SIEBEL oppty. *and then Call me:* **Kevin Norris**

What I need to know to help you…

➢**ISV Name, Application(s) Name, Customer Name(s)**

➢**Date Needed to close the deal**

➢**What's the deal worth?**

1 2 3 4 5 6 7 8 9 10

D BUSINESS™

Porting **HELP!** Getting Applications on AIX

New Porting Request
* denotes required field.

The IBM eServer pSeries and iSeries teams port commercially available ISV applications to their current operating System in response to significant sales opportunities. Upon receiving your request, the appropriate team will:

- Confirm receipt and contact you for request details within 2 business days
- Qualify the request by evaluating the projected revenue and required investment
- Initiate contact with the ISV and obtain their commitment and requirements to port
- Execute or provide resources to assist with the ISV application port, as required
- Ensure ISV is familiar with PartnerWorld for Developers program to provide ongoing IBM linkage after port is complete.

OPEN A RAPIDPORT for the application:
http://w3.rchland.ibm.com/projects/rapidport

For LoP there's also a listing of available apps on w3 systems sales.

The Rapid Port request site can be used for LoP ISV requests.

1 2 3 4 5 6 7 8 9 10

D BUSINESS™

Porting **HELP!** Getting Applications on AIX

Please complete the following to engage the iSeries or pSeries porting team:

Client Executive Profile   **IBMPort Home**

Name:* [   ]

E-Mail:* [   ]   Other E-Mail: [   ]

Phone # (W):* [   ]   Alternate Phone #: [   ]

Customer Profile

Customer Name:* [   ]

Customer Site:* [*Please pick the customer geography* ▼] Other: [   ]

Primary Sale:* ○ iSeries ○ pSeries ○ Other

Secondary Sale: ☐ iSeries ☐ pSeries ☐ Other

Opportunity Information

Current Platform:* [   ]

Proposed Platform:* [   ]

OMSYS #:* [   ]

Size of Project Opportunity:*
○ pSeries opportunity with no OMSYS or OMSYS < 50%
○ $0-1 million ○ $1-5 million ○ $5-10 million
○ $10-20 million ○ $20+ ○ Do Not Know

Size of Server Opportunity:*
○ $0-1 million ○ $1-5 million ○ $5-10 million
○ $10-20 million ○ $20+ ○ Do Not Know

1 2 3 4 5 6 7 8 9 10 D BUSINESS™

Take the PATH to SUCCESS

Use the "AIX"Resources Available to make you a success in 2005 !!

1 2 3 4 5 6 7 8 9 10

Resources to leverage when engaging with ISV's

➢ *ISV Enablement on AIX is KEY to your pSeries Success!*

➢ *Resources are available to Assist you in Porting!*

➢ *Know who to call – Kevin Norris (802) 769-3657*

Taking it to the next level with ISVs

Taking it to the next level

✓ *Leverage the Ecosystem in your Territory*
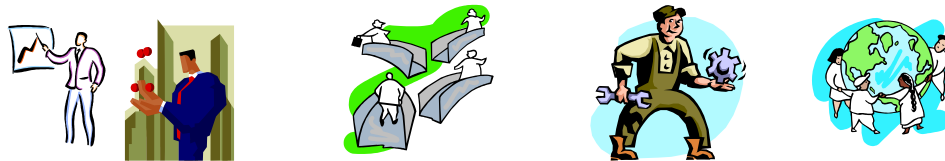
✓ *Successful Solution Selling w/ ISVs*

✓ *Leverage the Fighter Pilot to Make Plan & Take Share*

Team IBM

Business Partners
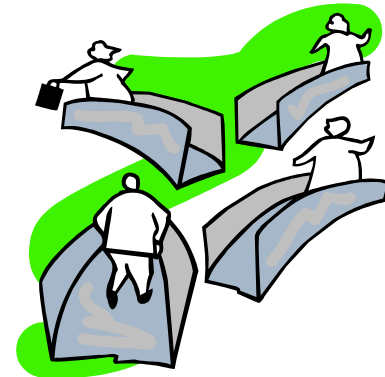
Ecosystem

Competeline

Techline

FTSS   ATS

pSeries Specialist
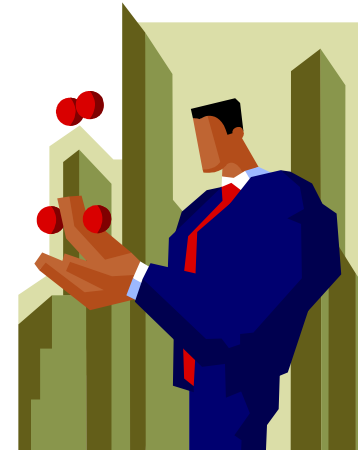
ISV

Goal for 2005 and beyond !

pSeries Specialist
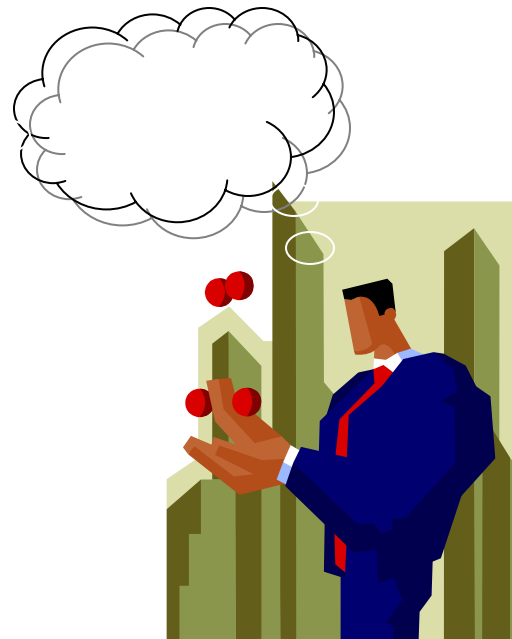
ISV Rep
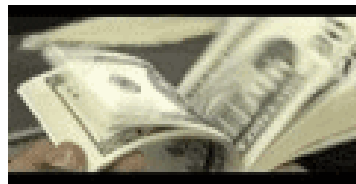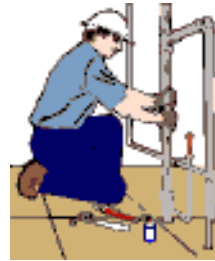
Successful Solution Selling ISVs $
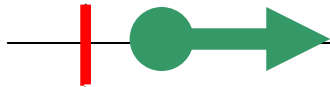
Scorecard:

- ✓ *"Measure twice – cut once" approach*
- ✓ *Work with your regional FP to id the ISVs that are dominant for your market sweet spots*
- ✓ *Leverage the Knowledge and Guidance of your FP*
- ✓ *Develop your target customer list*

Mining Opportunities in your Territory
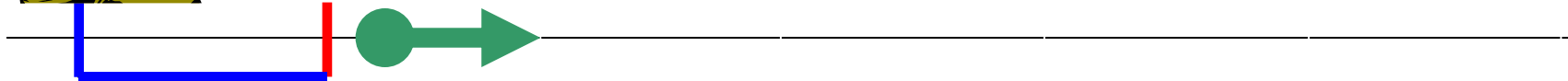
Scorecard:

✓ *Browse the ISV's web site: Market,Product,Customers*
✓ *Prioritize your key ISVs you want to align with*
✓ *Leverage the Knowledge and Guidance of your FP*
✓ *Verify ISV is ported to the latest release of AIX*
✓ *Reference: ISV Solution link & Global Solutions Directory*
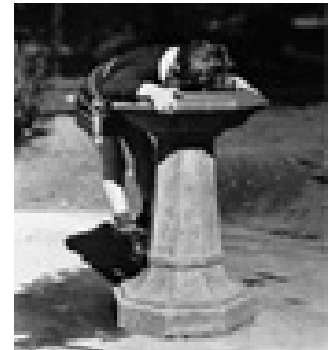
Scorecard:

