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:sageza:

Today's Consolidation Trends in the Data Center

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Data Center Decisions - Chicago

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Agenda

- Introduction to The Sageza Group, Inc.
- The state of the datacenter
- Motivating factors in the marketplace
- A vision of the new datacenter landscape
- Real life infrastructure simplification example
- 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; Milan, Italy;

Sageza – the inside story

"Sageza" from Italian word "saggezza" meaning "wisdom"

The State of the Datacenter

- 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 and 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 the Datacenter

- The vision of distributed n-tier computing paved the way to today's infrastructure.

  – The implementation of this vision resulted in a distributed collection of IT resources; both 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 the Datacenter

- 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
  - Today's consolidation efforts are largely about virtualization

What is n-tier?

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

What is the Data Center Seeking?

- Cost reduction (↑ROI)
- Better utilization
- Improved management
- Rapid provisioning
- Business continuity
- Disaster recovery
- Resiliency
- Security and Compliance

- Ability to make the data center 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

- New architectures: grids, blades, more use of SANs

- Regulatory compliance

- IT cost containment

- Linux and open source

- 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 Datacenter Landscape

- This confluence of customer needs and marketplace forces is dictating a new approach to datacenter 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 Datacenter 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
    - Blades can be repurposed as needed or by schedule
- The economics of shifting CPU workloads have clearly changed freeing up otherwise "unavailable" resources
- The economics of datacenter operation can change too

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

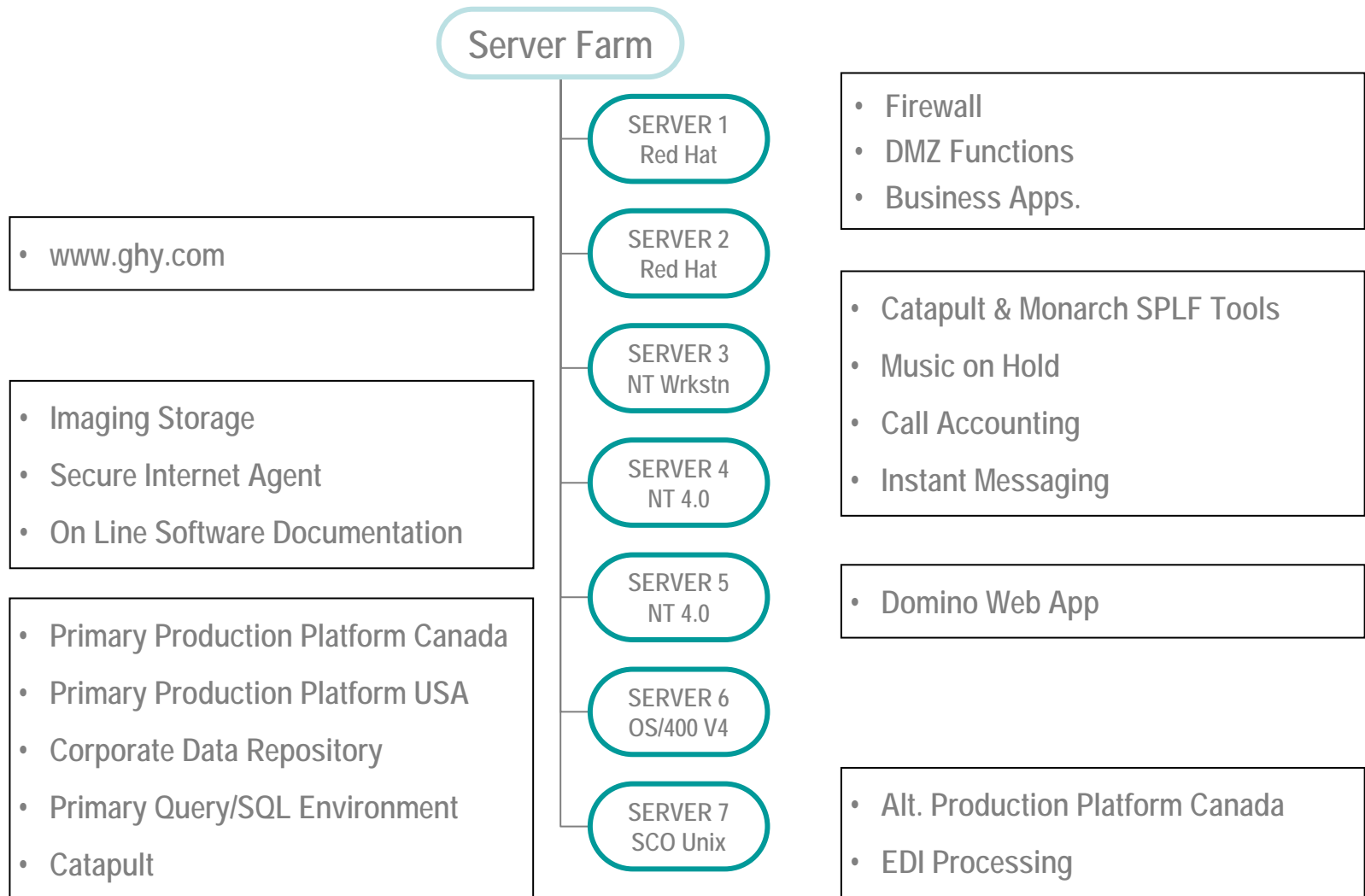Remember, it is a logical world in the future, not a physical one.

