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# Infrastructure Simplification: The Datacenter of Tomorrow

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sageza:

# Agenda

- Introduction to The Sageza Group, Inc.
- The state of IT infrastructure in the enterprise
- Marketplace forces in play
- The need for Infrastructure Simplification
- Summary
- Discussion

# The Sageza Group

- Independent market watch firm
  - Fact-based forward-looking analysis
  - Focused on enterprise behavior and business productivity
  - Provides services to Vendors and Enterprises
- Founded in 2001 - management start-up with key personnel from Zona Research
  - Headquartered in Silicon Valley, CA
  - European offices, London, England; Munich, Germany;

Sageza – the inside story

“Sageza” from Italian word “saggezza” meaning “wisdom”

# The Sageza Group

provides market insights that enable its clients to effectively manage within their current competitive environment, and to create their corporate future.

We do this by helping clients:

- ...Understand their markets and their relative position within each market;
- ...Respond to change resulting from new products, technologies, and competitors' actions;
- ...Position their company and its products for future growth;
- ...Anticipate user reaction to new product concepts and designs.

# The State of Enterprise IT Infrastructure

- During the late 1990s there was a bevy of IT investment
  - The allure of emerging Internet technologies and the promise of a bright future in the land of milk and honey
  - Enterprises of all stripes did not want to get “left behind”
  - Y2K was a convenient excuse to spend
  - Vendors aplenty capitalized on the panic and euphoria
- Unfortunately the investment was rarely strategic and often resulted in computing fiefdoms with minimal corporate leverage and ROI

Y2K = excuse = budgetary excess = build it because you can = wasted efforts = IT hangover  
and oh, the problem of enterprise IT demands didn't go away

# The State of Enterprise IT Infrastructure

- The vision of distributed n-tier computing paved the way to today's infrastructure.
  - The implementation of this vision resulted in a very distributed collection of IT resources both in terms of hardware and software
  - This collection of distributed resources led to the reuse of data in ways that were not previously considered possible
- Unfortunately, this physical implementation of n-tier computing is complex, costly, and cantankerous

Complex, Costly, Cantankerous, CFO Caustic, Curmudgeonly, Crippling...you get the picture

# The State of Enterprise IT Infrastructure

- The existing physically distributed n-tier solution is inefficient due to wasted CPU cycles, fragmented storage capacity, complex cabling, a massive “raised floor” footprint, etc. all of which leads to an operational nightmare.
- In other words, **excess overhead & underutilization**
- Nevertheless, the notion of n-tier computing remains sound
  - **N-tier computing is a logical concept, not a physical description**
  - Past attempts at realizing n-tier were mistakenly focused on h/w

What is n-tier?

It's the 3-tier and 4-tier (or more) distributed computing solutions in place today

# What is Enterprise IT Seeking?

- Cost reduction ( $\uparrow$ ROI)
- Better utilization
- Improved management
- Rapid provisioning
- Business continuity
- Disaster recovery
- Resiliency
- Security and Compliance
- Ability to make IT work for the enterprise, not the other way around
- Flexibility to respond to market challenges
- Leverage of untapped or underutilized corporate assets
- Delivering applications and data efficiently, effectively, if not entrepreneurially

IT really just wants it to work; IT staff want do more interesting things, like create new applications, improve ROI, and make more money



# Motivating Factors in the Marketplace

- Networking advances
- Rapid adoption of Linux
- Middleware & Java
- Blade architectures
- Grid computing
- IT cost containment
- The venerable mainframe
- Applications are abstracted from the operating system and underlying hardware
- The dynamic reallocation of IT resources is becoming a reality and user expectation
- **The basic economics of IT are changing**

# The Result: A New IT Landscape

- This confluence of customer needs and marketplace forces is dictating a new approach to IT implementation, maintenance, and management
- Physically mapped IT resources will give way to Logically or Virtually deployed IT services that are increasingly unaware of location & OS dependencies.
- The concepts of the “Remote Office” or “Remote Network” will become historic anachronisms

# A Vision of the New IT New Landscape

- Massively distributed networks & IT resources will be consolidated into 3 centers of gravity
  - Resources that **scale out**:
    - blades, grids, small scale distributed computing
  - Resources that **scale up**:
    - HPC, grids, mainframes, virtual blades
  - Resources that are **virtual**
    - CPU power, storage, management, data, applications, access, and most everything else!

Hmm...this all sounds very simplistic.

Hasn't technology taught us that simple things are too good to be true?

## Blades + Grids + Mainframes = New Flexibility

- These examples of dynamic scaling offer a new model for dynamic scaling and application of IT resources
  - Virtual blades being dynamically allocated within centralized environments
  - Physical and virtual blades are tied together through grids
  - Linux (or other) environments rapidly spun up and down as needed
  - Blades can be repurposed as needed or by schedule
  - Resource management and operation is centralized often by mainframe
  - Virtual resources are uniformly available to all blades
- The economics of shifting CPU intensive workload have clearly changed freeing up otherwise “unavailable” resources
- The economics of IT deployment and operation can change too

By the way, you can think of that zSeries LPAR as blade too.

Remember, it is a logical world in the future, not a physical one.

# Linux Is Real And Here To Stay

- Not just because the vendors tell you so, but their investments clearly will (IBM, HP, etc.)
- Linux continues being used for infrastructure (file, print, etc.) but more importantly is now hosting Enterprise Applications (SAP, PeopleSoft, etc.) and Databases (Oracle)
- Linux has become a viable hosting solution, and enterprises of all sizes have taken note
- Linux scales well, up, out, or virtually
- Linux offers a pricing model that is very attractive to cost-conscious organizations
- Foreign governments are forcing the issue (Germany, China, etc.)

and I didn't say Microsoft even once

or SCO

# Take Away Points

1. Existing physically distributed n-tier solutions are inefficient
2. n-tier computing is a logical, not physical concept
3. Organizations want IT to work flexibly, respond to market challenges, and leverage underutilized corporate assets
4. The basic economics of IT are changing
5. Physically mapped IT resources will give way to logically structured, and centrally managed virtual resources
6. Distributed networks & IT resources will be consolidated into 3 centers of gravity: scaling up, scaling out, and virtualization
7. Blades + Grids + Mainframes = New Flexibility
8. Linux will figure prominently in the new IT equation

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**Discussion**

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# Thank You for Your Attention

If you have any questions, opinions, or follow-up discussions, please contact me at

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