Zero Latency Enterprise (ZLE): Solutions for the Real World

Session: ES-2-HP

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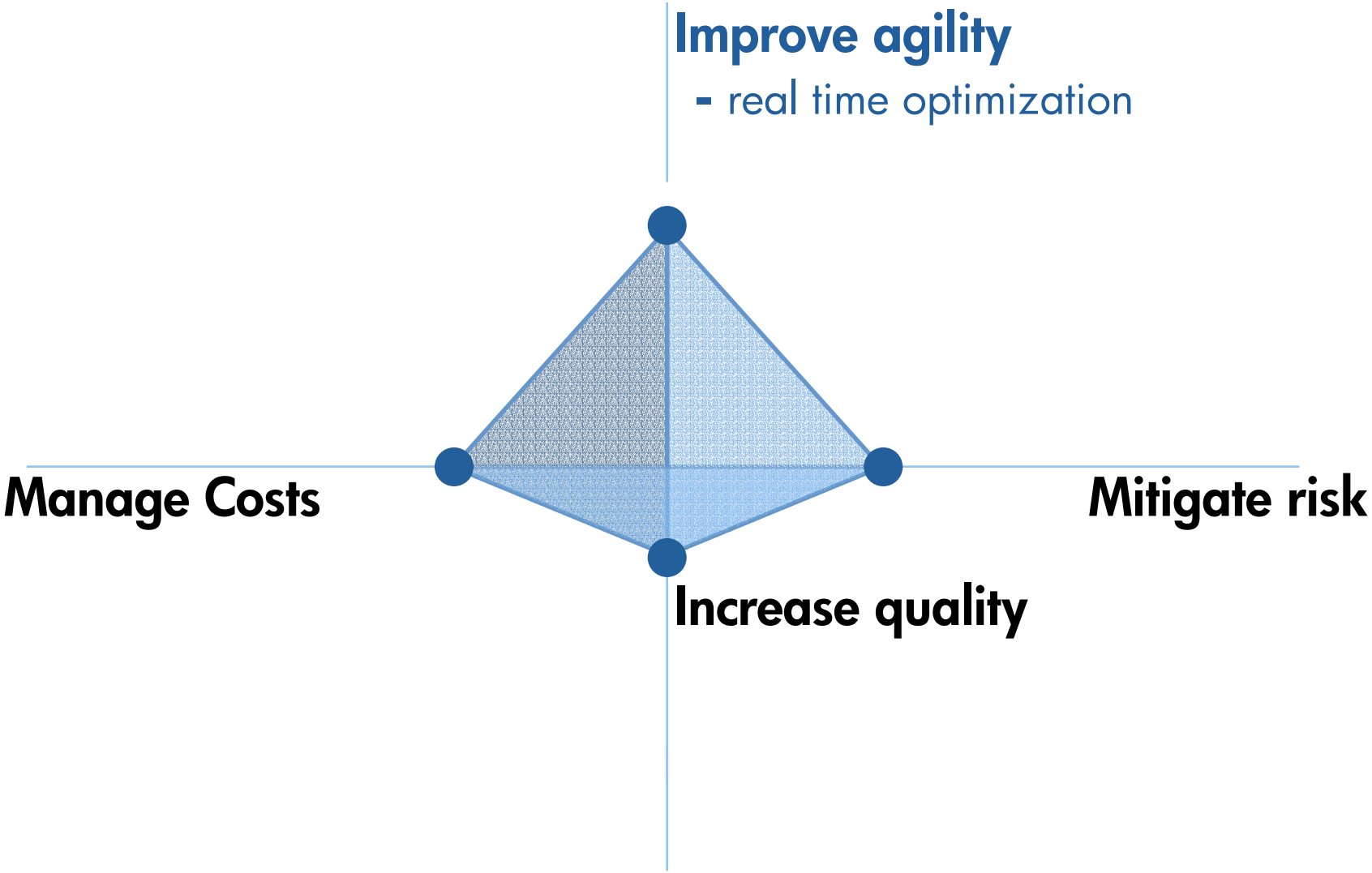
Hewlett Packard
13th October 2003

Agenda

- HP's adaptive enterprise and real time solutions
  - Why real time solutions matter
- The HP ZLE based solution approach
- Real world challenges
  - Retail
  - Manufacturing
  - Oil and Gas
  - Energy
  - Telco
  - Financial Services
  - Healthcare
  - Federal / Government
- Summary

Business agility: the Real Time Enterprise

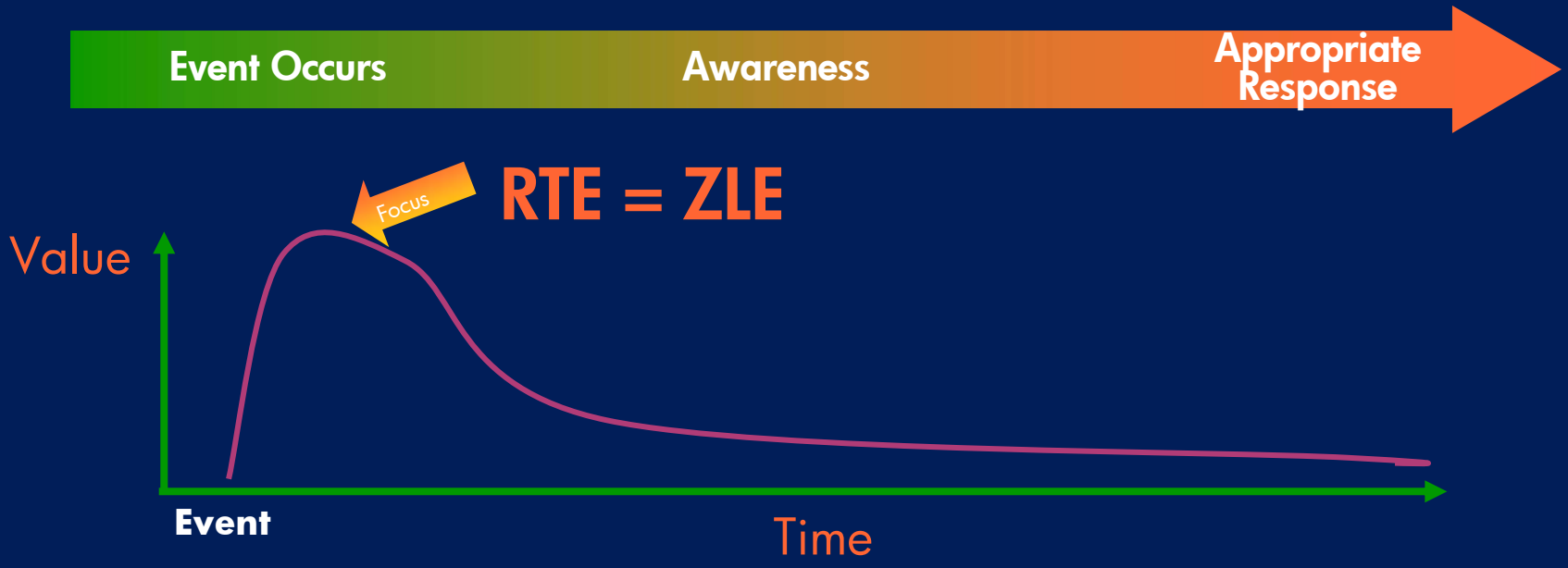


What does it mean for a company to be adaptive?

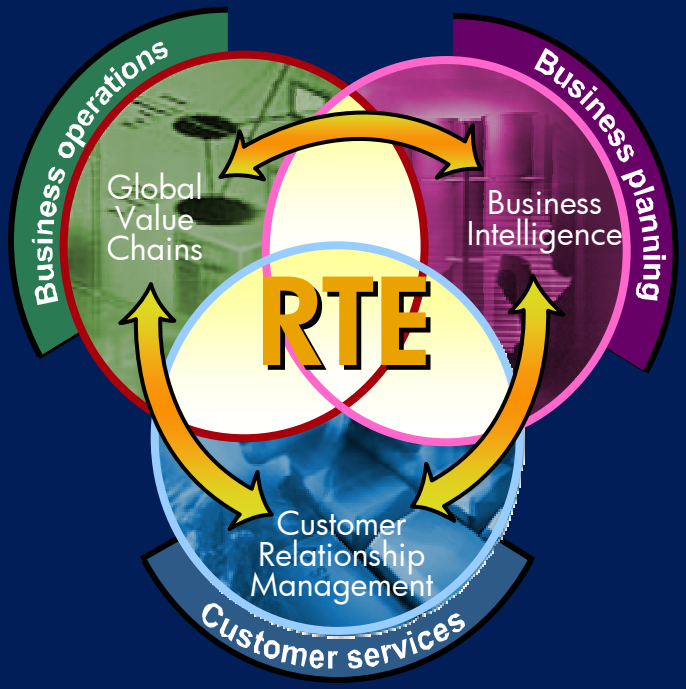
- deal effectively with competitive realities
- adapt quickly to changes in their business environment
- keep up with the globalization of technology
- deliver customer personalization
- reduce infrastructure costs
- create a proactive enterprise

An adaptive RTE architecture implies ..

- Ability to capture, analyze, and take the appropriate action virtually instantaneously upon the occurrence of a business event!

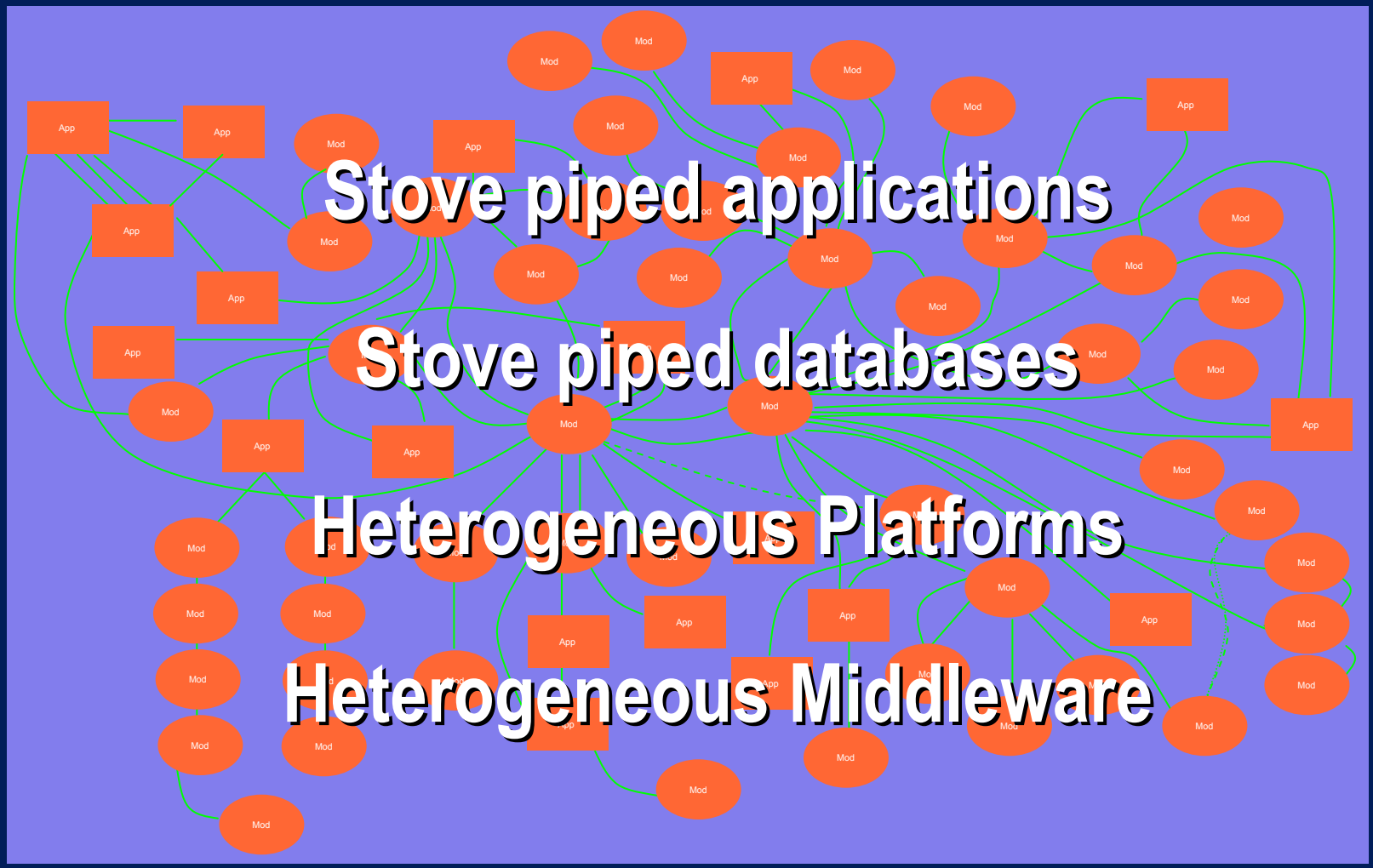


An adaptive RTE architecture demands



- Enterprise application integration
  - Route, synchronize, and integrate
  - State changes and events
- Enterprise data integration
  - Instantaneous virtualization of a "single view" of the enterprise
  - Current, integrated, and detailed
- Adaptive real-time decision making
  - Business rules based
  - Initiate and coordinate actions
  - Event driven i.e. transactional
- Facilitate creation of new RTE applications
- Non-invasive and synergistic to existing infrastructure (e.g. 24x7, scalability)

