Case Studies from HP NonStop Server Customers

John Boldt

Dir./Americas NED Field Marketing
HP

HP WORLD 2003
Solutions and Technology Conference & Expo

HP server portfolio

The world's broadest, most robust enterprise offering

High-end

ProLiant DL 700 series

AlphaServer GS series (32 way)

AlphaServer SC series

Superdome

NonStop™ S76000/S86000

Mid-range

ProLiant BL p-Class

ProLiant DL/ML 500 series

AlphaServer GS series (8,16 way)

RP7400/ 8400 series

NonStop S76XX series

Entry level

ProLiant BL e-Class

ProLiant DL/ML 300 series
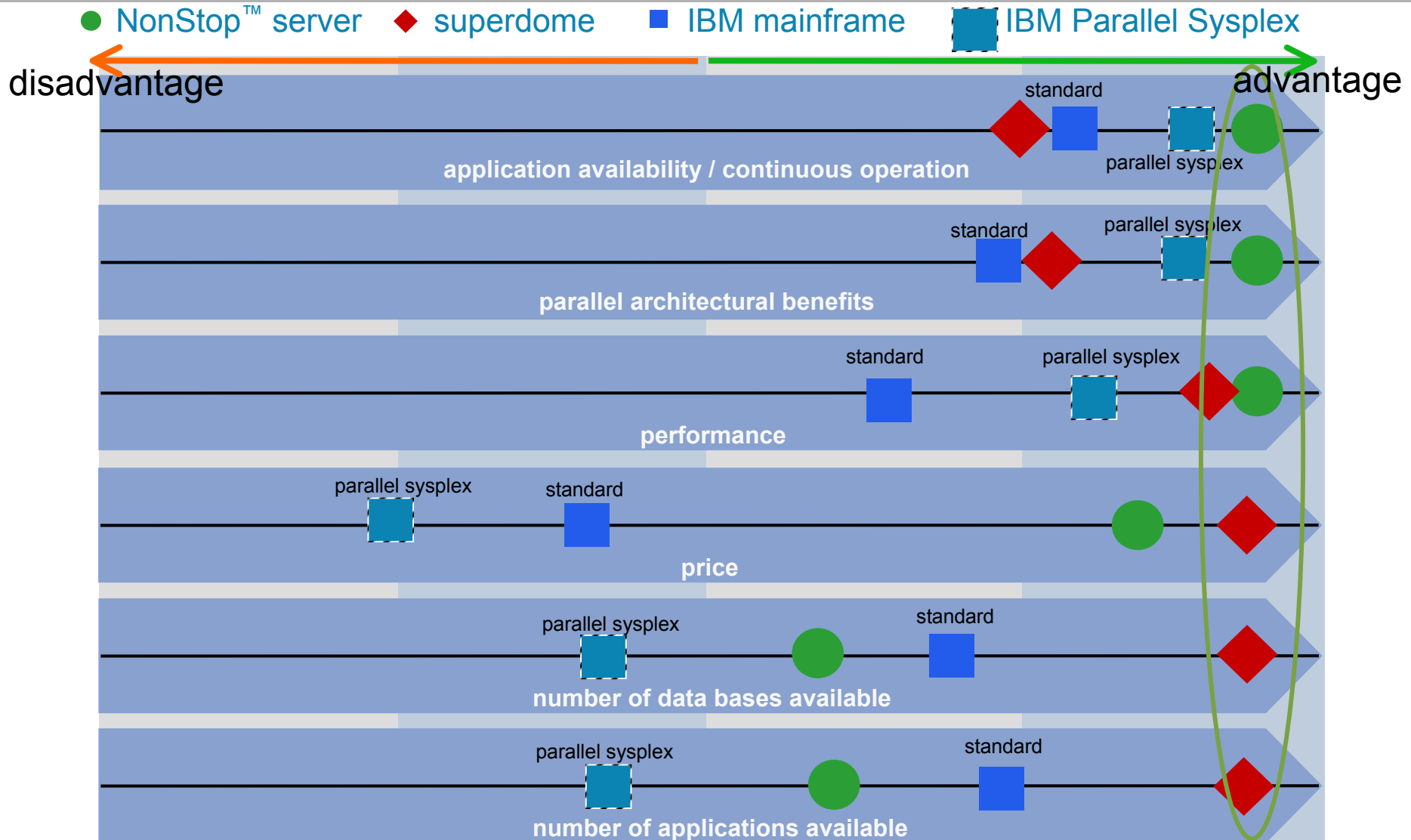
AlphaServer DS series

AlphaServer ES series

RP2400/5400 series

RX2600/5600 series

HP vs. IBM: the high-end ESG server advantages

● NonStop™ server   ◆ superdome   ■ IBM mainframe   ■ IBM Parallel Sysplex

disadvantage ←————————————————————————→ advantage

application availability / continuous operation

parallel architectural benefits

performance

price

number of data bases available

number of applications available

HP NonStop™ servers — Business-Critical Enterprise solutions

500 Financial Services Companies

- 80% of ATM transactions
- 66% of credit card transactions
- 75% of the world's 100 largest electronic funds transfer networks

106 Securities / Commodities Exchanges

- 95+% of securities transactions
- 106 of the world's120 exchanges

135 Telecommunications Providers

- 100% of the 35 largest
- Wireless and land lines

40 Police, Fire, Emergency Dispatch Systems

- Many large & small cities worldwide
- Majority of all U.S. 911 calls

450 Manufacturers

- Most European car manufacturers: Mercedes, Peugeot, Renault, Porsche

400 Retailers and Wholesalers Worldwide

- Including Hertz, Target, Victoria's Secret

200 Hospitals and Healthcare Providers Worldwide

- World's Largest HMO: Kaiser

100 Very Large Databases for Business Intelligence

- Deutsche Telecom
- AOL
- Target

ZLE defined

A definition

"Zero latency is the real-time, enterprisewide dissemination of new information distributed in such a way that allows businesses to react quickly to it, driving the competitive business advantage to its ultimate limits."