✓ Know how you can add value to the ISV's solution sale

✓ Know the customer and how you can add significant business value

✓ Get crisp on your 30-second value statement

✓ Leverage your ISV fighter pilot

✓
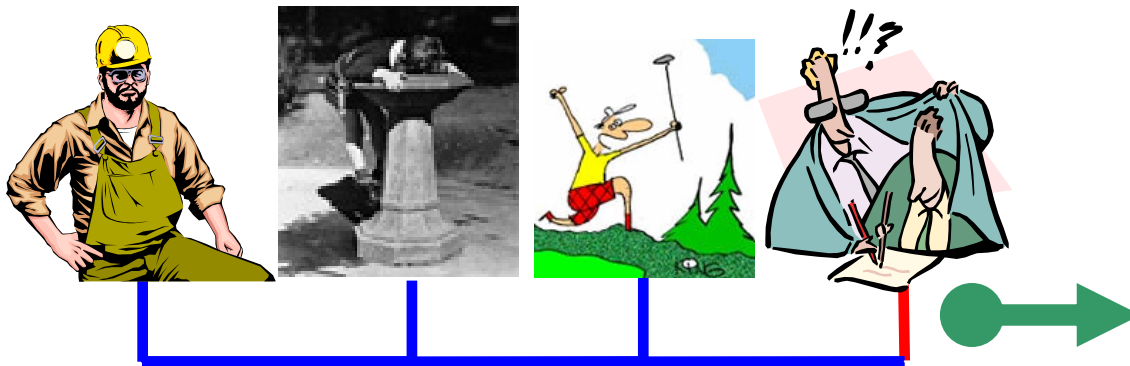
Scorecard:

✓ Don't go it alone – engage your FP early
    to help draft/guide the plan
✓ Set time line targets and coordinate blitz activities
✓ Find out who the IBM players are in the account
    ✓ current roles & projects
    ✓ contacts to leverage
✓ Plan to meet the ISV sales person!
✓ Plan to meet the System Integrator!

Scorecard:

✓ *Leverage the ISV competitive customer lists (FP)*
✓ *Get on the front end of the sale and not the drag!*
✓ *Set up joint sales calls with the FP!*
✓ *Progress your opportunities – ID the inhibitors!*
✓ *Leverage the IBM, SI, ISV, BP teams*
✓ *Make sure you introduce the ISV rep into the Account.*

Scorecard:

✓ *Engage your FP to help you drive the opportunity*
✓ *Identify and knock down the inhibitors- use your FP!*
✓ *Get the ISV rep to recommend you as part of the solution*
✓ *Exercise every option at your disposal!*
✓ *Can you see the checkered flag in front of you?*
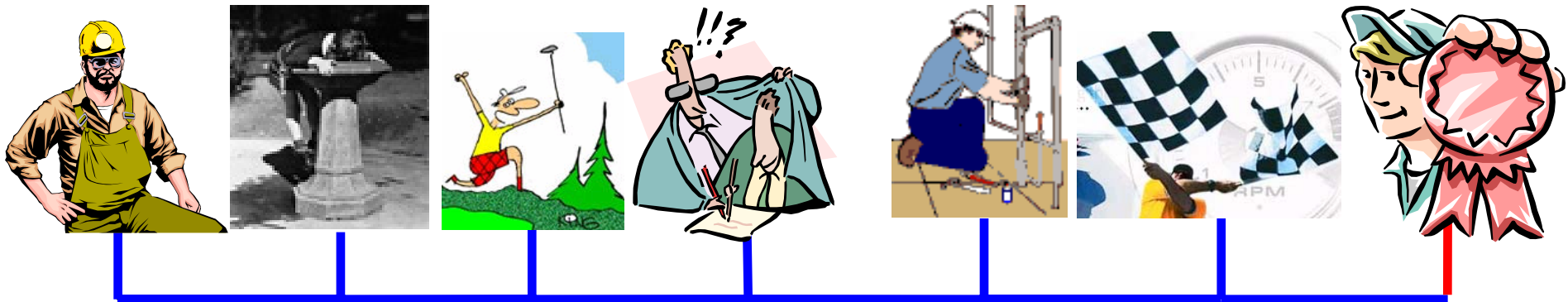
Scorecard:

✓ *Leverage the success to gain access to future projects*
✓ *Do 'lessons learned' together as a team*
✓ *Leverage that knowledge in the future.*
✓ *Celebrate as a team!*
✓ *Is your solution selling style uncovering other opportunities in the account?*
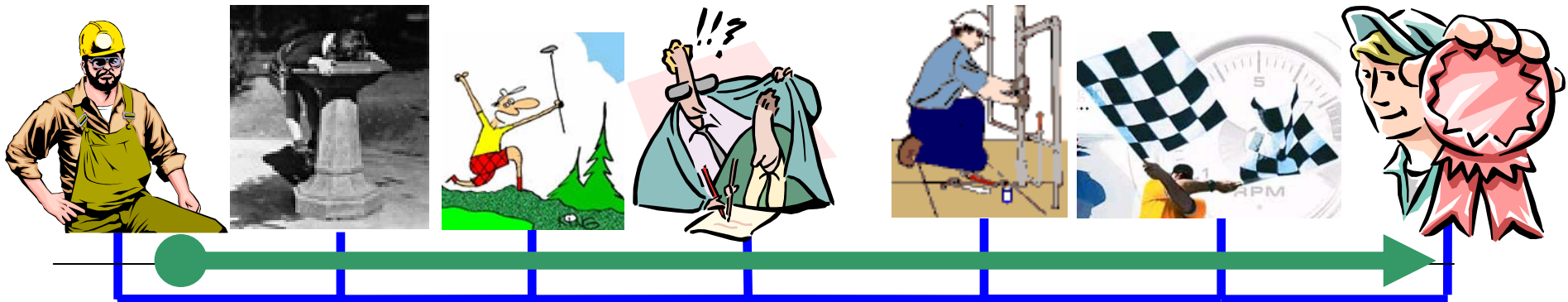
Take Advantage & Share Now!

- ✓ *Have a road map in place to Make Plan & Take Share!*

- ✓ *Exceed your revenue plan with ISV teaming!*

- ✓ *Revalidate your ISV partner selections for future success!*

- ✓ *Engage your FP to help strategize future opportunities!*

This is the $$ play for 2005
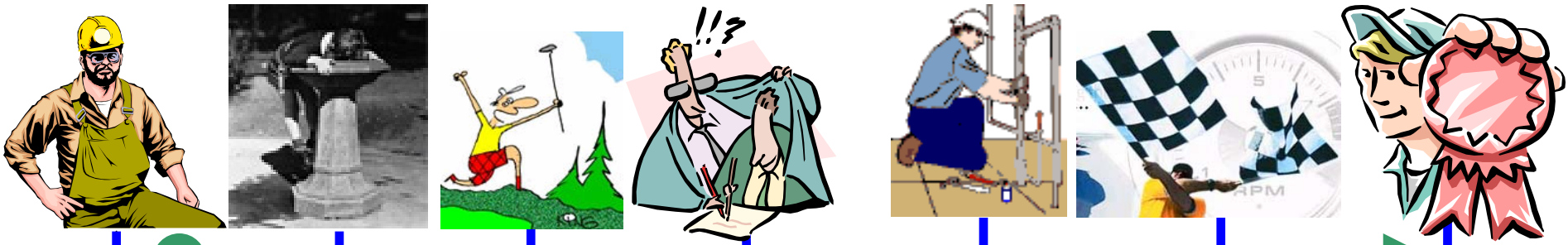
"I am going to leverage my ISV knowledge to the max!"

Taking it to the next level with ISVs

- ➢ *"Mine" for opportunities with your Fighter Pilot*

- ➢ *Get 'Business Value' educated on the application solution*

- ➢ *Leverage your Fighter Pilot as your guide to win more ISV pSeries opportunities*

Americas pSeries Sales Solutions Team

Peter Small

Our Squadron
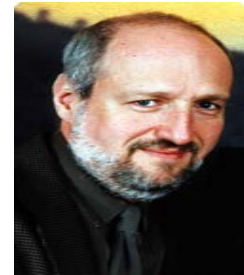
Donna   Dave   Ruben   David
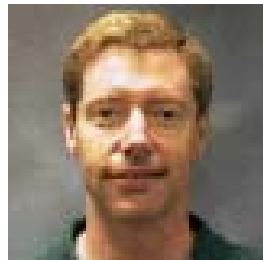
Alfred   Brian   Randall   Steve   Kevin

Jim   Chris   Mary Anne   Mitch   Al

Fighter Pilot Focus Areas for 2005!

