Optimization for your z/VSE data

Wilhelm Mild
IT Architect
mildw@de.ibm.com

http://www.ibm.com/zVSE
http://twitter.com/IBMzVSE

Trademarks

The following are trademarks of the International Business Machines Corporation in the United States, other countries, or both.

Not all common law marks used by IBM are listed on this page. Failure of a mark to appear does not mean that IBM does not use the mark nor does it mean that the product is not actively marketed or is not significant within its relevant market.

Those trademarks followed by ® are registered trademarks of IBM in the United States; all others are trademarks or common law marks of IBM in the United States.

For a complete list of IBM Trademarks, see www.ibm.com/legal/copytrade.shtml:

*, AS/400®, e business(logo)®, DBE, ESCO, eServer, FICON, IBM®, IBM (logo)®, iSeries®, MVS, OS/390®, pSeries®, RS/6000®, S/30, VM/ESA®, VSE/ESA, WebSphere®, xSeries®, z/OS®, zSeries®, z/VM®, System i, System i5, System p, System p5, System x, System z, System z9®, BladeCenter®

The following are trademarks or registered trademarks of other companies.

Adobe, the Adobe logo, PostScript, and the PostScript logo are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States, and/or other countries.
Cell Broadband Engine is a trademark of Sony Computer Entertainment, Inc. in the United States, other countries, or both and is used under license therefrom.
Java and all Java-based trademarks are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.
Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.
Intel, Intel logo, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Celeron, Intel Xeon, Intel SpeedStep, Itanium, and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.
UNIX is a registered trademark of The Open Group in the United States and other countries.
Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.
ITIL is a registered trademark, and a registered community trademark of the Office of Government Commerce, and is registered in the U.S. Patent and Trademark Office.
IT Infrastructure Library is a registered trademark of the Central Computer and Telecommunications Agency, which is now part of the Office of Government Commerce.

* All other products may be trademarks or registered trademarks of their respective companies.

Notes:
Performance is in Internal Throughput Rate (ITR) ratio based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput improvements equivalent to the performance ratios stated here.
IBM hardware products are manufactured from new parts, or new and serviceable used parts. Regardless, our warranty terms apply.
All customer examples cited or described in this presentation are presented as illustrations of the manner in which some customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics will vary depending on individual customer configurations and conditions.
This publication was produced in the United States. IBM may not offer the products, services or features discussed in this document in other countries, and the information may be subject to change without notice. Consult your local IBM business contact for information on the product or services available in your area.
All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.
Information about non-IBM products is obtained from the manufacturers of those products or their published announcements. IBM has not tested those products and cannot confirm the performance, compatibility, or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.
Prices subject to change without notice. Contact your IBM representative or Business Partner for the most current pricing in your geography.

Agenda

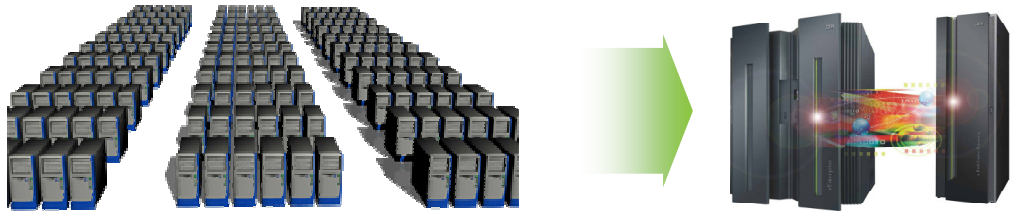
- **zEnterprise and z/VSE Positioning**
- **z/VSE Data Optimization Options**
- **Wrap-up**

The Data Center Challenge - Controlling IT complexity and cost while maintaining daily operations

- An Integrated system of multiple architectures for optimizing the deployment of multi-tier workloads
- Creating a single point of control for management and administration to reduce operational overhead by up to 80%, including:
  - Power and Facilities
  - Labor
  - Software License

zEnterprise

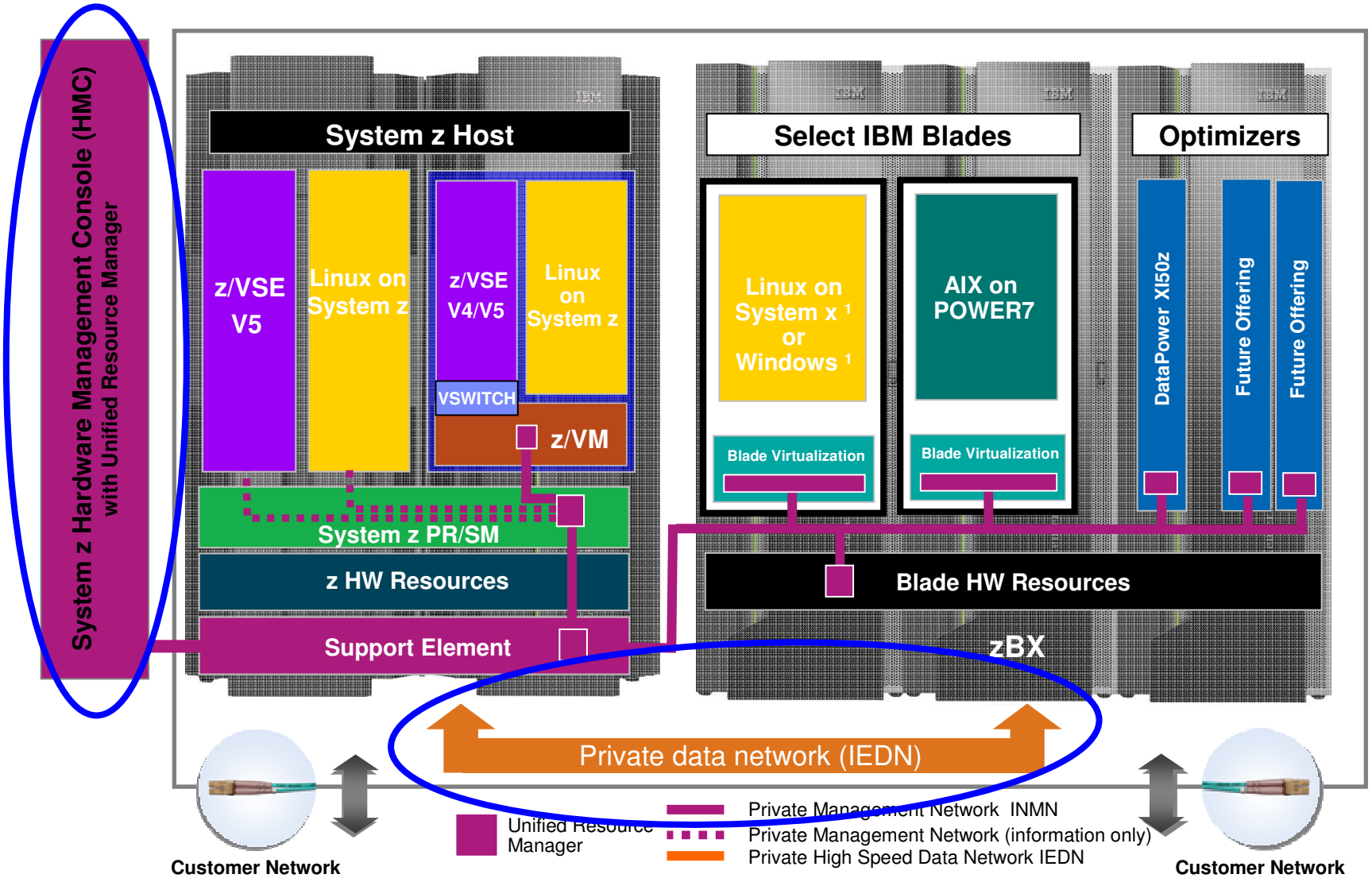
- Lowers cost of acquisition by up to 56%
- Reduces cost of ownership by up to 55%*



A strategic systems platform….
Helping to free up resources for critical projects and establish a base for the future

- Based on IBM analysis of a large Financial Services company Datacenter. See details on ibm.com/systems/zenterprise/ Deployment configurations based on IBM studies and will vary based on workload characteristics. Price calculations based on publicly available US list prices, prices will vary by country.

z/VSE 5 Support for IBM zEnterprise - IEDN to zBX



[1] All statements regarding IBM future direction and intent are subject to change or withdrawal without notice, and represents goals and objectives only.