Paul Larson
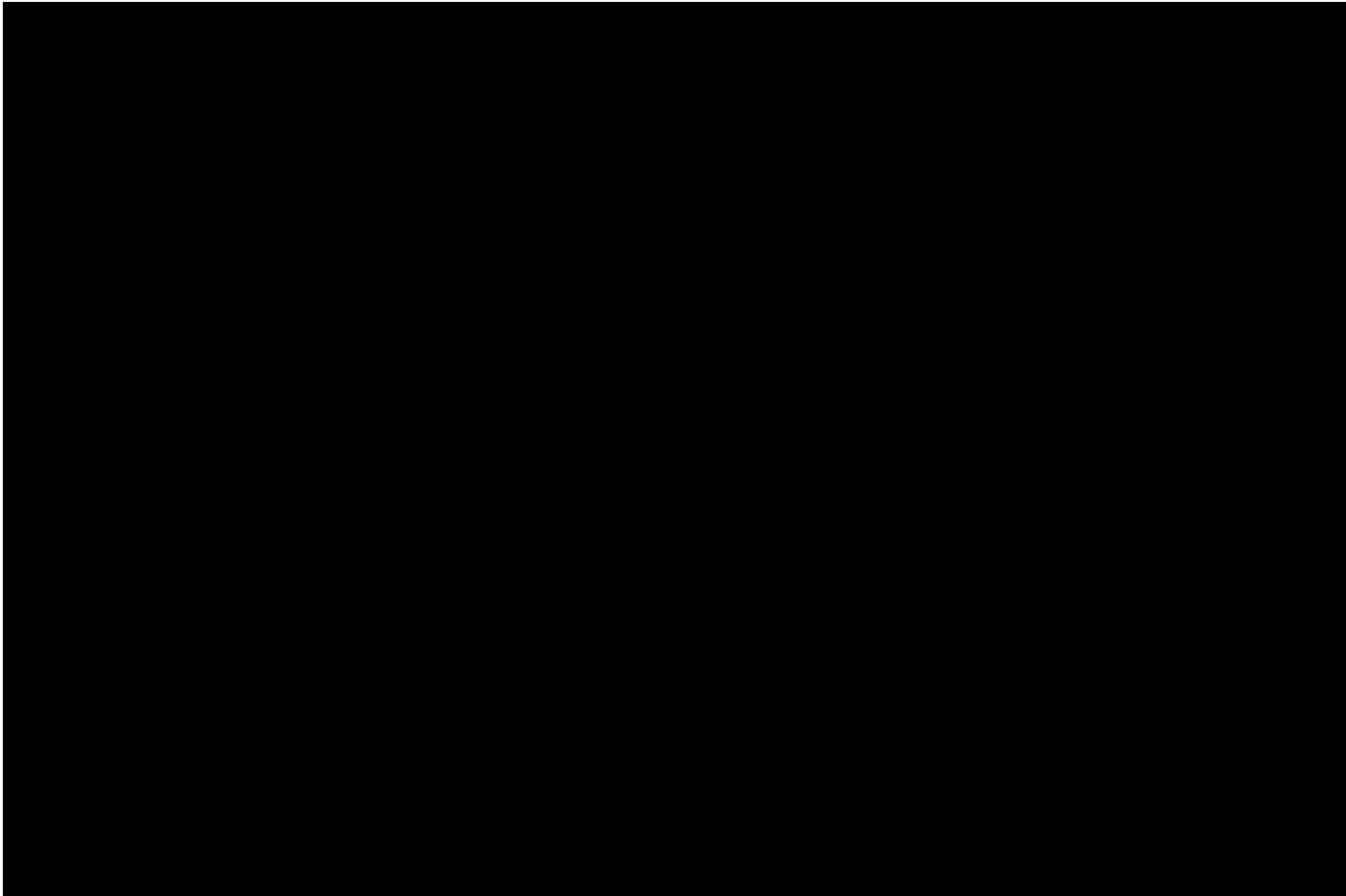Talarian Corporation (now TIBCO Software Inc.)

The goal

"Instantaneous awareness and appropriate response to events across an entire enterprise."