Today's environment – the RTE impediment



the demand for zero latency

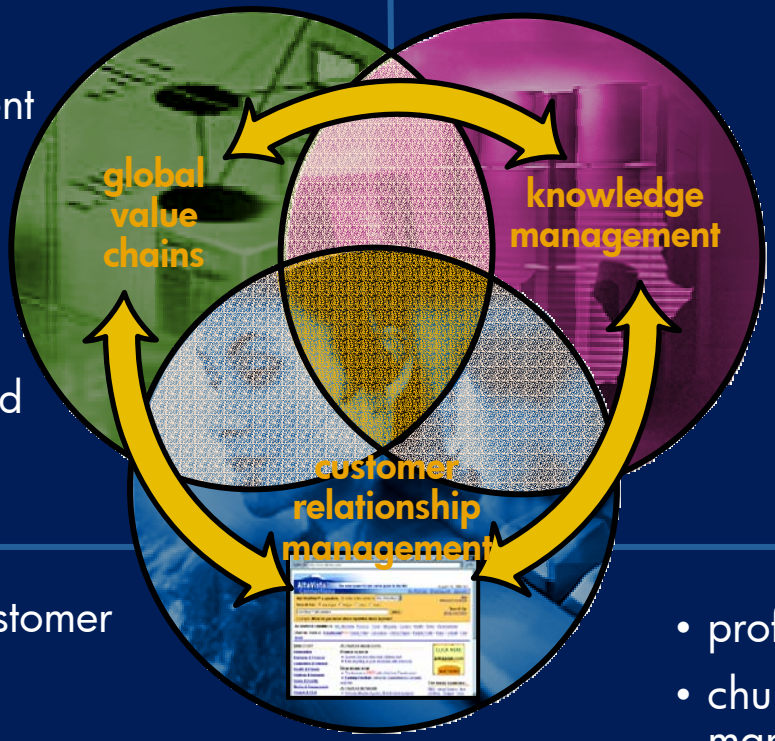
telco • retail • finance • healthcare • manufacturing

business operations

- fraud management
- global risk management
- supply chain management
- billing on demand

business planning

- view of financials
- business intelligence
- sales performance analysis

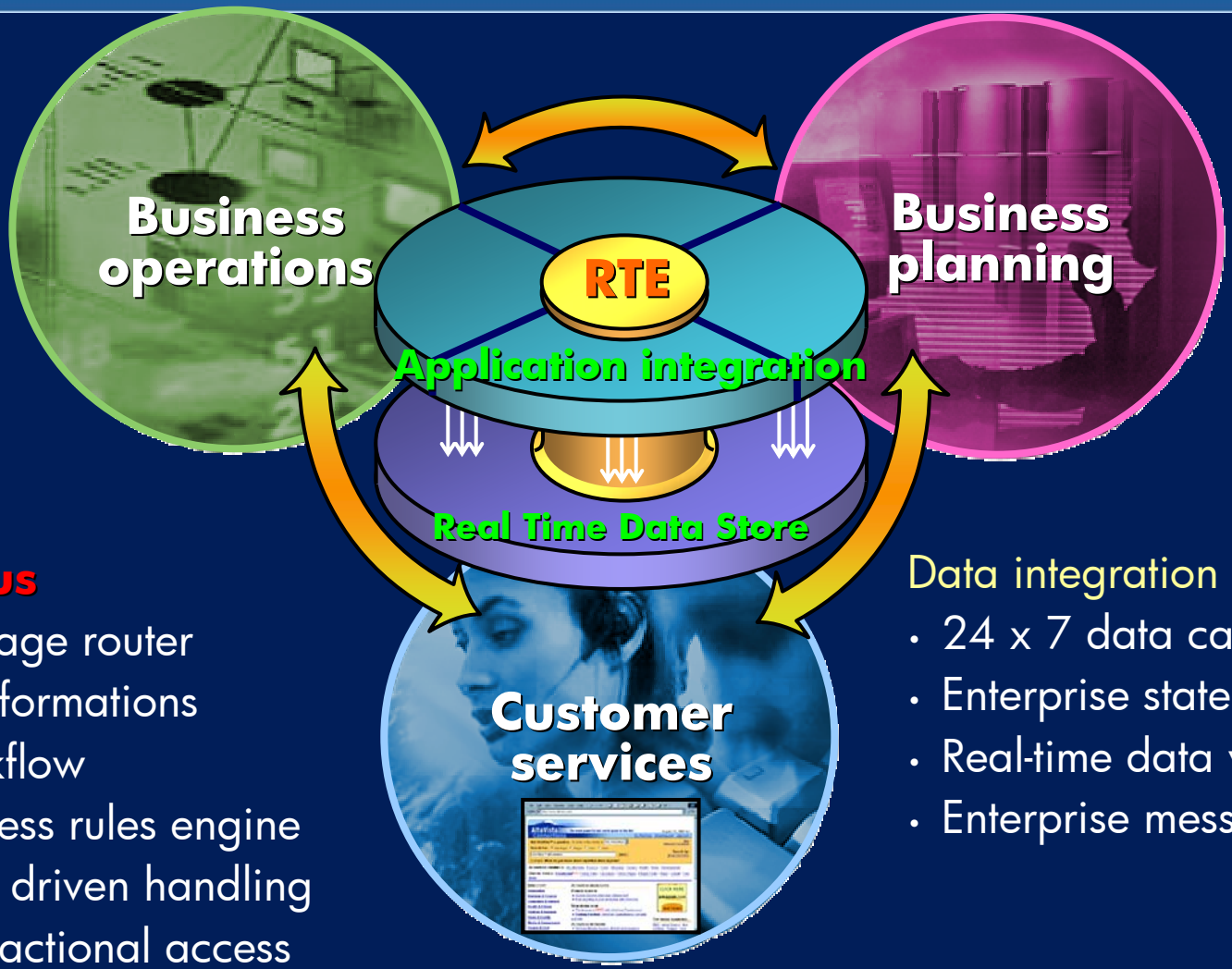


- single view of customer
- re-scoring
- personalization

customer services

- profitability analysis
- churn and attrition management

Adaptive Real Time Enterprise (RTE) model



EAI **Plus**

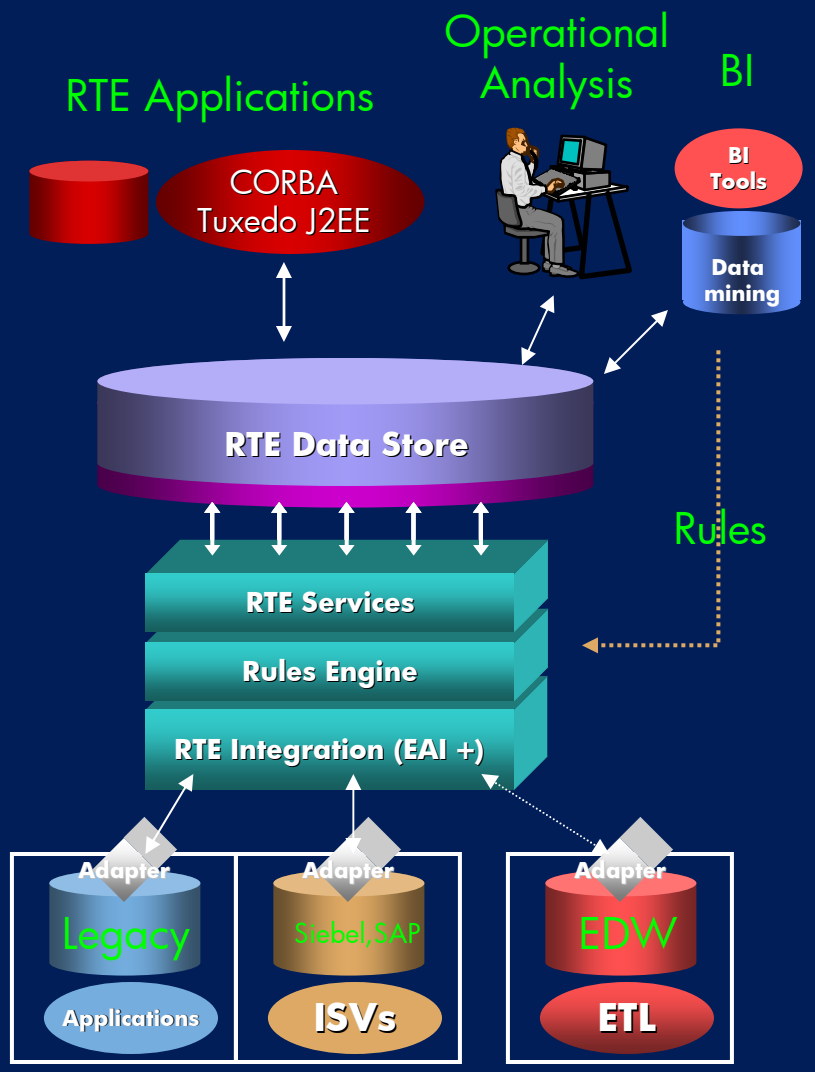
- Message router
- Transformations
- Workflow
- Business rules engine
- Event driven handling
- Transactional access

Data integration (**RTEDS**)

- 24 x 7 data cache
- Enterprise state engine
- Real-time data warehouse
- Enterprise message log

