System z Technology Update

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General Manager, IBM System z

A New Era for Business

24 x 7

Global

Highly
networked

Do you suffer from these symptoms?

Increasing complexity

Rising costs

Security threats

Mainframe: *Better for business*

- Security

- Reliability

- Automation

- Economy of scale

Today's mainframe

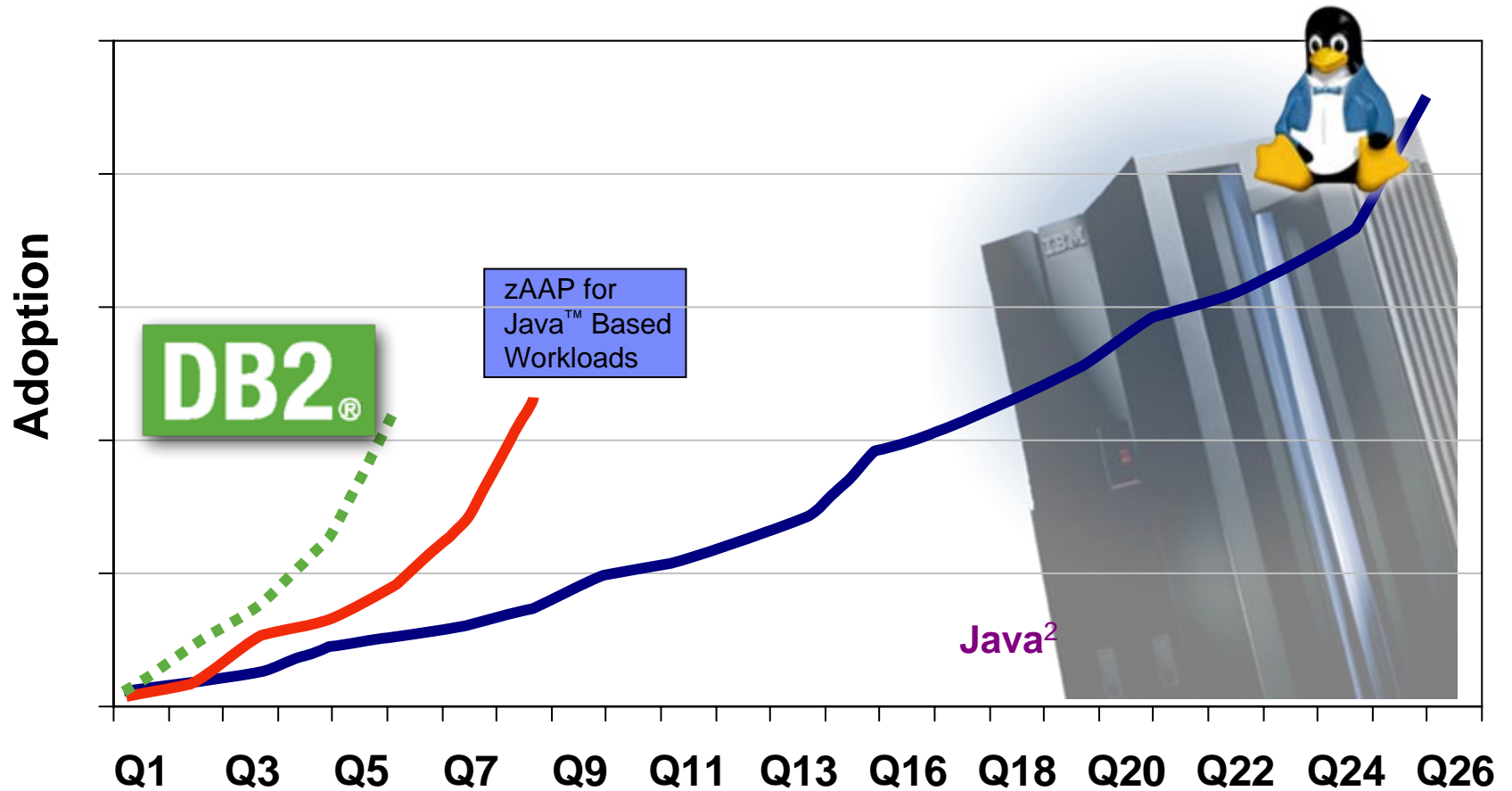## *Four Enterprise-wide Roles of the Mainframe*