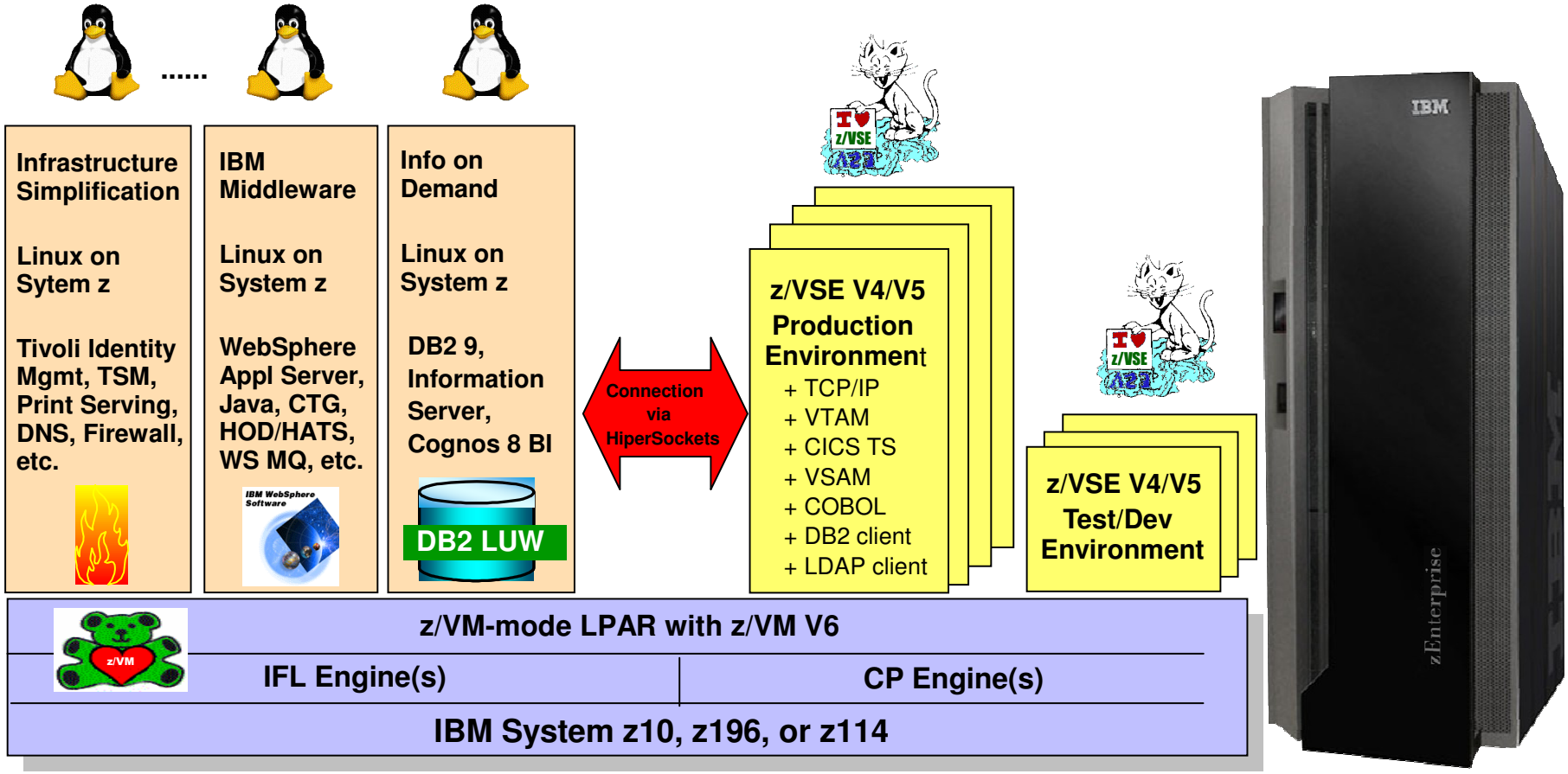
z/VSE Strategy w/ Linux on System z

Hybrid Environment leveraging z/VSE, z/VM, and Linux on System z

Protect existing VSE investments

Integrate using middleware and VSE connectors

Extend with Linux on IBM System z technology & solutions



Agenda

- **zEnterprise and z/VSE Positioning**
- **z/VSE Data Optimization Options**
- **Wrap-up**

Data Optimization purposes

- Standard interfaces to data
  - Our interfaces inhibit standard products for data analysis
- Consolidated view of all data
  - We have several different data stores and duplicated data
- Ease of access to business data
  - Operational data are in proprietary format and closed
- Real-time access to business data
  - Data we analyze are too old and not real-time
- Reduce time-to-market
  - Programs to promote our products need to long to get on market
- Take faster decisions
  - We can not get feedback from marketing actions
- Business Control
  - We can not see what we have sold and what ROI is
- Business Analytics
  - We can not see who has not sold/performed and which products could make it better

Define IT Standards in your Enterprise !

- Do you have an enterprise catalog for IT standards
  - Standards for new software acquisition to avoid data diversification
  - Application portfolio based on a list of supported data pools /databases
  - Databases based on in-house knowledge and platforms
  - Departmental goals – database, data format
  - Business goals and local, internal/departmental achievements

- Do you integrate Business requirements with IT goals
  - Globalization of the company needs standard interfaces
  - Effective and fast reaction to market trends need effective data analysis

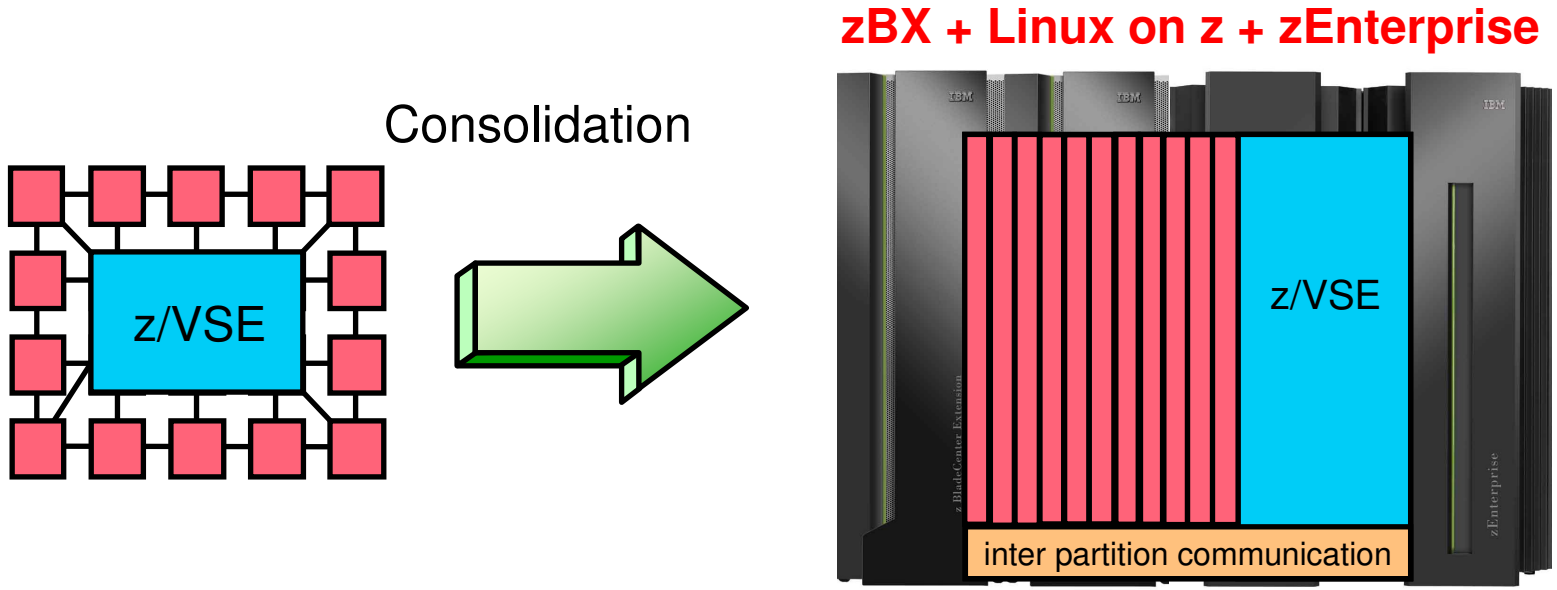
Steps to achieve Optimized data

- Analyze your business processes
- Analyze your data flow
- Analyze the data pools
- Establish a business requirement catalog with priorities
- Deduct the IT Requirement catalog based on Business Requirements
- Based on priorities, plan for a pilot workshop to optimize the data format and interfaces
- Deduct a future oriented Architecture

Note:

- IBM can help in these steps !