Application and data integration model

Putting the adaptive RTE model to work



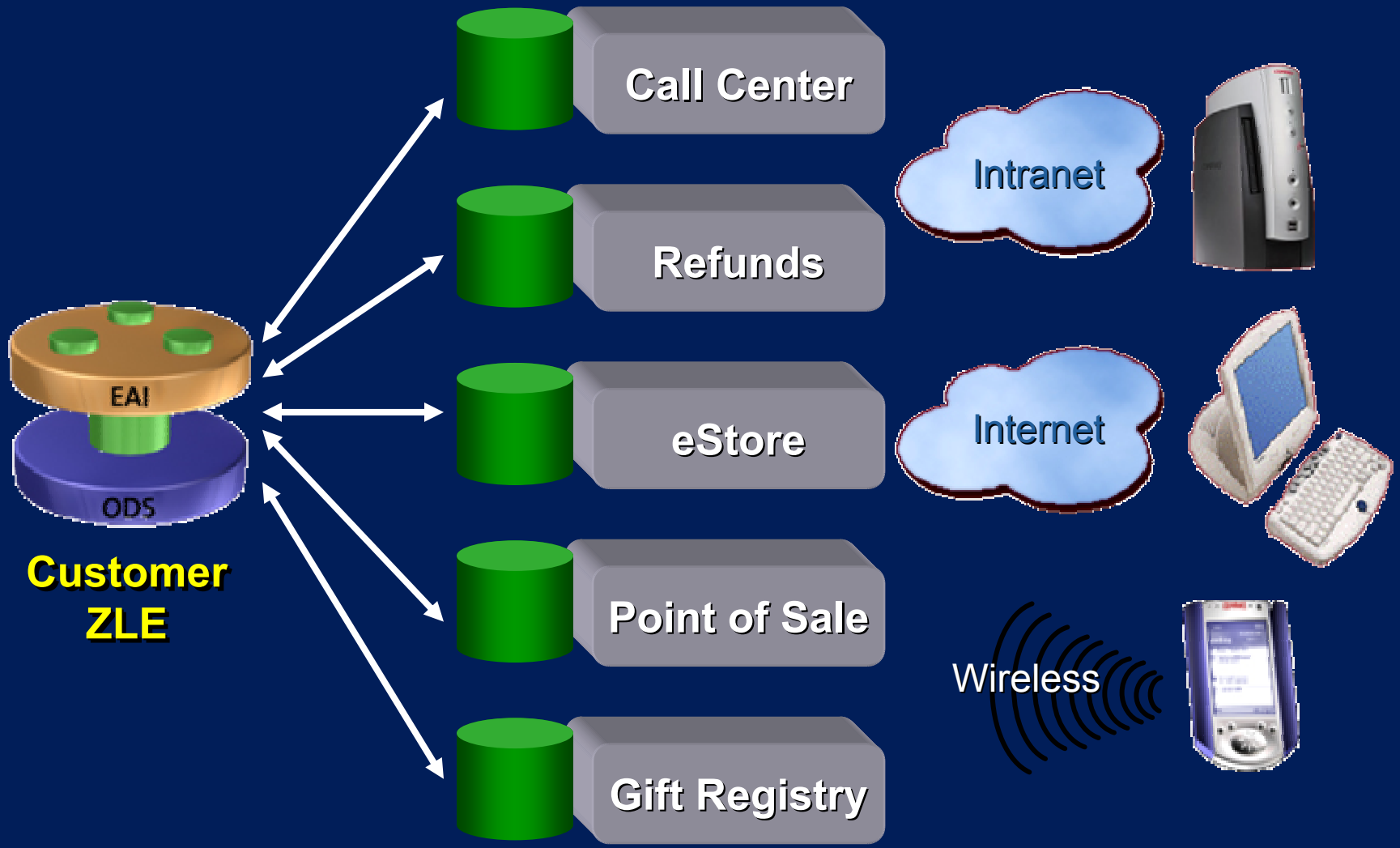
- Controls, enriches, and reconciles integrating transactions/applications
- Creates current, integrated, and detailed "single view" data store
- Centralization of business rules
- Enables fast RTE application deployment (database front-end)
- Facilitates mergers, acquisitions, and re-engineering efforts
- Real-time data warehousing
  - Real-time and adaptive analytics
  - Enriched operational analysis and business intelligence

Retail Challenges

Challenges—revolutionary new Customer Relationship Management solution— "skip a generation"

- single view of the customer and the enterprise in real time
- channel (touch-point) independent
  - brick and mortar store, e-store, call center, catalog, etc.
- dramatic improvements in customer service - personalization
- event driven interactions and campaign management
- real time asset protection

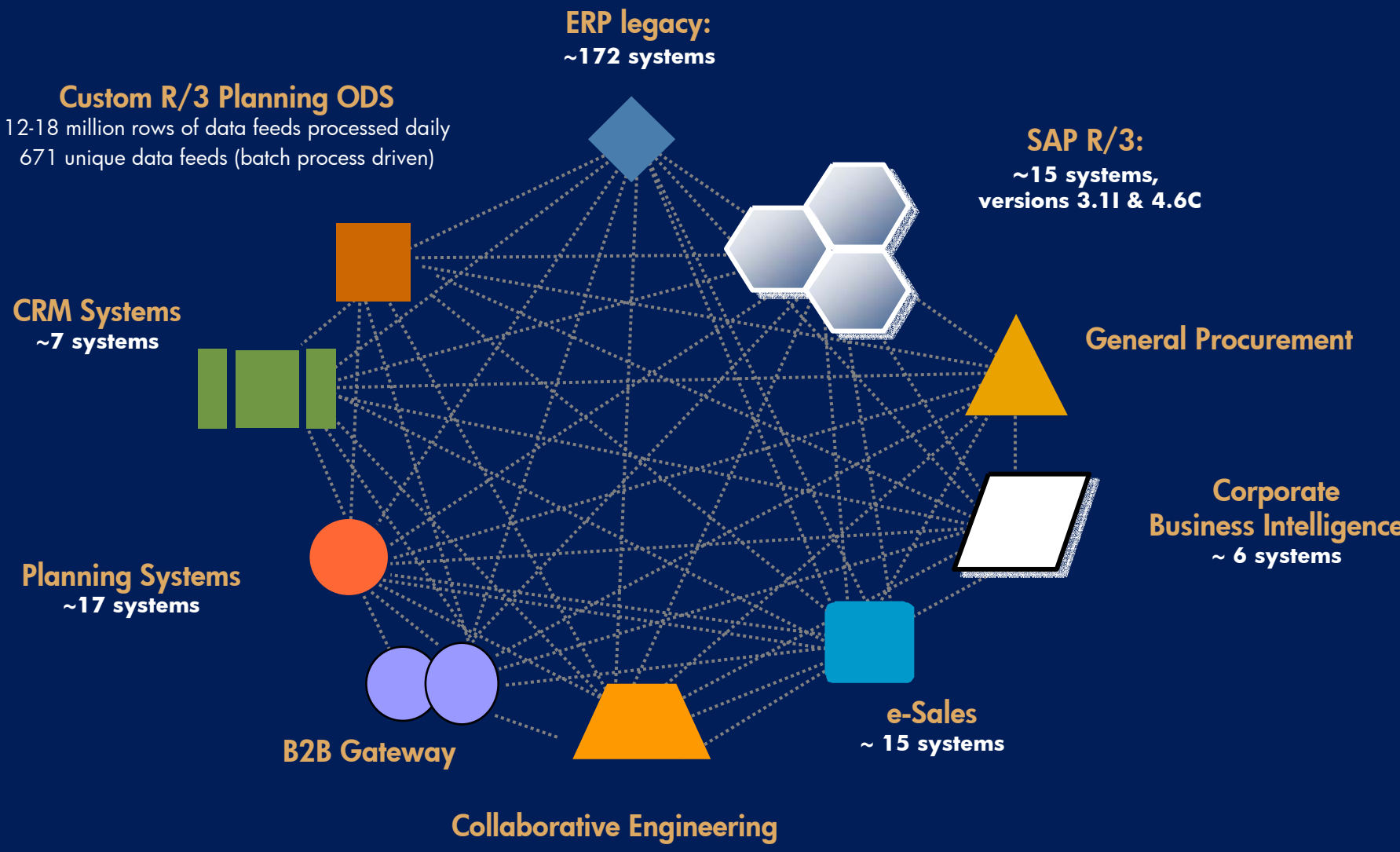
ZLE in Retail



Manufacturing Challenges

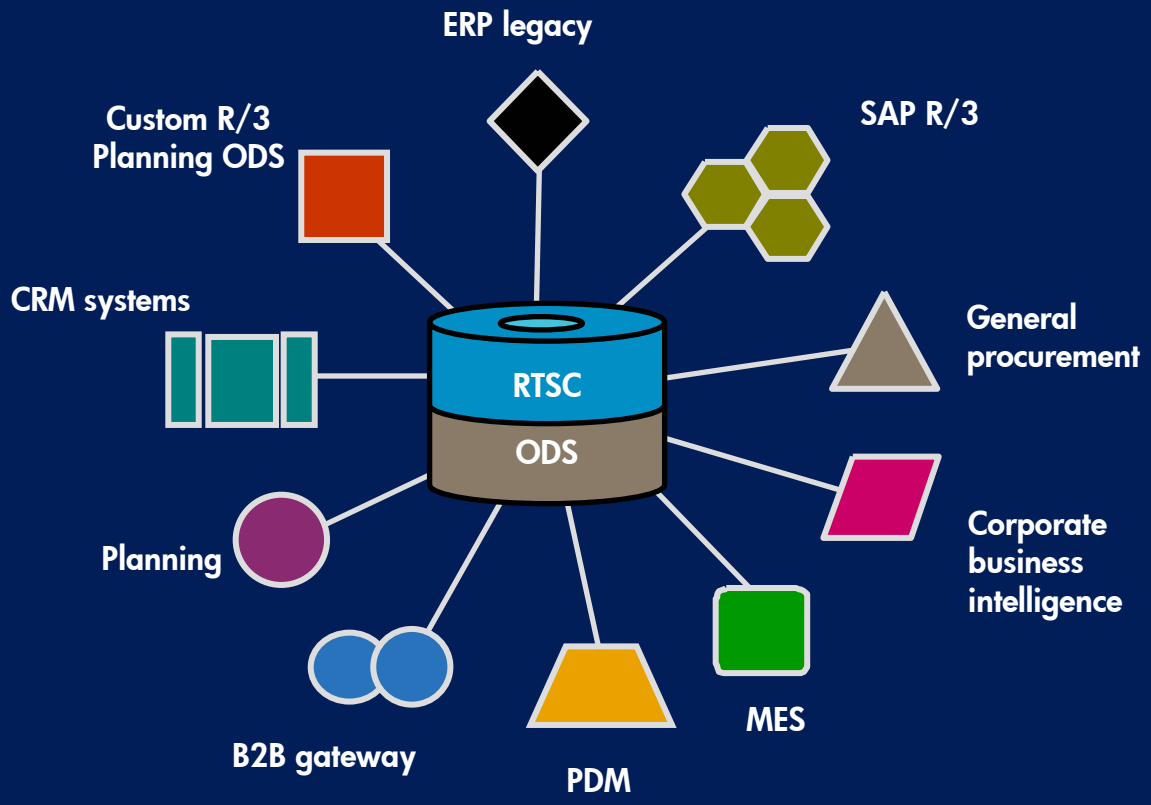
- Complex supply chain environments
- Stockouts and overstocks at customers
- Expensive centrally managed fulfillment process
  - Labor
  - Freight
  - Inventory
- SLA failures
- Poor collaboration—forecast, demand, and capacity

Manufacturing



Real Time Supply Chain (ZLE) Structured hub approach

- Enhances existing applications portfolio
- Enables integration and consolidation programs
- Centralizes key data from across the supply chain systems
- Enables immediate response to real-time changes in the supply chain