- **ERP** – **Enterprise Resource Planning - application software that automates and integrates both business and production management processes.**
  - **pSeries ERP ISVs: SAP, PeopleSoft, Oracle**

- **SCM** - **Supply chain management—delivering the right product to the right place, at the right time, at the right price, and at the least cost.**
  - **pSeries SCM ISVs: Oracle, PeopleSoft, SAP, i2, Retek, Manugistics**

- **HR** – **Human Resources- Supporting process that provides company-wide management support.**
  - **pSeries HR ISVs: Oracle, PeopleSoft, SAP, Siebel**

- **DATABASE MGT. and ANALYTICS** – **Warehouse of critical information**
  - **Oracle / DB2**

- **PUBLIC SECTOR** – **Education, Healthcare, Government**
  - **pSeries ISVs: Oracle, PeopleSoft, SAP, Siebel**

SAP

ERP - SAP Engagement Example

- **Ryerson Tull : SMB Manufacturing**

- **Business Drivers:**

  - **Compete more effectively and efficiently within a highly competitive steel/manufacturing environment.**

  - **Integration of information on a corporate wide basis**

  - **Provide management with timely actionable data**

- **ISV Solution: SAP**

- **IBM pSeries revenue: $2M**

SAP

Markets/Product Set: (sweet spot)

Industries: All industries with specific strength in on Manufacturing, Distribution and Services
Product set: ERP applications suite

Value Proposition for pSeries: Utilization of AIX 5.2 features like DLPAR and CuoD to enhance value proposition (100% CPU utilization, On the spot Test and Quality assurance Servers, Free Fail Over Servers). Exploit SUN availability weakness with our RAS strengths. Application Servers Consolidation on p650s and full consolidation of DB server and App servers on p690s.

Applications / AIX: R/3, APO, BW, CRM, mySAP cross-industry extensions, mySAP industry extensions

Customer References (success stories): More than 7,000 installations Worlwide. Most customers switch because Reliability problems with our competitors. Toyota, Colgate, Coca-Cola, Nestle, Shell, Diamond Shamrock, Phillip Morris, Apple Computers, Unilever, Callaway, Lufthansa and many more.

ISV Web Site: www.sap.com

SAP System Landscape as a typical example

Multiple Servers per SAP System

Data

DB SVR

APP SVRs

Multiple Operational Stages per SAP System

PROD

DEV

TEST

QA
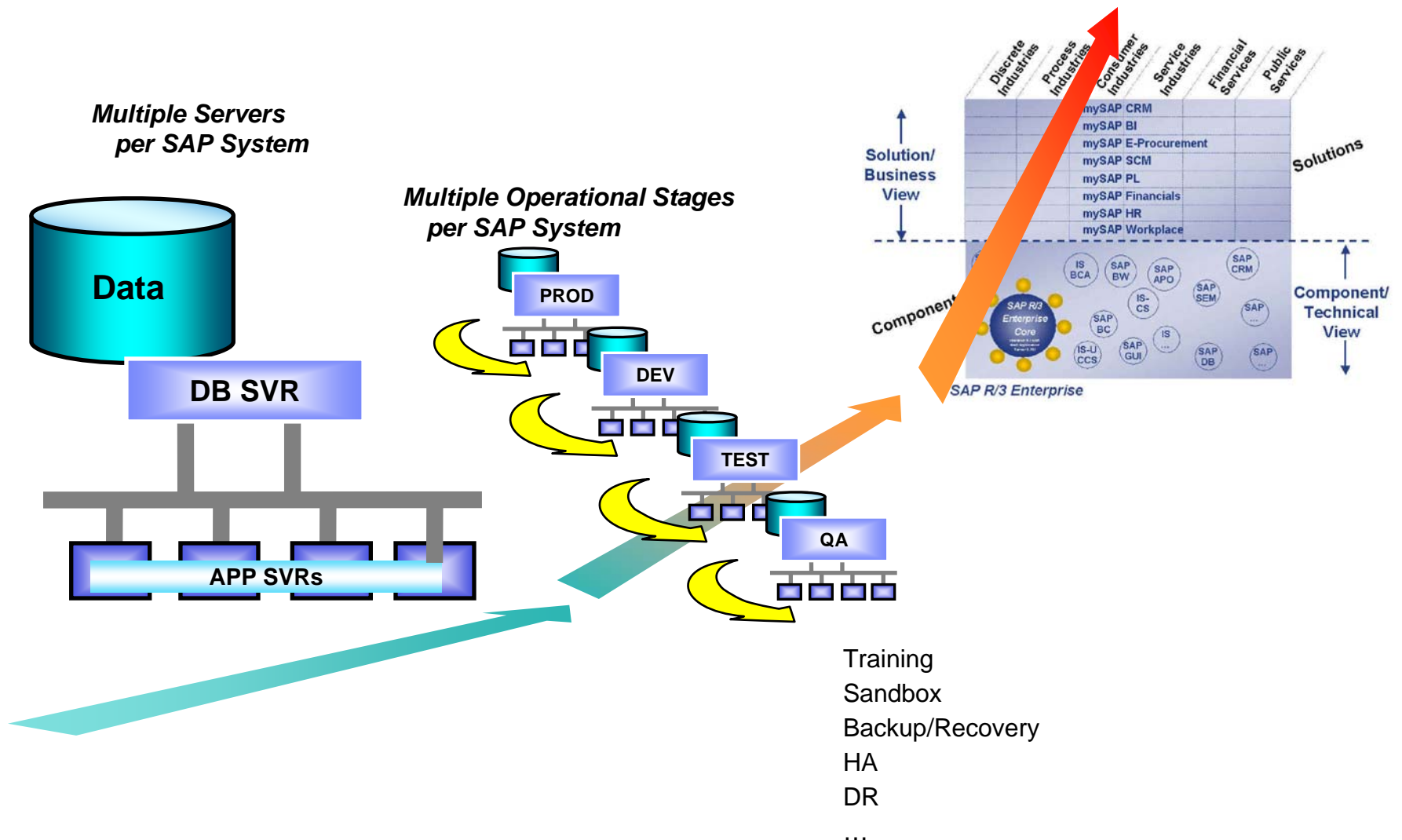
Training
Sandbox
Backup/Recovery
HA
DR
...

Solution/Business View

Solutions

mySAP CRM
mySAP BI
mySAP E-Procurement
mySAP SCM
mySAP PL
mySAP Financials
mySAP HR
mySAP Workplace

Component/Technical View

SAP R/3 Enterprise

Problem: large # of servers, poor utilization – crying out for virtualization

IBM On Demand for SAP & SAP Adaptive Computing
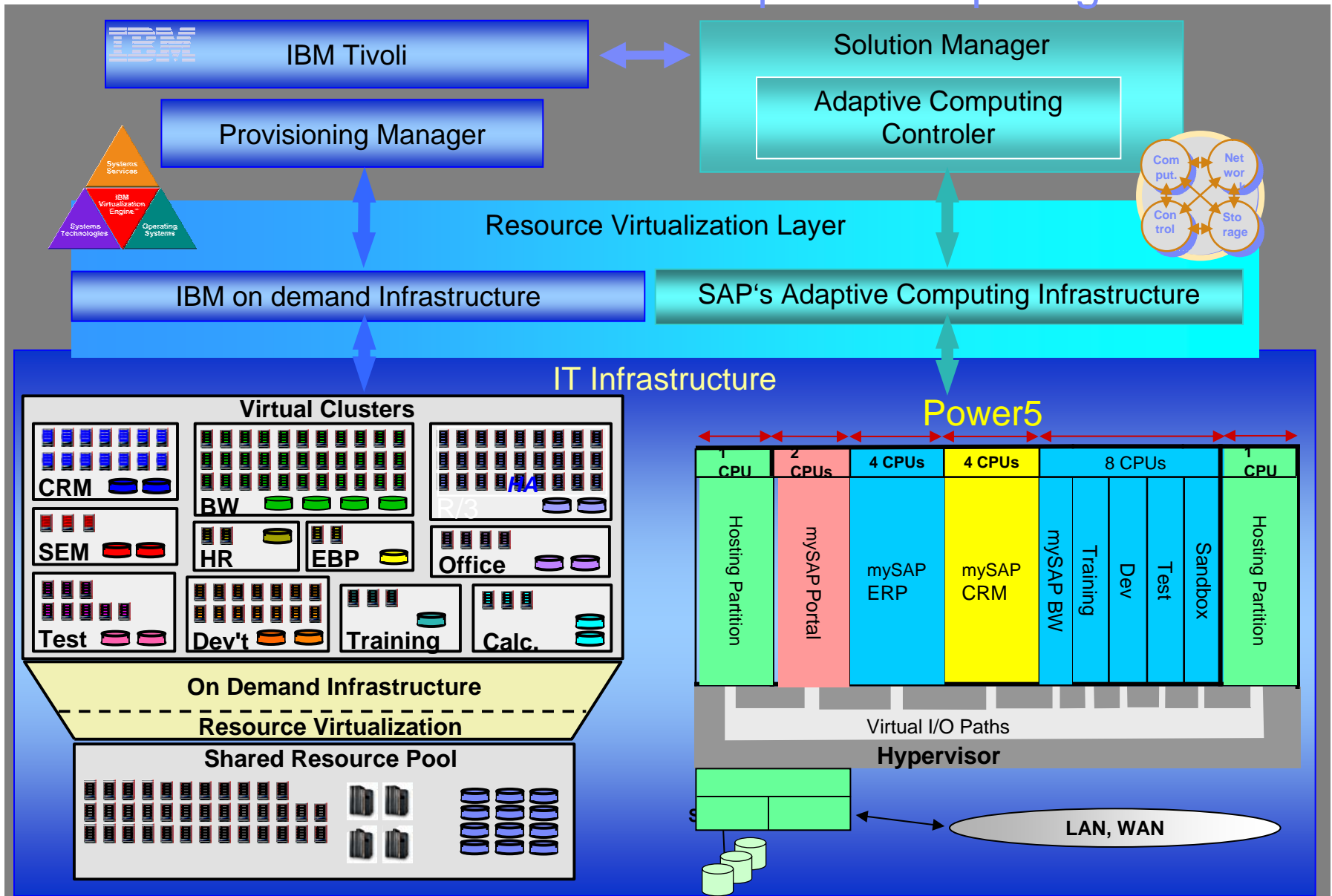
HR – PeopleSoft-

