

IBM: The Systems Agenda

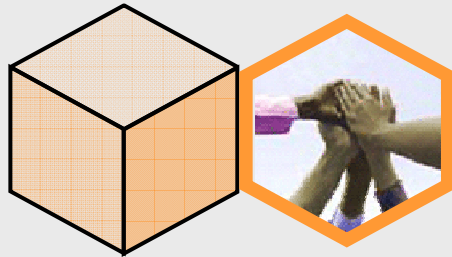
Francesco Stronati

VP Systems and Technology Group, IBM

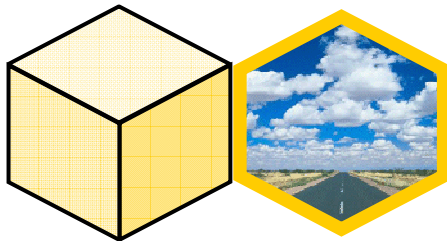
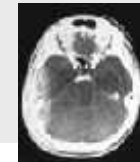
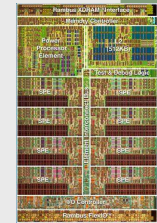
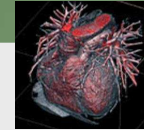


IBM Strategy: The Systems Agenda

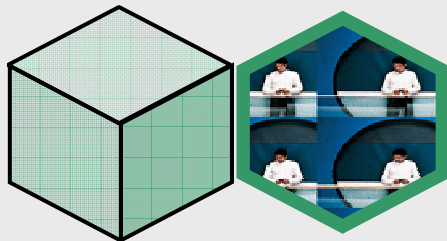
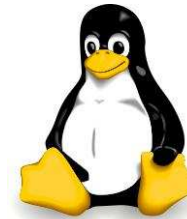
A strategic design for delivering innovative technology, resources and skills



Collaborative Innovation



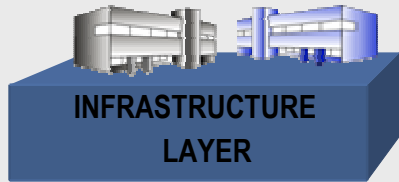
Openness



Virtualization

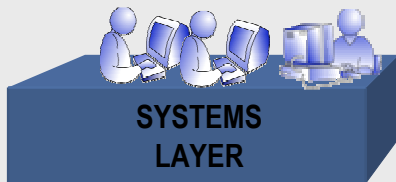


IBM delivers innovation at all levels



**IBM Director
SOA
IBM Virtualization Engine
Cloud Computing
Capacity on Demand**

**Infrastructure Solutions
Self-managing Autonomic Technology
Information on Demand
Supercomputing Capacity on Demand**



**z/OS®
i5/OS®
AIX® 5L**



Mainframe



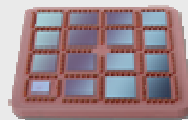
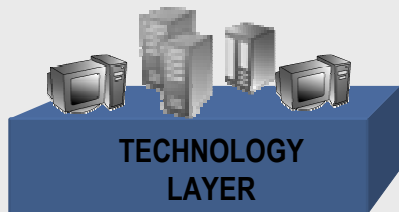
POWER



