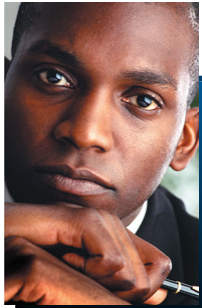# True Economics Lead to Accurate Visibility of IT Costs

Tell Me The Truth About My Data Center Costs

How do I get visibility into the true economics of my data center?

**What is the true allocation of labor and power costs for all my system workloads?**

What is the true cost for System z and distributed environments?

Typical Cost Allocation Uses False Economics

- Rough estimates are used rather than resource usage data to identify accurate costs for both System z and distributed environments

- Using linear costs rather than incremental costs for additional mainframe workloads

- Disproportionate allocation of data center (e.g. power, labor) to System z

- Server consolidation analysis does not take System z specialty processors into account

Hidden distributed costs must be exposed as the infrastructure grows
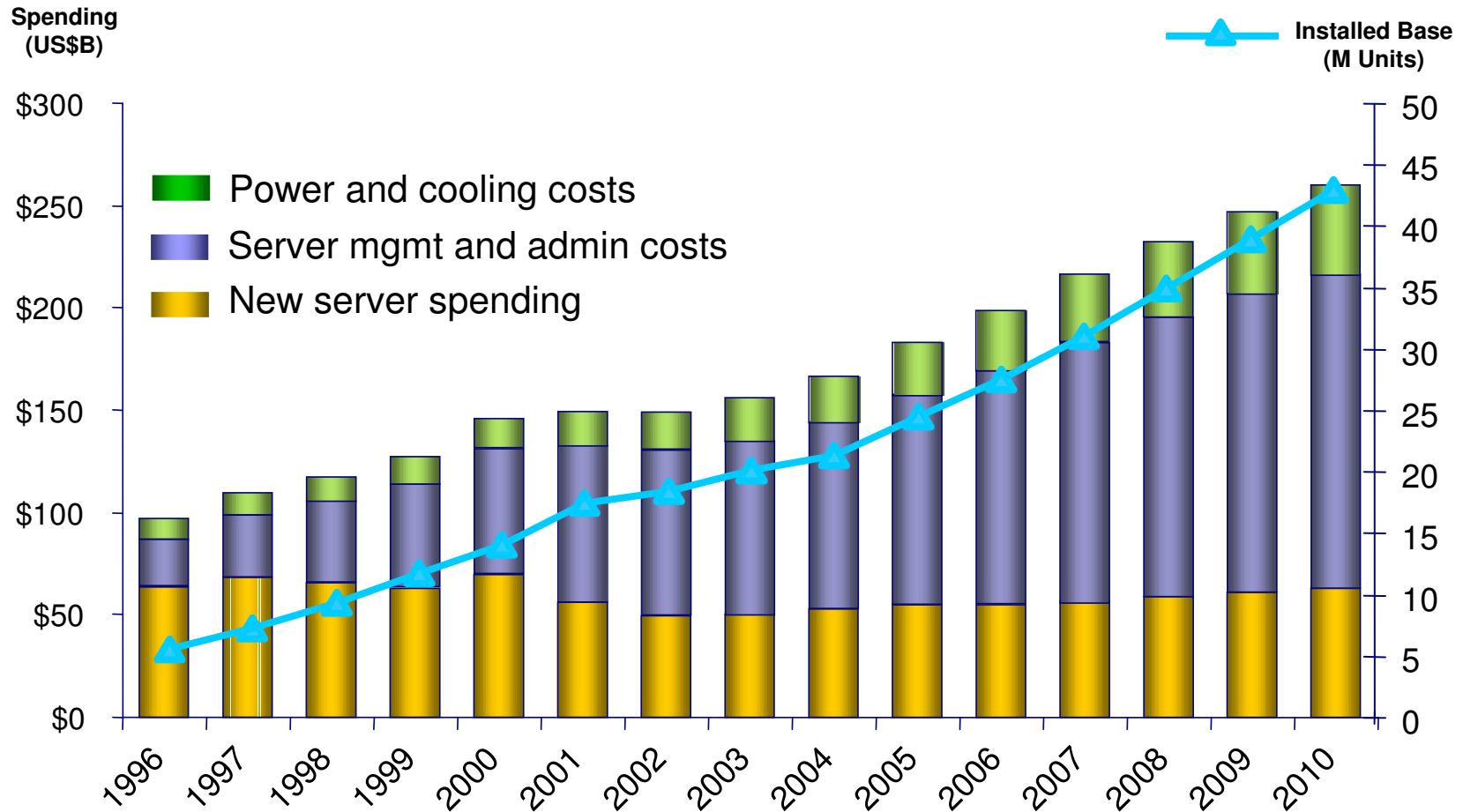
Source: IDC, Virtualization 2.0: The Next Phase in
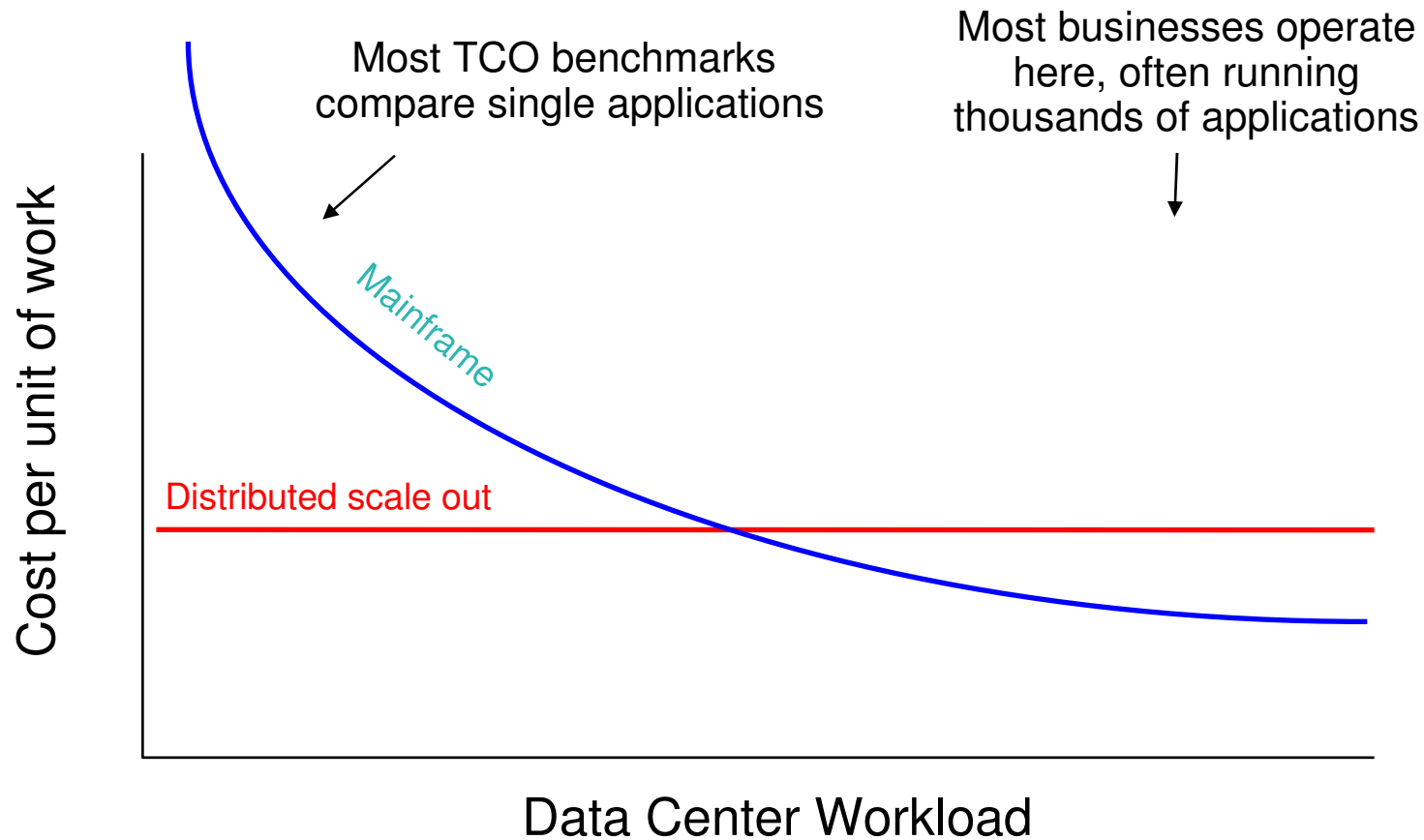Customer Adoption, Doc #204904, Dec 2006