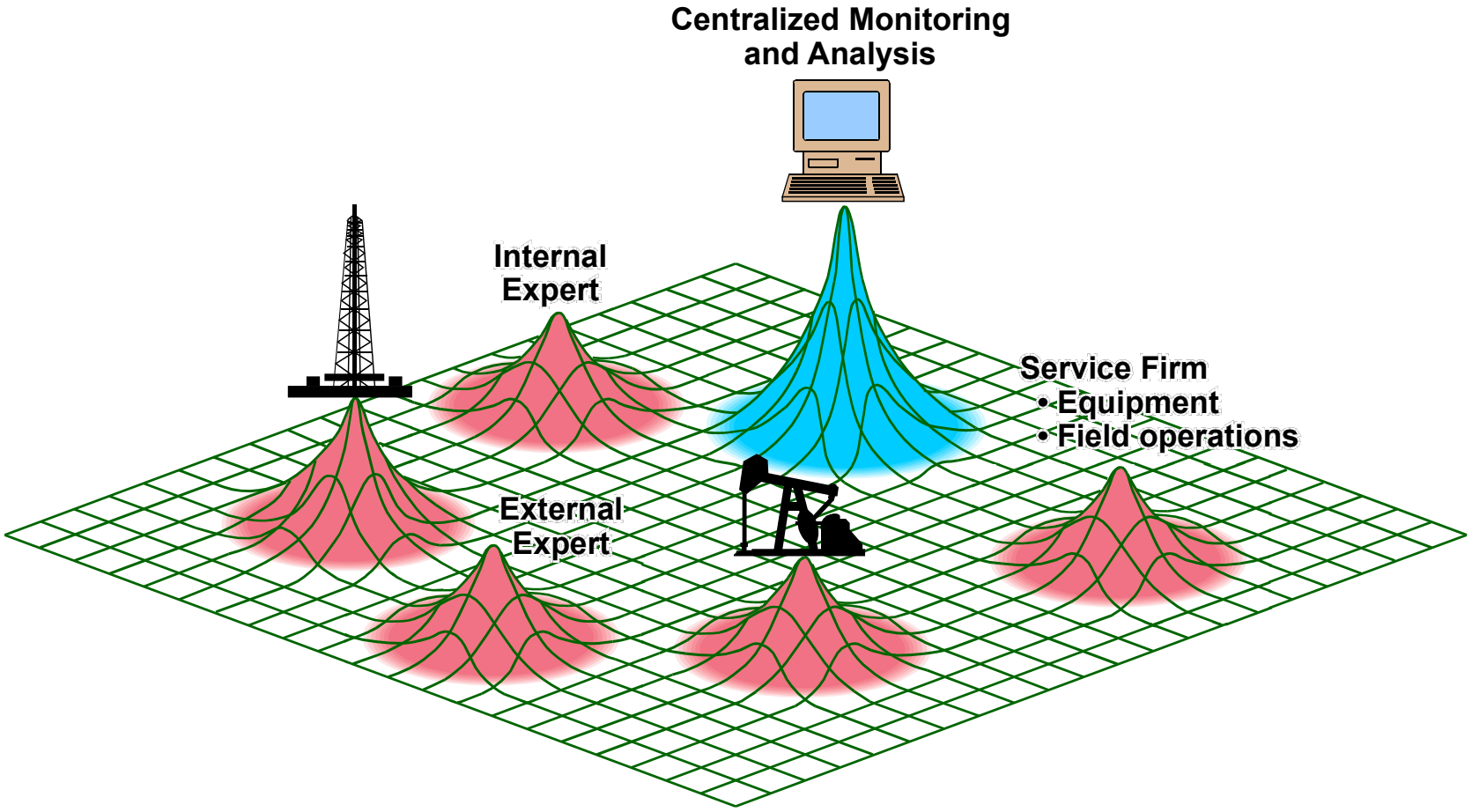


Oil & Gas - The Need for Near Real-Time

A current, consolidated and consistent view

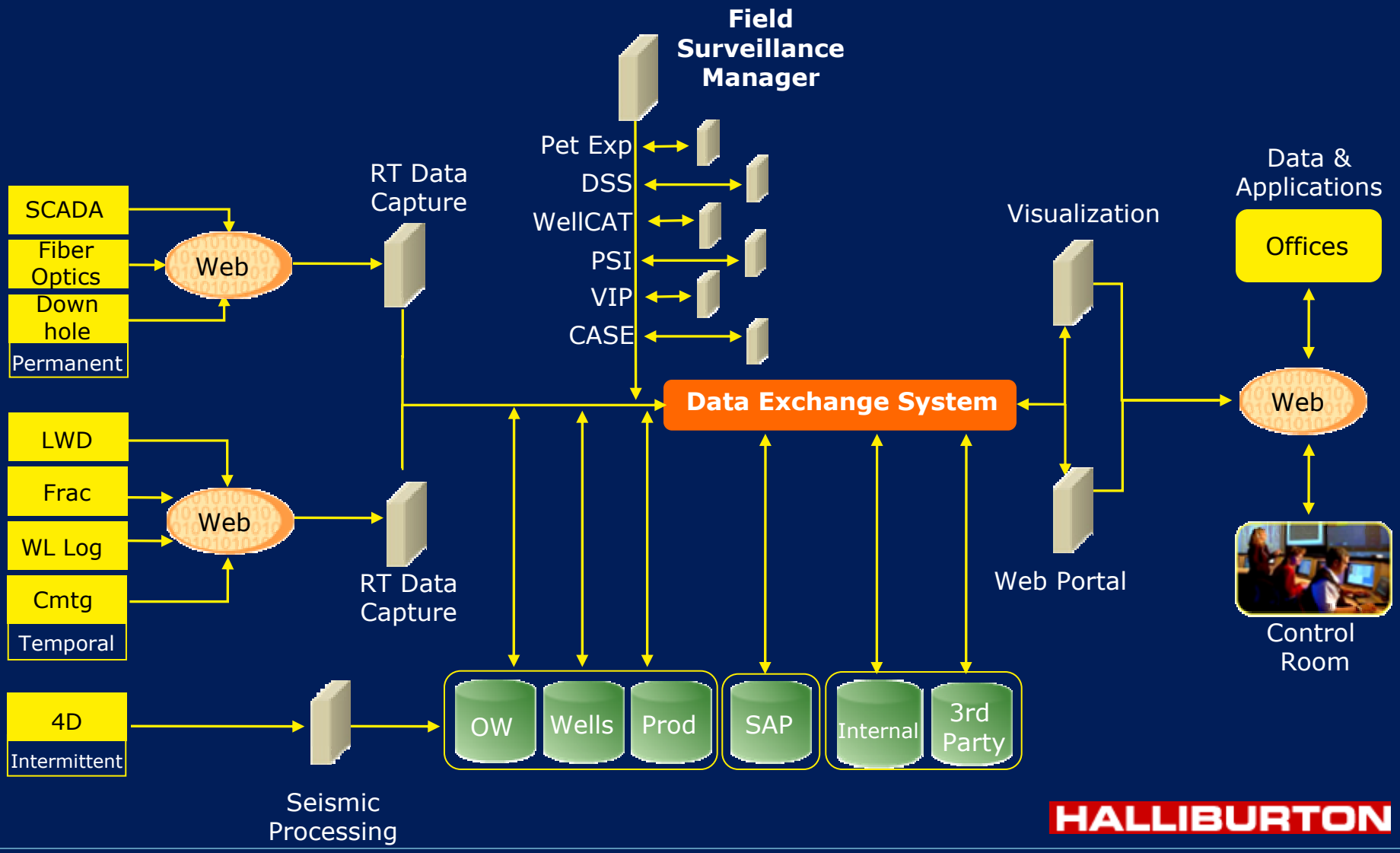
- Faster event detection and fault response
- Reduced well site presence
  - Centralized control rooms for domain and technical experts
- Near continuous seismic monitoring
- Minimize downtime
- Better predict potential events
- Turn serial processes into near-parallel processes
  - Data collection and analysis
  - Modeled vs. actual discrepancy resolution, earth model update
  - Decision-making processes based on acquired knowledge across assets

Oil & Gas – Digital fabric



Source: Cambridge Energy Research Associates.
Reference 21119-7

ARCHITECTURE



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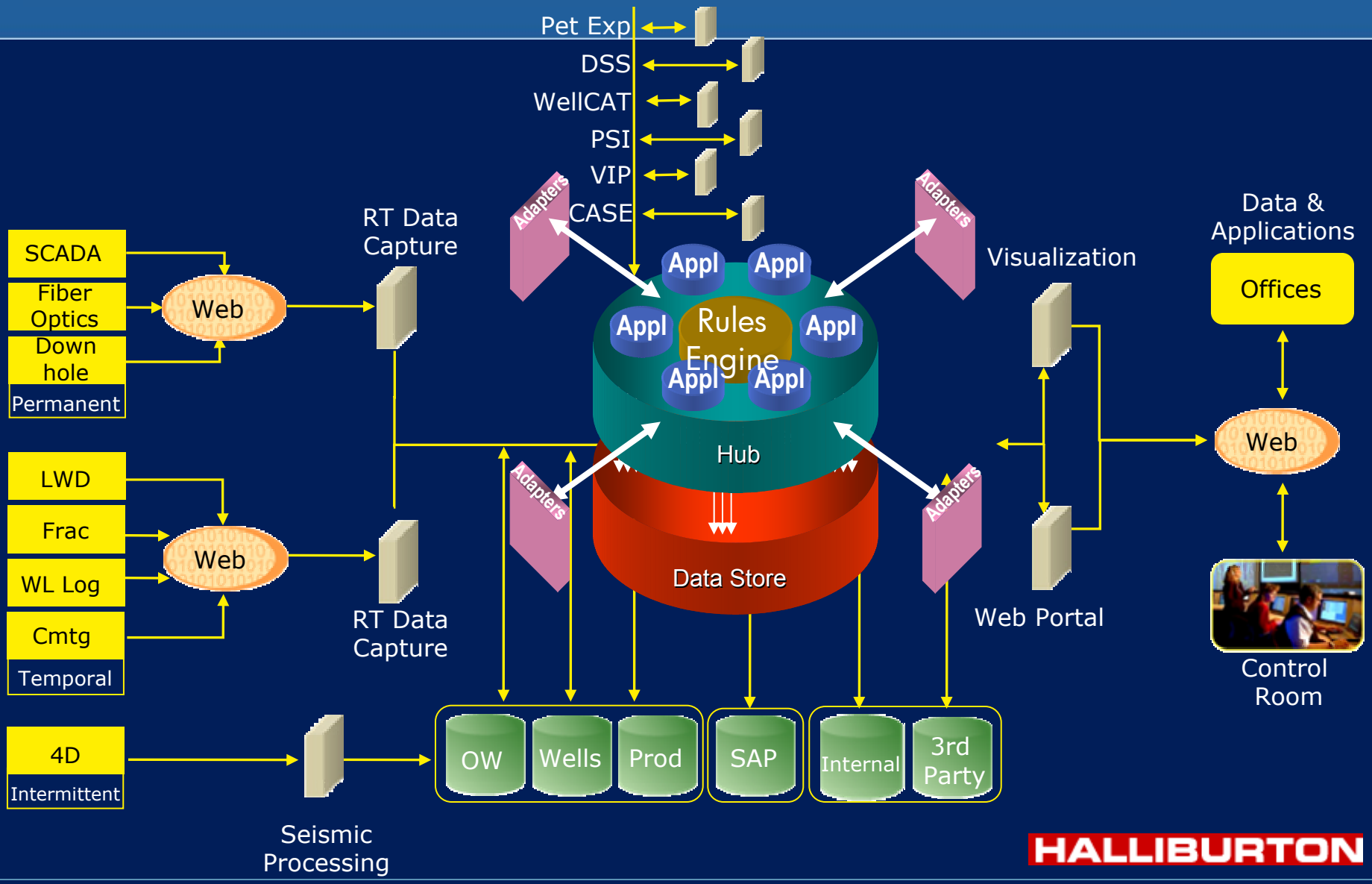
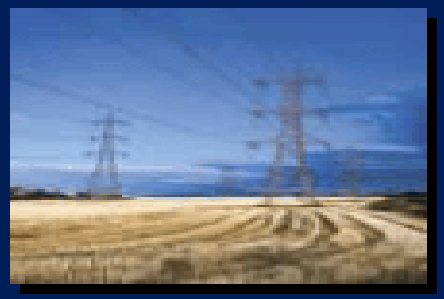
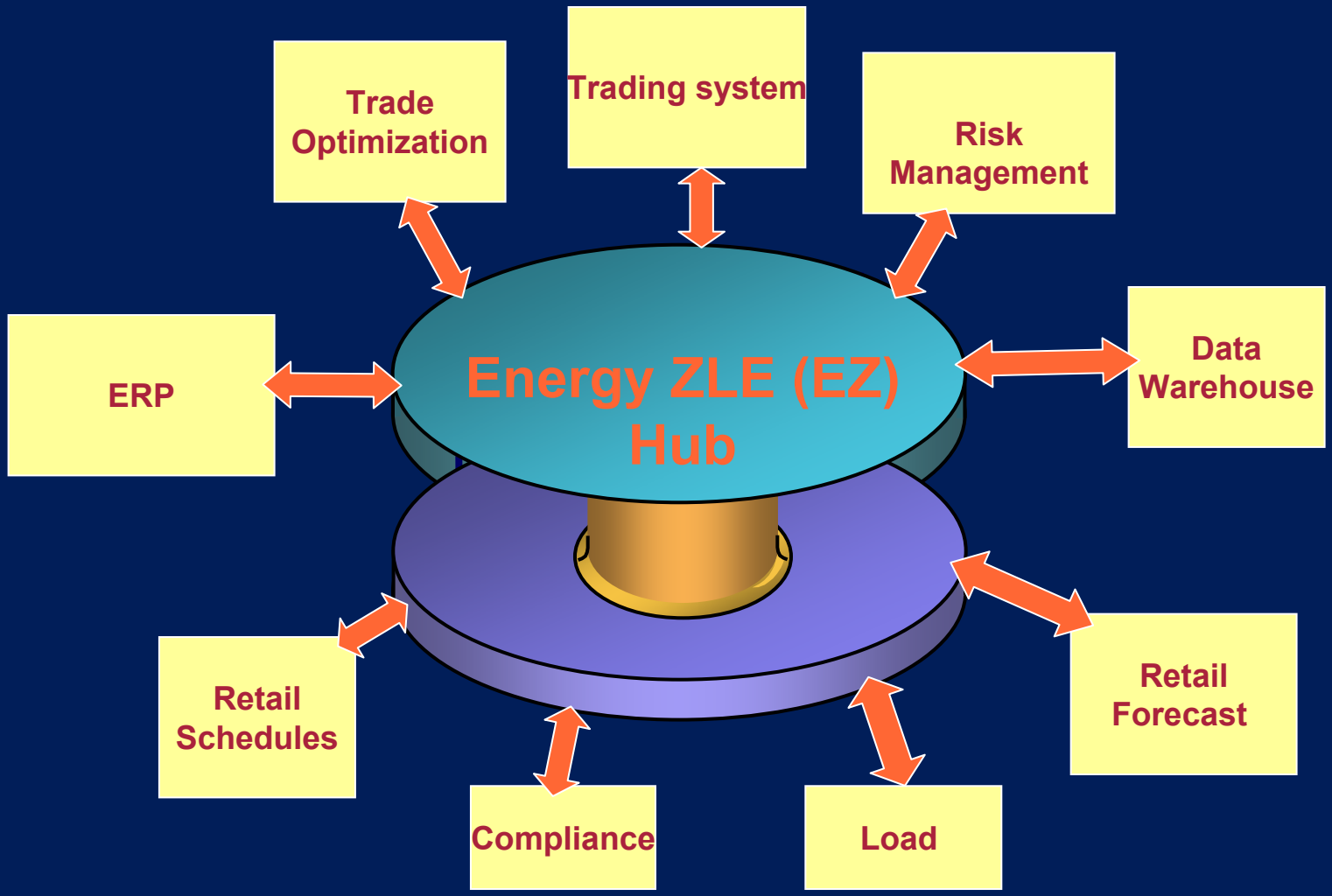