Mixed Workload consolidation on zEnterprise



For z/VSE customers, zEnterprise opens new horizons:

- Integration of multiple platforms of the Enterprise
- A big variety of standard applications
- The integration of existing applications and data using e-business Connectors
- Modern, scalable new solutions

Real-customer example: Global Distribution customer Europe

Pain points

- Diversified Software over the years
- Small IT team can not handle all components
  - Some servers were outsourced for maintenance
  - Loss of control for the data which are managed from outside
- Several different data pools inhibit control of data
  - Duplicated customer master data
  - Country based data pools do not have the same structure
  - No common view nor synchronization in activities
  - No learning effect from other areas
- Different departments without common architecture and IT view

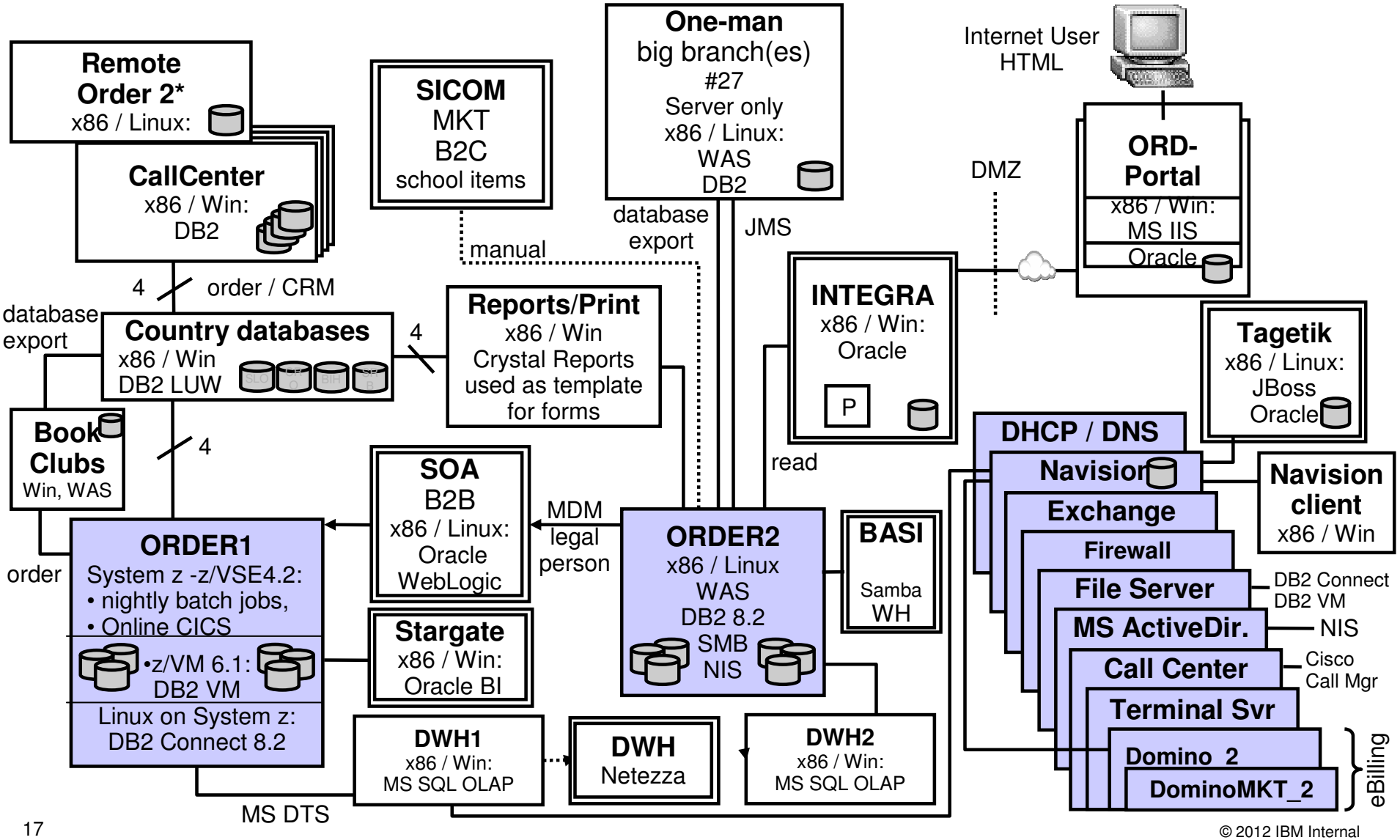
Required help to bring to the table the environment

- Define an proposed Architecture based on a Fit4purpose workshop
- Optimize data pools and follow-on application consolidation and integration / optimization

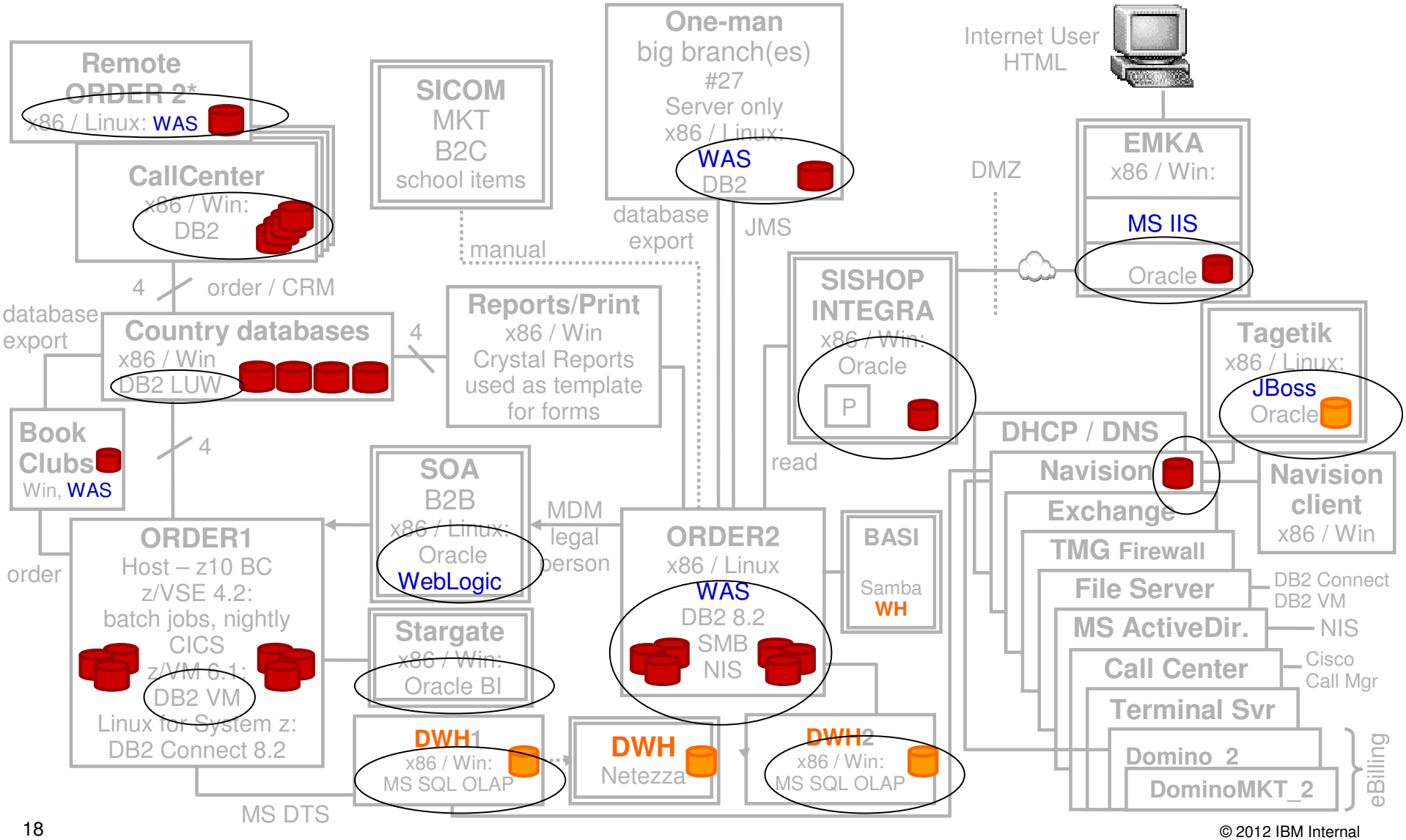
IT focus areas addressed

- Adopt mature IT technology
- IT simplification and efficiency
- Flexible IT Architecture
- Development and in-house expertise
- Reusability and maintainability of applications