True Economics: Measuring IT Resource Use Leads to Cost Transparency

- Understanding the cost of delivering IT services

- Determine line of business, product and service profitability
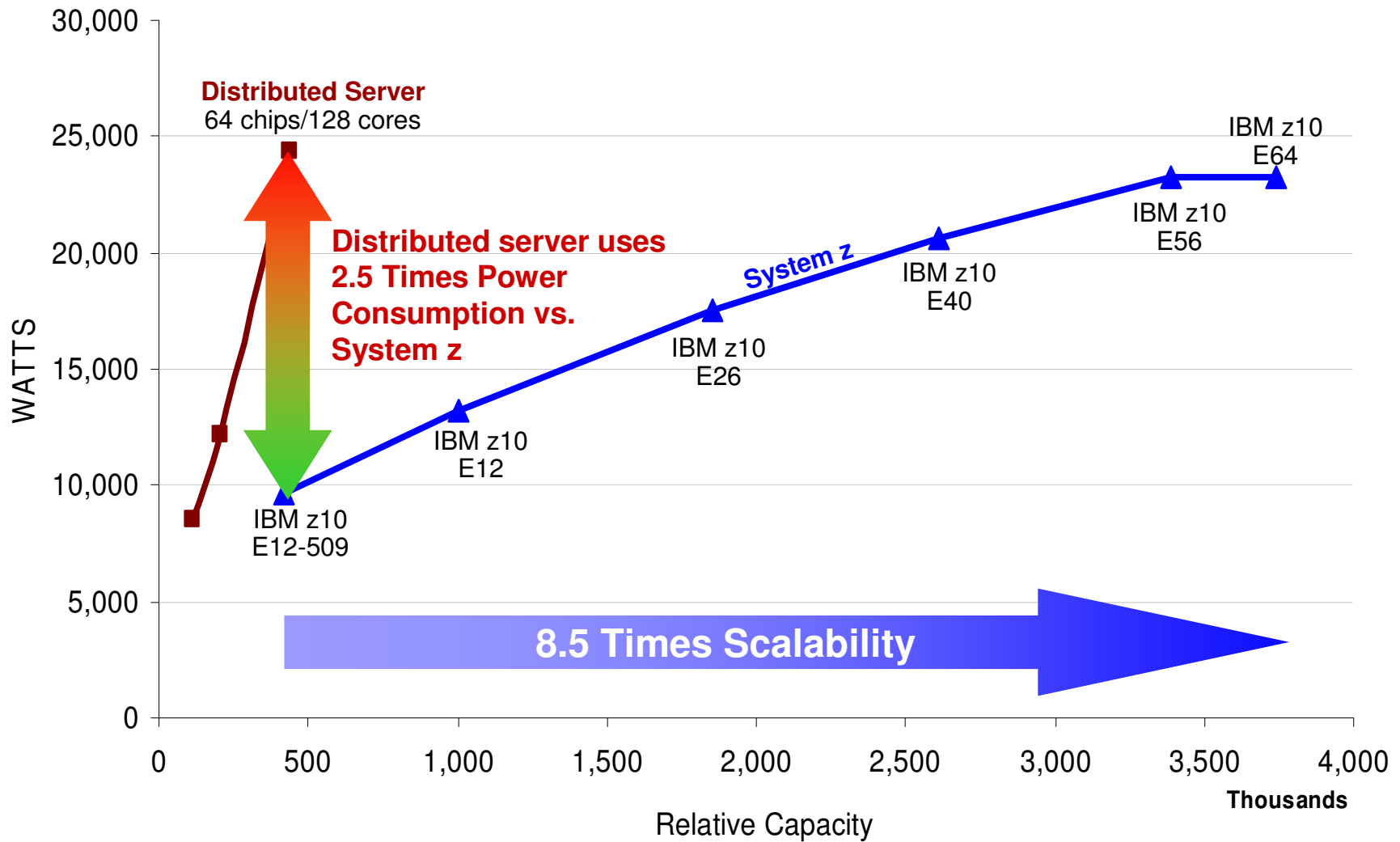
- Identifying the business transactions that drive IT cost

Last Months IT Usage by Department

True Economics: Mainframe Cost/Unit of Work Decreases as Workload Increases

Most TCO benchmarks compare single applications

Most businesses operate here, often running thousands of applications

Cost per unit of work

Mainframe

Distributed scale out

Data Center Workload

True Economics: Real distributed power costs are hidden in typical cost allocations