Energy ZLE Opportunities

- Load Management
- Real-time maintenance
  - work order ticket tied to inventory mgmt.)
- Real-time Supply Chain Hub (Downstream)
  - SAP multi-instance integration
- Digital Oil Field of the Future (Upstream)
- Extreme CRM
- RTO Infrastructure (Generator Enablement)
- Energy Marketing (Trading)
- And others . . .



Energy ZLE Architecture



Financial Services challenges
"Cost Out, Future In" require IT to adapt

Cost out

- More value from a shrinking budget
- Technology consolidation but investments required to build future
- The operational efficiency challenge:
  - cost out, future in

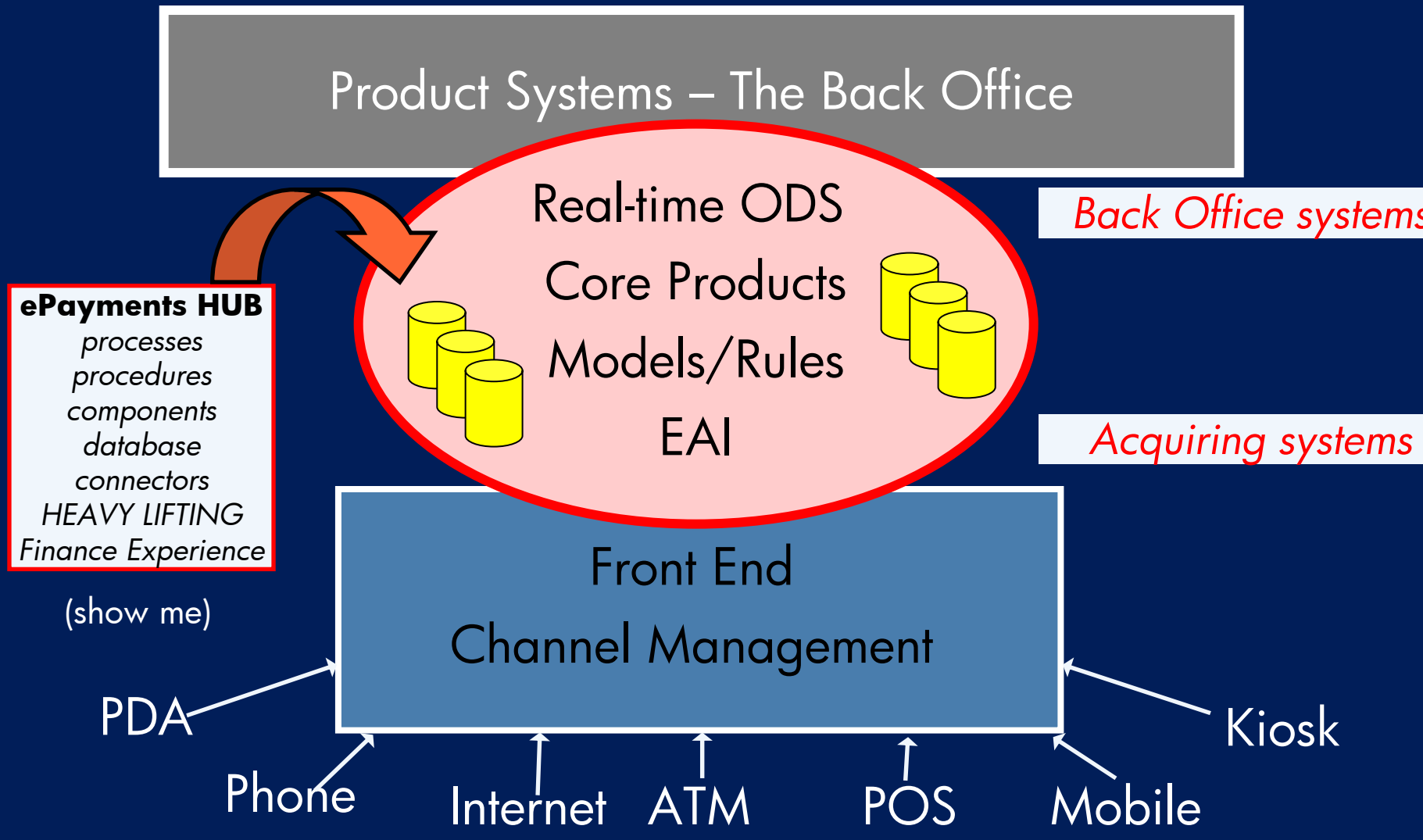
Future in – Increasing regulatory requirements

- Regulatory compliance: Patriots Act, Basel II, AML
- Industry and Association mandates such as SwiftNet
- Business continuity, STP, records retention
- Risk & operational Intelligence

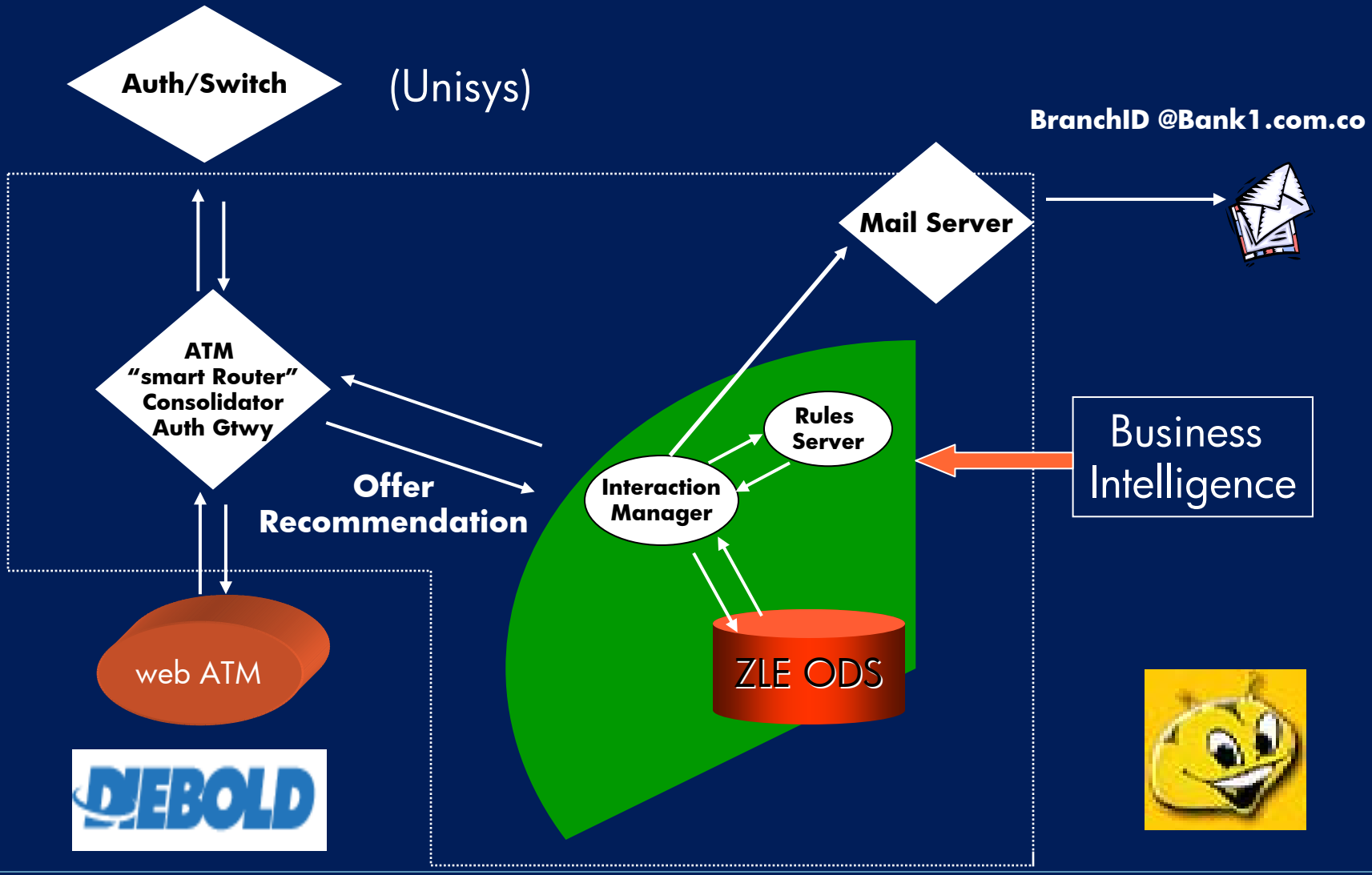
Future in – Profitability and customer-service goals

