



# Evolution of Shared Services

## Department of the Interior National Business Center

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# The National Business Center Services and Scale

- The National Business Center (NBC) is an **authorized Shared Services Provider**.
- NBC provides DOI and other Federal Agencies with **consolidated business management services and systems**.
- NBC offers a **multi-level and integrated service model** including infrastructure hosting, applications management, technical support, user support, transaction processing and business services.
- **Customers obtain value** from NBC services through economies of scale, expertise, lower risk, quality, security, and transparency.

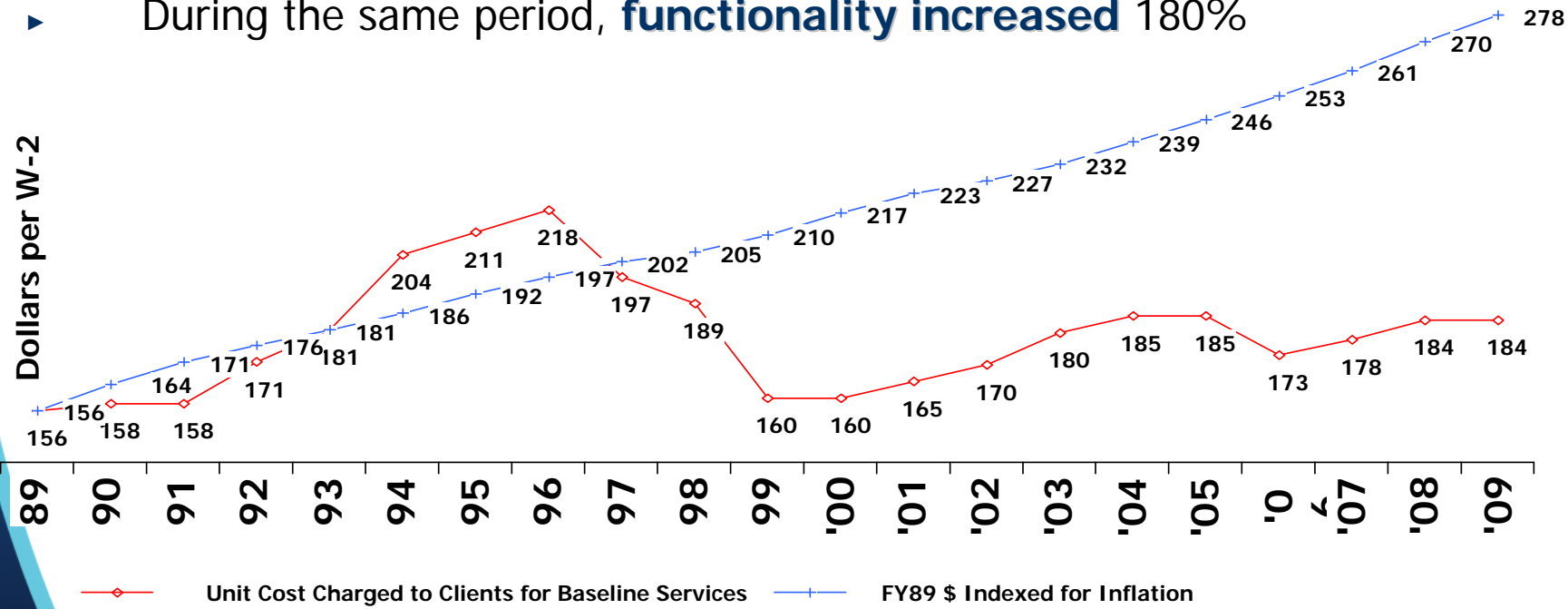
| NBC Lines of Business         | Services   | Revenue  |
|-------------------------------|--|--|
| Payroll and HR Services       | <ul style="list-style-type: none"> <li>• Payroll Processing</li> <li>• HR Systems and Services</li> </ul>  | \$ 95.3 M  |
| IT Services                   | <ul style="list-style-type: none"> <li>• Hosting Services</li> <li>• Customer Support Services</li> <li>• Website Development and Support</li> </ul>                           | \$ 83.4 M  |
| Financial Management Services | <ul style="list-style-type: none"> <li>• Core Financial Hosting</li> <li>• Application Management</li> <li>• Accounting Services</li> </ul>                                    | \$ 77.2 M  |
| Acquisition Services          | <ul style="list-style-type: none"> <li>• Life Cycle Contract Management</li> </ul>   | \$ 48.9 M  |
| Other Services                | <ul style="list-style-type: none"> <li>• Consulting Services</li> <li>• Facilities and Employee Services</li> <li>• Appraisal Services</li> <li>• Aviation Services</li> </ul> | \$ 11.1 M<br>\$ 66.9 M<br>\$ 12.6 M<br>\$ 12.3 M |
| <b>Total</b>                  |  | <b>\$407.7M</b>                                  |