- **Applications**
  - **HR & Financials**

- **Migrated From**
  - **HP**

- **Considerations**
  - **PeopleSoft 8.8 upgrade of HCM with the migration to IBM Platform**
  - **PeopleSoft 8.9 FMS upgrade with migration**
  - **HR DB remained Oracle**

- **Process Specifics**
  - **HR DB 100GB**
  - **32,000 Paychecks, 2,500 in largest group**
  - **Upgrade and New Hardware at the Same time**
    - **Source Oracle 8.1.6, PeopleTools 7.58, HR 7.51**
    - **Upgrading to PeopleTools 7.63 and Oracle 9.2 on old system**
  - **Target Platform**
    - **p650 development,**
    - **p670 production**
  - **Separate LPARS for App and DB**
  - **HACMP Failover**

PeopleSoft's #1 Partner

- **IBM received the FIRST and ONLY PeopleSoft Award of Excellence.**

- **Out of more than 100 partners, IBM was the ONLY alliance partner to win the award.**

- **The award recognizes partners for:**
  - **Highest** worldwide performance in the areas of sales and services teaming
  - **Largest** revenue growth
  - **Best** customer satisfaction ratings
  - **Most** dedicated resources

PeopleSoft, the company, Runs On IBM!!

PeopleSoft Internet Architecture
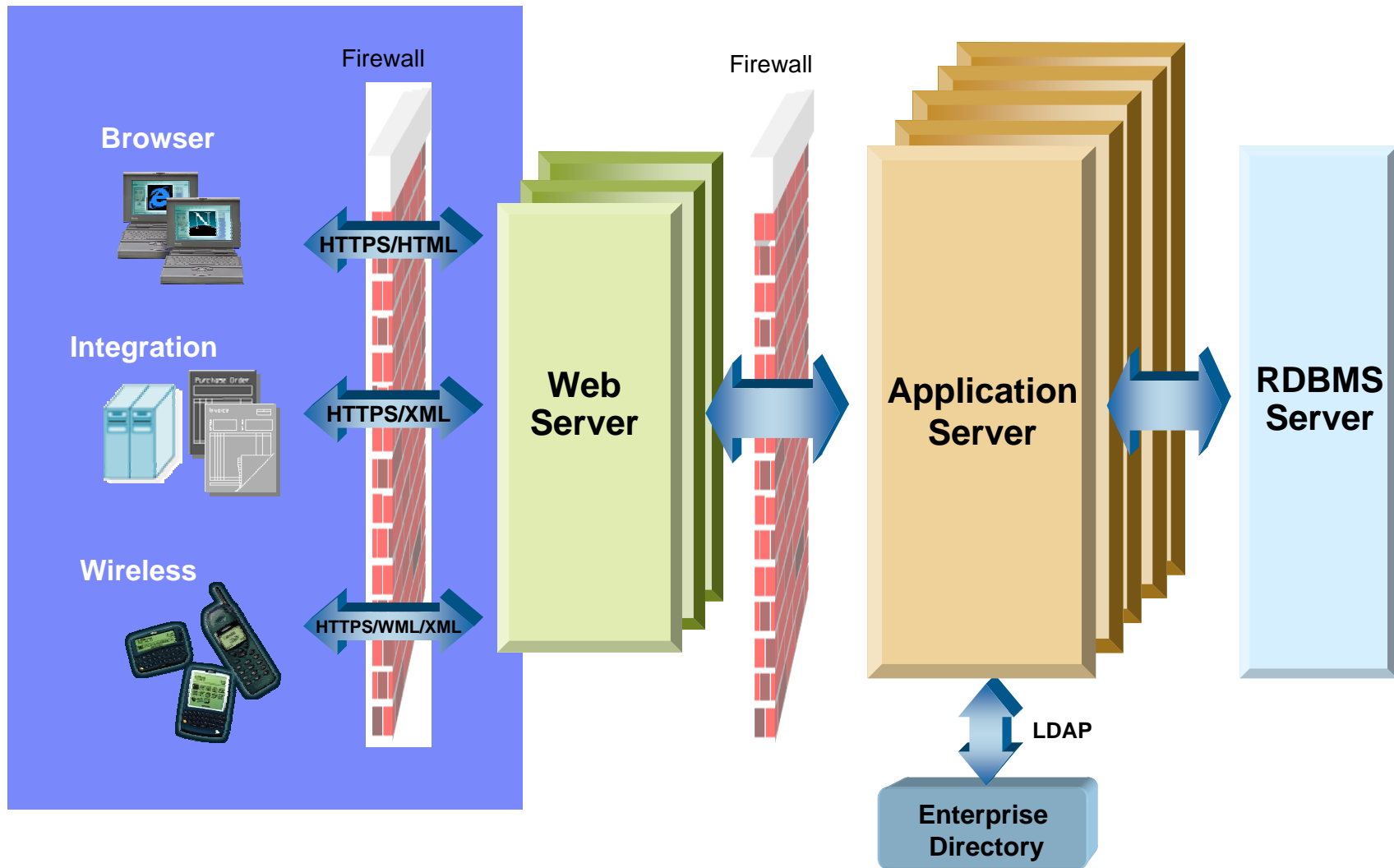
PeopleSoft
Enterprise

Markets/Product Set: (sweet spot)

*Healthcare, gov't and education, Distribution, Retail, Telco;
HRMS, Financials Solution, CRM, Portals Solutions, SCM/ Supplier
Relationship Management (SRM)/eProcurement, Enterprise Performance
Management (EPM)/ Analytics, Enterprise Service Automation (ESA)/Services
Procurement*

*Value Proposition for pSeries:PeopleSoft on pSeries offers customers the best in RAS
and performance characteristics for the solution set offered. With the new
price/performance breakthroughs of the the p650, customers can now achieve RAS
and performance characteristics at previously unheard of price points.*

*Applications / AIX: PeopleSoft is currently certified for AIX 5.1 & 5.2
AIX 5.3 certification is in progress*

*Customer References (success stories): **Scott & White** (healthcare): pSeries
660 and FAStT500 Srorage servers with PeopleSoft financials;
Genesco: They are a $750M/yr Shoe retail SMB company running PS 8.0
financials on a pSeries 660;*

ISV Web Site: www.peoplesoft.com

PeopleSoft
EnterpriseOne

Markets/Product Set: (sweet spot)

*Consumer Packaged Goods,Industrial Fabrication & Assembly,
Real Estate, Distribution / SCM, ERP, CRM*

Value Proposition for pSeries: A physical three-tier pSeries solution for EnterpriseOne (database, application logic and client layer) allows for quick and easy addition of servers for maximum scalability and flexibility. The IBM eServer pSeries is the current record-holder for the EnterpriseOne e-fulfillment benchmark beating out previous records by Sun and HP.