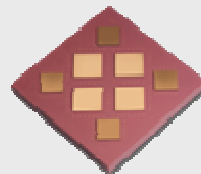
x86



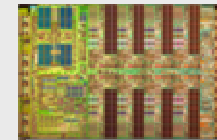
Blades Storage



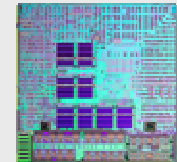
**IBM
z/Architecture™**



**Power
Architecture™**



**Cell Broadband
Engine™**

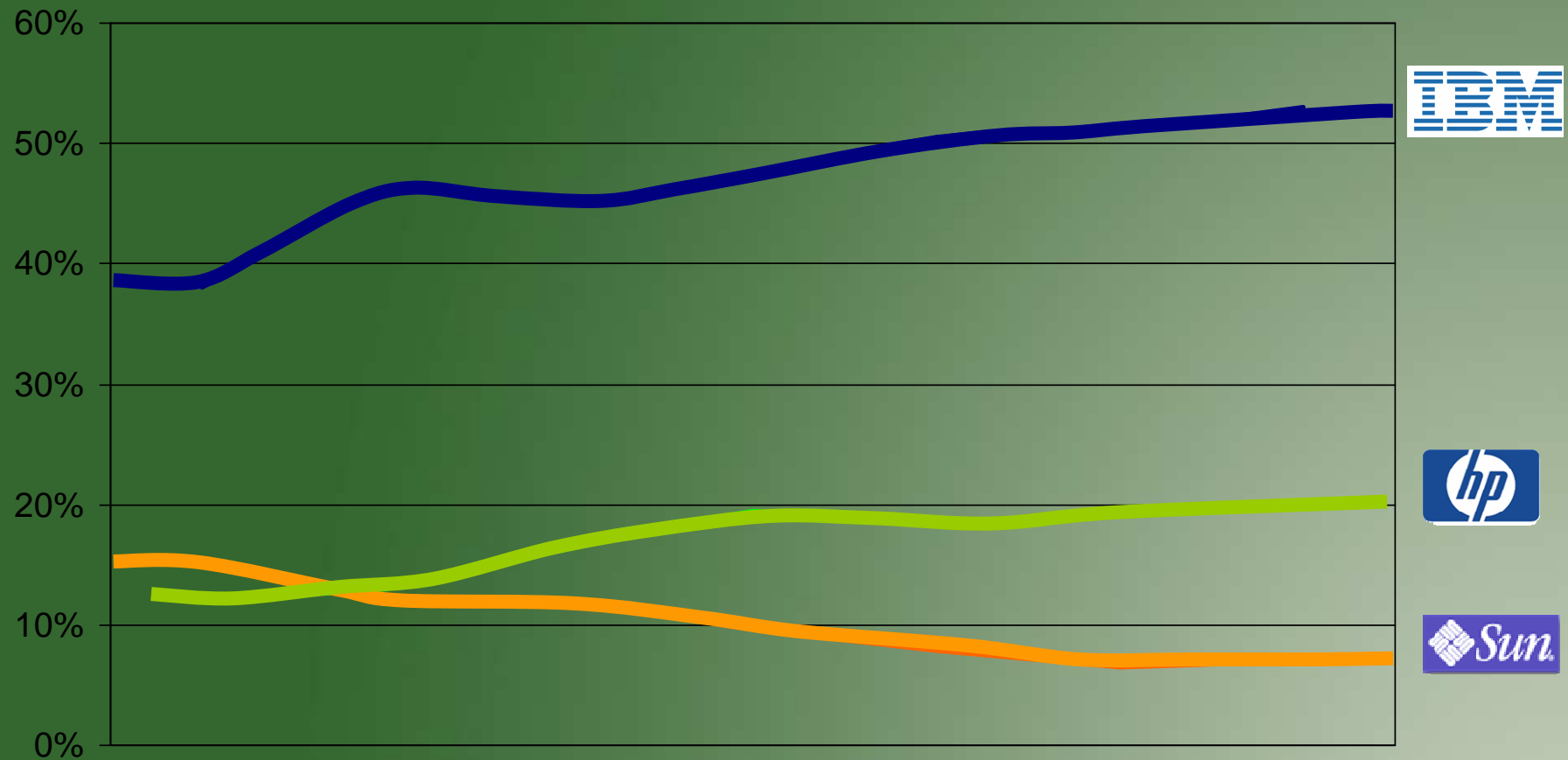


X-Architecture™



The Future Runs on System z

IBM Systems lead the way



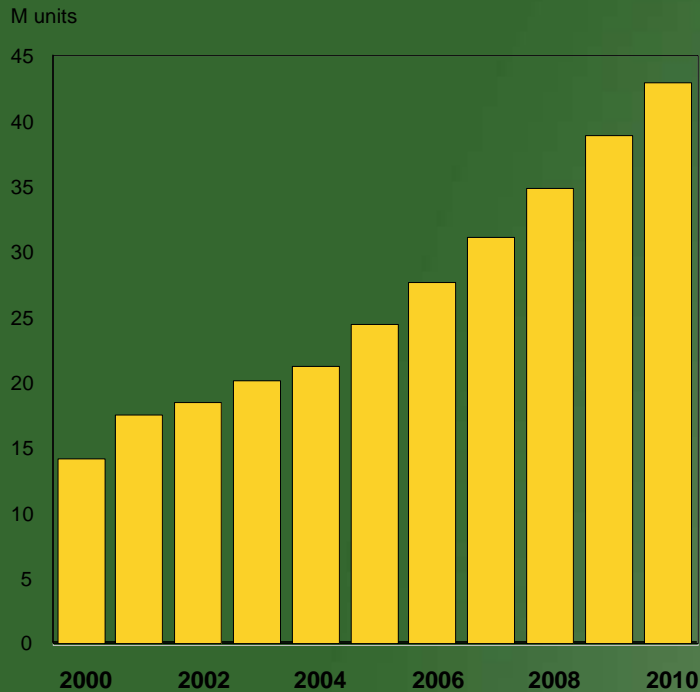
Source: IDC Quarterly Server Tracker, 2/07, \$250K+ server revenue share rolling four quarter average and IBM internal data



