
IBM
2010 IBM System z银行业创新论坛
智慧银行灵动Z远 持续创新共领未来

System z Strategy and Direction

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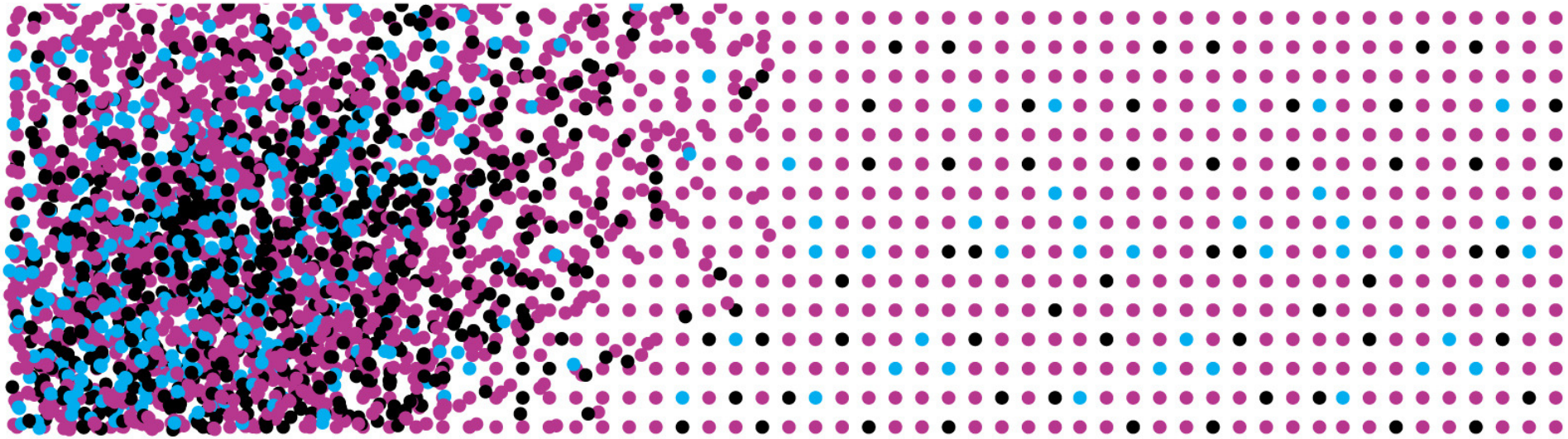

The Dynamic Infrastructure Journey


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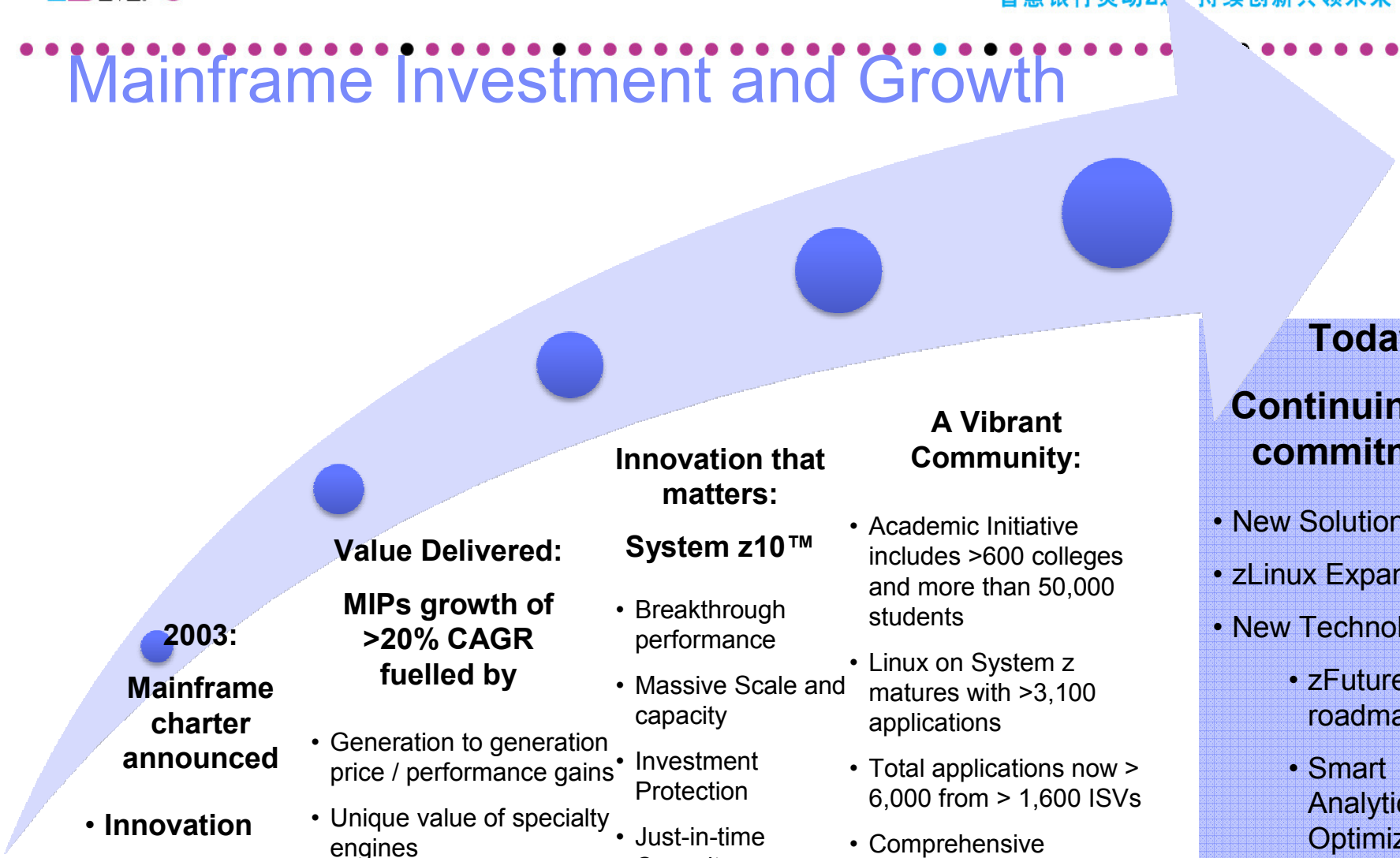
Mainframe Investment and Growth