Distributed Server
64 chips/128 cores

Distributed server uses
2.5 Times Power
Consumption vs.
System z

System z

IBM z10
E12-509

IBM z10
E12

IBM z10
E26

IBM z10
E40

IBM z10
E56

IBM z10
E64

WATTS

30,000
25,000
20,000
15,000
10,000
5,000
0

8.5 Times Scalability

0   500   1,000   1,500   2,000   2,500   3,000   3,500   4,000

Thousands

Relative Capacity

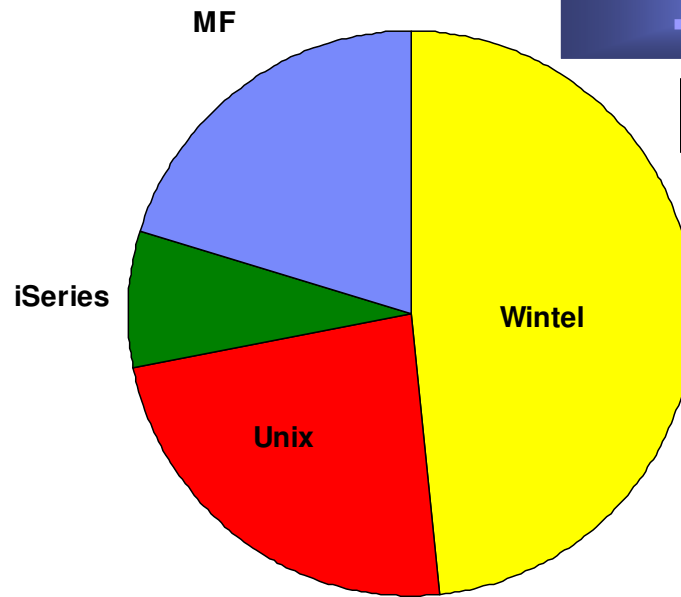# **True Economics:** Distributed systems require more headcount per Workload (capacity) than System z

Used Capacity
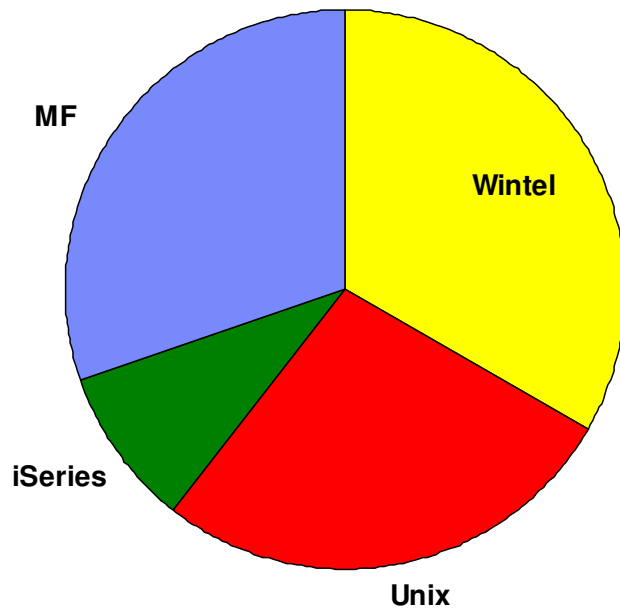
Dedicated Infrastructure Staff

- Customer Profile
  - 1800 servers, 1 location
  - New CIO, "get off the MF"
  - Focused on reducing cost

Capacity/ Labor Ratio

	Used RIPs / FTE
Wintel	552
Unix	578
iSeries	2198
MF	1937

IBM TCO study

Relative Internal Performance is a cross-architecture capacity metric used here. It is to be used only within the context of this study and cannot be compared to external benchmarks or other IBM performance ratings. Load or Used RIPS is the product of estimated utilization and RIP per instance for all 1800+ server instances.
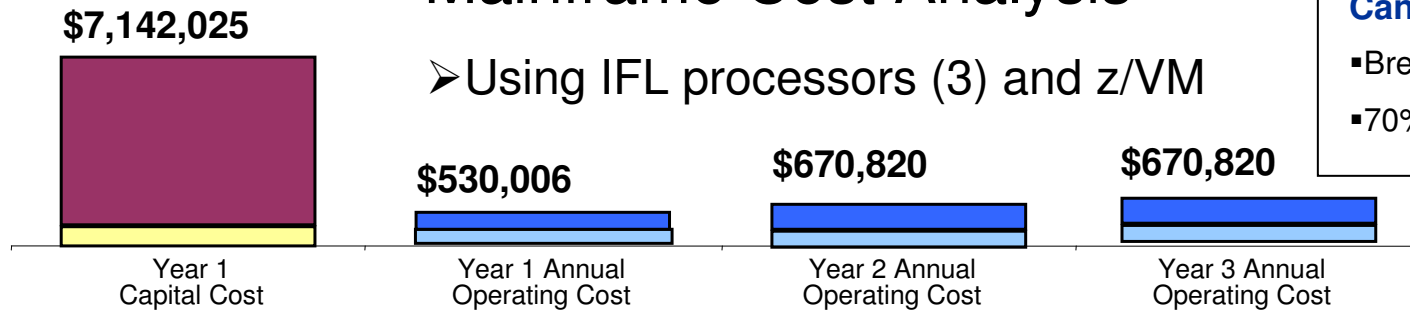
True Economics: Consolidate on System z Using IFLs