# The National Business Center Economies of Scale

- ▶ During FY89 – FY08, inflation adjusted **unit costs declined** by 30%
  - FY08 costs are 34% lower than the FY89 costs adjusted for inflation
  - FY08 costs (\$184) are about the same as in FY93 (\$181)
- ▶ During the same period, **functionality increased** 180%

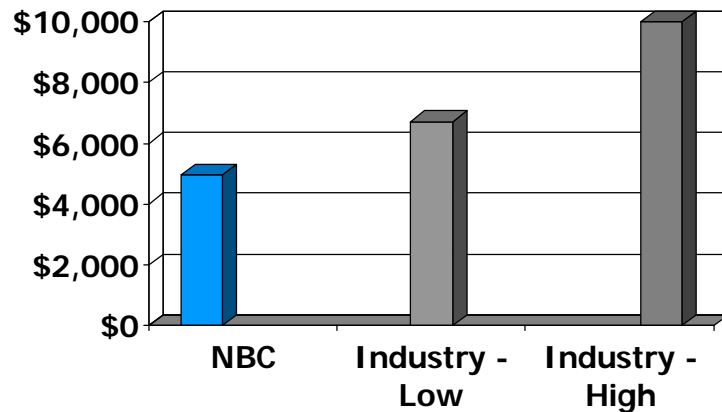




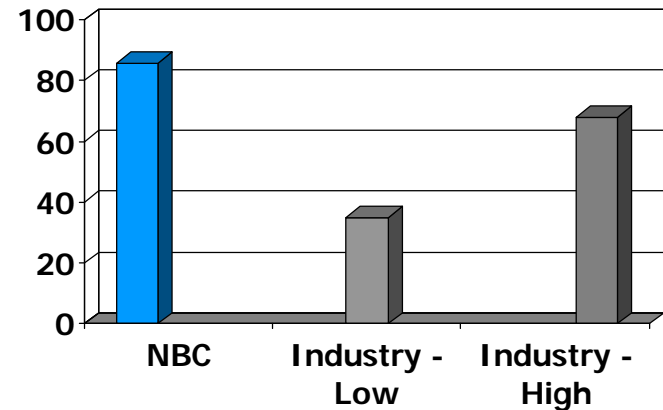
# The National Business Center Extremely Efficient Solutions

- ▶ The NBC operates a **highly efficient** IBM mainframe environment
  - Costs per MIPS are well below the industry standard
  - Productivity is well above the industry standard
- ▶ The IBM System Z platform enables **the NBC business model**

Cost Per MIPS



FTE Per MIPS





# The National Business Center Business Case for System Z

*A multi-functional Federal Shared Services Center uses Red Hat Enterprise Linux on System z9 and z10 to address significant data center cost and capacity concerns, achieve economies of scale, and enable cloud computing services.*

## ➤ The Challenge

As legacy financial applications are gradually retired, the share of the core infrastructure and costs utilized by the payroll application would increase by 40% to 60%.

## ➤ The Solution

Upgrade the z9 mainframe to run a modern operating system (z-Linux) on some processors. Continue to run legacy z-OS operating system on other processors for payroll and implement all new enterprise business applications on the z-Linux platform.

## ➤ The Benefits

- Increase server utilization by 150%.
- Reduce power consumption from max levels.
- Lower operations costs by more than 30%.
- Significantly reduce cycle times for provisioning.
- Extend economies of scale by increasing infrastructure leverage.