2003:

Mainframe charter announced

- **Innovation**
- **Value**
- **Community**

Value Delivered:

MIPs growth of >20% CAGR fuelled by

- Generation to generation price / performance gains
- Unique value of specialty engines
- Ability to reduce energy costs by up to 80%

Innovation that matters:

System z10™

- Breakthrough performance
- Massive Scale and capacity
- Investment Protection
- Just-in-time Capacity
- Unprecedented resiliency and security

A Vibrant Community:

- Academic Initiative includes >600 colleges and more than 50,000 students
- Linux on System z matures with >3,100 applications
- Total applications now > 6,000 from > 1,600 ISVs
- Comprehensive middleware
- IBM Destination z, hub of the community

Today

Continuing the commitment

- New Solutions
- zLinux Expansion
- New Technology
  - zFuture roadmap
  - Smart Analytics Optimizer
- ISV Focus

System z Software Strategy

Capitalize on Traditional System z Strengths

- Batch and Transaction processing, Messaging, Quality of Service, Data Serving
- Optimize to the evolving System z Hardware design point

Extend Value Proposition to New and Mixed Workloads

- Systematic re-engineering of the software stack for SOA
- Integrate with Modern Application Development Environments
- Deliver extensive Data Management services
- Leverage the wave of workload consolidation; zLinux
- Simplify System z – make it easier to install and manage for better TCO
  - New faces of z
  - More end-to-end management capability from a z central point of control
  - Simplified labor intensive tasks

Reinvigorate the System z Ecosystem

- Attract new System z customers and ISV application workloads
- Enable new Hybrid and Cloud environments
- Make System z relevant to the new IT generation

DB2 for z/OS

DB2

- **Deep synergy with System z**
- **HW Compression**
- **Consolidation**

DB2 9

- 20%-30% Utility CPU savings
- Compress indexes, save 50% disk
- More CPU on specialty engines

DB2 10

- Save up to 20% DB2 Batch & OLTP CPU
- On-the-fly data Compression
- Temporal data support
- Skip-level migration

- **Unmatched availability**
- **Unparalleled security**
- **Industry leading reliability**

- Flexible context and role security
- Expanded online schema changes
- Volume level backup & recovery

- Ten times more concurrent users
- More online schema changes
- More granular access control

- **Near-linear scalability**
- **Optimized for SOA**
- **Flexible development**
- **Warehousing capabilities**

- Seamless integration of XML and relational data
- Improved SQL
- Partition by growth
- OLAP expressions

- Enhanced query parallelism
- More SQL compatibility
- Improved pureXML and SQL PL

Beta Announced: Feb 9, 2010

Information Management Exploitation of z

IBM Smart Analytics Optimizer

Capitalizing on the best of relational and the best of columnar databases

What is it?

The IBM Smart Analytics Optimizer is a workload optimized, appliance-like, add-on, that enables the integration of business insights into operational processes to drive winning strategies. It accelerates select queries, with unprecedented response times.