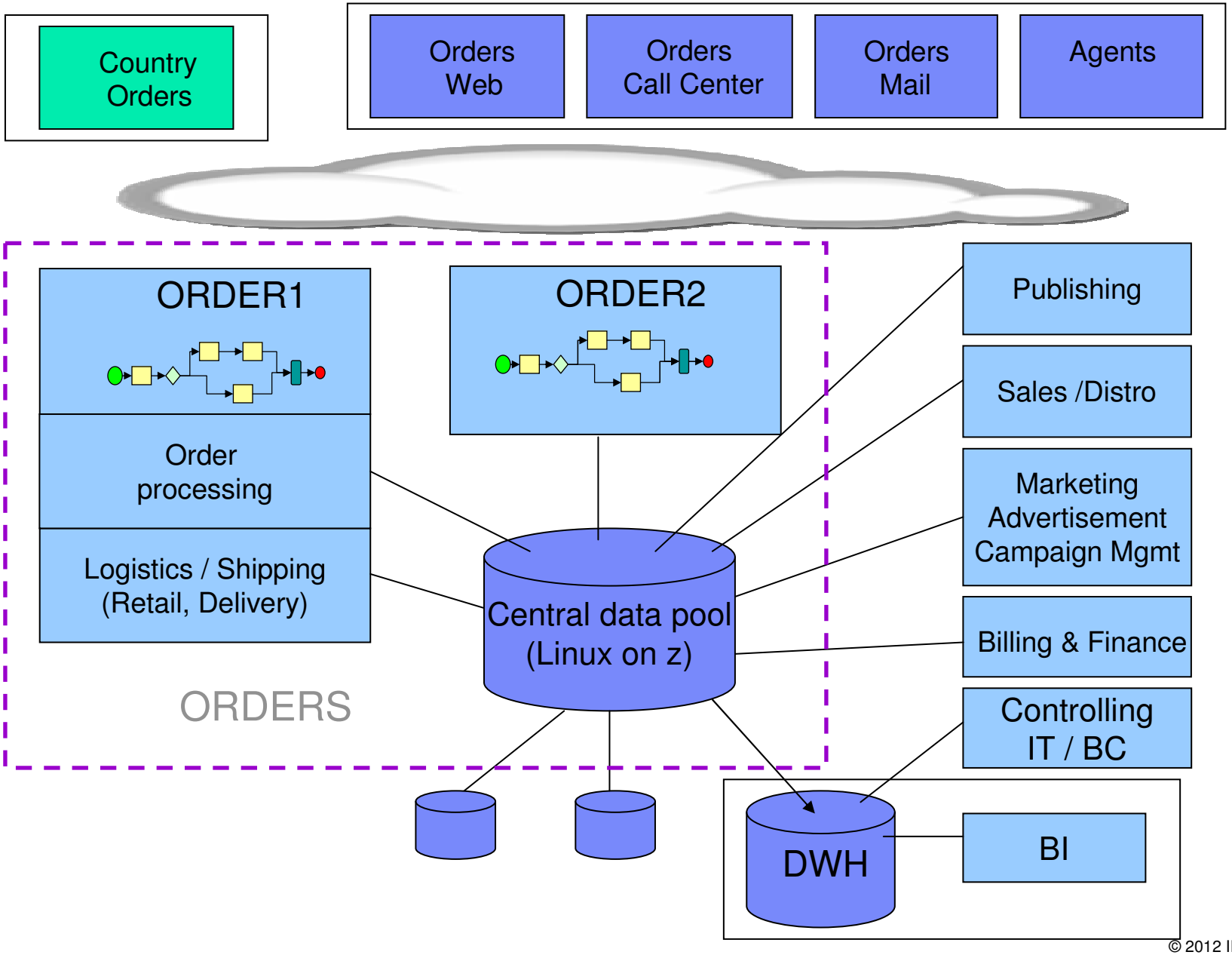
IT Infrastructure Overview Components



Database, Warehouse and App Server View

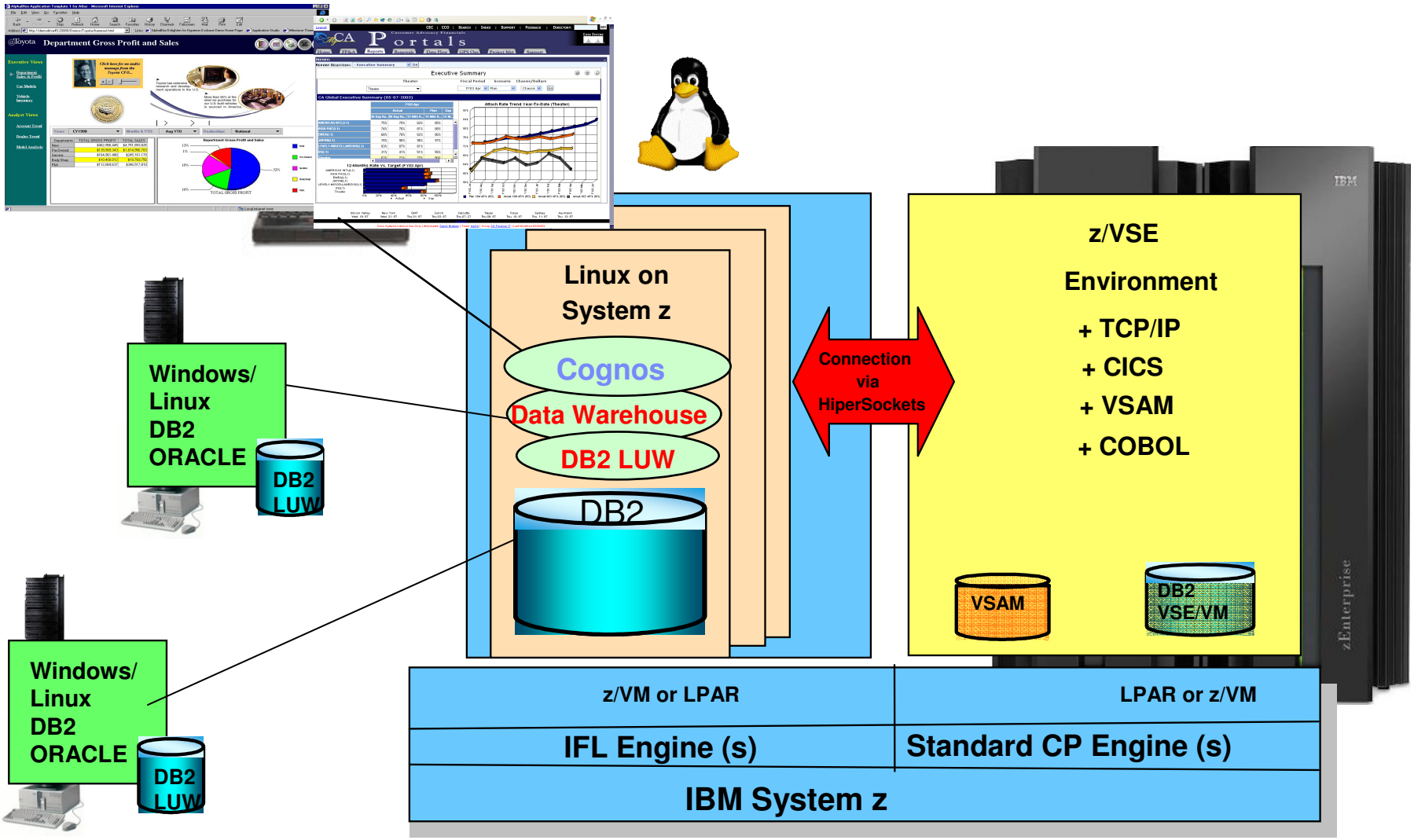


Proposed Architecture Overview Diagram (AOD)