- Enterprise business resilience manager
- Enterprise security manager
- Enterprise workload manager
- Enterprise hub for data & SOA

If data is the life blood of the business . . .
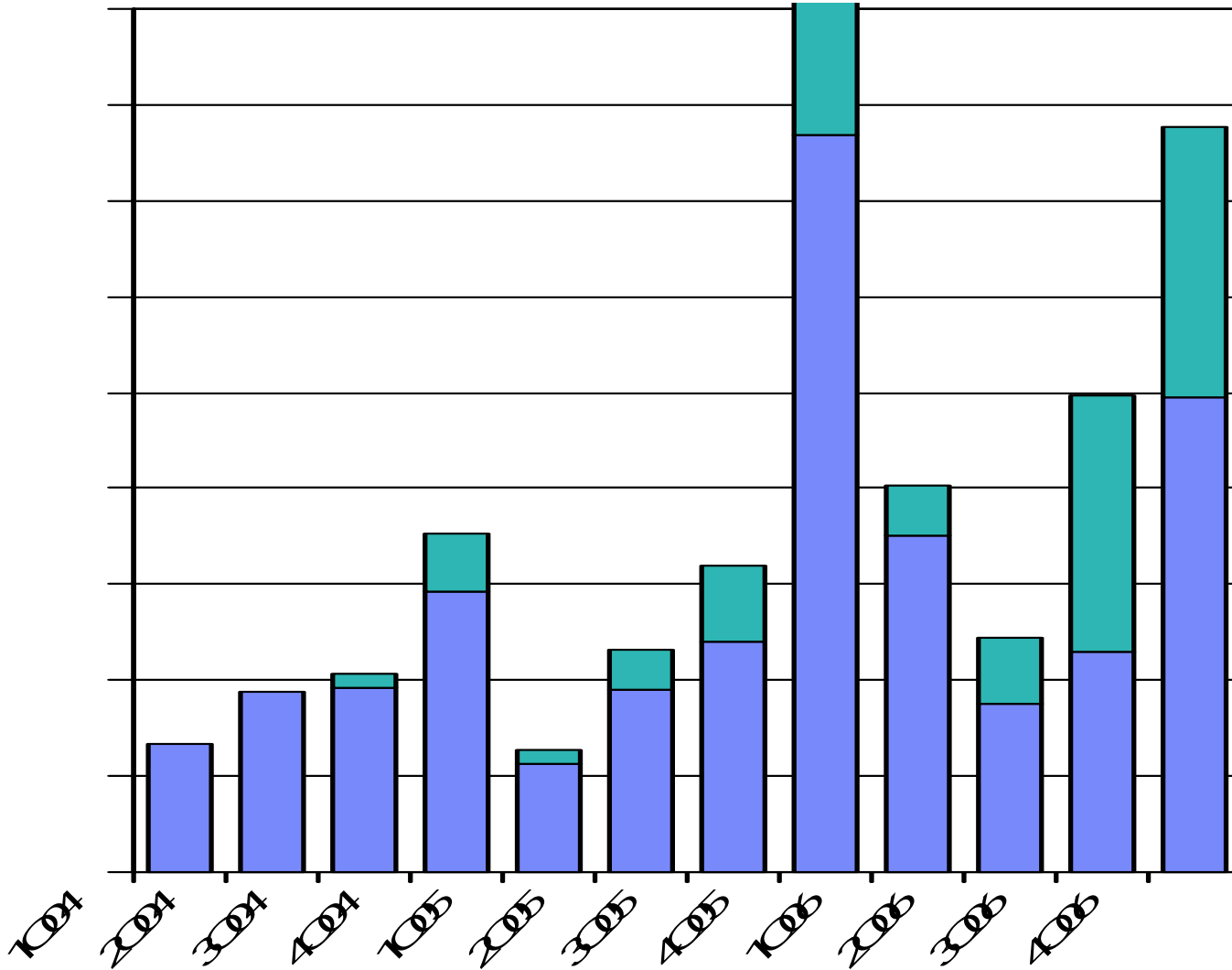
then your data server is the heart of your SOA
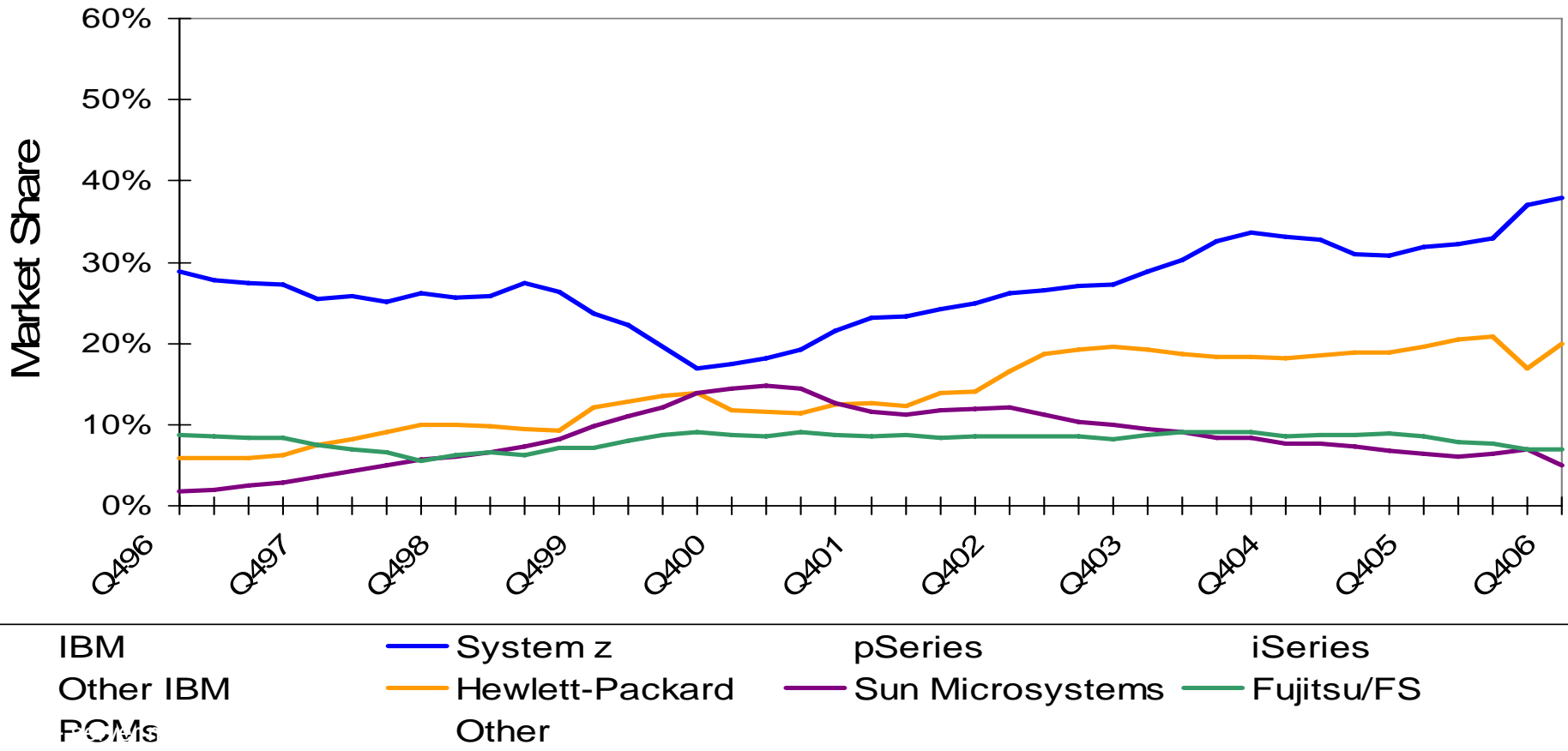
Dynamic Growth in New Workloads

Adoption

DB2®

zAAP for Java™ Based Workloads

Java[2]