Mainframe Cost Analysis

IBM TCO Case Study: Canada Government Agency
- Breakeven year 1
- 70% Cost reduction over 3 years

➢ Using IFL processors (3) and z/VM

$7,142,025

$530,006

$670,820

$670,820

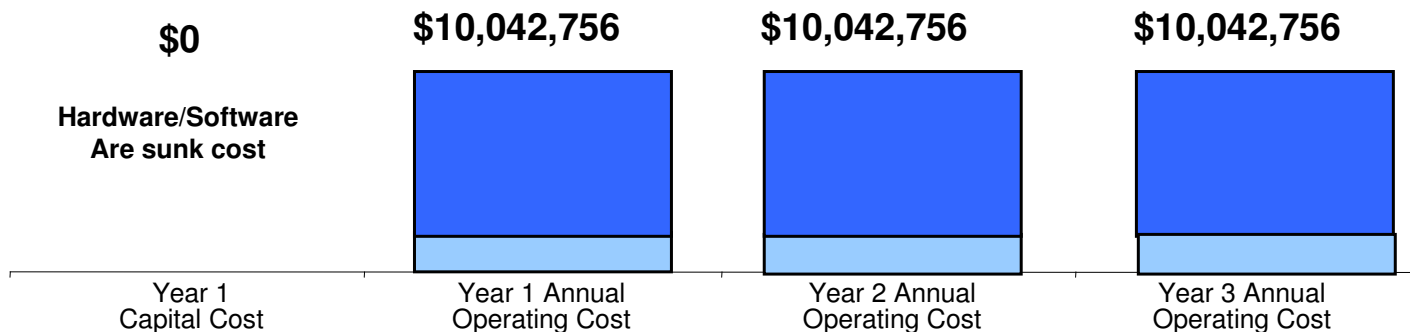| Year 1 Capital Cost | Year 1 Annual Operating Cost | Year 2 Annual Operating Cost | Year 3 Annual Operating Cost |

Total cost = $9,013,671

3 IFLs vs 292 servers

Distributed Cost Analysis

➢ Keeping dedicated servers (292)

$0

Hardware/Software Are sunk cost

$10,042,756

$10,042,756

$10,042,756

| Year 1 Capital Cost | Year 1 Annual Operating Cost | Year 2 Annual Operating Cost | Year 3 Annual Operating Cost |

- Hardware OTC
- Software OTC
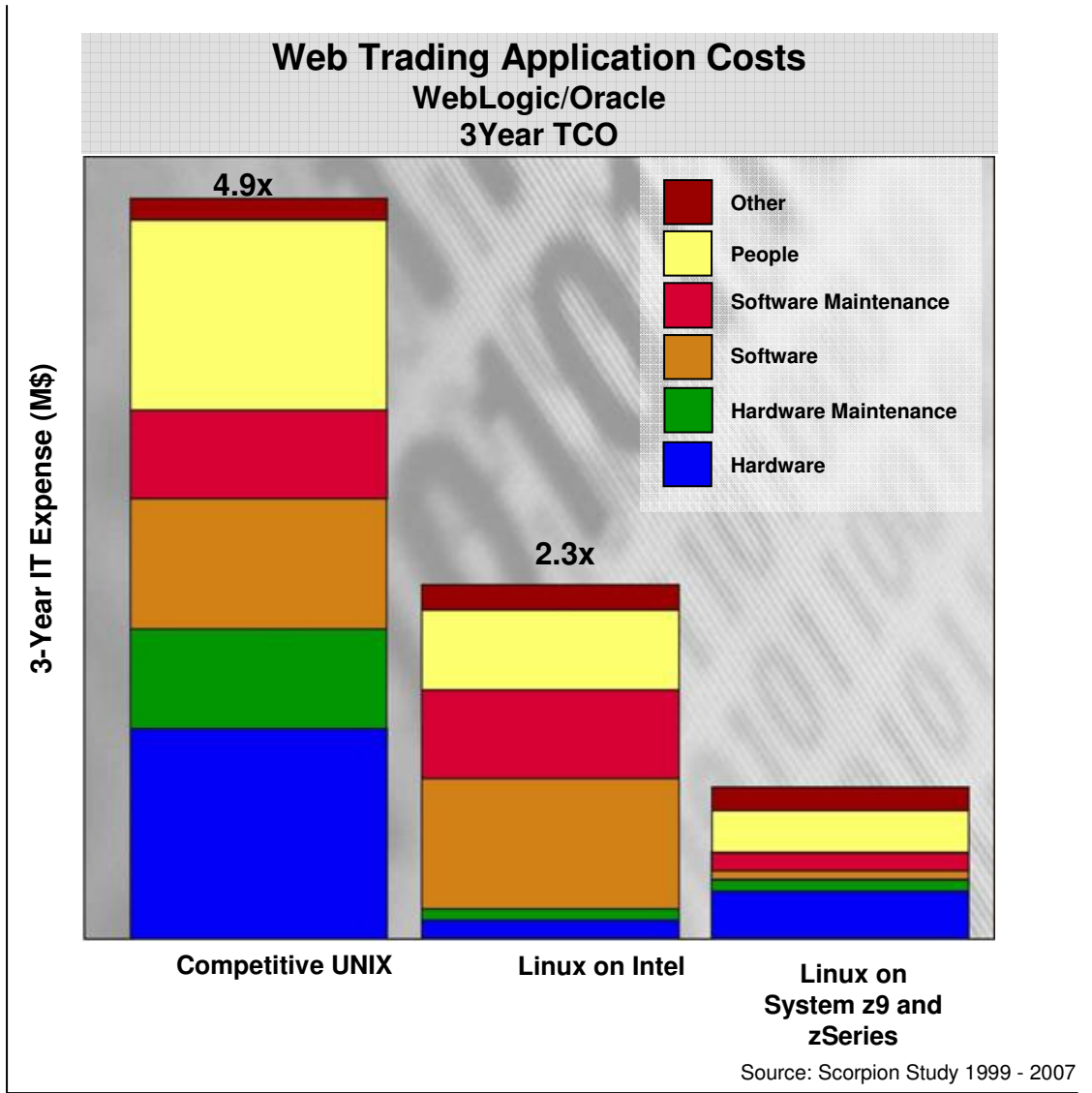- Subscription
- Maintenance