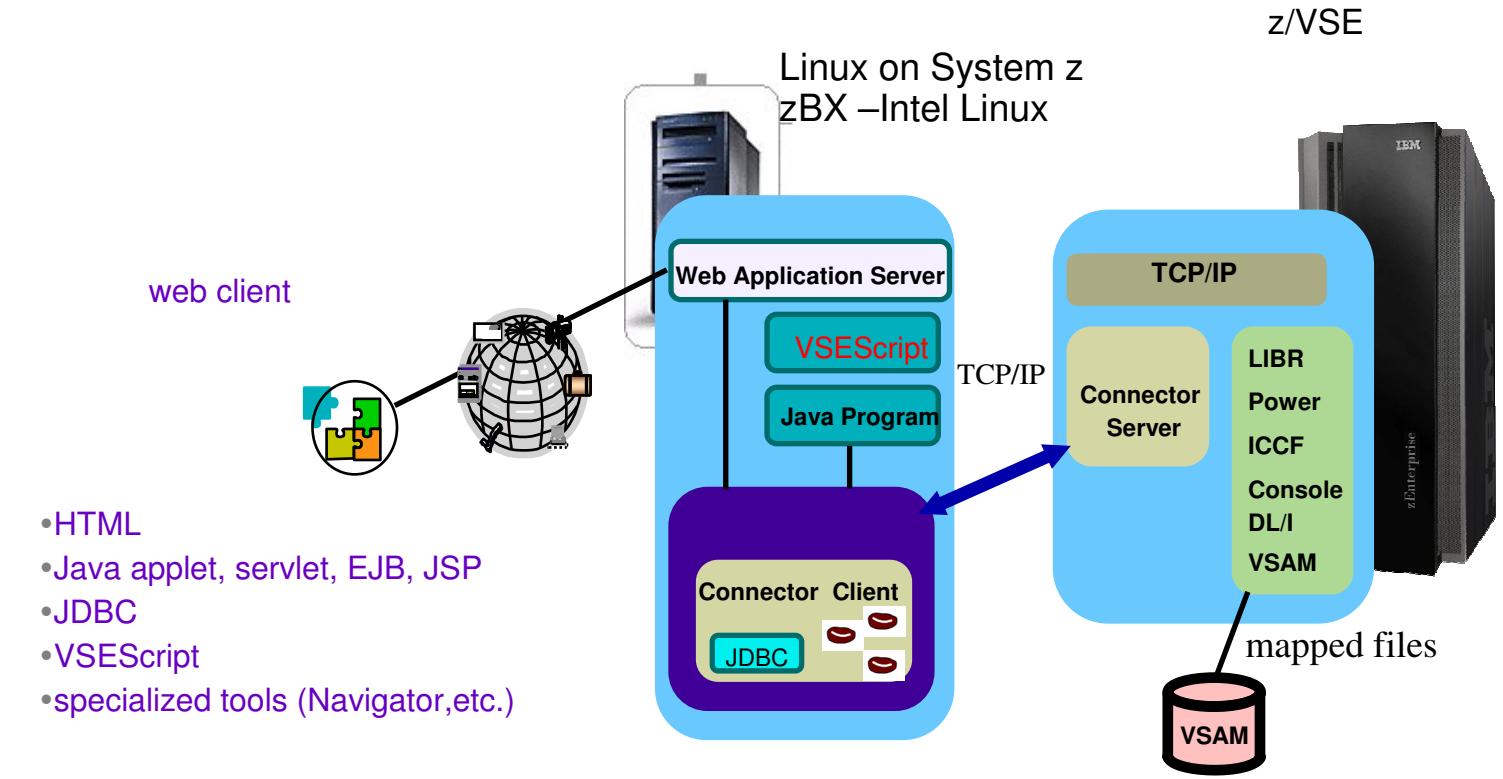


Data Warehouse and BI with Linux on System z

Consolidate, Integrate, Evaluate - DB2 Client, VSAM Redirector



Real time access to VSE resources using the Java–Based Connector (feature included in z/VSE)



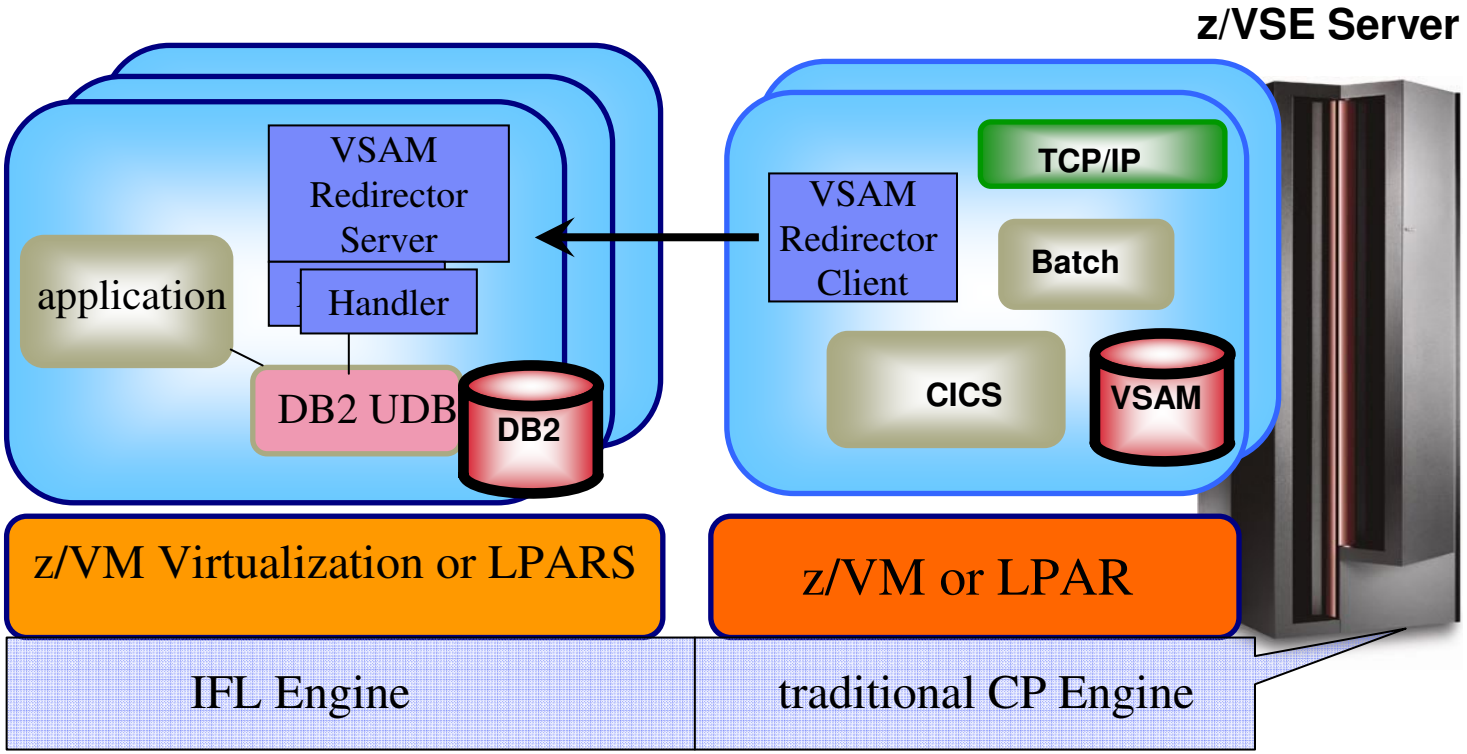
- real time access to VSE resources from remote systems
- new possibilities for leveraging the VSE investment