Applications/AIX: EnterpriseOne - AIX 5.1 & 5.2; AIX 5.3 certification is in progress

Customer References (success stories): Computer Network Technologies replaced a legacy ERP solution with EnterpriseOne running on (2) pSeries servers realizing $3M in savings and reduced their ROI from an anticipated 2 years to less than one leveraging industry best practices and standardizing global practices.

ISV Web Site: www.peoplesoft.com

ON **DEMAND BUSINESS**™

Oracle

DB MGT. & ANALYTICS - Oracle Engagement Example

- Tetra Tech- engineering consulting company in Los Angeles

- Situation: With assistance from BCS, Tetra Tech selected eBusiness Suite.
  Larry Ellison had personally closed the business 4 wks. earlier
  and had strongly recommended Dell servers with 9iRAC,
  Oracle's clustering technology.

- Approach: Test the customer's need for the high availability that comes
  with RAC…. it was modest.
  Test the customer's appetite for being on the bleeding edge
   …. also modest.

- Sell: Mission critical AIX operating system, strong Oracle pSeries
  references, price performance comparisons with Dell, HP, and SUN.

- Suggest: If you want to run Oracle on Linux do it in LPAR.
  Keep your mission critical work on AIX.

- Result: $800K deal for pSeries and storage in Q4.

pSeries Value Proposition for Oracle-based customers
The 5 P's

- **Parity: Oracle is available on AIX on Day 1**
  - Oracle shipped Oracle 8i, 9i, 10g and 11i on AIX 5.3 at GA

- **Performance: TPC, OASB, OASB with RAC**

- **Price/Performance: TPC, Ideas International, ITG, per CPU pricing**

- **uPtime**

- **Phlexibility: Oracle fully DLPAR aware**

Resources

- **IBM International Oracle Competency Center**
  ibmoracl@us.ibm.com

- **Certified Oracle on AIX solutions**
  http://www.oracle.com/technology/support/metalink/index.html

- **ISV Solution Link**
  http://w3.developer.ibm.com/isvsolutionlink/oracle/

- **Enterprise Technology Center….Oracle facility for proof-of-concept work, pSeries and xSeries both installed**

- **FTSS: Donald Whitt   ATS: Jim Dilley**

- **pSeries Fighter Pilot   Steve Wittenberg (swittenb@us.ibm.com)**

Oracle

Markets/Product Set:
(sweet spot)

Broad range of data base and application software, Oracle products compete effectively across a diverse group of industries and companies.

Value Proposition for pSeries: *The 5 P's:*

Parity: *New Oracle releases are available on AIX at the same time as Solaris, UX, Linux and NT*

Performance: *Top Oracle Application Standard Benchmarks, Single Server and clustered result*

Price Performance: *Ideas International rankings; fewer CPU's to do same Oracle workload reduces software license costs*

uPtime: *pSeries availability is key in Oracle mission critical environments*

Partnership with BCS: We have hundreds of Oracle eBusiness Suite experts in BCS who can help IBM leverage in pSeries servers

Applications / AIX: AIX is a strategic platform for Oracle. As such, Oracle's stated goal is to provide optimal performance, concurrent development, and consistent delivery of Oracle products on AIX.

Customer References (success stories): Reference sites include 24-Hour Fitness, Danka, Fidelity, Jacobs Engineering, Honeywell

ISV Web Site: www.Oracle.com

Siebel Engagement Example

- CompUSA : Major Technology Retailer

- Business Drivers

  - Siebel is Becoming Mission Critical

    - Outside Sales Force Expansion
    - Integration of Siebel to POS and ERP

- PAIN : **WINTEL Application Servers cause Siebel outages**

  - Must have fixes, security and others applied weekly

  - Must be recycled every 2-3 days

  - Floor Space limited

- Solution :

  - p670 Application Server (HACMP) and upgrade to p670 DB Server

- Revenue **: $1.3M**

Why Siebel on pSeries

- **More throughput for less**
  - **Lower software fees**
    - **Lower TCO**
- **Better Asset Utilization**

Infrastructure COSTS

Customer Satisfaction

- **Higher Availability**
  - **99.999%**
- **Expandability and Scalability Options**
- **Flexibility in support of the business**
- **Predictability**

- **Our Siebel Experience**
- **Unmatched Strategic Alliance**
  - **Product breadth/depth**
  - **Support**
- **Market-share**

Risk

TIME

IBM pSeries Is The Premier Platform For Siebel

PERFORMANCE LEADERSHIP

pSeries Certified Benchmark

23%

30,000 Users
(plus 5K, 4.5K & 2.5K)

10K   20K   30K

pSeries Certified Benchmark
Entry to mid level

2,500 Concurrent Users
on Single Machine!!!

2,500 PSPP users on 8 processors yielding a per-processor result of more than 300!
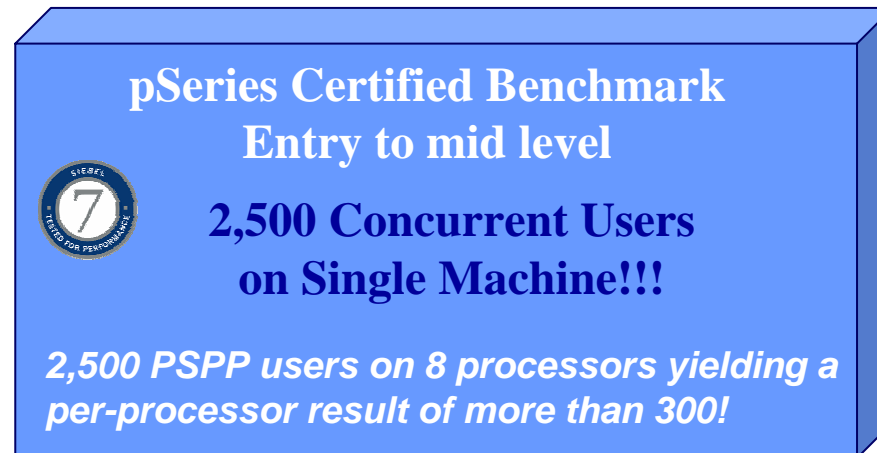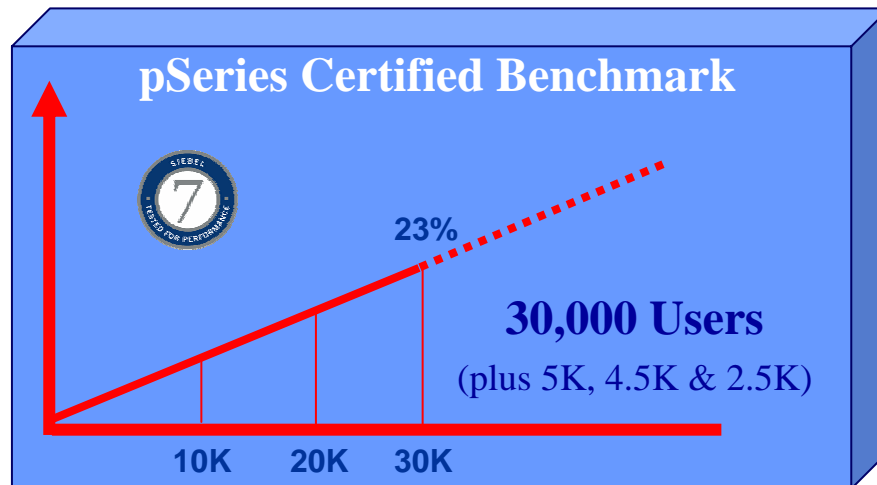
PRODUCTION LEADERSHIP

- Siebel's development environment
- Siebel and IBM's production
- Siebel CRM OnDemand
- 100's of Joint Customers

TECHNOLOGY LEADERSHIP

- Choice of Platforms
- Oracle AND DB2
- Sizing Expertise
- Analytics Partnership

TCO LEADERSHIP

- 12-54% less than HP
- 30-43% less than Sun
- Competitive to WINTEL !!!

Siebel

Markets/Product Set:
(sweet spot)

Any company that has a Call Center, Sales Force, or Field Service organization of at least 50 users

*Value Proposition for pSeries:*pSeries is the lowest TCO, lowest risk, and **highest availability** platform in the marketplace today for the business critical customer relationship management (CRM) solutions from Siebel.
Typical deal size is $400K in pSeries hardware.