IBM TCO study

Total cost = $30,128,268

3.3 times as expensive

TCO Study - Impact of Linux on System z Consolidations

Workload consolidation using Linux on a System z can result in significant TCO savings

Web Trading Application Costs
WebLogic/Oracle
3Year TCO

4.9x

2.3x

3-Year IT Expense (M$)

- ■ Other (dark red)
- ■ People (yellow)
- ■ Software Maintenance (red)
- ■ Software (orange)
- ■ Hardware Maintenance (green)
- ■ Hardware (blue)

Competitive UNIX

Linux on Intel

Linux on System z9 and zSeries

Source: Scorpion Study 1999 - 2007

Data Center Cost Recovery Model

What Costs
Need To
Be Recovered?

How Are Costs
Associated With
Applications?
(ATM, Credit Card,
Commercial Loans,
Mortgages)

ITFMA.COM
IT Financial Management Association

Receive
Recoveries
From
Departments

How are
Applications
Associated With
Departments And
Resources?

Create
Department
Invoices

Determine
Utilization

Failure to Accurately Allocate Distributed Costs can Lead to False Economics

What Costs Need To Be Recovered?

How Are Costs Associated With Applications?
(ATM, Credit Card, Commercial Loans, Mortgages)

Receive Recoveries From Departments

ITFMA.COM
IT Financial Management Association
➢Lack of resource usage data makes it:

➢Difficult justifying IT expenses

➢Challenging to determine if a line of business is profitable without IT costs

How are Applications Associated With Departments And Resources?

Create Department Invoices

Determine Utilization

- Lack of resource usage data

Data Center Cost Recovery Using True Economics

What Costs Need To Be Recovered?

How Are Costs Associated With Applications?
(ATM, Credit Card, Commercial Loans, Mortgages)

Receive Recoveries From Departments

ITFMA.COM
IT Financial Management Association

➢IT resource use results in IT cost visibility

How are Applications Associated With Departments And Resources?

Create Department Invoices

Determine Utilization

- Factor in resource usage data

Tivoli Usage and Accounting Manager
Resource Accounting and Chargeback

Tivoli Usage and Accounting Manager provides a comprehensive view of IT consumer costs. It shows who is utilizing shared resources, what resources exactly and how much of these resources they are using. It also provides a means to do chargeback based on this usage.