VSE/VSAM applications (without any change), access remote relational databases

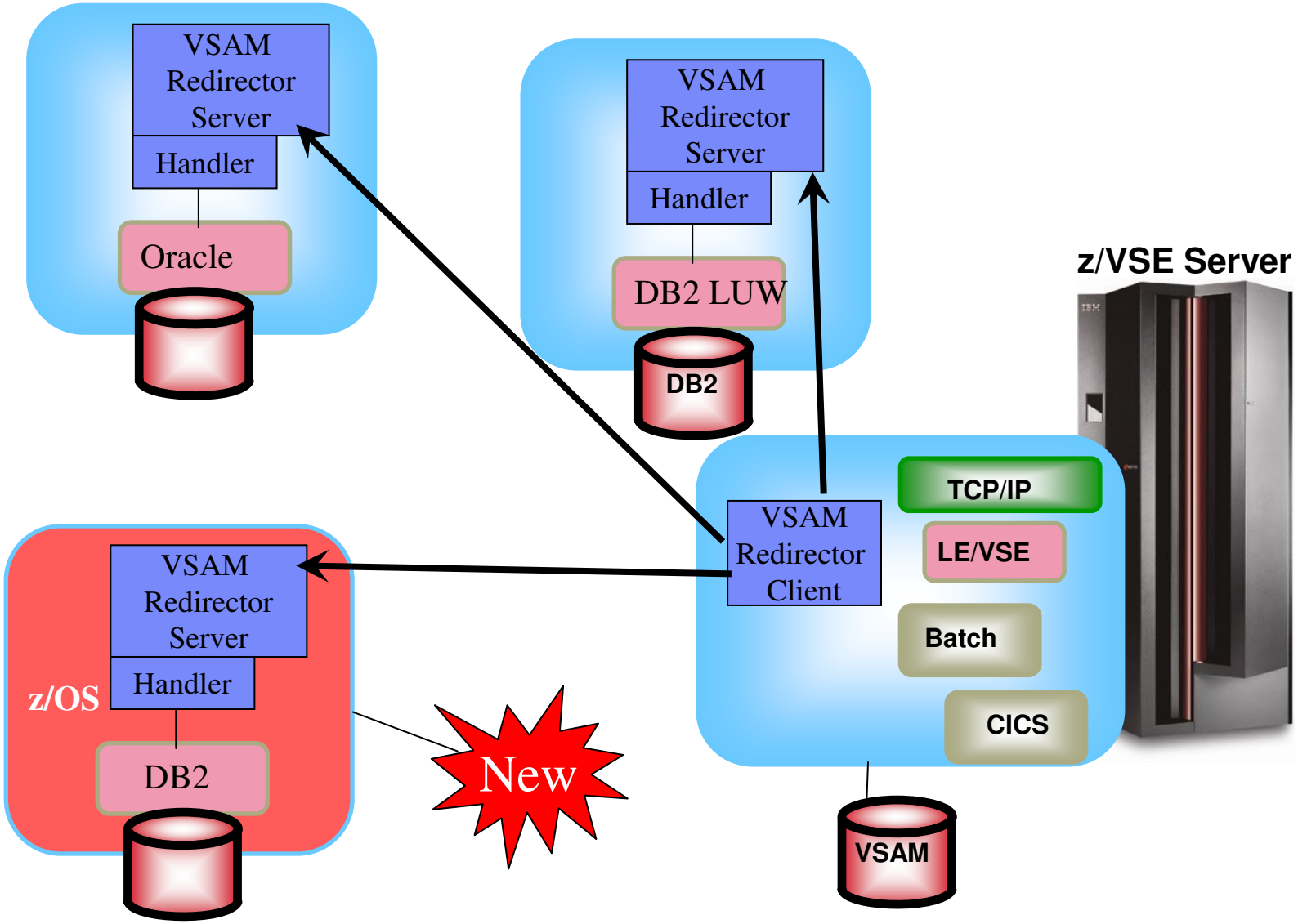
(1) Real time access VSAM to DB2

a) synchronization (two phase commit of VSAM and DB2)

b) Real time push of VSAM data to DB2

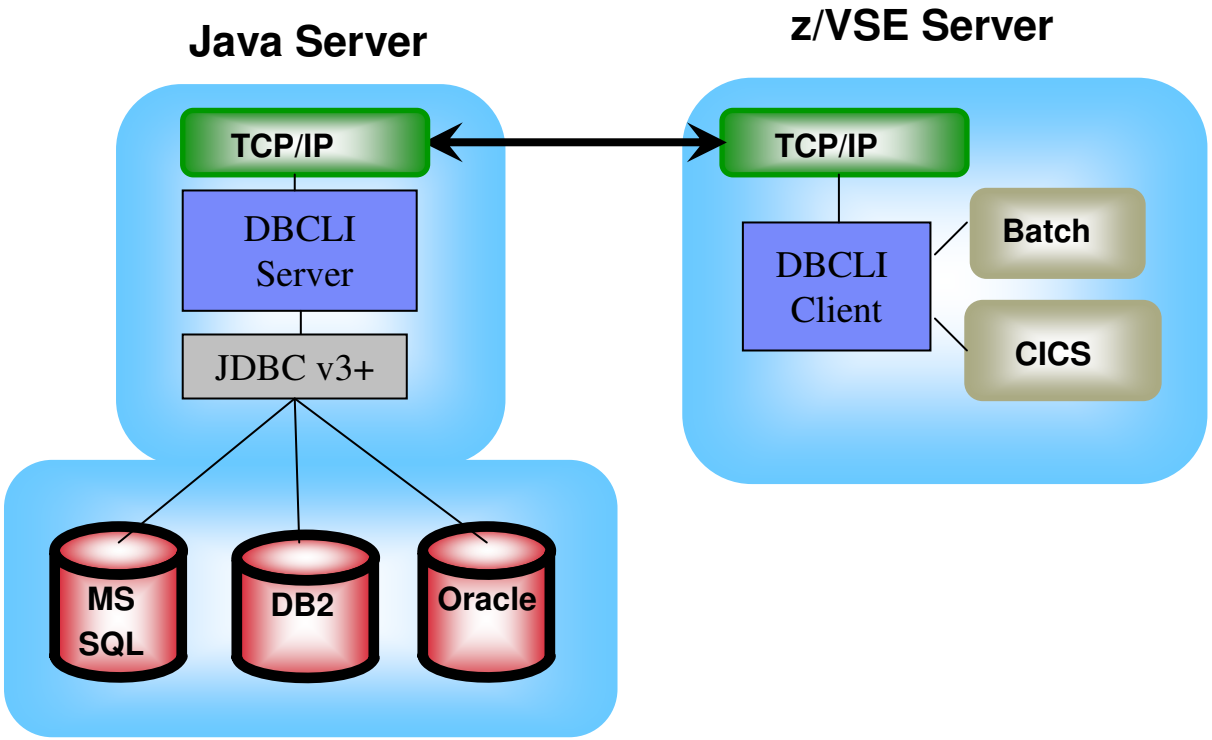


VSE/VSAM applications, access remote relational databases



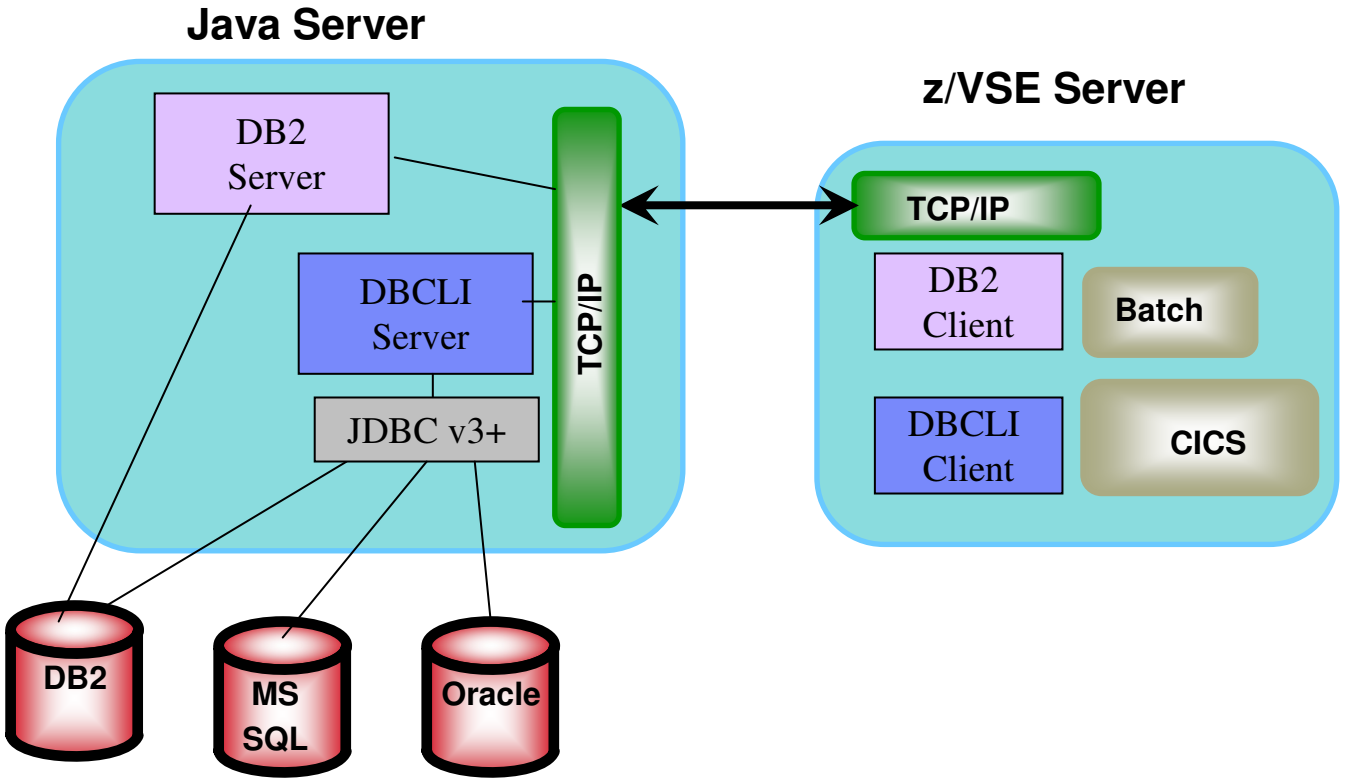
Applications on z/VSE access remote 'any' relational databases