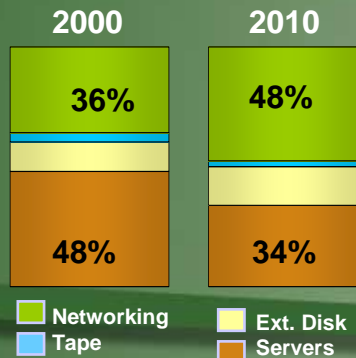
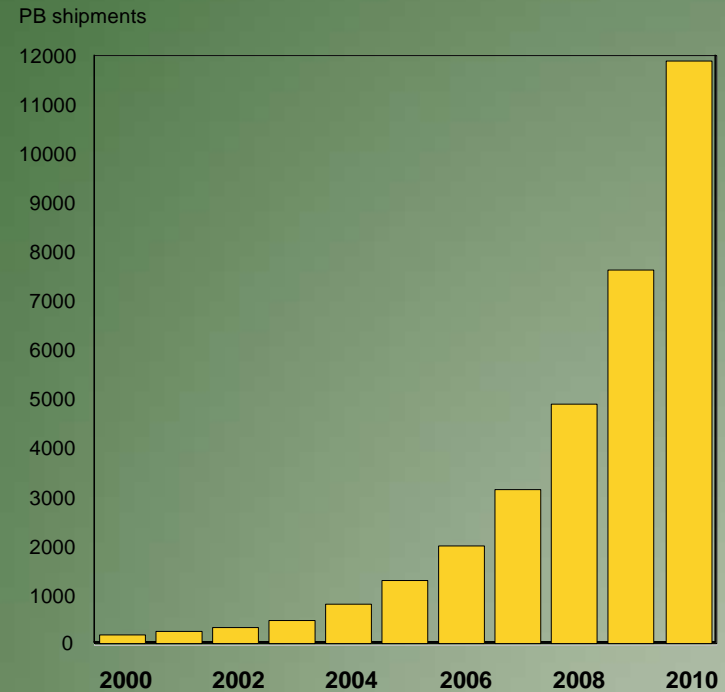
The Future Runs on System z

IT infrastructure growth

Installed Server Base



External Disk Petabyte Shipments



Source: IDC, *Virtualization 2.0: The Next Phase in Customer Adoption*, Doc #204904, Dec 2006

IT infrastructure costs growth



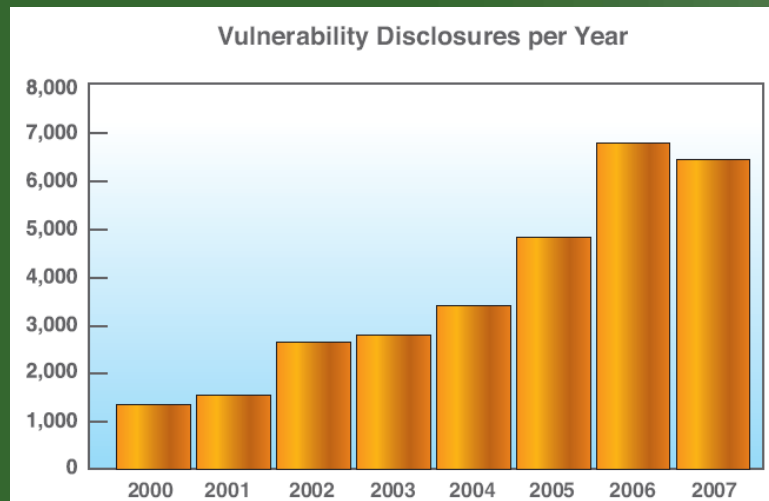
Source: IDC, *Virtualization 2.0: The Next Phase in Customer Adoption*, Doc #204904, Dec 2006

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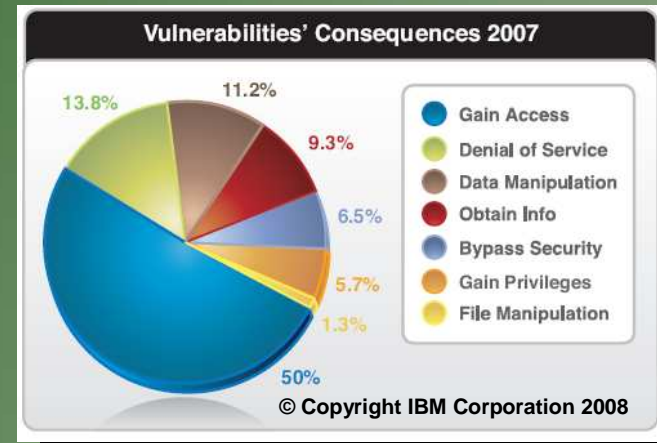
Hidden costs of IT *(what analysts say)*

Security breaches are becoming more prevalent and can be very costly

- IT security concerns continued to grow
- They do have a cost



Source: IBM Internet Security Systems X-Force® 2007



A table showing the financial impact of downtime per hour for various industries. The data is presented in a two-column format with industry names on the left and the corresponding cost in dollars on the right.

Industry	Financial Impact (Per Hour)
Brokerage Retail	\$6.5 Million
Credit Card Sales Authorization	\$2.6 Million
Airline Reservation Centers	\$90,000
Package Shipping Services	\$28,250
Manufacturing Industry	\$26,761
Banking Industry	\$17,093
Transportation Industry	\$9,435