Real Life Infrastructure Simplification

- Geo. H. Young & Co. Ltd. and GHYUSA, Inc.

  – Canadian and USA customs brokerages with trade consulting and compliance advisory services

  – Located in Winnipeg, MB; CDN$10 million annual revenues, 102 employees, 3 in IT

  – Complex collection of equipment and engineering, Windows, Linux, OS/400, SCO

  – Had 7 servers, but was going to have to grow to 16 to support the requested workload

Infrastructure simplification isn't just for the big guys

This is a classic SMB organization

2002 – GHY Existing Infrastructure

Server Farm

SERVER 1
Red Hat

- Firewall
- DMZ Functions
- Business Apps.

SERVER 2
Red Hat

- www.ghy.com

SERVER 3
NT Wrkstn

- Catapult & Monarch SPLF Tools
- Music on Hold
- Call Accounting
- Instant Messaging

SERVER 4
NT 4.0

- Imaging Storage
- Secure Internet Agent
- On Line Software Documentation

SERVER 5
NT 4.0

- Domino Web App

SERVER 6
OS/400 V4

- Primary Production Platform Canada
- Primary Production Platform USA
- Corporate Data Repository
- Primary Query/SQL Environment
- Catapult

SERVER 7
SCO Unix

- Alt. Production Platform Canada
- EDI Processing

2003 – GHY Simplified Infrastructure

IBM eServer iSeries 270

- 1 way Processor
- OS/400, Domino, NT Workloads

Server Consolidation

- Primary CDN system
- Primary USA system
- Combines NT onto 2 Integrated xSeries Server cards (Win2K)
- Add Domino Mail – web mail

IBM eServer iSeries 820

- 4 way Processor
- Linux and AIX Workloads

Server Consolidation

- OS/400 Managing Partition
- 7 Virtual Linux partitions
- Infrastructure and Applications

*Alternate CDN Production Server

Music on Hold Server

*Alternate CDN Server is currently SCO, and is being ported to AIX to be consolidated

Music on Hold Server requires a sound card; something the eServer iSeries does not support

Benefits of Simplification & Centralization

VPN   Saving $66,000/year because of Linux based VPN

PDF   Saved over $40,000 in licenses with open source PDF creation tool

SPAM   Saving $30,000/year in labor cost due to SPAM filtering (Jan '04 email volume)

Bandwidth Blocked Internet radio and bandwidth requirement dropped by a 1/3 in 1 month

Forms   Open source forms creation application saved $80,000 for first application

E-biz   Latest form solution (March 2004) saved $24,000/year in preprinted forms cost

Time   In house developed e-filing Web based application now in client pilot with no extra cost to extend it

Cost   Prior to server consolidation, GHY IT spent 95% of their time keeping systems and network running. Now they spend 5%.
            3 IT personnel not hired saved $135,000/year in additional IT budget

For a C$10 million company, these are some real take to the bottom line savings

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 the data center to work flexibly, respond to market challenges, and leverage underutilized corporate assets
4. The basic economics of IT are changing
5. Distributed networks & IT resources will be consolidated into 3 centers of gravity: scaling up, scaling out, and virtualization
6. Blades + Grids + Mainframes = New Flexibility
7. Linux will figure prominently in the new IT equation
8. Infrastructure Simplification can provide tangible benefits to enterprises of most any size, not just the big guys

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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