- Real time access to Relational databases
  - two phase commit from batch and CICS
  - Access based on z/VSE DBCLI interface



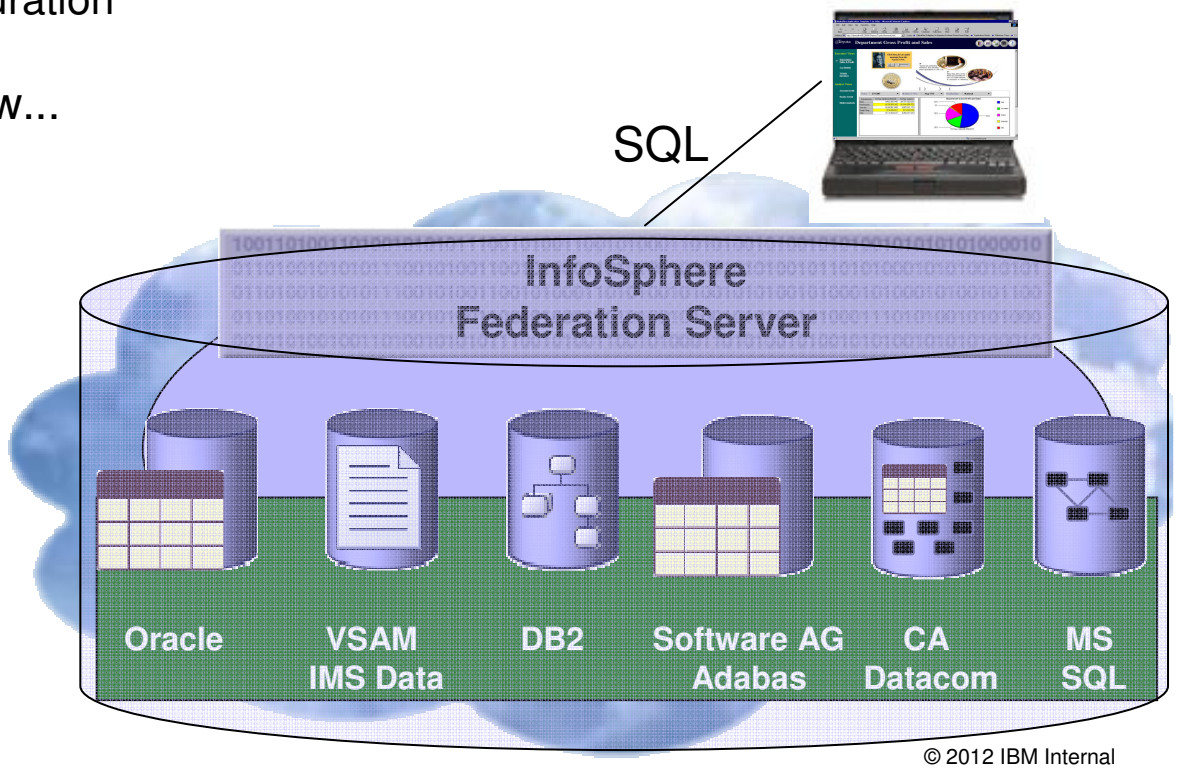
Applications on z/VSE access remote 'any' relational databases

- Real time access to Relational databases
  - two different ways from batch and CICS
  - Access based on z/VSE DBCLI interface **AND / OR** DB2 Client



InfoSphere Federation Server on Linux on System z

- Integrating at the data layer – Federation of data
  - Read from and write to federated mainframe data sources using SQL
  - Standards-based access via JDBC, ODBC, or Call Level Interface
    - Including for mainframe VSAM data and flat files
  - Multithreaded with native drivers for scalable performance
  - Metadata-driven means...
    - No mainframe programming required
    - Fast installation & configuration
    - Ease of maintenance
  - Works with existing and new...
    - Mainframe infrastructure
    - Application infrastructure
    - Toolsets



Customer 2: Local Production and Global Web commerce

- **The main IT requirements are:**
- Respond fast to business needs
- Integrate local and foreign markets processes
- Integrate the different existing data bases into a central data warehouse
- Integrate the various IT processes in a SOA for easier management and quicker reaction on future trends
  - Enable reuse of logic using SOA infrastructure and ESB
  - Transform IT processes to ease expansion to other markets
  - (e.g. new countries, retail, direct mail, web, and mobile selling)
- Define a smooth transition from today‘s IT environment to the new architecture/environment.
- Methods in BI to deliver real time business overview, channel based, product based, region based
- Enable mobile device interaction with direct marketing and advertisement
- Simplify Development

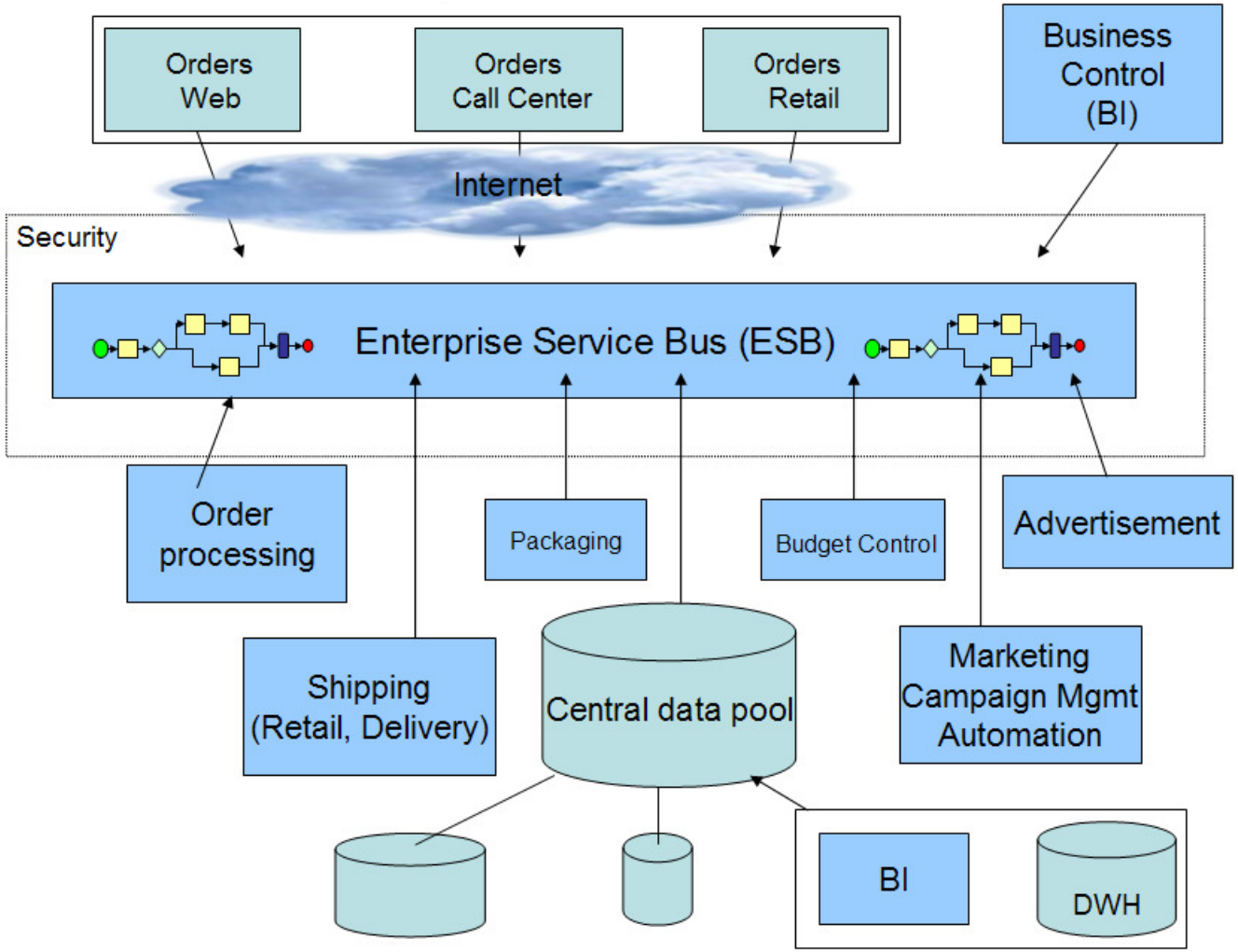
- **The main challenges in IT are:**
- Functional: - batch workload is a limiting factor
- Multi channel orders
- Interaction of Customer and Marketing policies
- Multilingual support
- Business analytics are not possible while multiple data sources

zEnterprise environment setup

- System z is divided in 2 LPARS running z/VM
- z/VSE LPAR
  - z/VSE production
  - z/VSE QA - Quality
  - z/VSE test
- Linux on z LPAR
  - 3 X DB2 server (production, QA, test)
  - 3 X tomcat server (production, QA, test)
  - 3 X ERP server (Production, QA, test)
  - 2 X server for address normalization
  - 1 X server for DB2 archiving