# The National Business Center IT Operational Challenges



## Costs & Service Delivery

- Rising costs of systems and networking operations
- Explosion in volume of data and information
- Infrastructure sprawl as demands increase



## Business Resiliency & Security

- Security of your assets & your clients' information
- Landslide of compliance requirements
- Systems and applications need to be available



## Energy Requirements

- Rising energy costs & rising energy demand
- Power & thermal issues inhibit operations
- Environmental compliance & governance mandates



## Flexible & Adaptive

- Difficult to deploy new applications and services
- Social networking expectations
- Siloed business applications and infrastructure





# The National Business Center Information and Technology Security



## IT Security Challenges

- Sensitivity of NBC information
- Certification and accreditation of systems
- Assurances of confidentiality, integrity, and validity of data
- Personally identifiable information (PII)
- Operational controls against unauthorized access and use

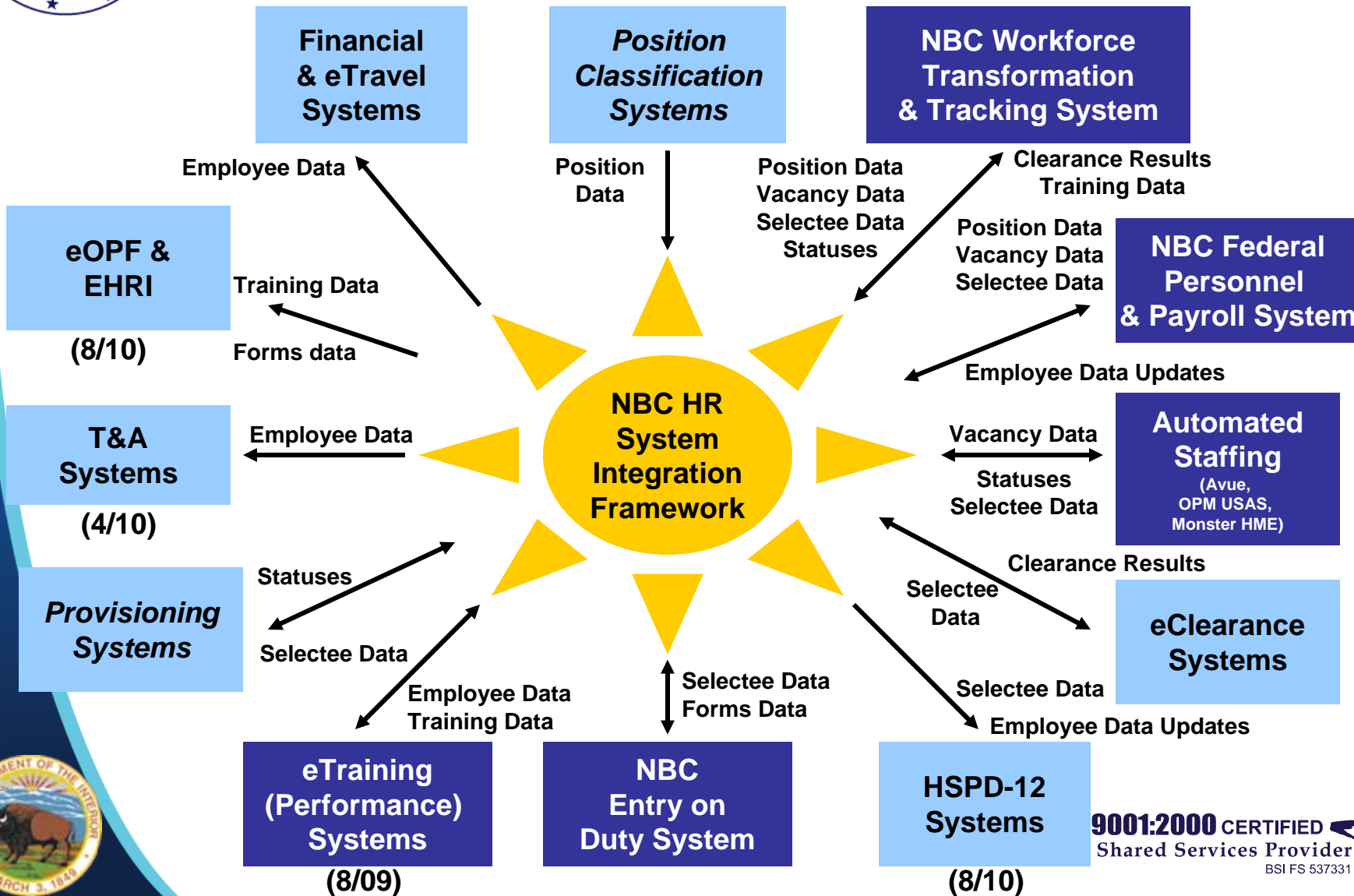
## NBC Strategies

- Social engineering and awareness
- Testing and mitigation
- Encrypted access, storage, and transmittal
- Standardized desktops, servers, databases
- Physical security protection
- Multi-faceted monitoring and response
- Security policies and hosting