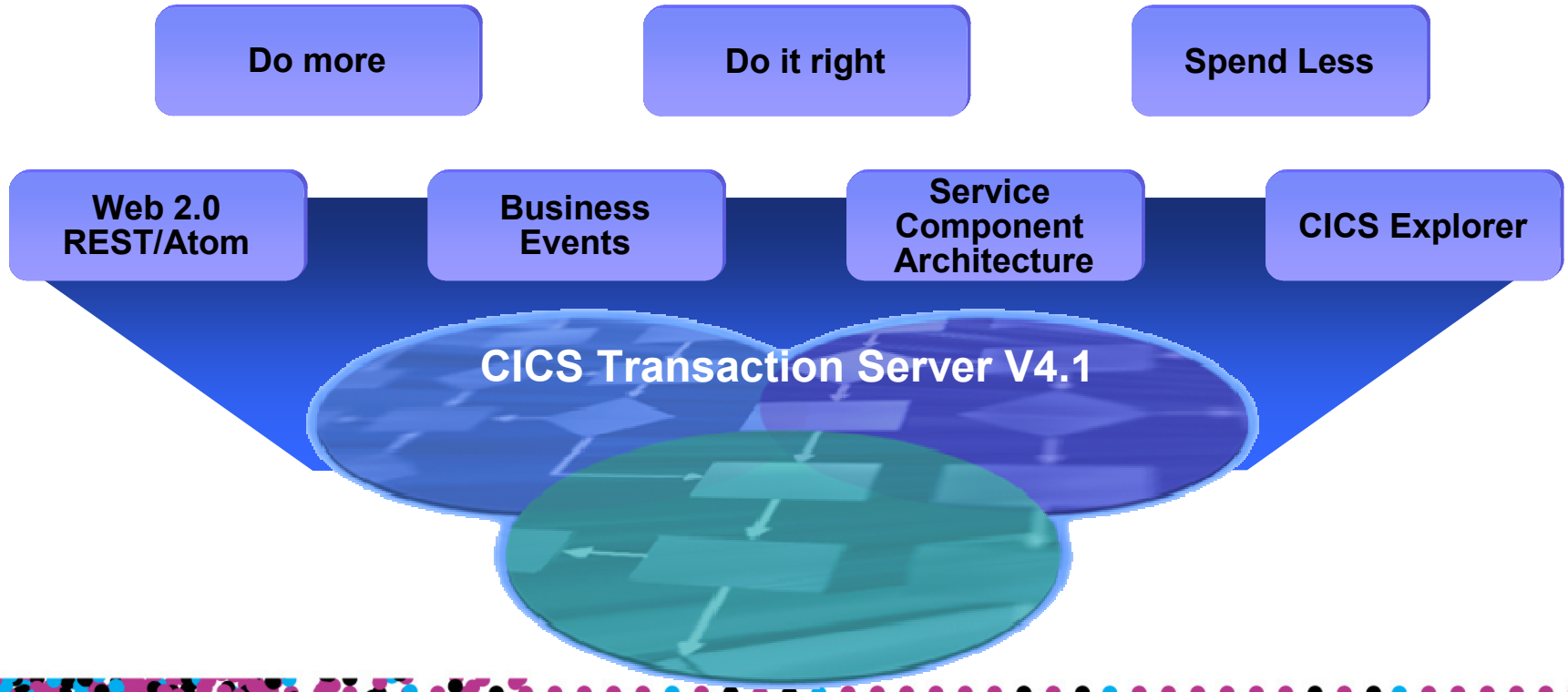
How is it different

- **Performance:** Unprecedented response times to enable 'train of thought' analyses frequently blocked by poor query performance.
- **Integration:** Connects to DB2 through deep integration providing transparency to all applications.
- **Self-managed workloads:** queries are executed in the most efficient way
- **Transparency:** applications connected to DB2, are entirely unaware of ISAO
- **Simplified administration:** appliance-like hands-free operations, eliminating many database tuning tasks

Breakthrough Technology Enabling New Opportunities

Spotlight: CICS Transaction Server V4.1

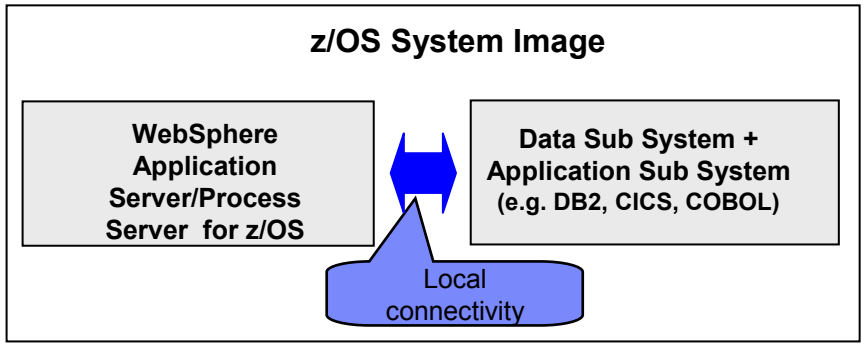
- Compete **with insight into business processes and modify business applications quickly**
- Comply **with corporate, industry, and government policies to manage business risk**
- Control **costs by simplifying IT infrastructure and productivity through easier-to-use interfaces & functions**