Roy Schulte
Vice President, World Services, Gartner

Director of *Infoworld* Test Center gives HP ZLE demo high marks

In a recent *InfoWorld* article, "Now isn't soon enough; Real-time databases are the next frontier," Tom Yager, technical director of the InfoWorld Test Center and *InfoWorld* columnist, said: "I have seen vertical solutions designed to enable real-time database access and analysis. I was not aware of more flexible, horizontal approaches to real-time challenges until I spent some time with Dave Wilson, Hewlett-Packard's director of marketing for ZLE (Zero Latency Enterprise). The company's ZLE project combines best-of-breed technologies (most of them right off the shelf) to create a fast, distributed database that you can hit with complex queries while transactions are coming in."
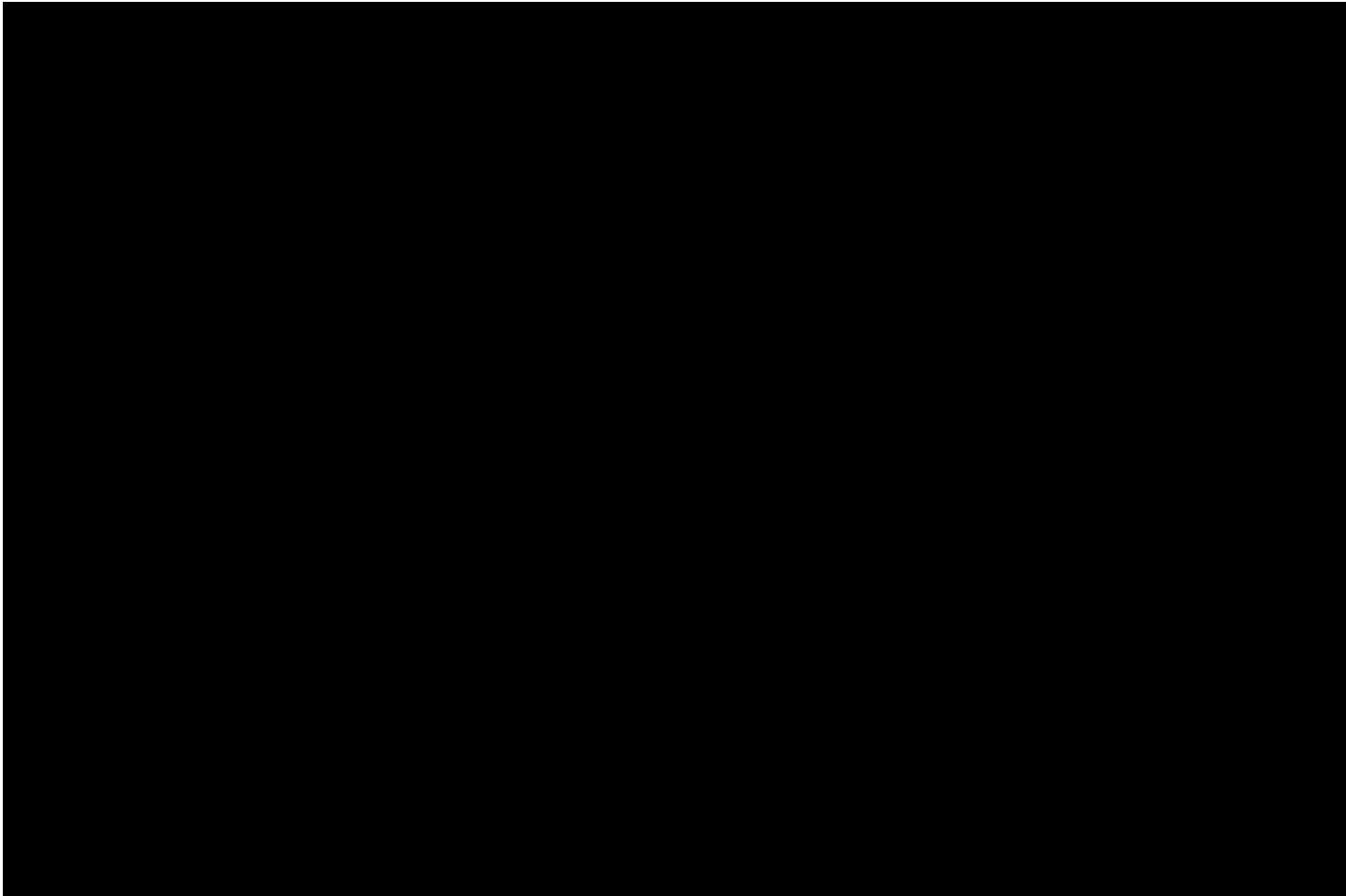
Target Corporation –
Retail case study

- **Challenge**
  - Personalize every guest experience when different parts of the enterprise are working with different data.
- **Solution**
  - Total integration of all Target's customer touch points and databases into a single, guest-centric business initiative.
  - Coordinate information from marketing, e-commerce, guest services, merchandising, credit registry, risk management, asset protection, and more.
- **Impact**
  - Ensure a positive, personalized experience for each guest with a single, up-to-the-second view of every customer.