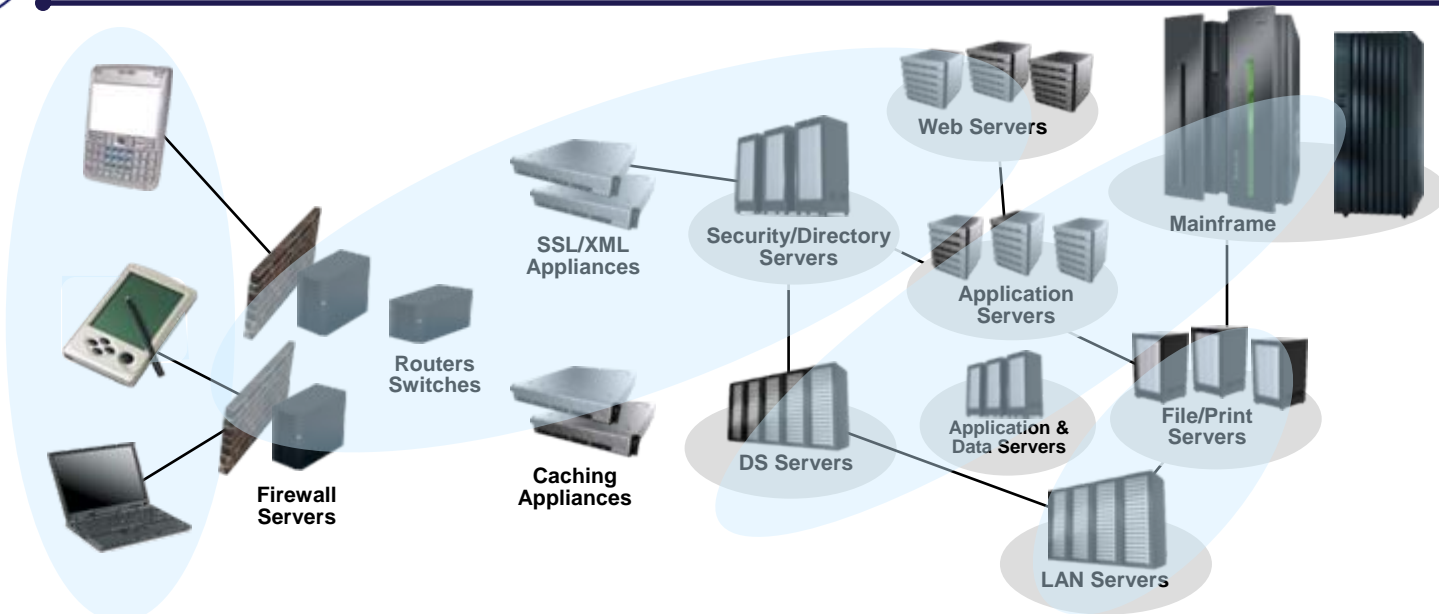
# The National Business Center SOA Based Real Time Integration







# The National Business Center Z-Linux Virtualization



## Virtualization Capabilities

- Dynamic provisioning and resource mgmt.
- Massively scalable and responsive
- Robust security model
- Highly available
- Single management and policy framework
- Extensive audit and monitoring
- Considerable improvements in efficiency
- Virtually accessible and managed