Source: ©Eagle Rock Alliance, LTD. All Rights Reserved

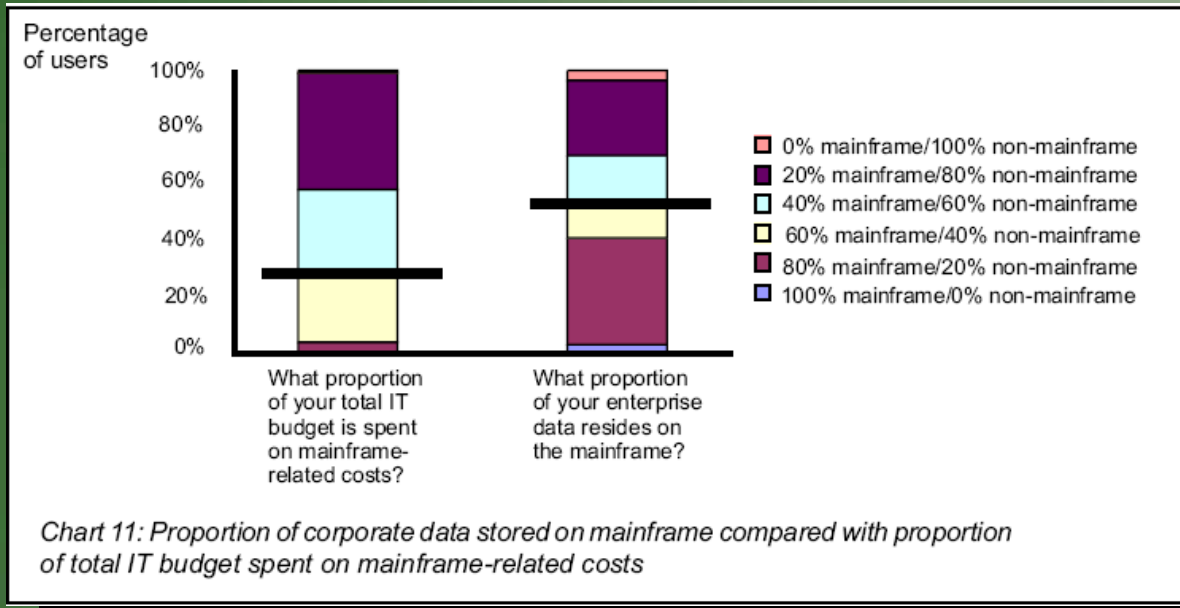
Hidden costs of IT (what analysts say)

Distributed vs Centralized

On average, approximately 15% of Global IT budgets are attributable to mainframe-related purchases, contracts, and activities, but at the same time, 25%-30% of the IT budget is recovered via billing for mainframe-resident services.

Source: MetaGroup ChargeBack White Paper

Breakthrough Economics: Centralization hidden ROI?



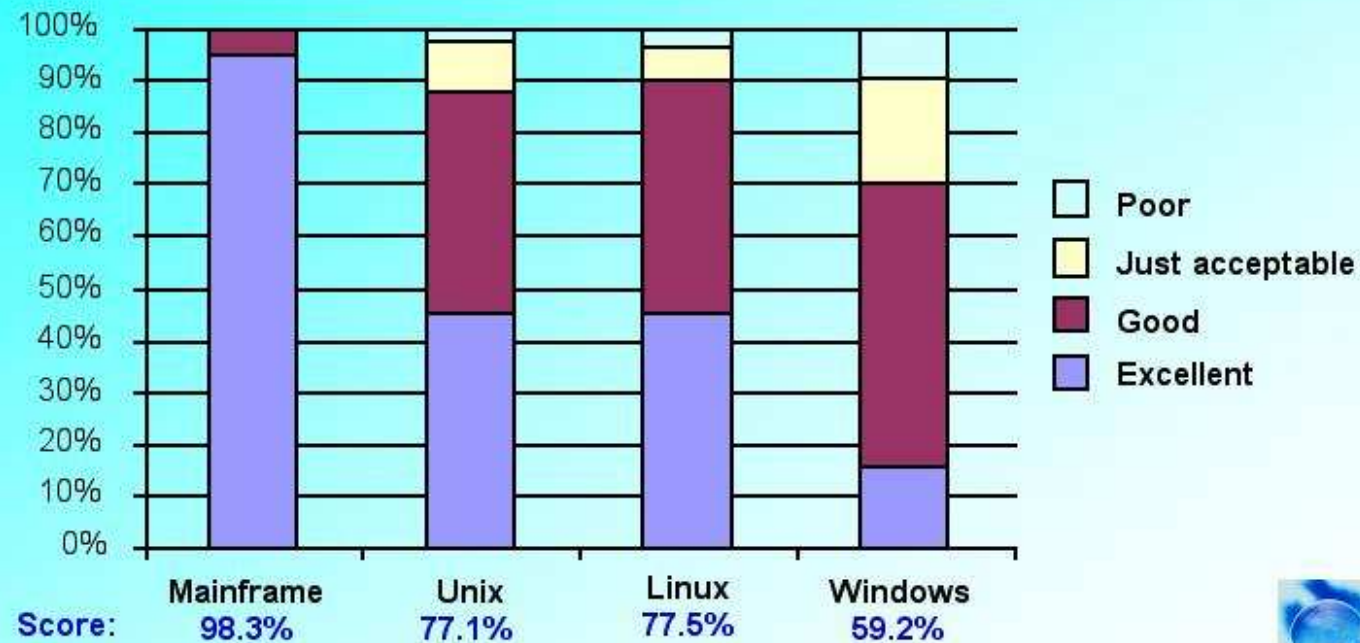
Source: Arcati Yearbook 2006



The Future Runs on System z

Reliability of IT *(what customers say)*

How would you rate the overall reliability of your data centre servers?