> "As we look out into the future, NonStop servers will be a key reality for us as we grow from a US$36 billion company to a US$50 billion company to US$75 to US$100 billion…. The only way we can grow to those kind of rapid changes in our revenues is to partner with somebody like [HP] who has the ability to grow with us, and using NonStop servers is a key foundation of making that happen."
>
> – Paul Singer
> CIO
> Target

TARGET.
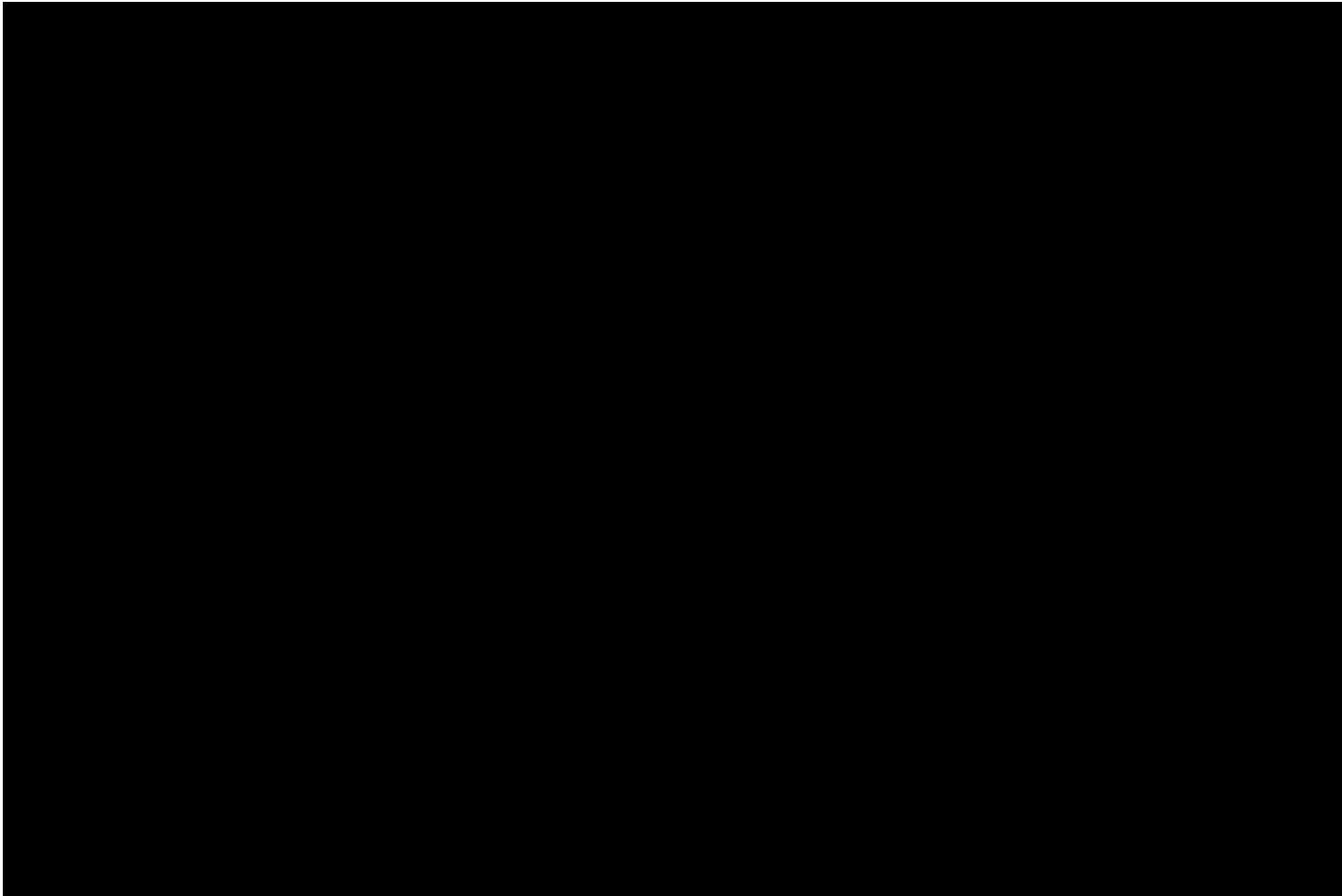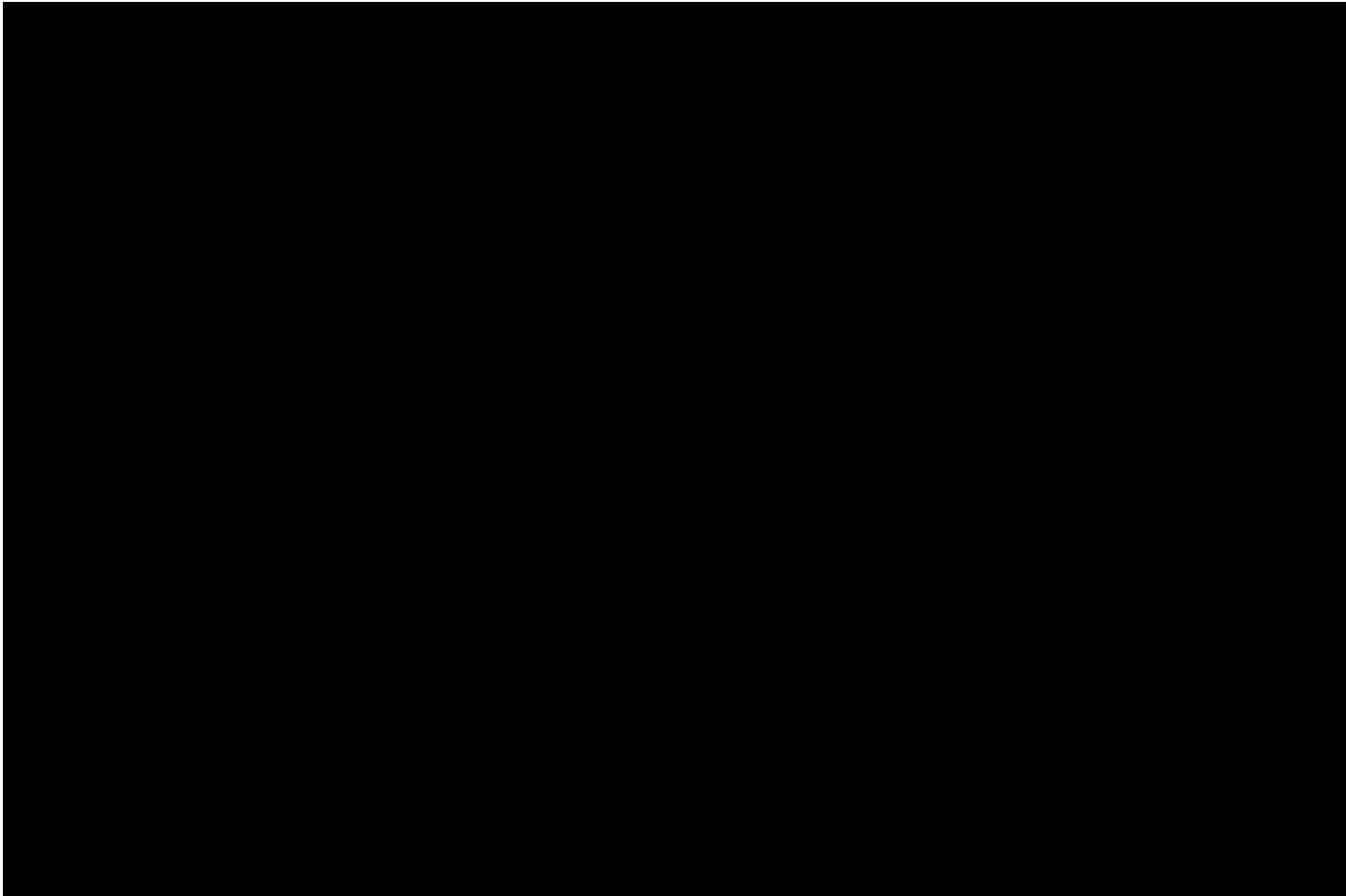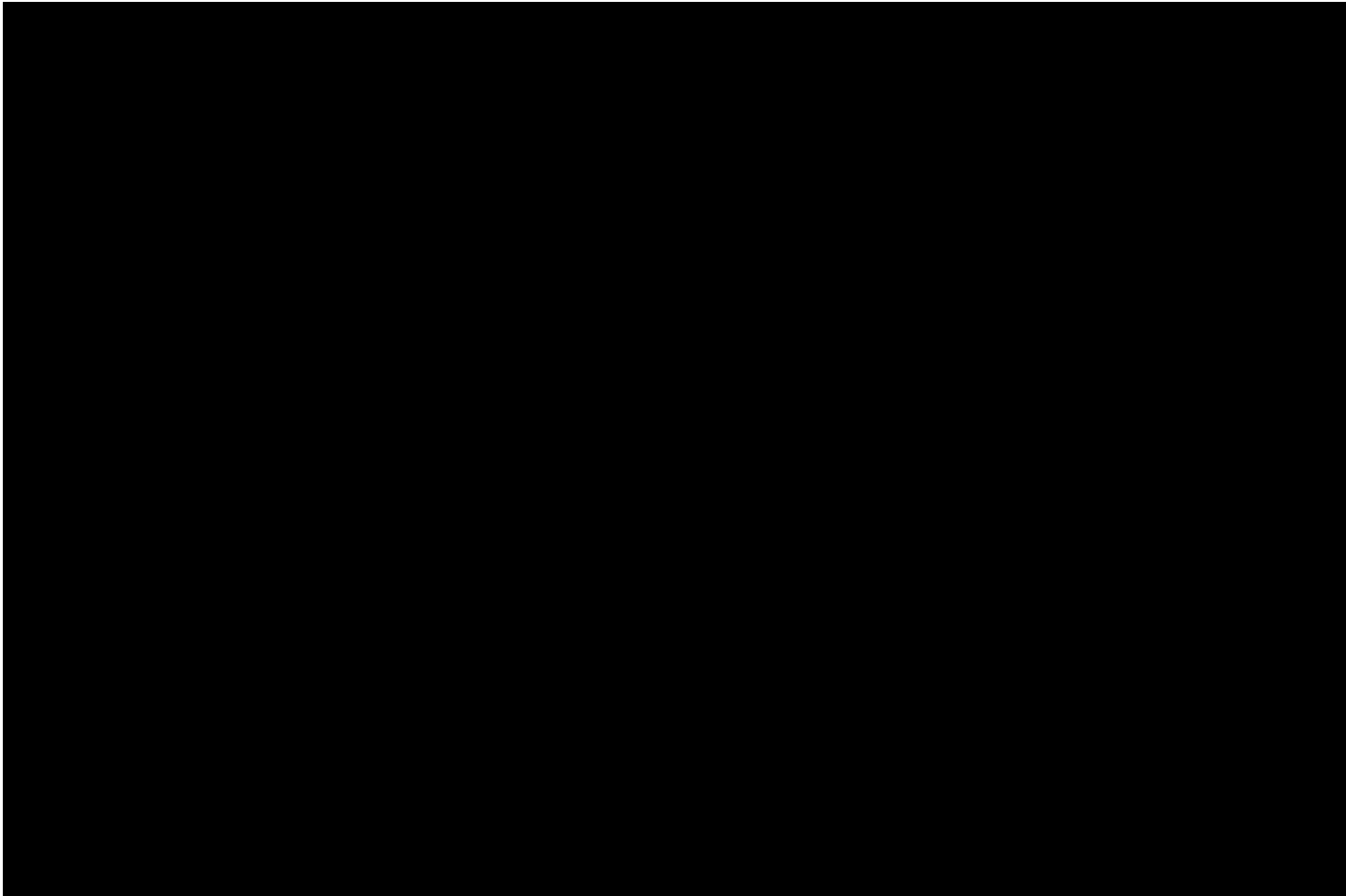
Benefits for retail sector