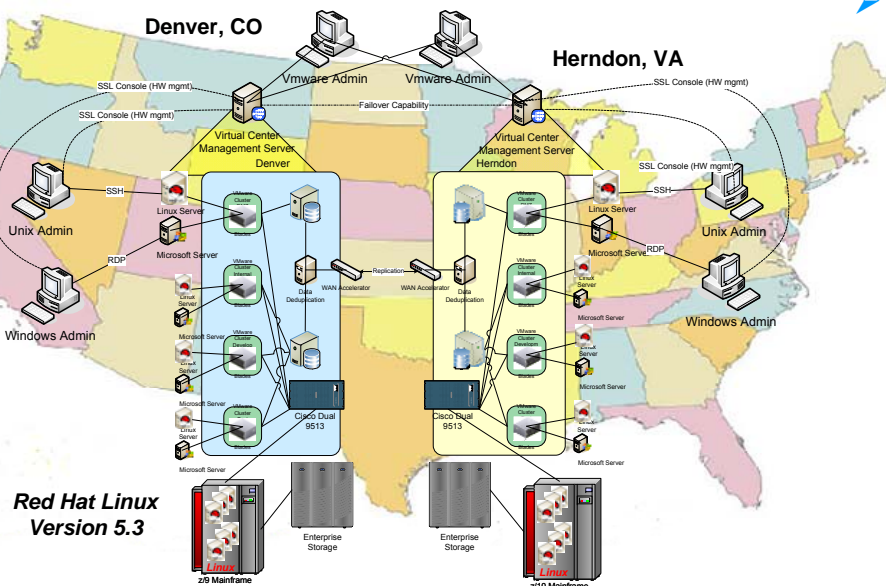
## Virtualization Business Case

- Significant increase in utilization
- Reduction in support requirements
- Considerable improvement in power consumption
- Decrease in sw/hw licenses and costs
- Lowers disaster recovery costs





# The National Business Center Dual Operating Environments



## zLinux for Business Economic Values

- Simplified policy and management domains across the multi-tier architecture
- Highly reliable and highly available platform
- Leverage current NBC resources and skill sets
- End-to-end management view of distributed application components
- Support multi-tenancy including provisioning, metering and cost by usage
- Consolidated disaster recovery
- Proven economies of scale and efficiency

## zLinux for NBC Cloud Infrastructure and Scalability

- Dynamic allocation in NBC Cloud environments
- Support for both upward and downward scalability
- Significantly reduce cycle times for provisioning
- Support for dynamic CPU and memory allocation

## zLinux for Increased Security

- Combine with zLinux Mainframe and Red hat O/S, NBC Cloud infrastructure has increased Controlled Access Protection Profile (CAPP) level 5 and Level 4+ Common Criteria
- Enterprise security access control

## zLinux for Green IT

- Increase in server utilization reduces power consumption
- Reduction in physical servers frees up precious floor space
- Provides additional capacity for continued business growth

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Shared Services Provider  
BSI FS 537331





# The National Business Center Cloud Services

| Cloud Service                | Description   | NBC Launch           |
|------------------------------|---|----------------------|
| SaaS<br>(NBC Apps)           | Software applications delivered over the Internet, available on-demand, and typically run from within a web browser.  | Q4 2009<br>(ongoing) |
| PaaS<br>(NBC Stage)          | A fully-fledged software development and hosting environment available as a service over the Internet. Applications are built to run on a specific PaaS platform.     | Q4 2009              |
| IaaS<br>(NBC Grid)           | Computer infrastructure such as servers, desktops or network equipment, delivered over the Internet. IaaS resources are able to scale easily according to demand.     | Q4 2009              |
| Authentication<br>(NBC Auth) | Allows authentication between applications in NBC's Cloud product suite to occur seamlessly and links back to an agency's internal directory services infrastructure. | Q4 2009              |

- **Enterprise:** NBC's very large enterprise application install base provides sufficient scale to ensure competitive unit pricing.
- **Customer Service:** NBC's approach to meeting the needs of customers has earned it an ISO-9001 certification.
- **Performance:** NBC's commitment to service level performance provides full transparency and reporting.
- **Security:** NBC's defense in depth security architecture meets all Federal security requirements including FISMA and PII.
- **Virtualization:** NBC has implemented virtualized z-Linux and X86 environments.
- **SOA:** NBC has embraced SOA for an integrated and accessible SaaS approach.

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# The National Business Center Z-Platform Strategy

*Workload performance varies by application and can be best served by different platforms or the right mix of multiple platforms.*

**CPU Intensive & High Utilization Applications:**  
GIS, Animation Rendering, etc.

**Stand Alone Applications:** Legacy Systems,  
not designed/optimized for System Z.

**ERP Solutions:** Generally, these environments are Mixed  
between Distributed and zLinux. It is often that the  
workloads are variable and unpredictable.

**LDAP security services:** There are both open  
source OPEN LDAP products as well as  
commercial products. Example: Enterprise  
Access Control Services (EACS), etc

**OLTP Systems** – Applications with high transaction  
throughput requirements. System Z has high  
clock speed and improves decimal floating point in  
hardware capabilities.

**Java Application Development Platforms:** Custom  
software development environments with  
streamlined provisioning to cloud production.

**Optimal for  
System z**

**Optimal for  
other platforms**

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