Highlights

- ✓ Aligns IT spending with business objectives

- ✓ Provide visibility of IT Costs to determine line of business, product and service profitability

- ✓ Helps organizations reduce IT infrastructure costs by showing accurate System z vs. distributed costs

- ✓ Integrates with **IBM Tivoli Decision Support for z/OS** to collect System z resource usage data

Get Financial Control with Tivoli Usage and Accounting Manager
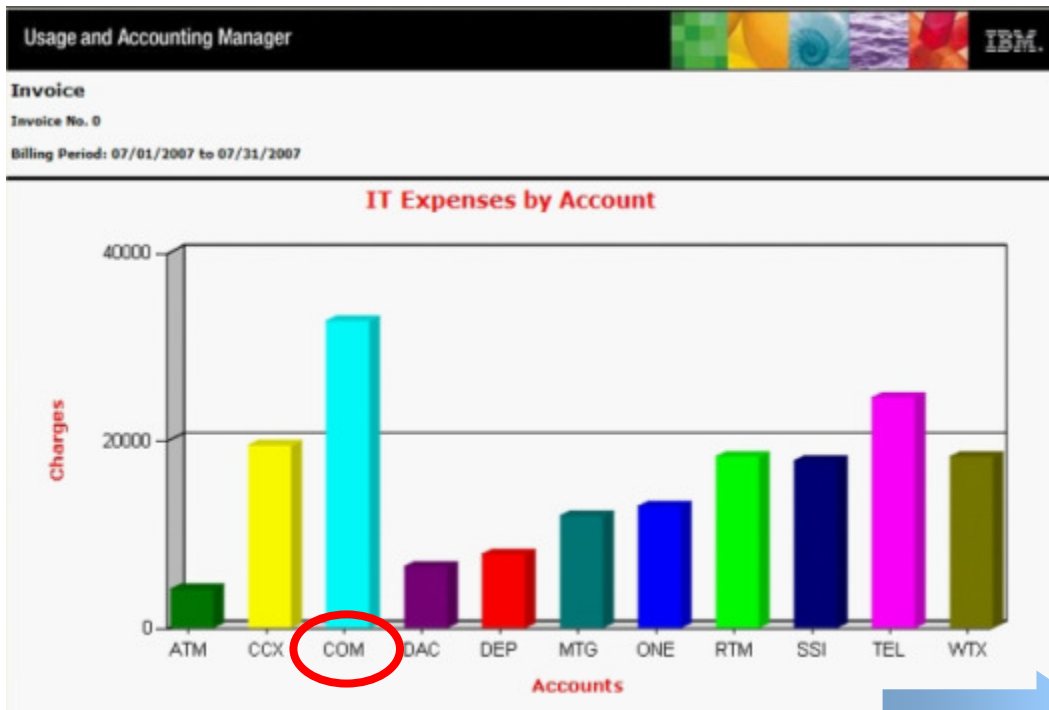
IBM Tivoli®

**Usage & Accounting Manager
Decision Support for z/OS**

Enabling IT operations to establish appropriate allocation methodologies to measure and manage IT cost and provide granular reporting and invoicing capabilities

➢View costs by line of business, product, application or service

➢Drill-down to view mainframe and distributed resource usage and costs

IT Cost Accounting Assessment

- **No charge one day event**

- **Objective is to establish a solution for :**
  - Improved IT cost transparency and communication of business contribution
  - Enhanced IT cost efficiency

- **Participants with your sponsorship**
  - Customer:
    - IT finance
    - IT data center management - both distributed and system z
    - Optionally, lines-of-business representatives
  - IBM financial management specialist