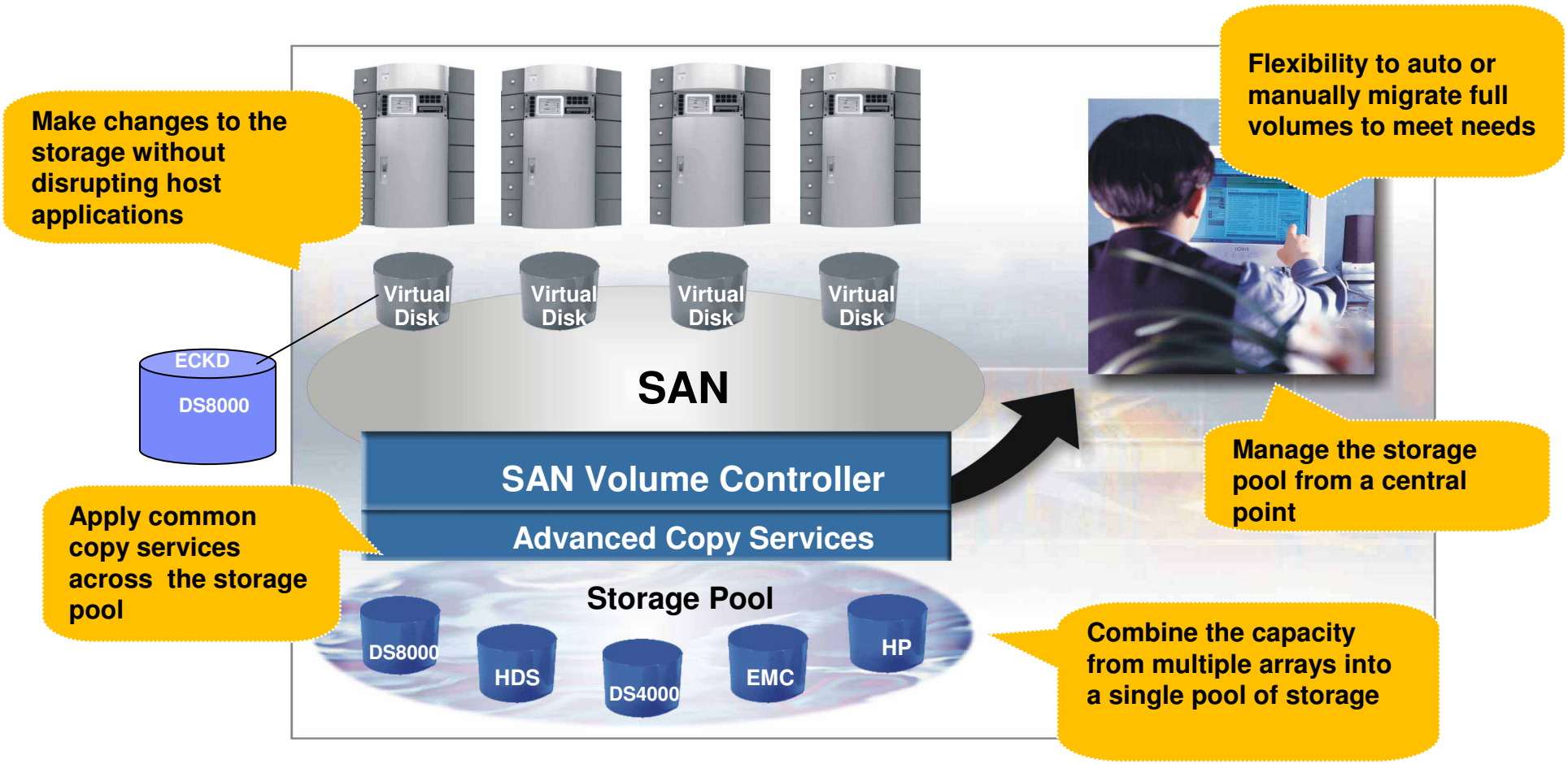
Architecture Overview Diagram – SOA / ESB based

- SOA flexibility:
  - Fast enhancement
  - Easy Relocation
  - Easy Governance
  - Faster reaction because of common data pool



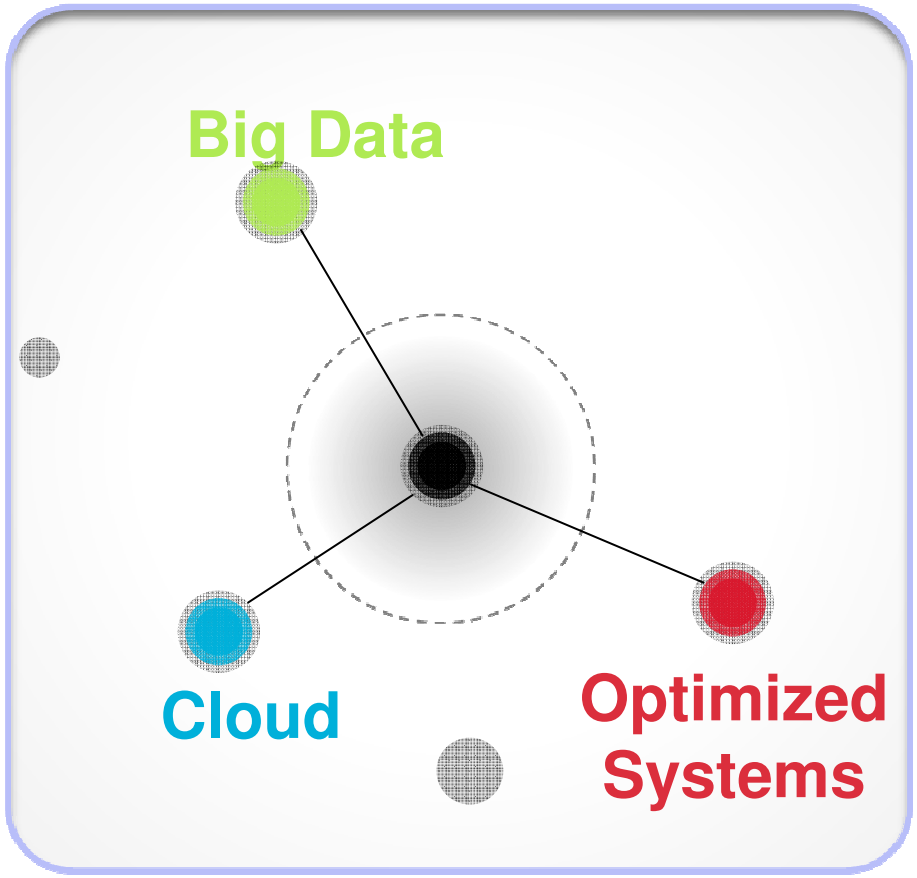
Virtualize Storage to Increase Utilization

- Virtualize existing storage with IBM SAN Volume Controller
  - **Increase usable capacity and flexibility** without complexity



Tivoli Workload Automation Integration Points

We Are Entering the Next Era of Computing



Smarter Computing

The Era of Insight for Discovery

- Created by the integration of Big data in Optimized systems, managed as a Cloud
- Applied to deliver new insights and drive innovation
- Twice the capacity for service on a flat budget

Be current: http://www.twitter.com/IBMzVSE

Subscribe to be get on the distribution list for latest news for z/VSE

Thank You

For more information, please see the z/VSE web site:

http://www.ibm.com/zvse/