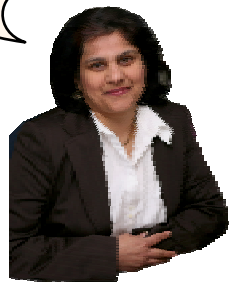


# Extending Your Mainframe for More Business Value

Extend Your Investment in System z

## Extend the Mainframe Like Never Before

We need to extend our environment to support new applications. Can the new mainframe handle this well?



Service Oriented Finance  
CIO

The System z10 has *breakthrough* performance and scale especially to support new workloads like Java. It's a complete redesign!



IBM

## System z10 Vital Statistics

	System z9	System z10
MIPS per processor	580	920
Maximum number of processors	54+10=64	64+13=77
Maximum MIPS per system	17,802	30,361
Clock-speed	1.7 GHz	4.4 GHz
I/O bandwidth	2.7 GBps	6.0 GBps
Max I/O thrupt/system	173 GBps	288 GBps
One MSU	7.3 MIPS	8.2 MIPS
PVU's (IFL)	100	120

**60% more**

**20% more**

**70% more**

**Compute-intensive tasks  
benefit ~ 2X**

**122% more**

**67% more**

**12% reduction in MLC  
price performance**

**32% reduction in OTC  
price performance**

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## Typical Banking Data Center Workload

- **Banking by Telephone**
  - ▶ Interactive Voice Response (IVR)
    - Voice XML with WebSphere Application Server
  - ▶ 50 transactions per second
    - Each transaction is also logged to DB2 or Oracle
  - ▶ 24x7x365 availability required
- **Branch Transactions Sent to Backend Core Systems**
  - ▶ Message backbone with WebSphere MQ
  - ▶ Millions of messages per day
- **Workload is Separated by Function**
  - ▶ Production, development, quality assurance testing
- **Let's Consider the Cost of Hardware, Software, Labor, Power, Cooling and Floor Space Over 5 Year Timeframe**

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## Three Choices to Run the Workload



Intel Servers



Intel Servers with VMWare



System z10 z/VM, Linux, IFL's

350 Intel Servers	45 Larger Intel Servers	1 System z10
2.8 GHz each	3.2 GHz each	24 IFL's 4.4 GHz
700 cores	360 cores	24 cores
2,464,650 rated capacity	1,263,555 rated capacity	14,238 MIPS
<b>Low Utilization</b>	<b>Better Utilization</b>	<b>High Utilization</b>

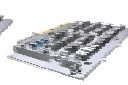
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## Resources Consumed by the Workload



Intel



Intel with VMWare



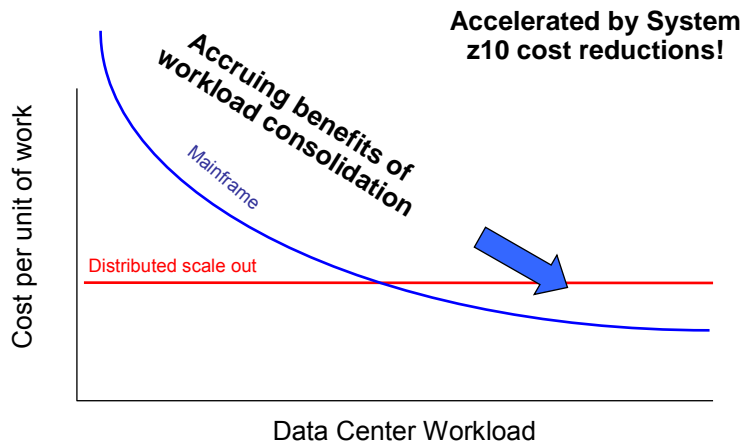
System z10

Servers	350	45	1	} <b>\$ 7 million yearly savings</b>
Memory GB	700	720	352	
Cores	700	360	24	
Software Licenses	742	352	40	
System Administrators	35	18	5	
Sq. Feet of Floor Space	135	75	62	
Kilowatt Hours Per Year	3.2M	697K	127K	

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## Mainframe Cost Per Unit of Work Goes Down as Workload Increases



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## Remember This:

- Deploying a new application on System z will probably cost less if:
- It is Incremental Workload on an existing system
- Specialty Engines can be used
- Disaster Recovery is required

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## The Value of Mainframe Computing

- ☑ Mainframe core business systems can be easily extended
- ☑ Mainframes deliver superior qualities of continuous operations, rapid scale-up, virtualization and security
- ☑ Consolidation is a proven way to save money and simplify operations
- ☑ Modern mainframes leverage the latest hardware and software technology for maximum business value
- ☑ Mainframes have a lower environmental impact
- ☑ Modern mainframe tools enable speed-to-value, flexibility, deployment, productivity and reduced cost