Q1   Q3   Q5   Q7   Q9   Q11   Q13   Q16   Q18   Q20   Q22   Q24   Q26

Specialty Engine Growth Trend

Mainframe Market Share

2006 Major Milestones

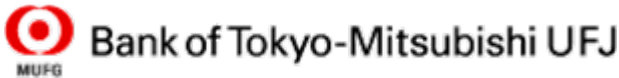| 4Q Largest Hardware Revenue Quarter Since 4Q98 |
|---|
| Top 25 Banks in the World |
| Record High for Market Share: 38% |
| Record Year for Specialty Engines |
| 10 Million MIPS Installed |
| $1 Billion in Revenue from SIs |
| First Online Game Client: Hoplon Infotainment |

New Customers and New Markets

Announced Yesterday…

"Sparkassen Informatik Signs Strategic Five-Year Contract with IBM"

- € 700 million continued investment in the mainframe
- 82.8 million customer accounts
- 30 billion transactions per year
- Enterprise-class SOA
- Performance and cost structure
- Flexibility for growth

Sparkassen **Informatik**

Key Drivers

Innovation explosion

Server Consolidation

India, China

Control

Mainframe Security

Integrated Security

ID Management

EAL5

Encryption Facility

Key
Management

Hoplon Infotainment

Nexxar

- ✓**Highly available and manageable**
- ✓**Security, reliability, scalability and flexibility**
- ✓**Support growth by acquisition business**
- ✓**Server consolidation on Business Class**
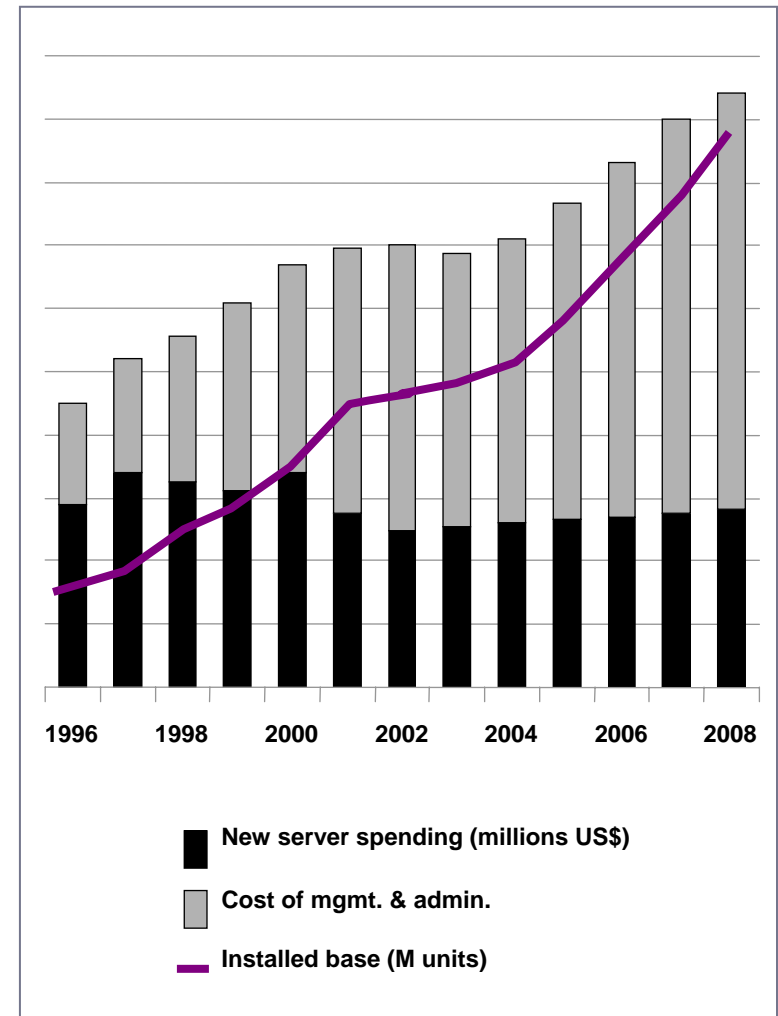- ✓**Reduced labor costs by 75%**

NEXXAR
G R O U P

Mainframe Economics

IT Complexity Drives Many Hidden Costs

- Managing today's mixed IT platform environments can be complex and costly
    - ▸ **Thousands of servers**
    - ▸ **Underutilized assets**
    - ▸ **Thousands of software licenses**
    - ▸ **Thousands of distributed control points**
    - ▸ **Ineffective costing methodologies**

- The Result
    - ▸ **Massive complexity**
    - ▸ **Spiraling people costs**
    - ▸ **Increased availability and downtime costs**
    - ▸ **Increased security breach costs**
    - ▸ **Sub-optimal investment choices**

1996   1998   2000   2002   2004   2006   2008

■ New server spending (millions US$)

■ Cost of mgmt. & admin.