- Profitability
- Customer Access & Quality of service
- New products and services
- Integration, customer information
- Real-time enterprise

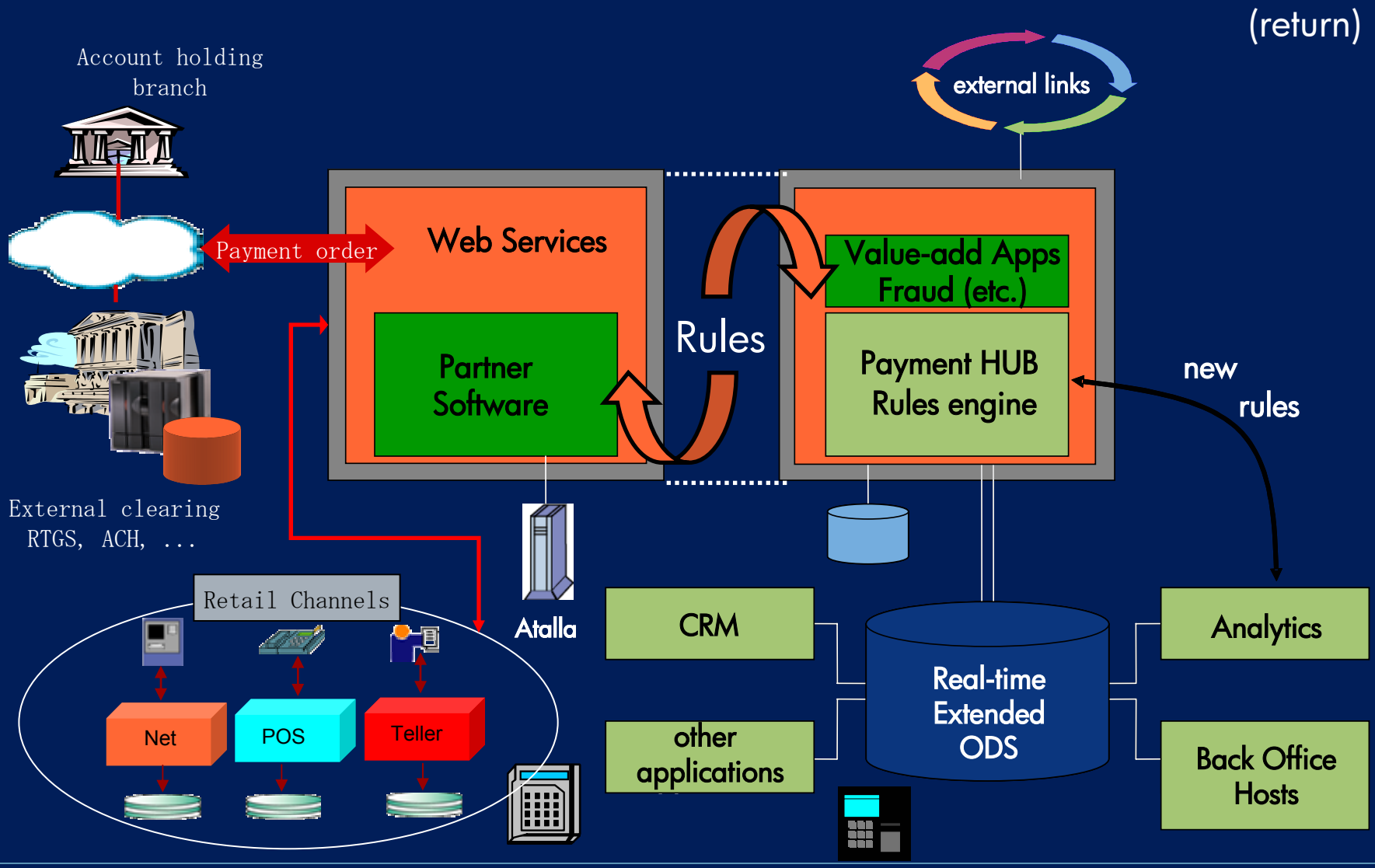
Real Time Financial Services (RTFS) Conceptual architecture



Cross-sell automatic debit & insurance



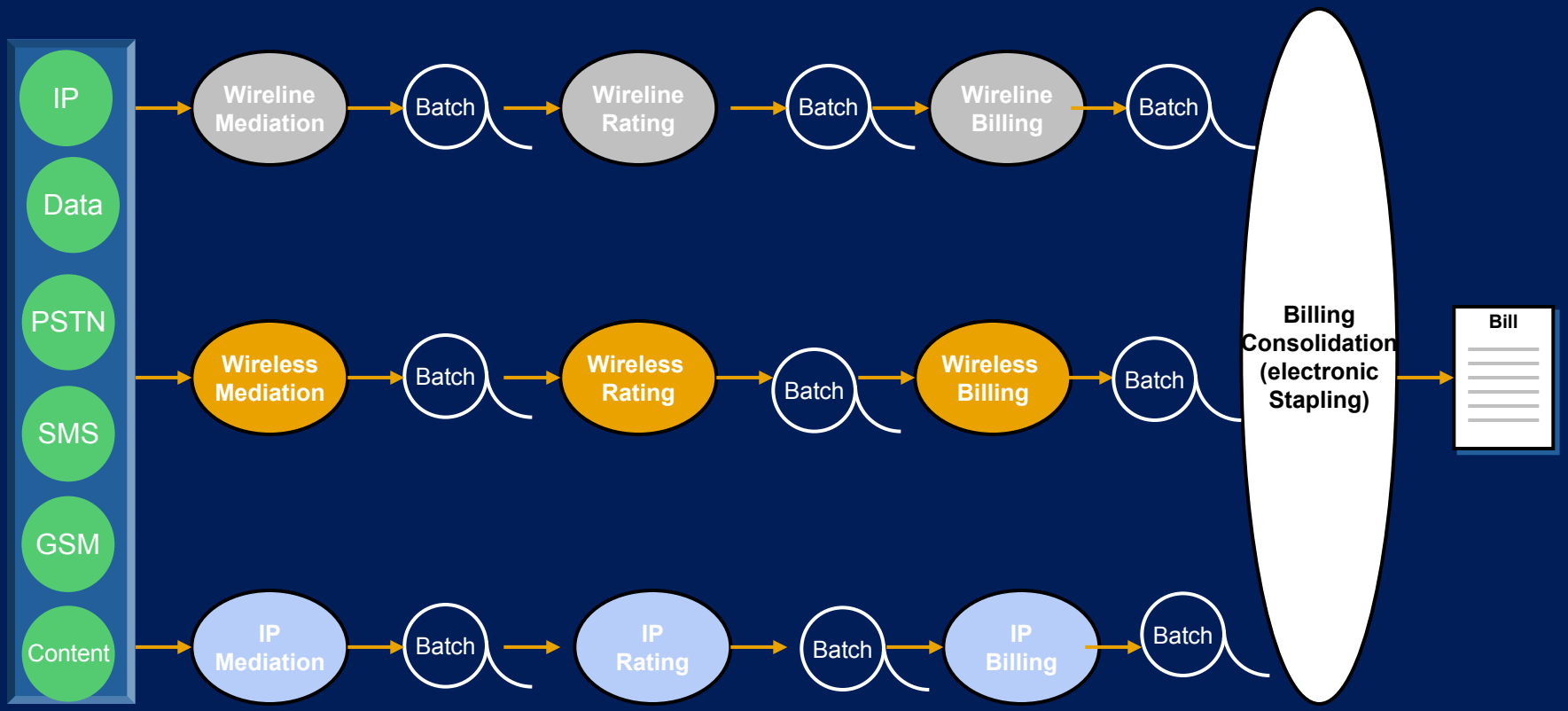
RTFS final vision



Telecommunications Challenges

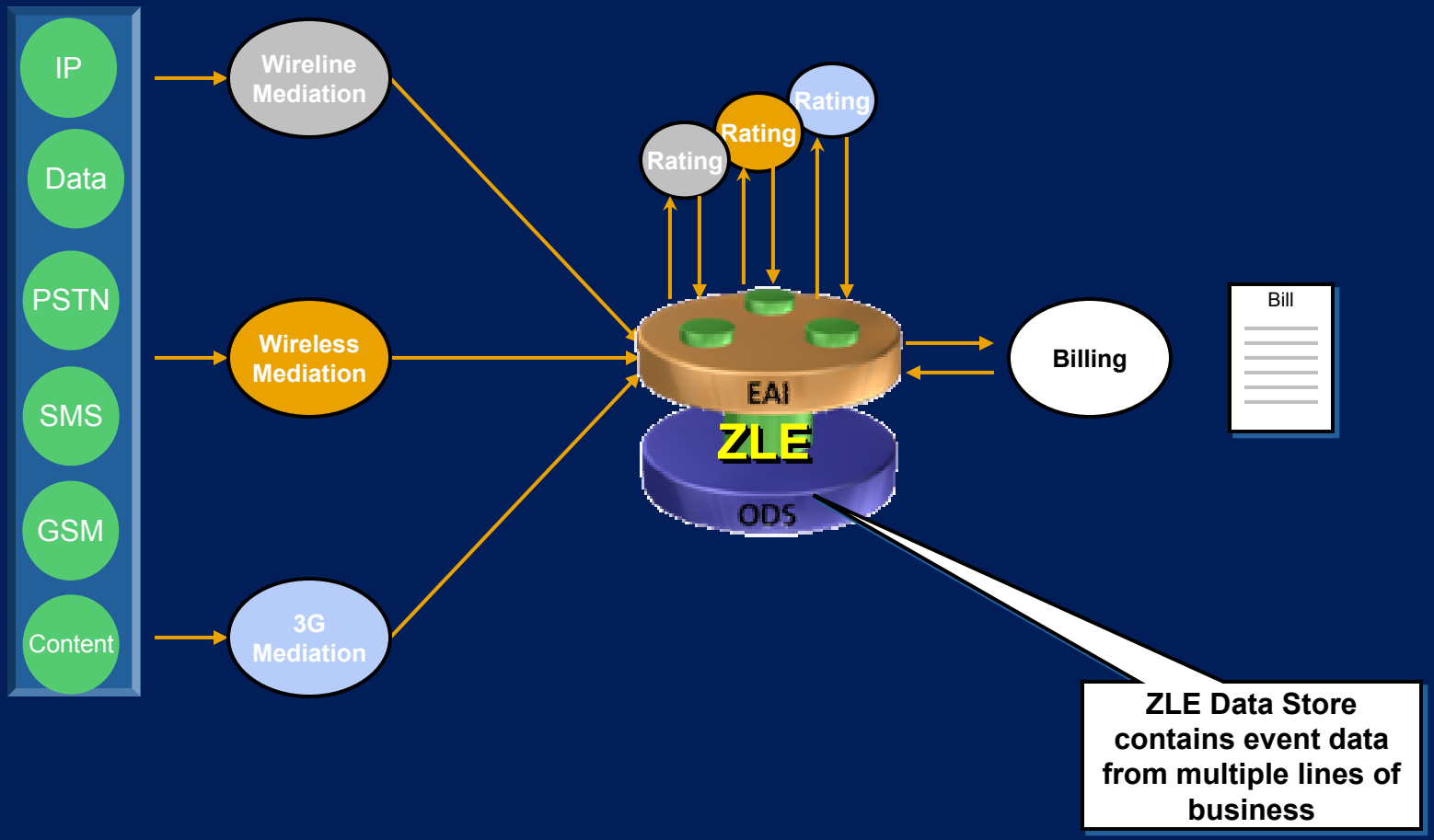
- Customer satisfaction and marketing
  - Build customer loyalty and reduce churn rate
- Flexible billing cycles
  - To allows easier implementation of new services
- Fraud
  - Fraud costs continue to rise
- Credit and collection
  - To better manage late paying clients and “bad” customers
- Information technology
  - Be flexible enough to keep with business demands