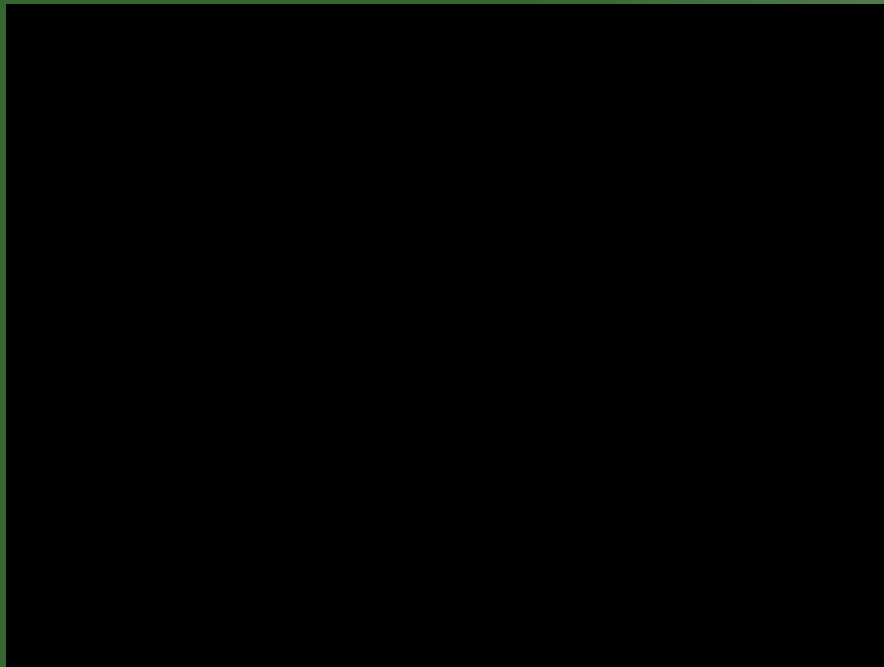


Source: Arcati Data Centre Infrastructure Survey 2006



“More than 70% of the world’s Global 1000 organizations will have to modify their data center facilities significantly during the next five years.”