- With the window of opportunity for influencing customer purchase decisions shrinking, ZLE allows:
  - Accurate account of inventory and supply chain with the ability to take action immediately.
  - **"Personal touch"** at every customer touch point, ensuring customer loyalty.
  - More targeted marketing campaigns, eliminating duplication and waste.
  - Data mining analysis performed up to the second, allowing more accurate campaign models.

Large car rental company - Case study
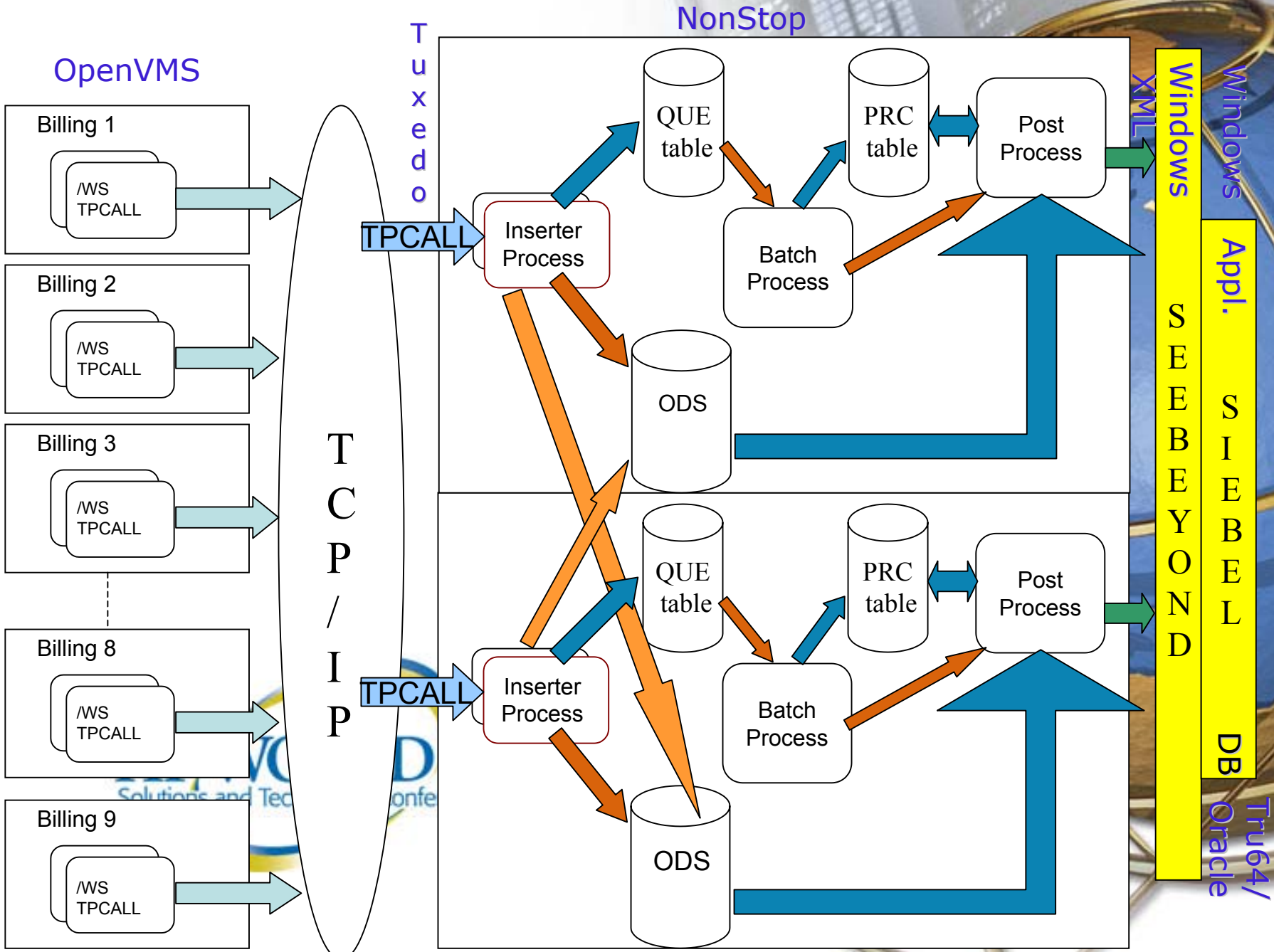

Business problem

- Approximately 70 disparate customer databases
- No integration

ZLE business value

- Consolidation of customer databases
- Better call center information and customer service