Applications / AIX: All Siebel applications are supported on AIX 5.1, 5.2
Database Server is certified on AIX 5.2

Customer References (success stories): **Siebel's** internal implementation and development is on IBM pSeries supporting over 8000 users worldwide
IBM's implementation of Siebel is on pSeries with plans to support 55,000 users
Whirlpool's initial roll-out on March 2002 supporting 700 users

ISV Web Site: www.siebel.com

SCM - Manugistics Engagement

- **COMPUSA win for Manugistics running on IBM p690**
  - Retail environment working on improving Product replenishment
  - Moving from older Manu environment (NetWorks Demand and Fulfilment v6.3) running on old HP gear to a new Manu Application release (v7.0)
  - Heavy Batch jobs at Calendar YE, Significant need for heavy scaling

What Won it for us:

Demonstrated Complete understanding of their Business Needs

Strong Product Offerings

Fighter Pilot engaged early.   Strong sales linkages with manu team

Very strong BP engaged early to help drive daily activity at CompUSA

PURCHASED NEW APPS:

P690 with CuOD Features

IBM Global Services

IBM Shark Storage

Value from the Sale:

Sale Lead to a Great Press Release

Built up IBM / Manu Partnership

Key Reference to win more business

PURCHASED NEW APPS:

NetWORKS Demand

NetWORKS Fulfillment

NetWORKS Delivery Manager

NetWORKS Collaborate

NetWORKS Monitor

NetWORKS ONEview

WebConnect HVE (High Volume Edition)

NetWORKS Market Manager

Manugistics

Markets/Product Set: (sweet spot) *Leads industry in supply chain management, service/parts management, pricing/revenue optimization, and supplier relationship management.*

Value Proposition for pSeries: Many of Manugistics applications are numeric intensive and require high floating point capability. IBM's Power 4 technology hits the spot and have demonstrated dramatic cycle time reductions which are imperative in many Supply Chain environments.

Applications / AIX: Manu's 'NETWORKS Suite' includes SCM, SRM, and PRO applications are all available on AIX 5L. Exception is Networks Sequencing which we are working towards moving.

Customer References (success stories): During recent testing for a major U.S. supermarket, IBM p690 proved the power it delivers with the Manugistics' retail solution.The "Industry First" scalability performance, created a 42-day stock-keeping replenishment plan, processing over 520 million elements in one hour 40 minutes.

ISV Web Site: www.manu.com

Cognos

Markets/Product Set:
(sweet spot)

<u>Industries:</u> Automotive/Mfg, Energy & Natural Resources, Consumer Products/Retail,FinancialServices/Ins., Gov./Educ., Technology, Healthcare.
<u>Product Set:</u> Enterprise Planning, Scorecarding, & Business Intelligence.

Value Proposition for pSeries: Cognos is a world leader in BI and Performance Planning SW. These applications require high performance computing capability, scalability, which pSeries High End servers provide leadership advantages with.

Applications / AIX: Enterprise Server, Transformation Server, NoticeCast, Query, ReportNet, WebServices.

Customer References (success stories): BMW, AmeriCredit, Fossil, Dow, Bayer, Penn State, ADP Canada, AAA, Travelocity, AutoTrader, Siemens Medical, State of Utah

ISV Web Site: www.cognos.com

Telcordia

Markets/Product Set: (sweet spot)

Global market share leader in telecom Operations Support Systems (OSSs) offering carriers the most comprehensive, integrated operations solutions in the world.

Value Proposition for pSeries: Scalable, interoperable OSSs designed for fast, error-free, flow through provisioning. Best price performance;capacity on demand;lower maintenance costs;more flexible configuration options.

Applications / AIX: Telcordia Network Configuration Manager, Telcordia Service Delivery/Telcordia Order Manager, Telcordia Work Item Manager and Telcordia Force.

Customer References (success stories):SBC Communications Inc. "We welcome the agreement between IBM and Telcordia for its potential to result in more flexible and responsive solutions that address this need and deliver expanded service choices for the telecommunications industry."

ISV Web Site:www.telcordia.com

Amdocs

Markets/Product Set:
(sweet spot)

Industries: Telco
Product set: BSS and CRM offerings

Value Proposition for pSeries: Amdocs is the largest BSS ISV in the Telco Industry. 70% installed of their installed base is on HP Servers and 30% on Sun.

Applications / AIX: Amdocs Enabler, Mobile Suite, PRM, Prepaid Server, and Mobile Enabler are ported to AIX 5.2

Customer References (success stories): Cultivation plans in plan

ISV Web Site: www.amdocs.com

Markets/Product Set: (sweet spot)

Industries: *Aerospace, Auto, Electronics Supply Chain*

Product Set: *Catia V4 and V5, Enovia, SmarTeam, Delmia, Matra Datavision*

Value Proposition for pSeries: *Workstations that are powerful, secure and highly available and faster than Sun/HP; Servers that are reliable and secure for supply chain colloboration that supports large Catia installations*

Applications / AIX: *3D COM, Catia V5, Enovia LCA, DMU, Catia V4, Enovia VPM*

Customer References (success stories): *United Airlines, Daimler-Chrysler, Electrolux, Solo Golf*

ISV Web Site: *www.3ds.com*

Veritas

Markets/Product Set: Financial, Telco, Govt.

VERITAS storage software solutions include: Storage Management, Data Protection, High Availability, Disaster Recovery & Application Resource Management.

Value Proposition for pSeries: Veritas is the defacto standard for, Clustering, Volume & File Management and Backup & Recovery in most Solaris and HP shops. The availability of these solutions on AIX allows customers to lower TCO by having one common tool set across multiple platforms while they migrate from Sun & HP to p Series.

Applications / AIX: Veritas Foundation Suite (Volume Manager and File System), Veritas Cluster Server, Data Base Edition for Oracle and DB2, Netbackup , Replication and Opforce
Customers: US Customs Service, Verizon, State Street, Advanced PCS, Norwich Union, Harvard, CNA, JP Morgan Chase, TIAA,

ISV Web Site: www.veritas.com

Sybase

Markets/Product Set: (sweet spot) *Wall Street, Telco, Health and Govt / HIPPA healthcare, disaster recovery, and replication as is being required by new government requirements.*

Value Proposition for pSeries:Sybase on pSeries provides the best $ per transaction for 4 and 8-way processors Unix servers. Tied together with SCON and TCO costs, this brings to the customer the best price, performance, reliability, and TCO for the solution set offered. IBM and Sybase deliver the best e-business infrastructure tools for applications at the most competitive $ per transaction levels available.

Applications / AIX: Adaptive Server 12.5, Financial Fusion

Customer Wins: Moodys, Anthem Healthcare, Citadel, Competitive Media Reporting, ADP.

ISV Web Site: www.sybase.com

UGS PLM

Markets/Product Set:
UGS PLM (Product Lifecycle Management) is the leading provider of PLM software and services with over $875 million in revenue. Markets include Automotive, Aerospace and Industrial, Medical Devices.

Value Proposition :
MCAD : pSeries provides users with 64-bit systems that have the speed and reliability to get those numerical intensive graphic manipulationscompleted quicker so customers have more time to be creative. In 2005, EDS will no longer support SGI so Unigraphics and I-deas customers will need a new hardware provider.
PLM : IBM's family of eServer platforms can provide customers with lower total cost of ownership by providing reliable, flexible and secure hardware platforms

Applications / AIX:
Mechanical Computer Aided Design (MCAD) : Unigraphics & I-Deas
Product Data Management (PDM) : Teamcenter Engineering & Enterprise

Customer References (success stories):new relationship focus
Bell Helicopter,Textron, Electric Boat, Ford, Lockheed Martin

ISV Web Site: www.eds.com

Retek

IBM Server*Proven*

Retek BPID CODE SUSE 044222

Industries:

- **End-to-End Retail / CRM, SCM, Demand Forecasting, Data Warehouse, Retail Intelligence, and WebTrack. A defacto choice for high end retailers with plans to offer their function down stream**

Background:

- **Retek's client list is a "who's who" of high end retail. Approximately 60% of their customers are IBM Unix. Sun is another partner. Retek, runs their own business, develops on, and scales on pSeries. Although their current version is Retek 10, most of their customers run Retek 9 with Oracle 8.17.**

Value Proposition for pSeries:

- **In situation after situation, pSeries demonstrates significantly better scalability for Tier 1 retailers running Retek. IBM p690 is the premier platform choice. Many of these enterprises need to address sunsets of Oracle 8.17 (Solaris & AIX installs), and AIX 4.3 (AIX installs).**
- **Retek is increasing its' focus on mid sized retail with new offerings for the $750m-$3B retailer. "Retail in A Box" (rBox) is their new offering for this space. A qualification form is available to help you assess opportunities.**