━ Installed base (M units)

System z9 – Managing Growth and Complexity

Workload

Ops Staff

System z9 Business Class

Lowest entry price point ever for System z

Perfect fit for a growing business

Runs Java, Linux, DB2, WebSphere

Shanghai

Breakthrough Economics

FNBO consolidated on a single IBM mainframe and IBM BladeCenter®

- 30 UNIX® servers
- 500 Applications
- 560 Microsoft® Windows® servers

Results:

- 70% improvement in hardware utilization
- Savings: $2 million/yr average
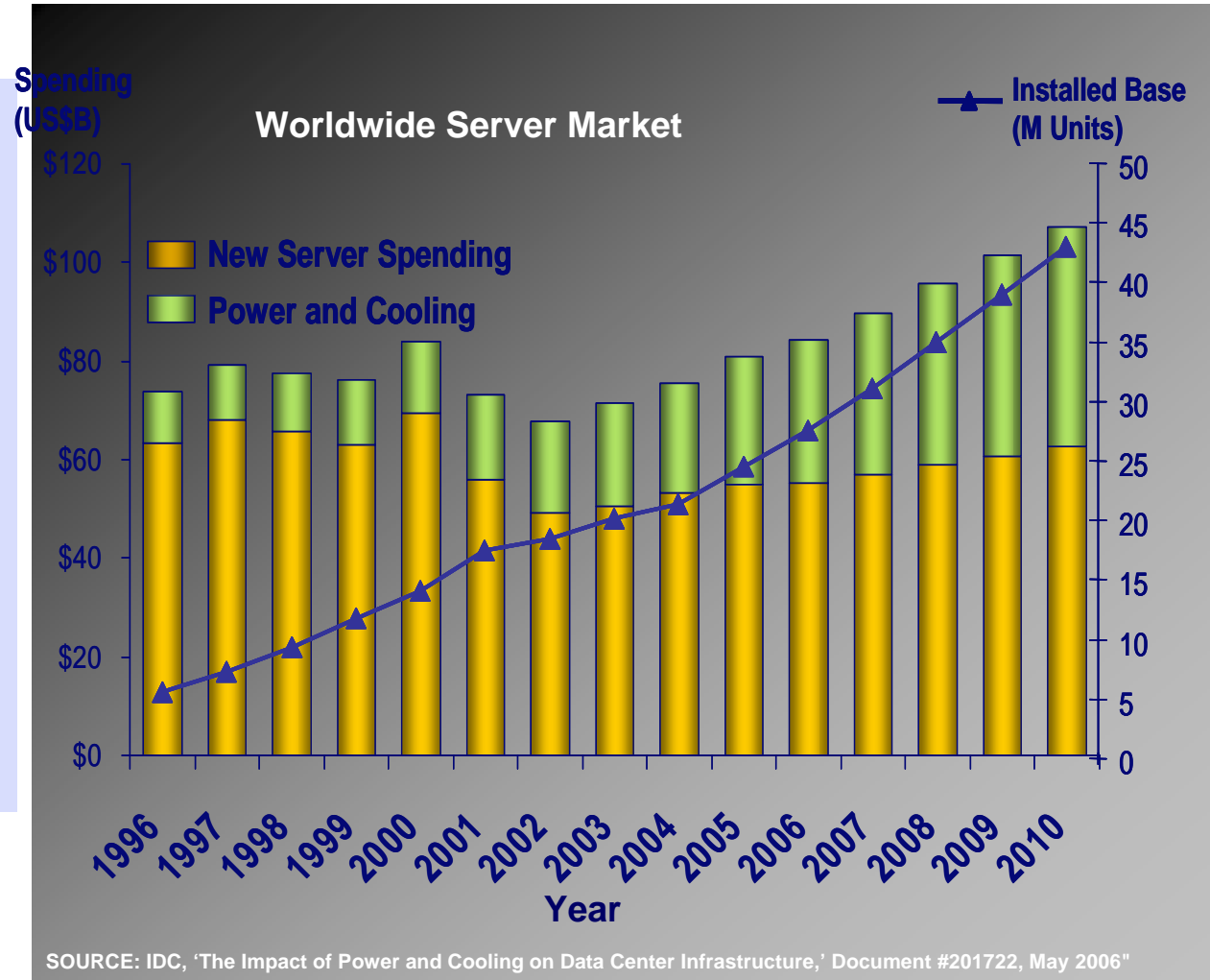
First National Bank
Omaha