Large Cable TV Provider

Sprint –
Telecom case study

- **Situation**
  - Sprint is a global communications company at the forefront of technology in integrating long distance, local, wireless, and Internet communications service. Sprint developed and operates the United States' only nationwide, all-digital, fiber-optic network and is a leader in advanced data communications services.
- **Challenge**
  - Consolidate multiple data stores of call detail records and operational measurements into a single source
  - Reduce query time
  - Enable in-depth data analysis
- **Key components**
  - HP NonStop S74000 processors, disks, and software
    - 64 processors
    - Key software: NonStop SQL, NonStop Remote Database Facility (RDF), and NonStop DOM for CORBA

For Tom Steele, principal network design engineer at Sprint, the system has made a world of difference. "We put a big challenge out to [HP]. Give us a way to take all the call-in information that comes in so incredibly fast and not just save it, but be able to instantly find information anywhere in that stream. That really began the concept that Gartner later called zero latency. It all started with our call detail records and [HP]."

Sprint
Telecom case study

- **Solution**
  - Implemented an ODS with some EAI capabilities
  - Mixed-workload capabilities
  - Largest geographically dispersed, data-replicated ODS and warehouse in the world
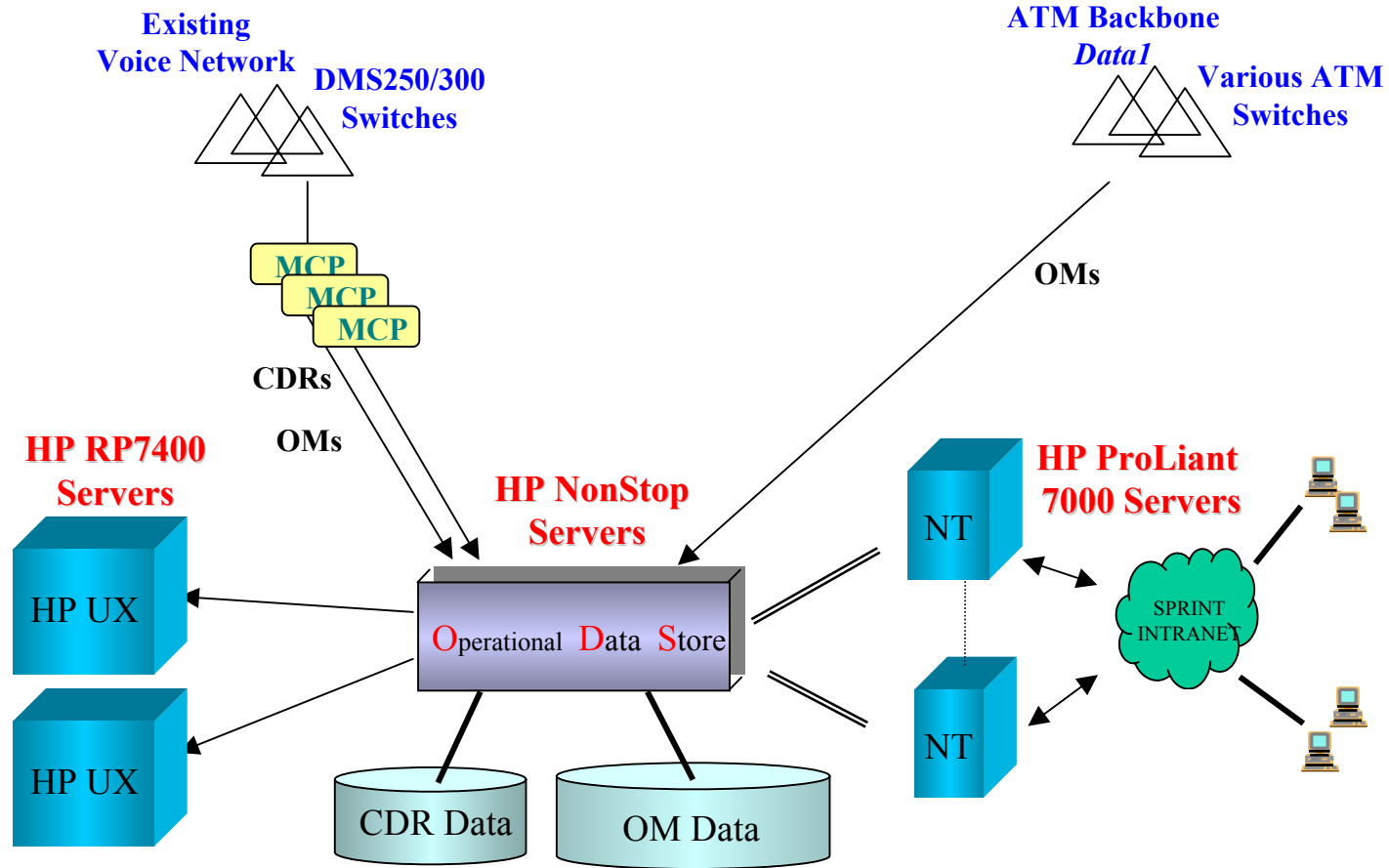- **Impact**
  - High-quality, enhanced communications service across the board
  - Reduced query time
  - More reliability and flexibility
  - Enhanced control and customizable features and on-demand capabilities
  - Information presented the instant it is available across the enterprise

Steele gives high marks to [HP's] ZLE framework for enabling a high-performance ODS:

"As for ZLE, there isn't another platform out there that can store and retrieve the call detail records coming in as fast as they do. Others have tried, but they just can't accomplish it."