Applications / AIX:

- **Retek 10 is the latest product suite and is certified for AIX 5.1. Retek 10.1 is certified on AIX 5.2 Retek runs on Oracle but is working on DB2. Retek 9 is being upgraded to support Oracle 9.**

Customer References (success stories):

- **Longs Drugs (win from HP), Williams & Sonoma, WH Smith,Brooks Brothers, A&P, Auto Zone, Kohls, Talbots, Toys R Us, Disney Stores, Hallmark Cards, Sears Canada, Wilsons, Homebase, and The Gap (win from Sun).**

ISV Web Site: www.retek.com

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Lawson

Lawson BPID CODE SUSE 024336

Industries:

- **Lawson provides industry solutions for retail, healthcare, education and other services industries. Lawson prides itself on rapid implementation of web-deployable applications. Lawson Insight software suites include distribution, retail, financials, and HR.**

Background:

- **An important IBM partner for 27 years with revenue over $300m. Lawson has over 2,200 customers with the vast majority in AG. Lawson has 1,700 employees. Unix is approximately 60% of new license revenue with pSeries in the lead.**

Value Proposition for pSeries:

- **Lawson's architecture lets customers deploy a "pre-configured solution" or easily customize. This translates into opportunities for fast / low cost implementation. pSeries offers great performance and gets over 1/3 of Lawson's new license business. Some newer Lawson modules run on pSeries but not on iSeries or zSeries, providing an opportunity to keep those customers "all blue".**

- **Opportunities exist to grow our Unix leadership with Lawson while helping competitive install customers in healthcare (HP leads) and in other areas (Sun opportunity).**

Applications / AIX:

- **Applications support AIX 5.2 - Supports Oracle / Informix.**

Customer References (success stories):

- **UNC Hospitals, Long John Silvers, Blue Cross and Blue Shield of NC**

ISV Web Site: www.lawson.com

BAAN

IBM Server Proven

BAAN BPID CODE SUSE 028754

Industries:

- **BAAN focuses on end-to-end ERP for manufacturers. It is strong, in particular for discrete manufacturing. BAAN install customers will be looking at BAAN 6 as a continuing upgrade possibility in 2005. In the 2H of 2003, BAAN was acquired by SSA. BAAN 6 will help integrate with other SSA products providing broader / more comprehensive capabilities for manufacturers.**

Background:

- **BAAN has a significant install base (pSeries and competitive UNIX) and a major release in 2004 (first in nearly 4 years). We estimate they have over 500 AIX installs in Americas and 2,000 competitive Unix installs. It is likely that their AIX installs are running on older Power 3 and AIX 4.3.**

Value Proposition for pSeries:

- **For existing AIX BAAN customers, it is time to re-engage them and show them the benefits of Power 4 / 5 and AIX 5.1 / 5.2 based on their situation. Our new products can make them more flexible and responsive and can position them for the BAAN 6 upgrade.**

- **For competitive installs we can show the benefits of our technologies and reasons to consider AIX while transitioning or positioning for BAAN 6.**

Applications / AIX:

- **BAAN IV (up to AIX 5.1), BAAN 5 (up to AIX 5.2) and BAAN 6 (TBA). BAAN IV is still most popular version.**

Customer References (success stories):

- **Braskem (Brazil), CAE (Canada), Wacker Corporation (US), Damlier / Benz (US), Santista (Brazil), Aerostructures Corp. (US)**

ISV Web Site: www.baan.com

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Ariba

**Markets/Product Set:
(sweet spot)**

Enterprise Spend Management (ESM) a new class of strategic solutions that incorporates analysis, sourcing and procurement solutions

Value Proposition for pSeries: *Outstanding performance in leading e-business performance benchmarks. Low cost of ownership, fits the precise requirements for e-business infrastructure for maximum customer responsiveness at minimal cost.*

Applications / AIX: *Buyer 8.0, Anaylsis 2.0 and Sourcing 4.0.*

Customer References (success stories): *Hydro One, Inc. is a leading energy company in Canada, employing more than 4,500 professionals and providing electricity to approximately 1.2 million customers throughout the Ontario region. Quantifiable ROI in less than a year on actual savings through quick implementation time, streamlined purchasing processes, reduced cycle times, and leveraged aggegated purchase and lowered transaction costs.*

ISV Web Site: *www.ariba.com*

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i2

**Markets/Product Set:
(sweet spot)**

Consumer Package Goods, Automotive, Industrial, High Tech / SCM, SRM, DCM, SPM, and TDM

Value Proposition for pSeries: "i2 Replenishment Planner's scalability was demonstrated, highlighting the capabilities of IBM DB2 7.2 EEE database and pSeries 680 platform in supporting a scalable replenishment planning solution for volume retailers."

Applications / AIX: v5.2.2 Value Chain Management Suite; All apps are certified for AIX 5.1 except RP and SPP (4.3.3); Certification of all apps on AIX 5.2

Customer References (success stories):Kmart, Best Buy, Caterpillar Diamler-Chrysler, Panasonic, Celestica, Delta(the faucet), Lucent Technologies, Nortel Networks, Taylor Made, Bell Helicopter, Honeywell, Barnes & Noble, and e2open.

ISV Web Site: www.i2.com

SAS

**Markets/Product Set:
(sweet spot)**

Industries: Automotive, Fin Services, Healthcare, Insurance, Pharma, Retail Product Set: SAS Base 9.X, Risk Manager, Analytical CRM, IT Resource Mgt

Value Proposition for pSeries: pSeries p650, p690, Cluster 1600 and storage offers SMP, near linear scaling for large data marts in secured, Highly Available environment;pSeries 620 and mid-range 650 offer platform for SAS capacity planning and risk mgt software platforms for server consolidation and network computing management.

Applications / AIX: SAS Base 9.X, Enterprise Miner, Risk Mgt 3.1, Performance Mgt, Mkting Automation, and CRM Apps

Customer References (success stories): Ford, Honda. Sprint, Vitran

ISV Web Site: www.sas.com

Sungard

Markets/Product Set: (sweet spot)

SUNGARD storage software solutions include: Storage Management, Data Protection, High Availability and Disaster Recovery

Value Proposition for pSeries: As customers come to understand the price performance benefits of p and IBM, they can now take advantage of Veritas on AIX and Linux.Their investment in training and one common tool set is preserved and removes an large objection to Sun displacement.

Applications / AIX: Veritas Foundation Suite (Volume Manager and File System), Veritas Cluster Server, Data Base Editions and Netbackup

Customer References (success stories): US Customs Service: Multimillion dollar Veritas/ IBM p win. JP Morgan Chase, Several million dollar Veritas deal in Q3 with a significant piece allocated to IBM.

ISV Web Site: www.sungard.com

SCT

Markets/Product Set: *Industries: Higher Ed*
(sweet spot) *Product set: BSS and CRM offerings*

Value Proposition for pSeries: SCT is the leading global provider of technology solutions for colleges and universities of all sizes and complexities.

Applications / AIX: AIX 5.1

Customer References (success stories): Cultivation plans in plan

ISV Web Site: www.sct.com

➢*Differentiate yourself & leverage the FP and their application knowledge*

➢*Maximize the Resources that your FP can provide*

➢*Engage your FP early when you Identify an opportunity*

In 75 minutes you are walking away with:

✓ A review of our Unix Market Today

✓ How and Why to become a Power sales rep

✓ Resources to Leverage when engaging with ISV's

✓ Taking it to the next level with ISV's

✓ Skilled Resources to assist you

✓ Our Unix ISV business environment today

Notes to Presenter

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The presenter must display the *Special Notices* chart, the *Notes on Benchmarks and Values* charts (if the referenced values are given), and the *Notes on Performance Estimates* chart (if the referenced performance estimates are given) during the course of the presentation. Any printed copies of this presentation that are distributed must include legible copies of these charts. If printed copies are not distributed, the attendees must be offered the option to receive legible printed copies of these charts.

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Revised January 9, 2003

Notes to Presenter (Cont.)