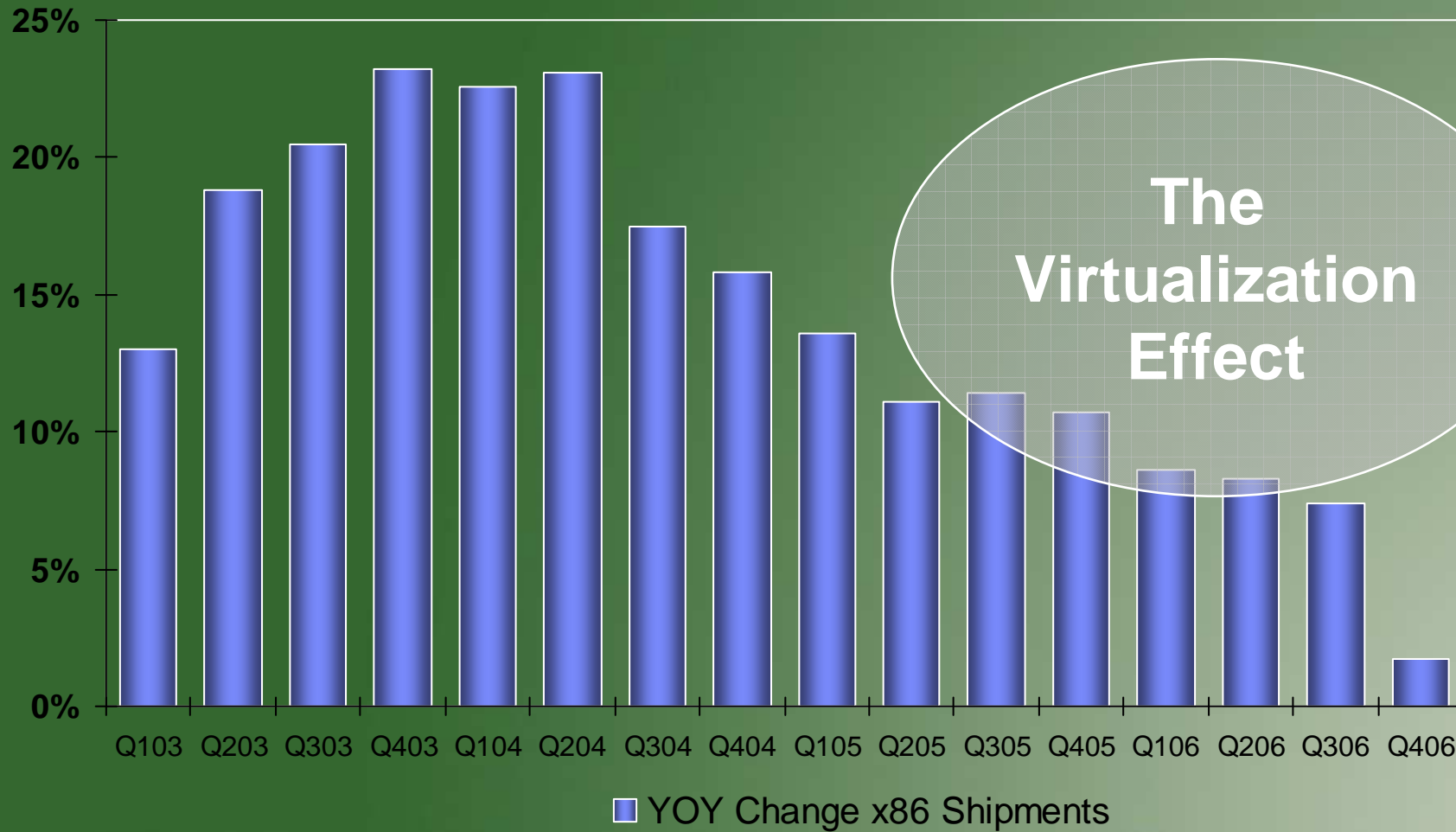
-- Gartner, September 2007



Life In The Data Center Video Clip

The virtualization effect

% Growth x86 Shipments



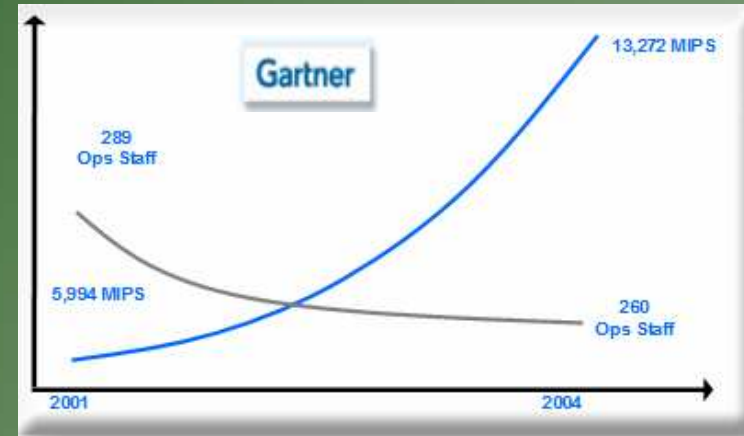
Source: IDC, 03/07

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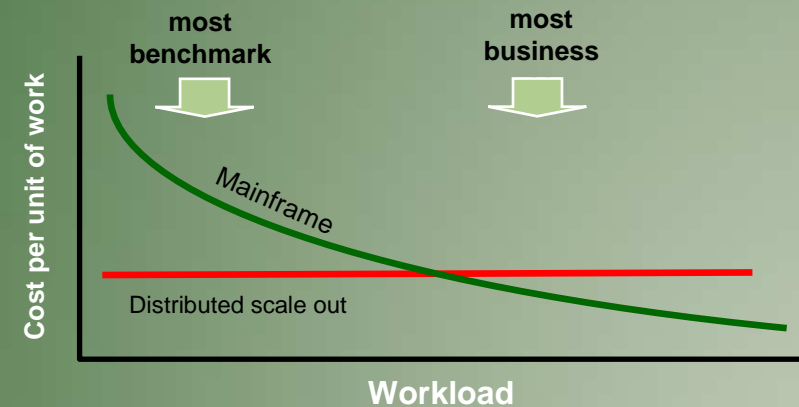
Data Centers Models

Distributed vs Centralized

In centralized Data center models, **staffing levels** have not significantly changed despite large increase in volume



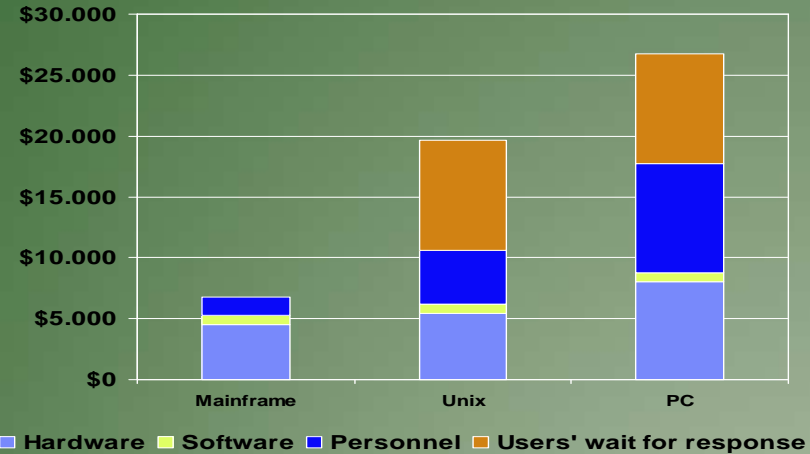
Most **TCO benchmarks** compare single applications, while most business operate in a mixed workload and etherogeneous operating environment