Mainframe Energy Efficiency

The New Economics of IT

- **Power/cooling spend may eventually exceed new server spending**

2000 – Raw processing "horsepower" is the primary goal, while the infrastructure to support it is assumed ready

2006 – Raw processing "horsepower" is a given, but the infrastructure to support deployment is a limiting factor

Worldwide Server Market

Spending (US$B)

Installed Base (M Units)

New Server Spending

Power and Cooling

Year

SOURCE: IDC, 'The Impact of Power and Cooling on Data Center Infrastructure,' Document #201722, May 2006"

Energy Efficiency

RFG analyst case study: Retailer consolidated 600 x86 servers onto a single mainframe

- Eliminated an **entire floor** of servers
- Reduced the administrative staff by 10
- **Cut power and cooling costs by 80%**
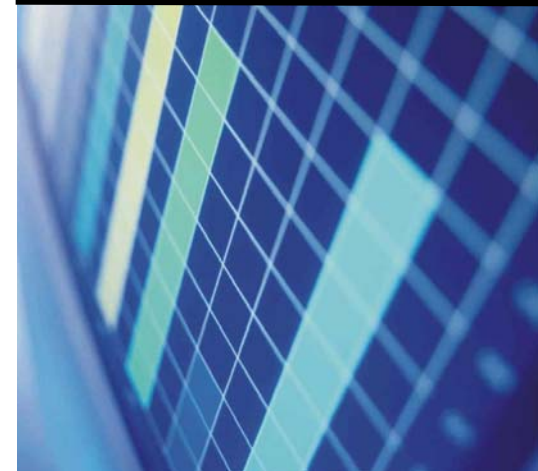
ROBERT
FRANCES
GROUP

Nationwide saves $15M with System z

TCO: $15M savings over 3 years

▸ 80% reduction in data center floor space needs; power conservation

▸ 50% reduction in hardware & OS support efforts

▸ 70% average CPU utilization

Dynamic allocation of compute power

▸ Capacity on demand

▸ Tested 22 times capacity for Super Bowl 2006 Ad blitz traffic

Today's mainframe

Designed for data serving and SOA

Architecturally compatible

Operationally superior

If data is the life blood of the business . . .