Traditional Telco Architecture

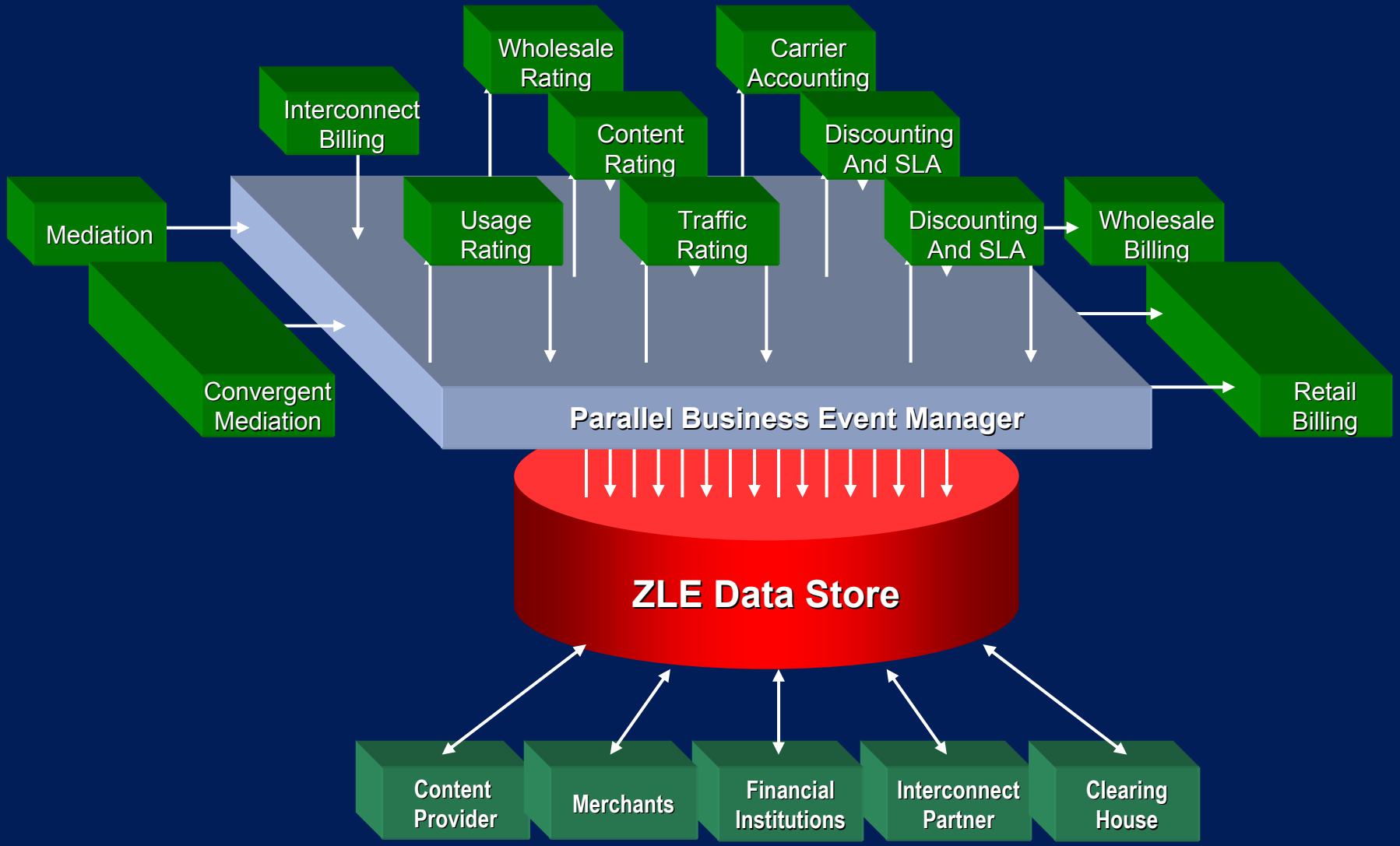


Telco ZLE Architecture Overview

- Event Capture – a logical view



Completing the Business Operations with ZLE



US Healthcare Challenges

- Market Pressures
  - Increasing costs of healthcare – treatments, medications, human resources
  - Increasing pressure from patients, government, insurance companies to lower costs yet improve quality
  - Increased media coverage of medical errors
- Clinical Pressures
  - Physicians want a return of control of the physician-patient relationship, fair compensation and less administrative burden
  - Shortage of qualified professionals
  - Increasing complexity of clinical options
- Regulatory Pressures
  - Government demands for more efficient administration, better patient care, and more secure patient privacy are pushing fundamental changes in the processes of healthcare organizations and their IT systems
  - Increased cost, focus on regulations, less on patients
- Consumer Pressures
  - More educated customer base – demands best care
  - "We want less complexity, more choice and more caring. And we don't want our health plans between us and our doctors."

Patient Centric View of Healthcare

On-line Pharmacy

Existing Legacy Systems

Medical Suppliers

Physician – patient interaction

Insurance (payers)