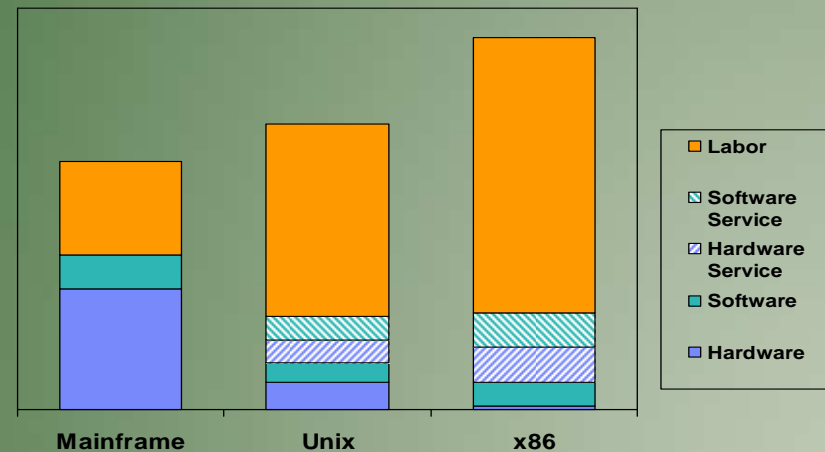
Data Centers Models

Distributed vs Centralized

Current Total Cost per User: Major advances for centralized systems in self-healing, self-managing, self-protecting, autonomic technologies. Distributed requires much more hardware, software and staff than Mainframes (2.5x-3x) Source: Arcati Research note



A customer example of 4 year costs comparison between a TCA and TCO view (running WebSphere in a distributed or centralized environment): distributed servers have higher service, monitoring and support costs – and cost more to deploy. Source: IT Optimization Study (German Banks Joint Users Center)

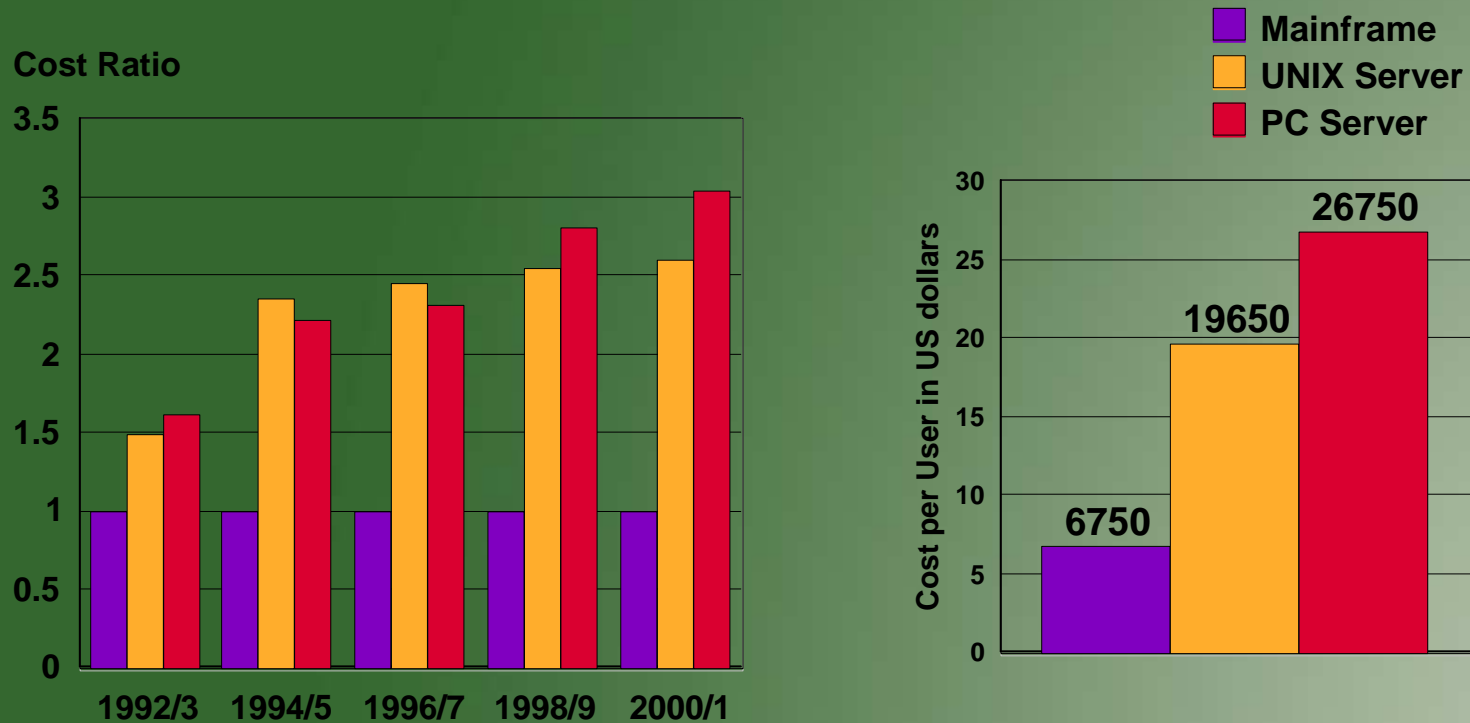


The Future Runs on System z

Data Centers Models

Distributed vs Centralized

5-year cost comparison sees not only *higher*, but also *increasingly higher* costs in distributed



Source: Arcati Research note



The Future Runs on System z

“More than 70% of the world’s Global 1000 organizations will have to modify their data center facilities significantly during the next five years.”