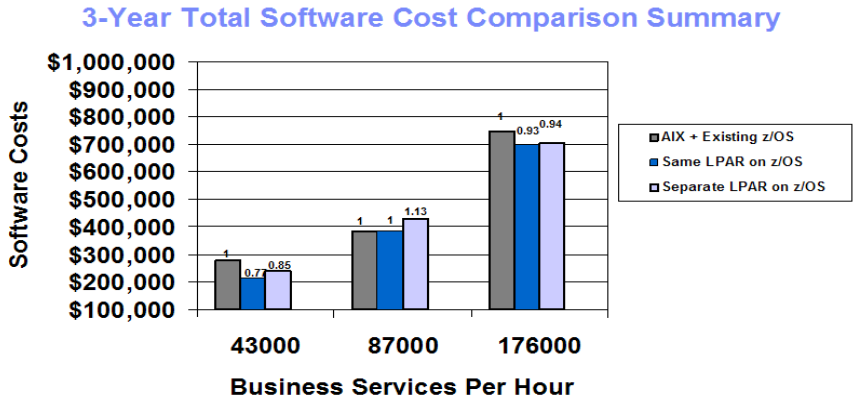


Websphere Performance Optimization with Co-location

Deploying application servers, data sub systems and application sub systems

Co-located Deployment





Top five 5 reasons for Co-location

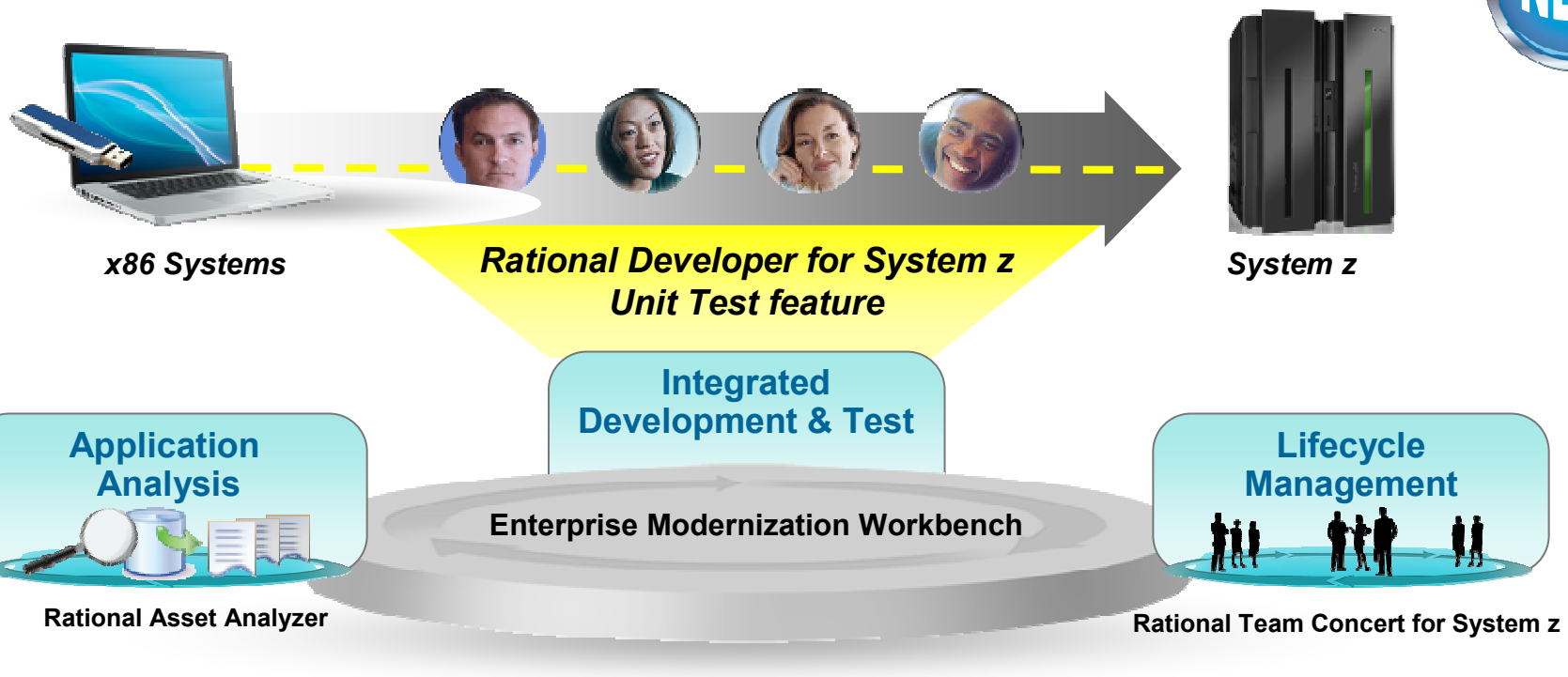
- 52% more throughput when WAS for z/OS is co-located with DB2 in the same LPAR
- Up to 34% overall CPU savings with WebSphere Application Server and DB2 on the same LPAR
- 500% improvement over Web Services when WebSphere Application Server co-located with application sub systems
- 3-year TCA shows WAS / WPS are price neutral when compared to running equivalent workload on distributed servers
- Networking costs plunges, while infrastructure is drastically simplified by leveraging existing assets and infrastructure

Additional Benefits

- Improving team collaboration
- Align business goals with downstream design
- Operational benefits (QoS), such as DR, scalability, and high availability
- Incremental strategic modernization

New Rational solutions for System z

A more affordable and portable development workbench for System z



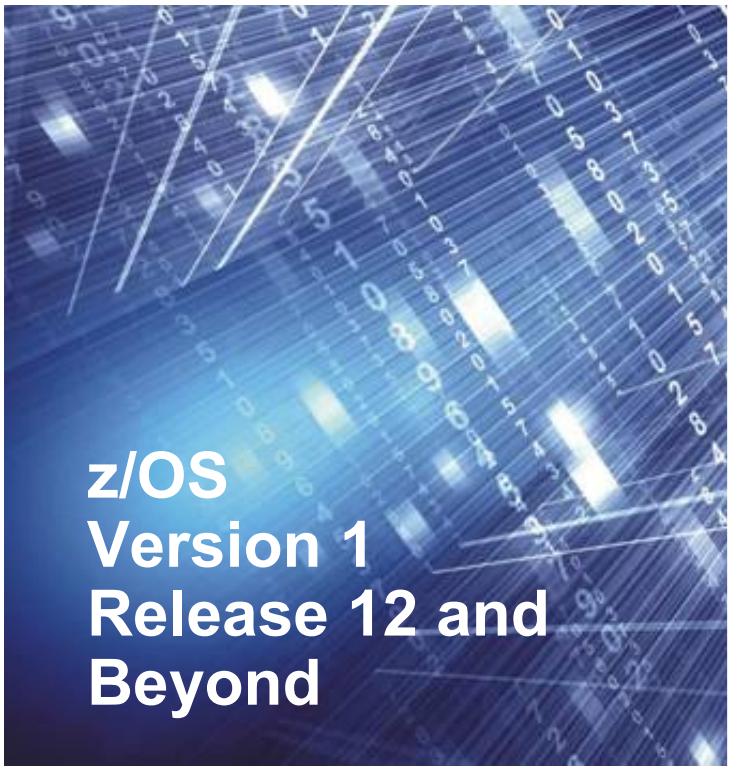
- Portable System z environment for development and testing on x86 systems
- Opens up System z development to wider range of developers
- Eliminating the cost differential between distributed and System z development

Note: This Program is licensed only for development and test of applications that run on IBM z/OS. The Program may not be used to run production workloads of any kind, nor more robust development workloads including without limitation production module builds, pre-production testing, stress testing, or performance testing.

Extending leadership capabilities for the Dynamic Infrastructure

- **A Summary of z/OS Strategy**

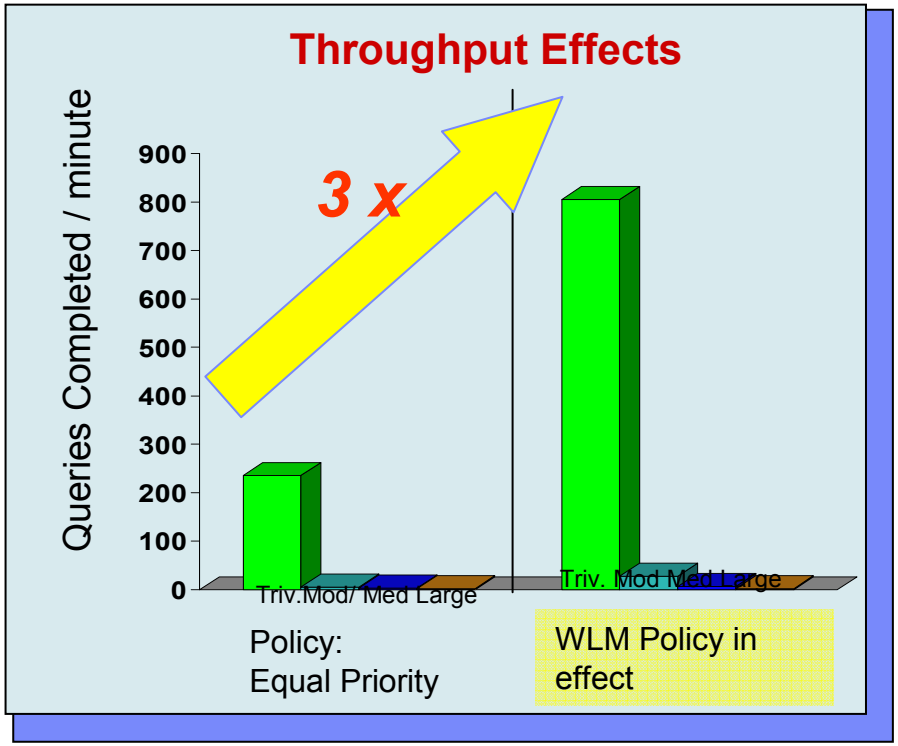
  - Trusted - the latest encryption technologies, centralized security certificates, and foundation for unified enterprise-wide identity and access management reduce risk of fraud.
  - Responsive - communications that improve network recoverability, availability, and reduce complexity and latency of transactions
  - Accountable - enhanced measurement to support comprehensive control, analysis, risk management, audit, and compliance plans
  - Smart - a system that learns heuristically from its own environment and is able to anticipate and report on potential issues for predictive analysis