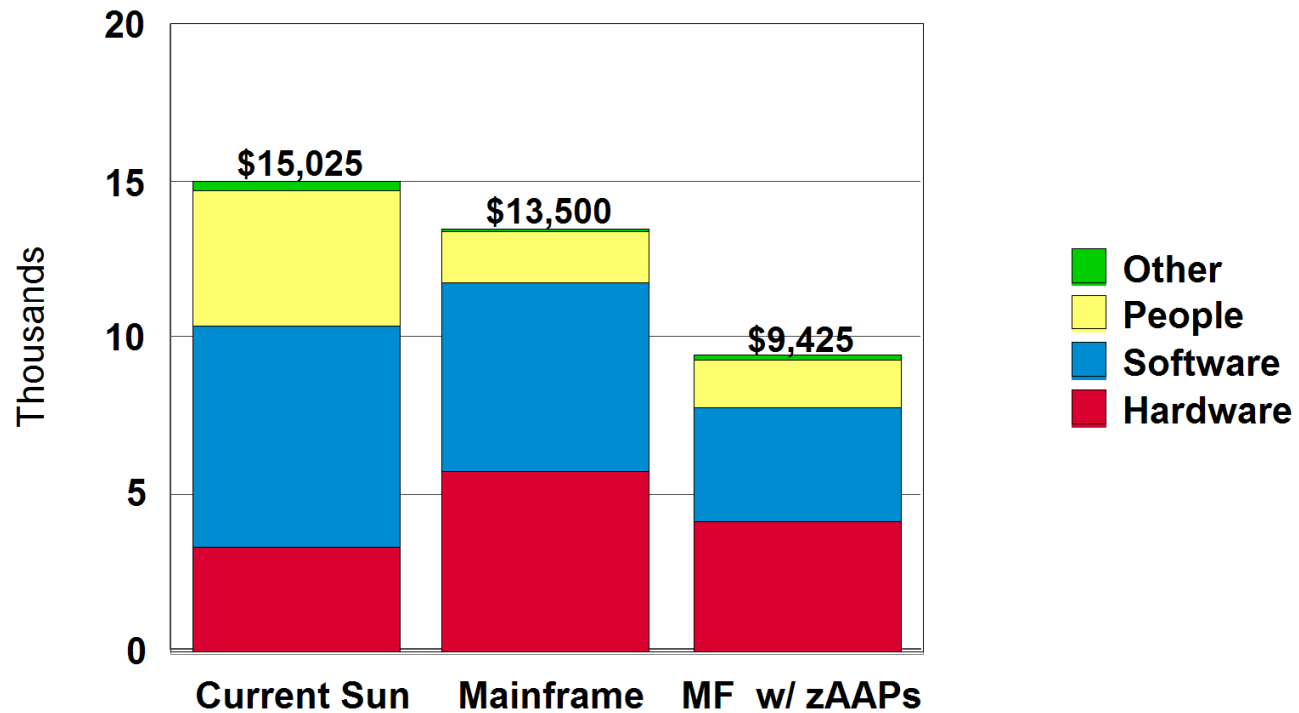- **Follow with a formal recommendation document**

Sig Puchacz
spuchacz@us.ibm.com, 512-286-8089

- **Backup**

WebSphere Business Case for Large U.S. Insurance Company

3 Year Cost of Ownership

Thousands (y-axis)

- $15,025 — Current Sun
- $13,500 — Mainframe
- $9,425 — MF w/ zAAPs

Legend:
- **Other** (green)
- **People** (yellow)
- **Software** (blue)
- **Hardware** (red)

IBM eServer™ zSeries® w/ zAAPs savings 37% / 3 year TCO
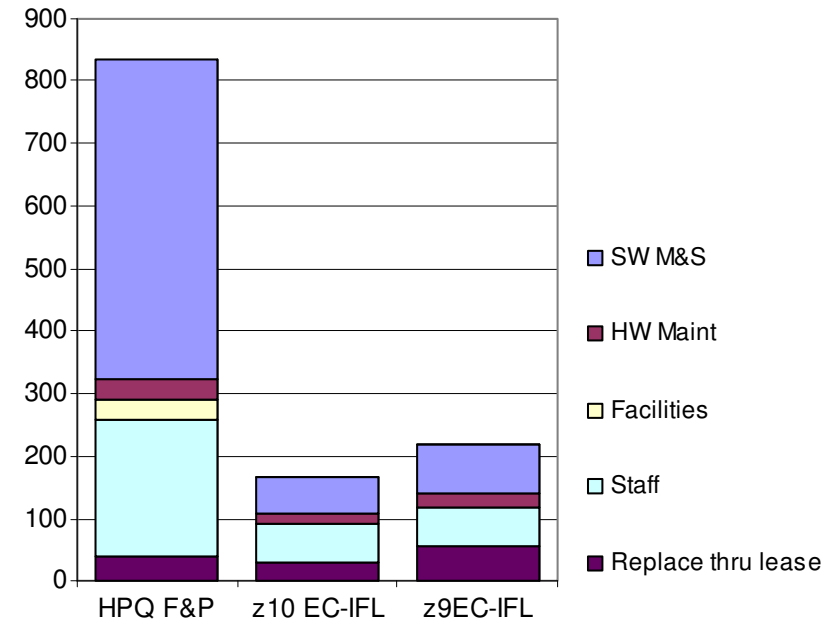
A Recent IBM TCO Study for a Client

- **Potential for dramatic reductions in software expense**

- **Reductions in power and cooling**
  - **No additional Energy Costs on z by activating 1 IFL**
  - **No additional floor space by activating 1 IFL**

- **Potential for dramatic improvement in service and disaster recovery**

- **Increased processor utilization**

- **A true "utility" solution**

…and the savings will improve over time with z.

Insurance Company IT Costs

File & Print Servers

5-Year Total IT Cost Analysis

$600-700K Savings

Chart: Insurance Company IT Costs, 5-Year Total IT Cost Analysis. Categories on x-axis: HPQ F&P, z10 EC-IFL, z9EC-IFL. Y-axis 0–900. Legend: SW M&S, HW Maint, Facilities, Staff, Replace thru lease.