**Some businesses have
already started**

Virtualization Breakthrough Economics

A Distributed Unix Bank case

- FNBO consolidated on a single IBM system
 - 30 Unix servers
 - 500 internal applications
 - 560 small Windows servers
- Results:
 - 70% improvement in HW utilization
 - Savings: \$10M over 5 years

"It's revolutionary. It paid for itself in a year."
Ken Kucera, Senior Vice President

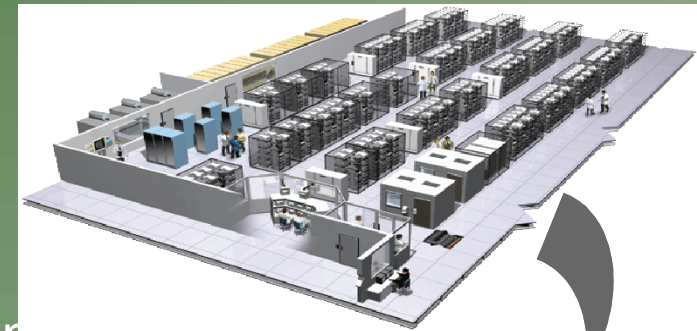


Virtualization Breakthrough Economics

A Distributed Unix/x86 Retailer case



- Hannaford Bros. Co. replacing 300 servers with a single system
- Saves thousands of IT staff hours on:
 - Installation, management/monitoring
 - Bugs, security patches, virus protection
 - Change application, backup/recovery, testing



"The only way we'd consider consolidating critical data from hundreds of servers onto one system was by choosing an IBM mainframe for its legendary reliability and availability,"

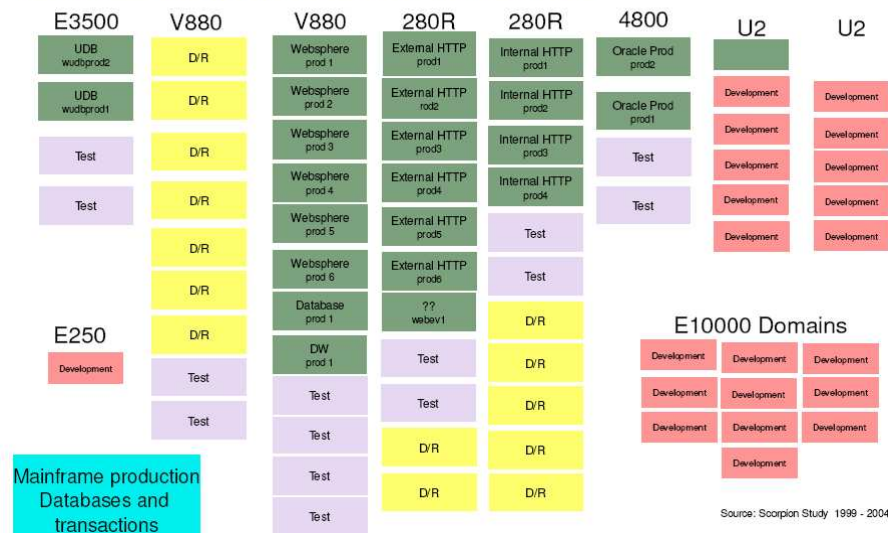
- Bill Homa, senior vice president and CIO of Hannaford

Virtualization Breakthrough Economics

eBusiness Integration: Websphere Business Case

Customer A: existing SUN Server Architecture

WebSphere 4.0, 62 Sun servers, 73 Solaris images



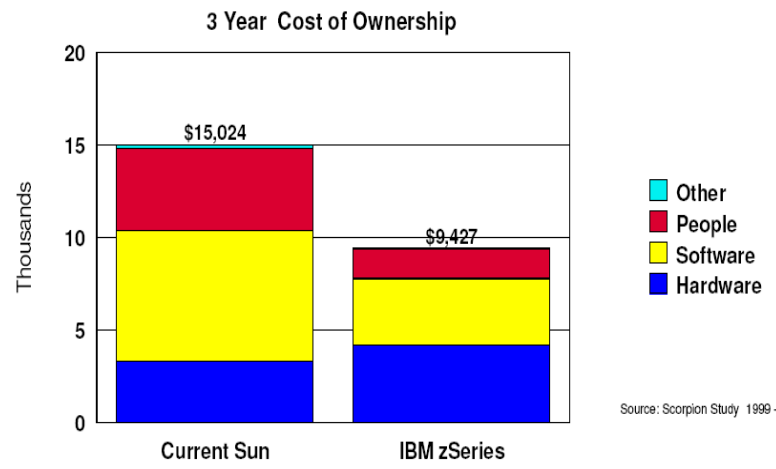
Mainframe production
Databases and
transactions

From Distributed Unix to Mainframe: 37% lower TCO plus full High Availability solution

Original customer perception was Mainframe is 5x more expensive than Sun

Customer A: IBM's Websphere Business Case

A simplified infrastructure consolidating from Solaris to z/OS on two zSeries systems



Source: Scorpion Study 1999 - 2007

Last but not Least: Extreme Scalability

Bank of China: The Largest Transactional Benchmark Ever

- Over **350 million** accounts
(US population 300 million)
- with **three billion** transaction histories



30 million transactions in
less than 60 minutes

Project Big Green: IBM internal transformation

- *3,900 servers targeted for consolidation onto 30 Linux virtualized mainframes*
- *80% energy saving, in addition to footprints and space*
- *Flexibility: scaling up and out on demand enabled by the zVM sophisticated virtualization capability*
- *Systems management simplification*



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