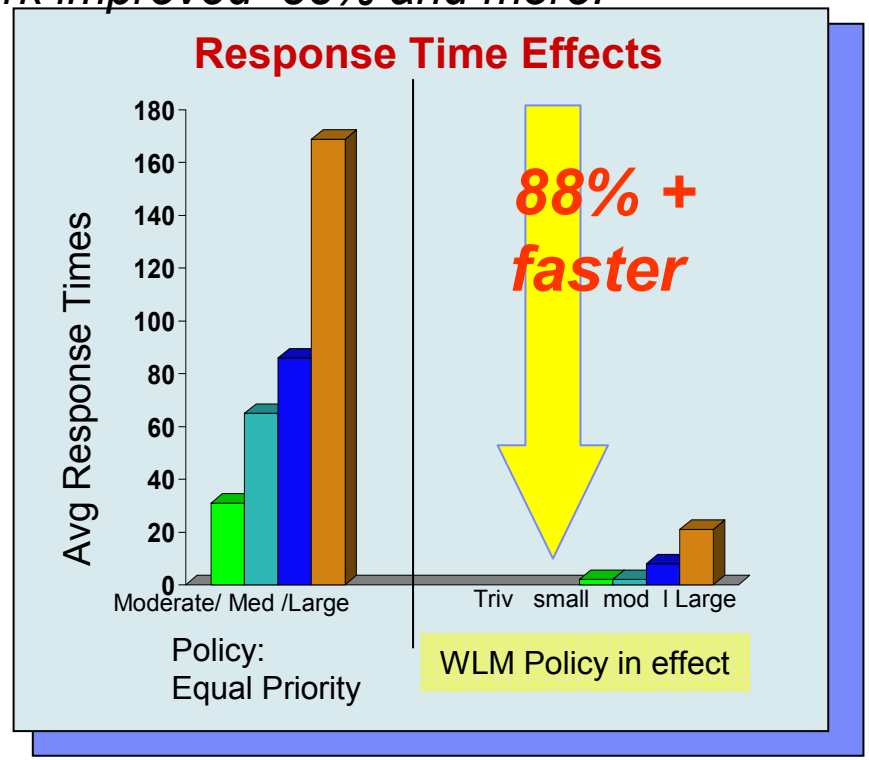


Policy Based Performance

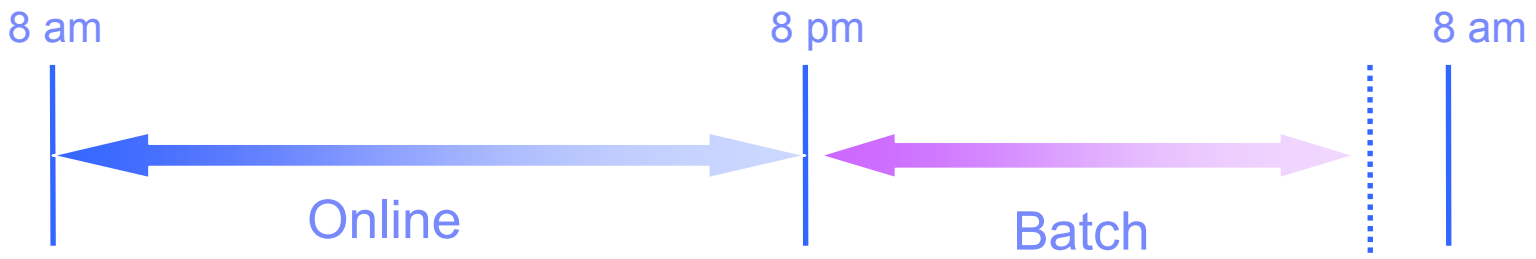
Prevent large queries from monopolizing a system

Number of critical queries that completed: tripled,
Response times for critical work improved 88% and more.