Consumers

Patients

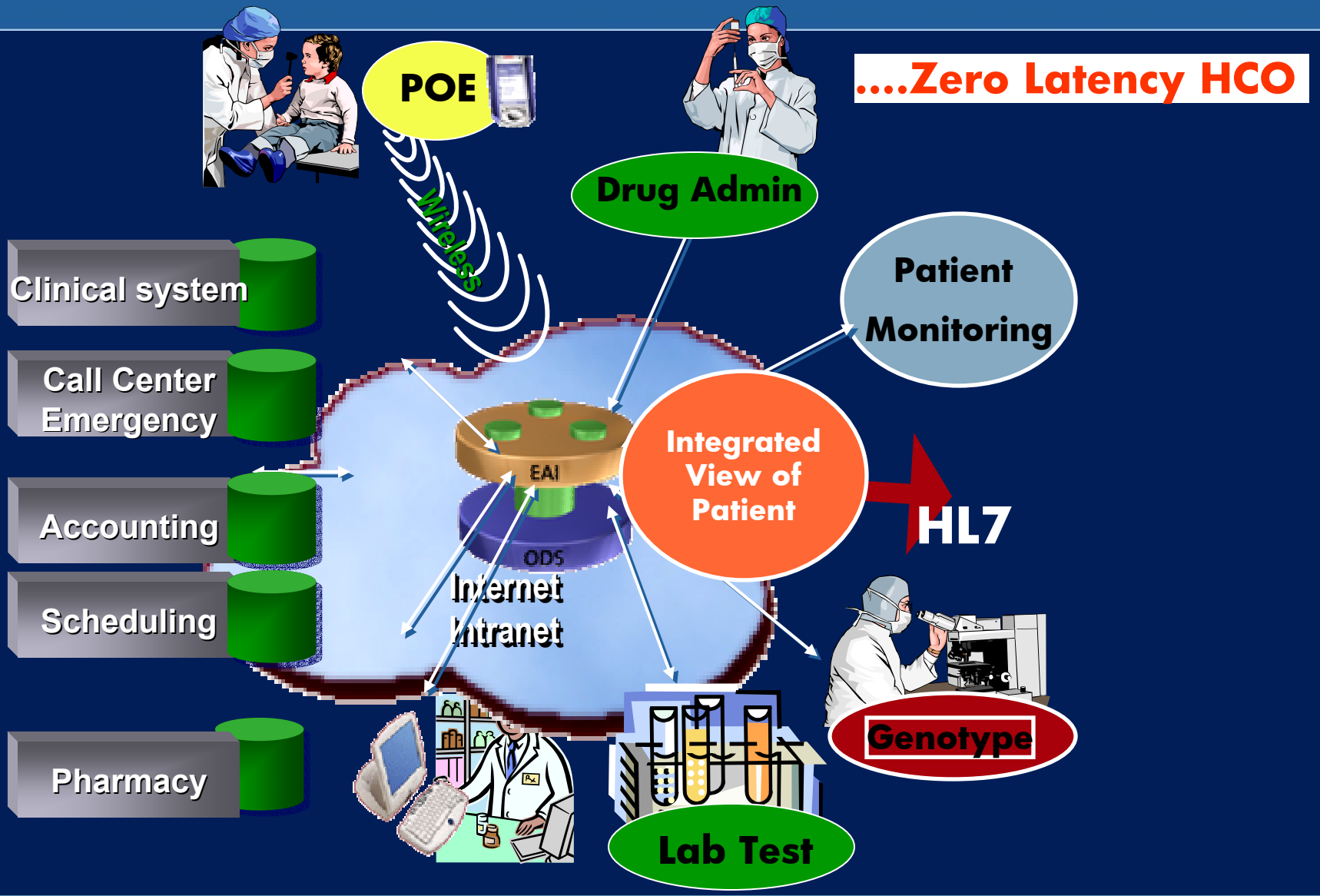
Laboratories

Billing Services

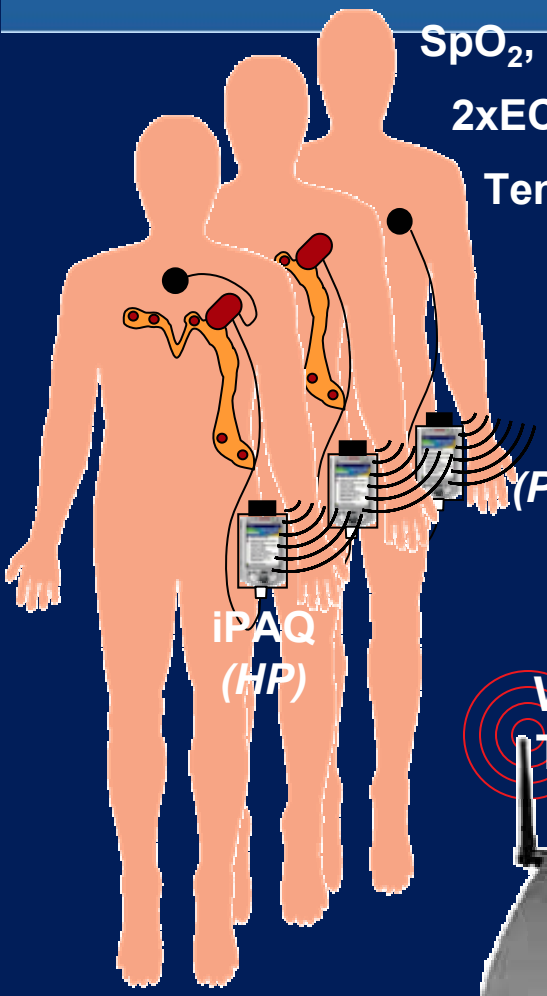
Physicians

Federal Government

Integrated View of Patient Care



Remote Monitoring
Multiple Data Sources



SpO_2, Heart Rate *(Nonin)*

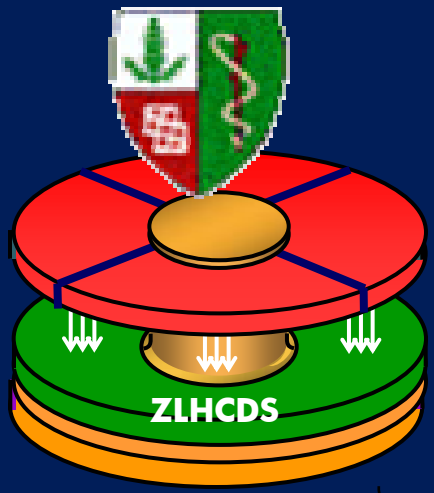
2xECG, Resp. *(Nexan)*

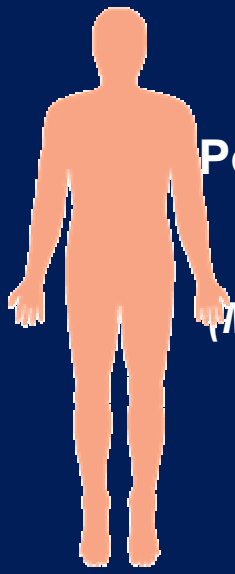
Temperature *(Custom)*

RF *(Proxim)*

iPAQ *(HP)*

Remote Data Collection, Evaluation and Distribution





Portable Display Devices

HMD *(MicroOptical)*

Laptop

Wireless Data Transmission

RL2 Accesspoint *(Proxim)*

iPAQ

Internet Connection

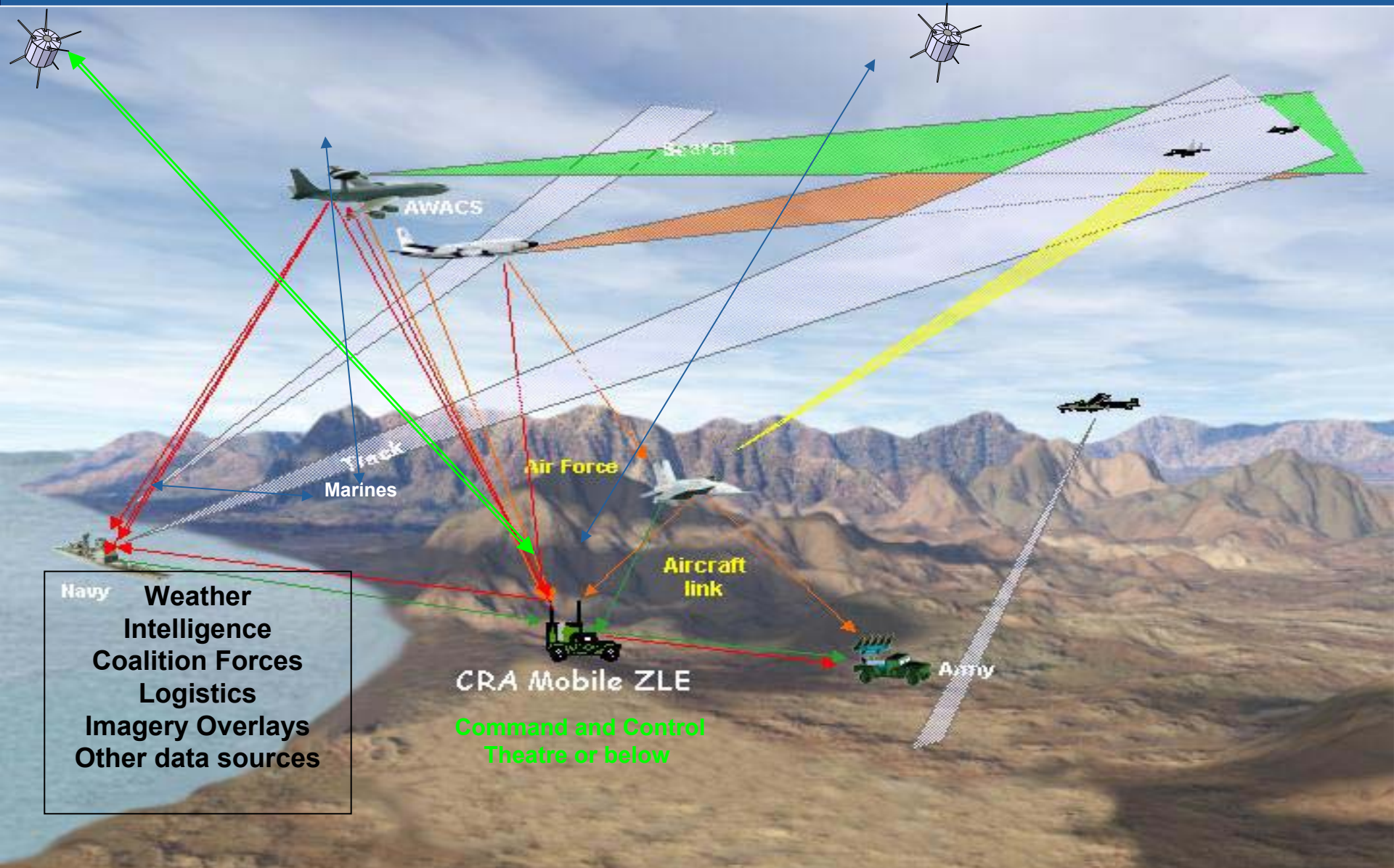
Challenges for National Defense

"…leverage information technology and innovative network-centric concepts of operation to develop increasingly capable joint forces.

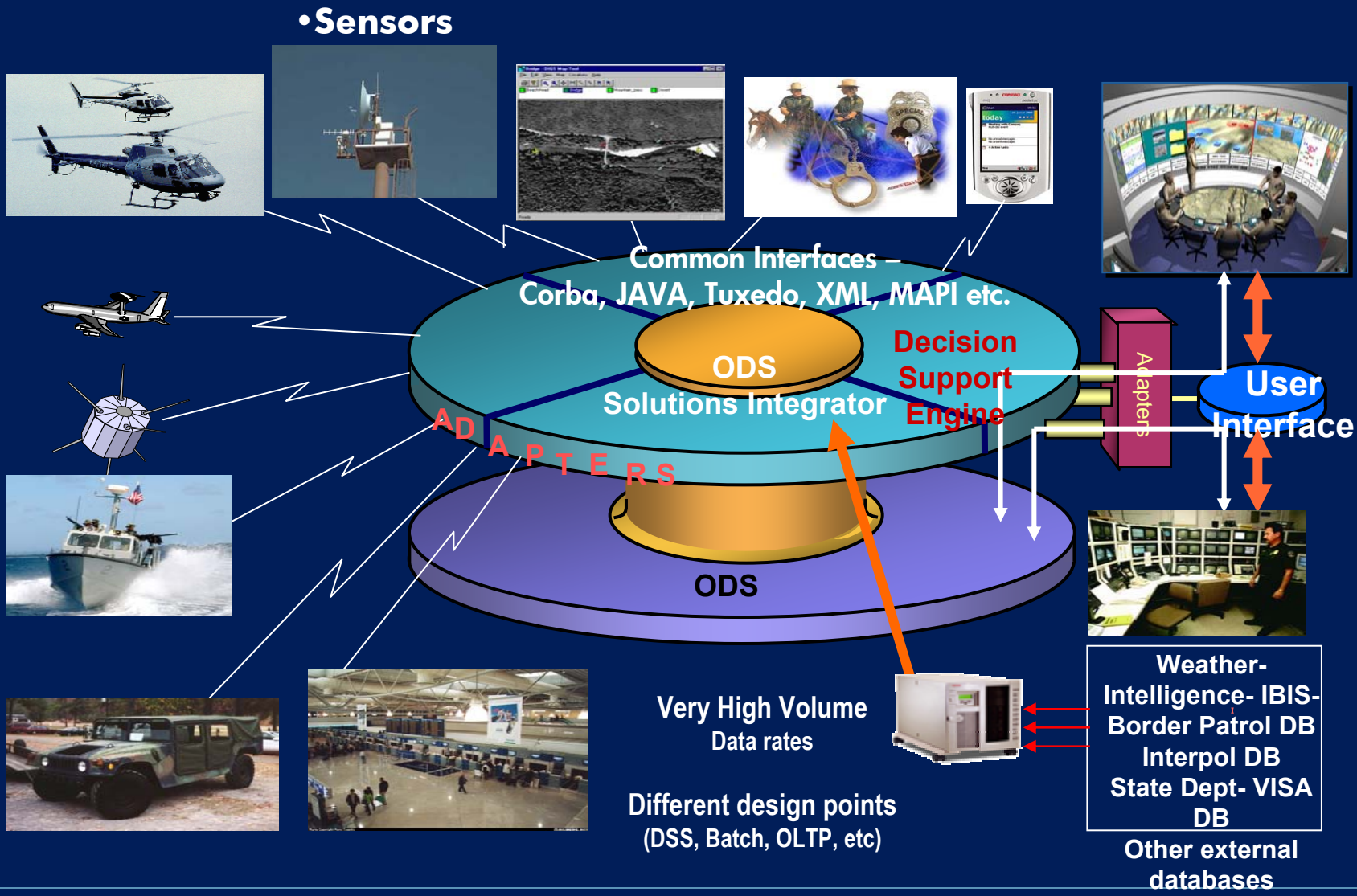
Our ability to leverage the power of information and networks will be the key to our success…"

Deputy Secretary of Defense P. Wolfowitz

Combined Air Operations Center



Real–Time Sensor Processing and Integration



Summary

- The goal of a Zero latency enterprise is the Instantaneous awareness and the appropriate response to events across an entire enterprise or beyond
- There are many scenarios where the HP ZLE approach offers real world value
- With ZLE you can:

  See… across the enterprise

  Learn… from all relevant knowledge

  Recall… events and outcomes

  Act… appropriately and immediately

  Inform…who ever you want!

Summary

Business Requirements	IT Requirements	HP ZLE delivers
See…	Collect	Integrate/Cleanse/ Synchronize
Learn…	Analyze	Genus/SAS
Recall…	Retain	ZLE Data Store
Act…	Evaluate	Rules Engine
Inform…	Communicate	Business Activity Monitoring (BAM)

ZLE related sessions at ITUG 2003

Date	Time/Room	Session Title
Mon	11:15a, Salon 4	ES-2-HP: ZLE - Solutions for the Real World (Dave Wilson)
	04:15p, Salon 4	ES-3-HP: ZLE Architecture and Products (Mike Zivkovic)
	05:30p, Salon 4	ES-15-HP: Developing ZLE and RTSC (Steve Carr)
	05:30p, Salon 3	ES-32-HP: Inside Payment HUB (Jon Harms)
Tue	8:00a, Room B1	ES-34-U: ZLE Experience, a Sprint Perspective (Tom Steele)
	8:00a, Salon 4	ES-16-HP: Latest in Enterprise Data Integration (L. Mendoza)
	10:45a, Salon 1	V-14: ZLE Federated Data Access (E. Adan, Attunity)
	1:30p, Room C1	ES-13-HP: ZLE in Banking (Jon Harms)
	1:30p, Salon 4	ES-11-HP: Real Time Supply Chain (Dave Wilson)
	2:45p, Salon 1	ES-6-HP: ZLE Core Services (Mike Zivkovic & partners)
	4:15p, Salon 4	MEA-6-HP: Managing ZLE with HP OpenView (T. Schachter)
	4:15p, Room C4	DA-11-HP: Developing Java & Tuxedo (V. Ranganathan)
	5:30p, Salon 1	ES-17-HP: ZLE Data Store & DB Synchronization (Bill Woo)
Wen	8:00a, Salon 4	ES-9-HP: How to Move to the ZLE (M. Hopkins, D. Tully)
	11:30, Salon 2	ES-7-HP: ZLE Data Mining Tools & Practices (P. Bosinoff)
	11:30, Salon 4	ES-18-HP: Enterprise Messaging (G. Haskell & partners)
	2:45p, Room B4	ES-29-HP: ZLE in Real-Time Banking using Tuxedo (U. Hilson)
	4:00p, Room B4	ES-8-HP: EAI Solutions for NonStop (M. Zivkovic and BEA)
	5:15p, Room C4	ES-31-HP: Implementing ZLE at SHAZAM (P. Cooper)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