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Revised May 6, 2004

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Revised February 6, 2004

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Revised August 2, 2004

Notes on Benchmarks and Values

The benchmarks and values shown herein were derived using particular, well configured, development-level computer systems. Unless otherwise indicated for a system, the values were derived using external cache, if external cache is supported on the system. Buyers should consult other sources of information to evaluate the performance of systems they are considering buying and should consider conducting application oriented testing. For additional information about the benchmarks, values and systems tested, contact your local IBM office or IBM authorized reseller or access the following on the Web:

TPC	http://www.tpc.org	Linpack	http://www.netlib.no/netlib/benchmark/performance.ps
Pro/E	http://www.proe.com	SPEC	http://www.spec.org
GPC	http://www.spec.org/gpc	NotesBench Mail	http://www.notesbench.org
VolanoMark	http://www.volano.com	STREAM	http://www.cs.virginia.edu/stream/

Unless otherwise indicated for a system, the performance benchmarks were conducted using AIX V4.3 or AIX 5L. IBM C Set++ for AIX and IBM XL FORTRAN for AIX with optimization were the compilers used in the benchmark tests. The preprocessors used in some benchmark tests include KAP 3.2 for FORTRAN and KAP/C 1.4.2 from Kuck & Associates and VAST-2 v4.01X8 from Pacific-Sierra Research. The preprocessors were purchased separately from these vendors. Other software packages like IBM ESSL for AIX and MASS for AIX were also used in some benchmarks.

The following SPEC and Linpack benchmarks reflect microprocessor, memory architecture, and compiler performance of the tested system (XX is either 95 or 2000):

- SPECintXX - SPEC component-level benchmark that measures integer performance. Result is the geometric mean of eight tests comprising the CINTXX benchmark suite. All of these are written in the C language. SPECint_baseXX is the result of the same tests as CINTXX with a maximum of four compiler flags that must be used in all eight tests.
- SPECint_rateXX - Geometric average of the eight SPEC rates from the SPEC integer tests (CINTXX). SPECint_base_rateXX is the result of the same tests as CINTXX with a maximum of four compiler flags that must be used in all eight tests.
- SPECfpXX - SPEC component-level benchmark that measures floating-point performance. Result is the geometric mean of ten tests, all written in FORTRAN, included in the CFPXX benchmark suite. SPECfp_baseXX is the result of the same tests as CFPXX with a maximum of four compiler flags that must be used in all ten tests.
- SPECfp_rateXX - Geometric average of the ten SPEC rates from SPEC floating-point tests (CFPXX). SPECfp_base_rateXX is the result of the same tests as CFPXX with a maximum of four compiler flags that must be used in all ten tests.
- SPECweb96 - Maximum number of Hypertext Transfer Protocol (HTTP) operations per second achieved on the SPECweb96 benchmark without significant degradation of response time. The Web server software is ZEUS v.1.1 from Zeus Technology Ltd.
- SPECweb99 - Number of conforming, simultaneous connections the Web server can support using a predefined workload. The SPECweb99 test harness emulates clients sending the HTTP requests in the workload over slow Internet connections to the Web server. The Web server software is Zeus from Zeus Technology Ltd.
- SPECweb99_SSL - Number of conforming, simultaneous SSL encryption/decryption connections the Web server can support using a predefined workload. The Web server software is Zeus from Zeus Technology Ltd.
- SPEC OMP2001 - Measures performance based on OpenMP applications.
- SPECsfs97_R1 - Measures speed and request-handling capabilities of NFS (network file server) computers.

Revised May 28, 2003

Notes on Benchmarks and Values (Cont.)

–SPECjAppServer200X (where X is 1 or 2) - Measures the performance of Java Enterprise Application Servers using a subset of J2EE APIs in a complete end-to-end Web application.

The Linpack benchmark measures floating-point performance of a system.
–Linpack DP (Double Precision) - n=100 is the array size. The results are measured in megaflops (MFLOPS).
–Linpack SP (Single Precision) - n=100 is the array size. The results are measured in MFLOPS.
–Linpack TPP (Toward Peak Performance) - n=1,000 is the array size. The results are measured in MFLOPS.
–Linpack HPC (Highly Parallel Computing) - solves the largest system of linear equations possible. The results are measured in GFLOPS.

STREAM is a simple synthetic benchmark program that measures sustainable memory bandwidth (in MB/s) and the corresponding computation rate for simple vector kernels. Both standard and tuned results may be reported. http://www.cc.virginia.edu/stream/

VolanoMark is a 100% pure Java server benchmark that creates long-lasting network client connections in groups of 20 and measures how long it takes for the clients to take turns broadcasting their messages to the group. The benchmark reports a score as the average number of messages transferred by the server per second.

–The following Transaction Processing Performance Council (TPC) benchmarks reflect the performance of the microprocessor, memory subsystem, disk subsystem, and some portions of the network:
–tpmC - TPC Benchmark C throughput measured as the average number of transactions processed per minute during a valid TPC-C configuration run of at least twenty minutes.
–$/tpmC - TPC Benchmark C price/performance ratio reflects the estimated five year total cost of ownership for system hardware, software, and maintenance and is determined by dividing such estimated total cost by the tpmC for the system.
–QppH is the power metric of TPC-H and is based on a geometric mean of the 17 TPC-H queries, the insert test, and the delete test. It measures the ability of the system to give a single user the best possible response time by harnessing all available resources. QppH is scaled based on database size from 30GB to 10TB.
–QthH is the throughput metric of TPC-H and is a classical throughput measurement characterizing the ability of the system to support a multiuser workload in a balanced way. A number of query users is chosen, each of which must execute the full set of 17 queries in a different order. In the background, there is an update stream running a series of insert/delete operations. QthH is scaled based on the database size from 30GB to 10TB.
–$/QphH is the price/performance metric for the TPC-H benchmark where QphH is the geometric mean of QppH and QthH. The price is the five-year cost of ownership for the tested configuration and includes maintenance and software support.

Revised February 6, 2004

Notes on Benchmarks and Values (Cont.)

The following graphics benchmarks reflect the performance of the microprocessor, memory subsystem, and graphics adapter:
- SPECxpc results - Xmark93 is the weighted geometric mean of 447 tests executed in the x11perf suite and is an indicator of 2D graphics performance in an X environment. Larger values indicate better performance.
- SPECplb results (graPHIGS) - PLBwire93 and PLBsurf93 are geometric means of literal and optimized Picture Level Benchmark (PLB) tests for 3D wireframe and 3D surface tests, respectively. Larger values indicate better performance.
- SPECopc results - Viewperf 7 (3dsmax-01, DRV-08, DX-07, Light-05, ProE-01, UGS-01) and Viewperf 6.1.2 (AWadvs-04, DRV-07, DX-06, Light-04, medMCAD-01, ProCDRS-03) are weighted geometric means of individual viewset metrics. Larger values indicate better performance.

The following graphics benchmarks reflect the performance of the microprocessor, memory subsystem, graphics adapter and disk subsystem.
- SPECapc Pro/Engineer 2000i2 results - PROE2000I2_2000370 was developed by the SPECapc committee to measure UNIX and Windows workstations in a comparable real-world environment. Larger numbers indicate better performance.

The NotesBench Mail workload simulates users reading and sending mail. A simulated user will execute a prescribed set of functions 4 times per hour and will generate mail traffic about every 90 minutes. Performance metrics are:
- NotesMark - transactions/minute (TPM).
- NotesBench users - number of client (user) sessions being simulated by the NotesBench workload.
- $/NotesMark - ratio of total system cost divided by the NotesMark (TPM) achieved on the Mail workload.
- $/User - ratio of total system cost divided by the number of client sessions successfully simulated for the NotesBench Mail workload measured. Total system cost is the price of the server under test to the client, including hardware, operating system, and Domino Server licenses.

Application Benchmarks
- SAP - Benchmark overview information: http:// www.sap-ag.de/solutions/technology/bench.htm; Benchmark White Paper September, 2000; http://www.sap-ag.de/solutions/technology/pdf/50020428.pdf.
- PeopleSoft - To get information on PeopleSoft benchmarks, contact PeopleSoft directly or the PeopleSoft/IBM International Competency Center in
 San Mateo, CA.
- Oracle Applications - Benchmark overview information: http://www.oracle.com/apps_benchmark/
- Baan - The Baan benchmark demonstrates the scalability of Baan ERP solutions. The test results provide the number of Baan Reference Users (BRUs) that can be supported on a specific system. BRU is a single on-line user or a batch unit workload. These metrics are consistent with those used internally by both IBM and Baan to size systems. To get more information on Baan benchmarks, go to http://www.ssaglobal.com.
- J.D. Edwards Applications - Product overview information at http://www.jdedwards.com.

Revised December 9, 2003