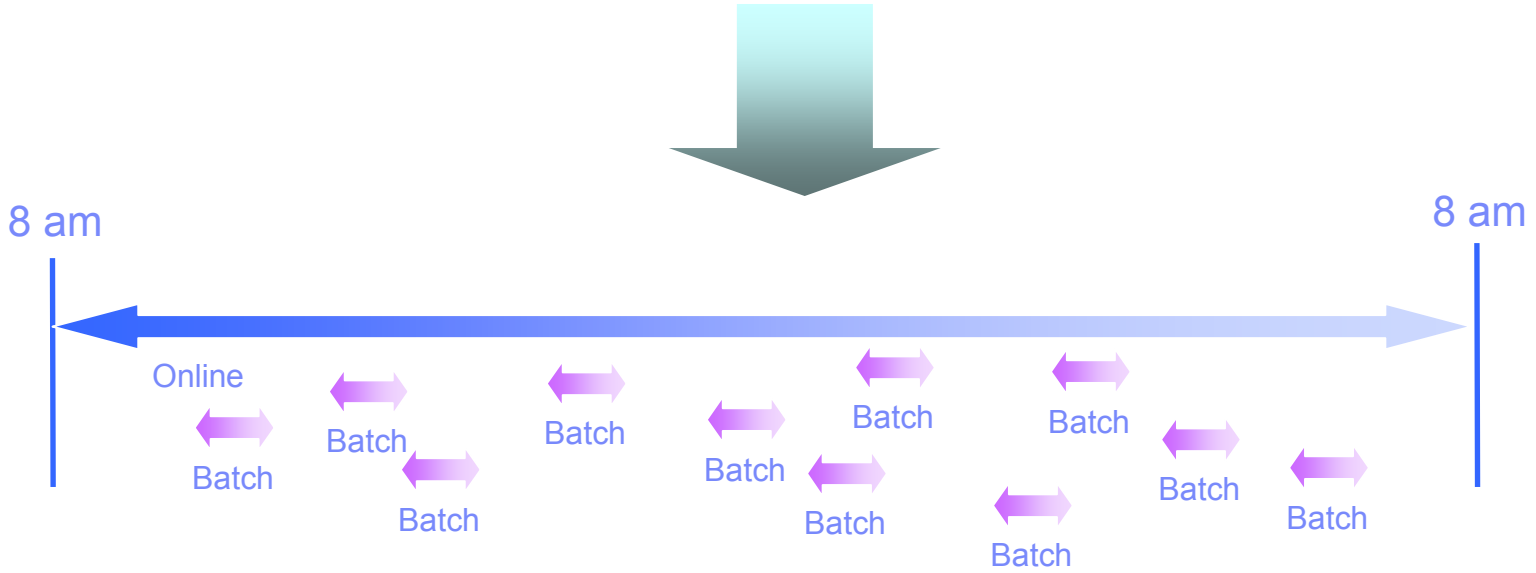




Continuous Batch Processing



Current Batch Processing Technique



Going forward, Batch Processing Techniques

Fractional Availability Improvements Are Important

Example: Financial Services Company

- $300B assets, 2500+ branches, 15M customers
- Retail banking, loans, mortgages, wealth management, credit cards
- CRM System – branches, financial advisors, call centers, internet
- Number of users – 20,000+

	Unix/ Oracle	***Systemz DB2***
Availability %	**99.825%**	**99.975%**
Annual outage	**15h 20m**	**2h 11m**
Cost of Downtime	$22.9M	$3.3M

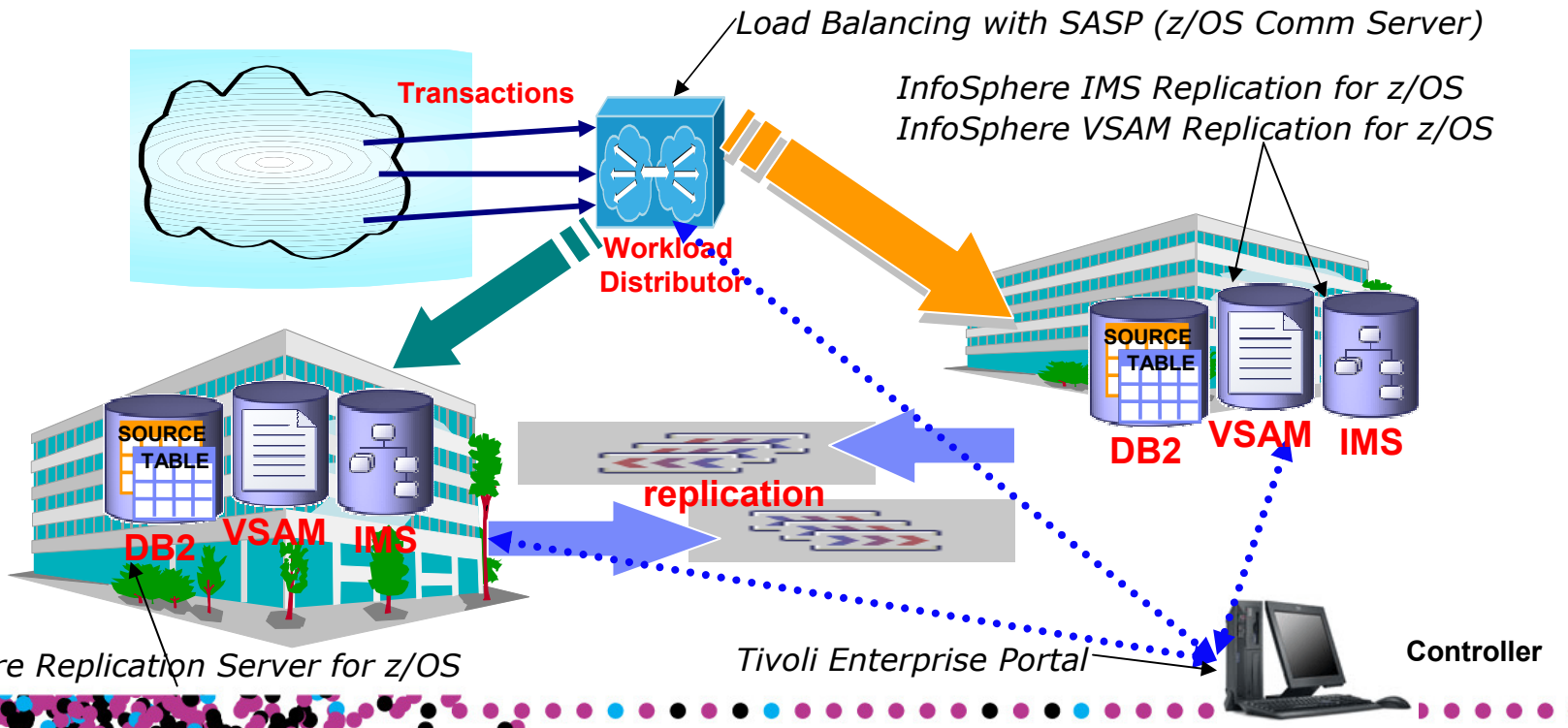
Financial Impact of Downtime Per Hour

Industry segment	*Cost*
Energy	**$2,818K**
Telecommunications	**$2,066K**
Manufacturing	**$1,611K**
Financial	**$1,495K**
Information Technology	**$1,345K**
Insurance	**$1,202K**
Retail	**$1,107K**
Pharmaceuticals	**$1,082K**
Banking	**$997K**
Consumer Products	**$786K**
Chemicals	**$704K**
Transportation	**$669K**