then your data server is the heart of your SOA

Mainframe Ecosystem
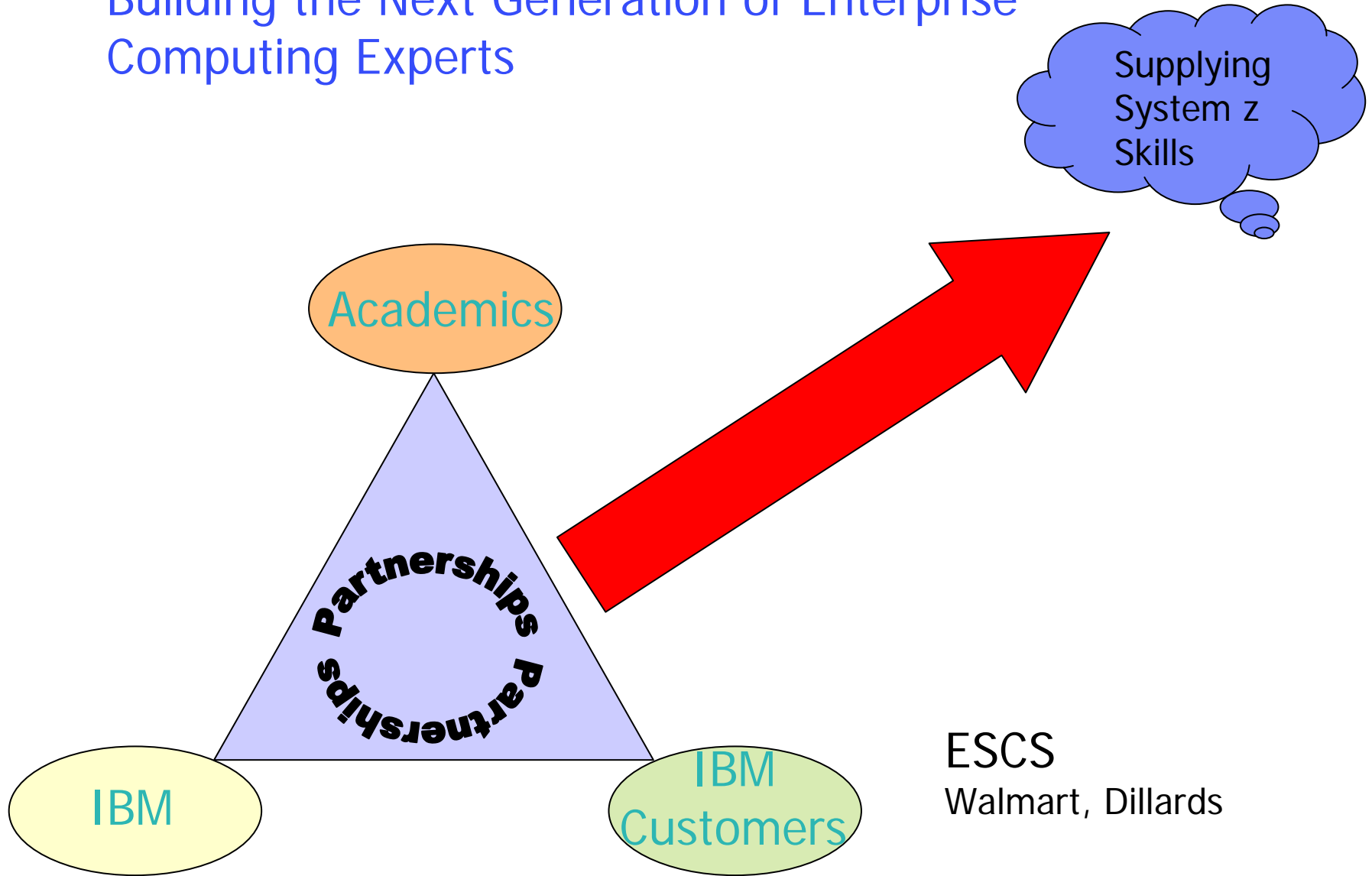
Customer councils

IBM Academic Initiative

- 294 colleges and universities
- 23,000 students educated already
- Student contests – 2.500 students/300 schools

Partners

- 1,350 ISVs
- 1,500 mainframe partners

Mainframe blog: http://mainframe.typepad.com

Building the Next Generation of Enterprise Computing Experts

Supplying System z Skills

Academics

Partnerships Partnerships

IBM

IBM Customers

ESCS
Walmart, Dillards

Mainframe Academic Initiative

Fachhochschule Bochum, Germany

ESIAL Nancy, France

Universidad Politécnica de Madrid (UPM), Spain

Kungliga Tekniska Høgskolan (KTH)

Czech Technical University, Prague, Czech Republic

Tshwane University of Technology, South Africa

Politecnico Bari, Italy

University of Surry, Guildford, UK

Strategic Investment

System z9

- ▶ **$1.2 billion**

- ▶ **5,000 tech professionals**

$40M SAP

ORACLE

- ▶ **Joint Initiative**

- ▶ **Expanded Technology**

$100M simplification[1]

1. Planned investment

Summary

- Today's Mainframe: Better for Business

- New Workloads / Business Class

- Renewed Interest in the Mainframe

- Security, Economics, Power Efficiency

- Next Generation of Mainframe Eco-system