Sources: ITG Value Proposition for Siebel Enterprise Applications, Business case for IBM System z & Robert Frances Group

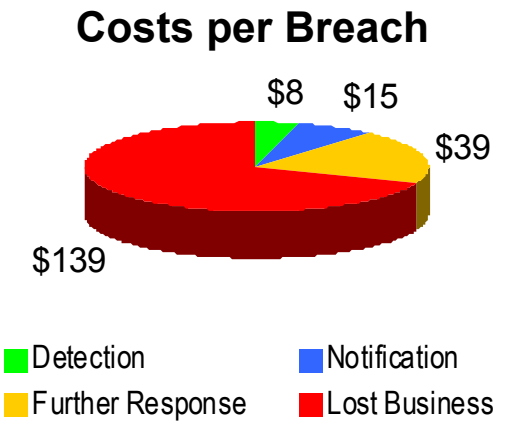
Active/Active – What is it ?

- **Two or more sites, separated by *unlimited* distances, running the same applications and having the same data to provide cross-site workload balancing and Continuous Availability / Disaster Recovery**
- **Paradigm shift: failover model => near continuous availability model**



High Cost of Security Breaches

- Average cost of security breaches continues to rise according to a 2008 Ponemon Security Study
- Average costs of a data breach: $202 *per record*
  - Average total: $6.6M *per breach*
  - Cost of lost business: on average $4.59 M
  - Over 84% of organizations had over one breach
- Each breach involved paper notifications wasting energy and paper
  - Worst of all, damages company reputation



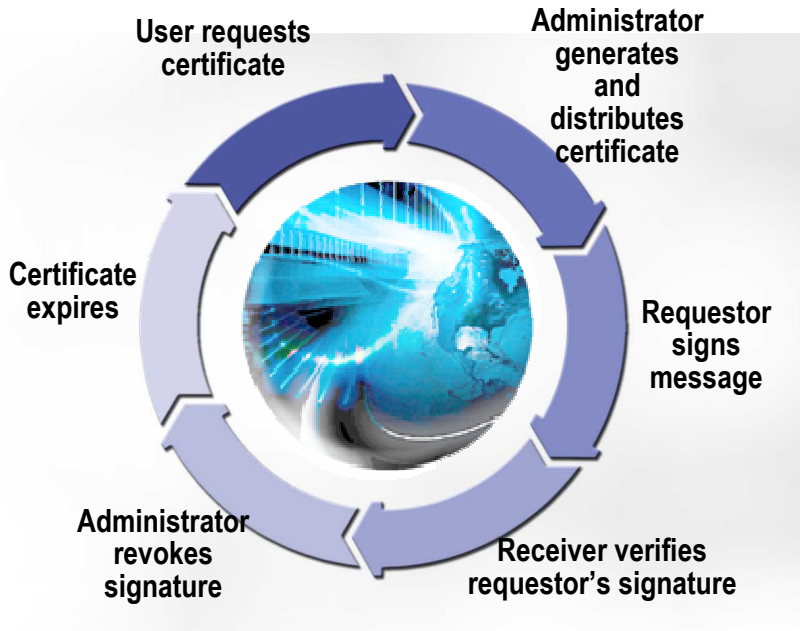
Notifications also consume at least one ton of paper!

(You don't see System z cited on front page news covering security breaches.)

A complete digital certificate solution

z/OS PKI Services

- **Alleviate need to pay a third party Certificate Authority**
  - z/OS PKI Services is a Certificate Authority solution in z/OS
  - Leverage z/OS skills and resources to address your certificate needs
- **Provides full certificate life cycle management**
  - Generate certificates for end users, network devices, browsers, and servers
  - Administration, approval, renewal, and revocation processes can be automated
- **PKI Services, many updates over the years!**
  - Improved automated e-mail notification for certificate requests, renewals, expirations (1.9)
  - Support for Unicode (UTF8 subset) – helps improve compatibility with existing CAs. (1.10)
  - New key archival/recovery capabilities – provides a backup process for recovery of keys (1.11)
  - Support for ECC keys (in addition to RSA and DSA), automation to find unused cert. serial numbers, support for Certification Management Protocol (CMP) for integration with existing Certificate Authority solutions (planned, R12*)

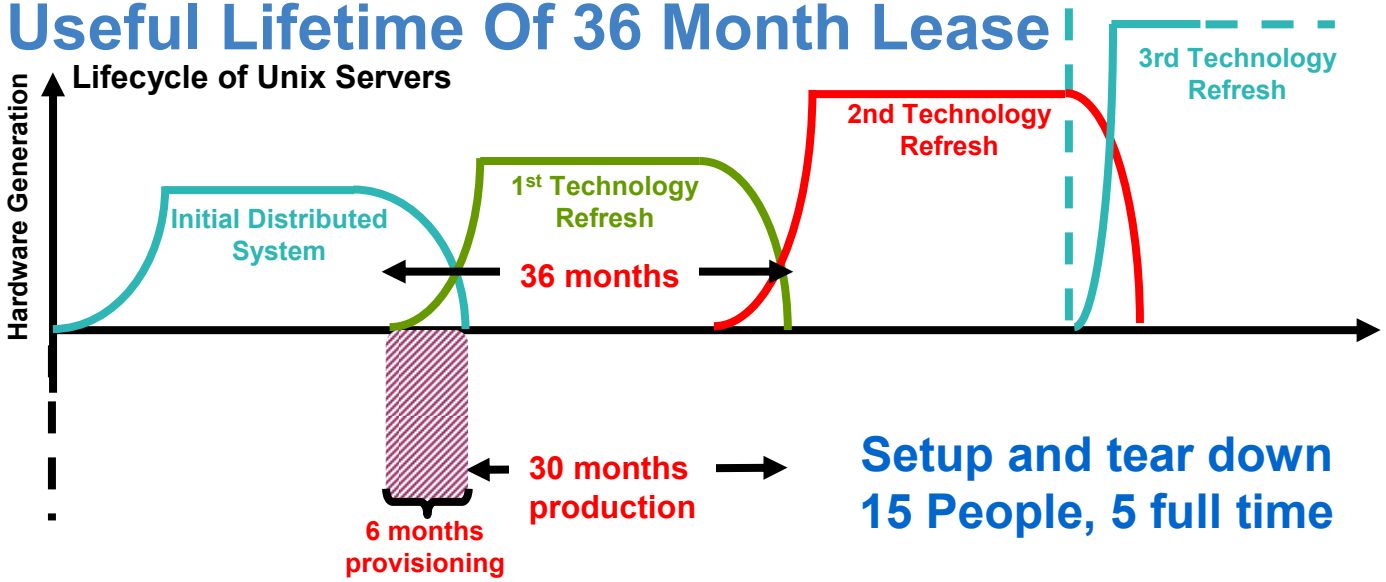


Example of feedback

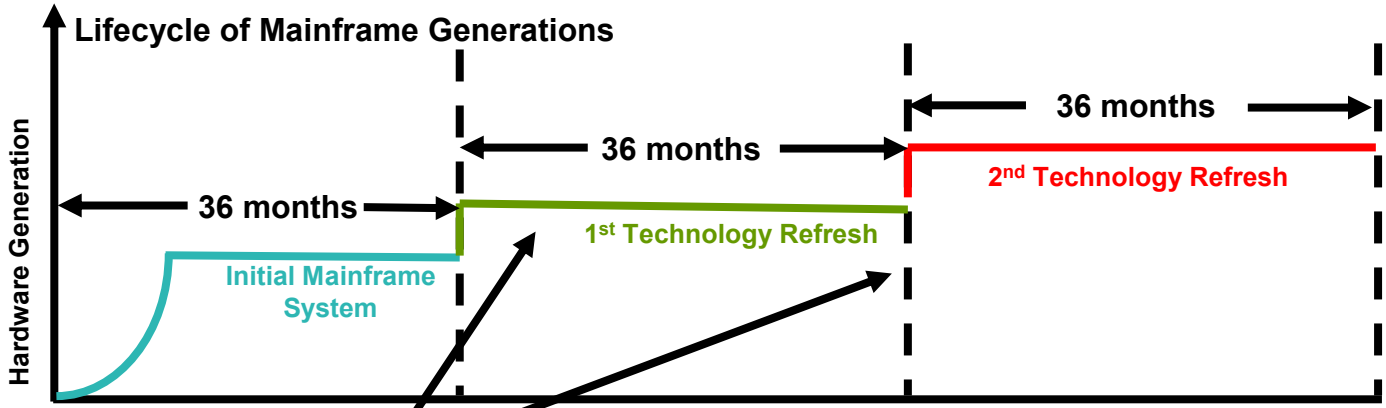
Used by a large bank to help secure connection between data center and branch offices - *Saved an estimated $16M a year*

* Statements regarding IBM future direction and intent are subject to change or withdrawal, and represents goals and objectives only.

New York Financial Services Company – Useful Lifetime Of 36 Month Lease



Setup and tear down
15 People, 5 full time



1 Weekend
upgrading to new hardware and software levels

36 months production

No need to retire the server, upgrade in place

Observed at a large financial service customer

In each 36 month lease there are only 30 months production use

Setup and tear-down time costs 25% more. Plus . . . 41 hours of FTE setup and tear down labor per server = $3,075

Weekend upgrades performed by IBM

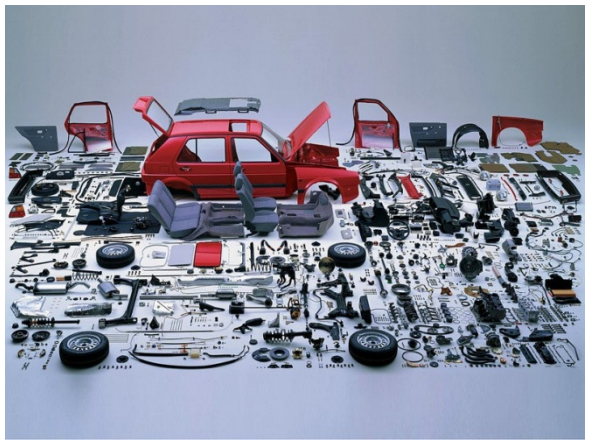
Capacity on demand pricing

Tivoli Service Automation Manager (TSAM)

- **Deploying & managing Cloud Services in a datacenter environment**
  - Dynamic instantiation and management of Cloud Services along their entire lifecycle
- **Raises the level of abstraction for Service Management in data centers from single LPARs, storage volumes, SW installations to Cloud Services as the units of management**
- **Integrated Management Solution**
  - Based on strategic Tivoli Process Automation Engine (TPAE)

The holistic view of a service...

…is more than the sum of its individual parts



Summary

- We are delivering a New Generation of z software and hardware
- System z is committed to extend and leverage decades of massive business investments
- The z ecosystem now enables Modern Application Development for the Next Generation of Applications
- System z is being re-architected for Enterprise Data Serving
- It's all about the economies of scale and how System z capabilities and 'Quality of Service' makes a difference




Thank You