Sprint ODS/ZLE

Existing Voice Network

DMS250/300 Switches

ATM Backbone
Data1

Various ATM Switches

MCP
MCP
MCP

CDRs

OMs

OMs

HP RP7400 Servers

HP NonStop Servers

HP ProLiant 7000 Servers

HP UX

HP UX

NT

NT

SPRINT INTRANET

Operational Data Store

CDR Data

OM Data

(Voice OMs) (Data OMs)

M

icroStrategy

M

icrosoft ISS

C

old Fusion

- Increase revenues 2 to 3 percent with billing on demand

- Reduce fraud by more than 50 percent

- Reduce information processing costs by 5 to 35 percent

- Improve profitability by 6 to 15 percent by reducing churn

Gartner Consulting Report, March 2001

Scalable growth with HP NonStop™ Servers
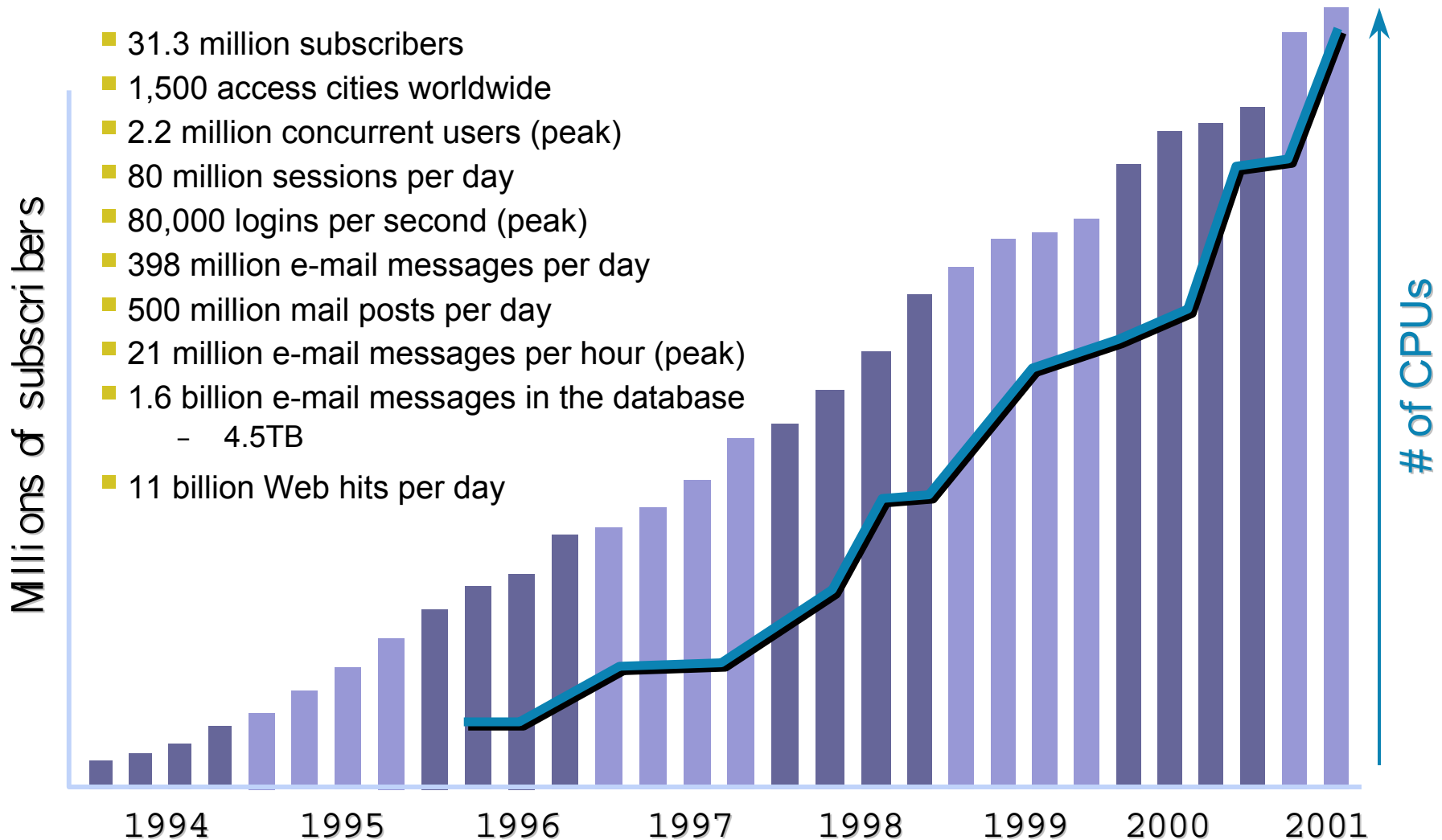
- 31.3 million subscribers
- 1,500 access cities worldwide
- 2.2 million concurrent users (peak)
- 80 million sessions per day
- 80,000 logins per second (peak)
- 398 million e-mail messages per day
- 500 million mail posts per day
- 21 million e-mail messages per hour (peak)
- 1.6 billion e-mail messages in the database
    - 4.5TB
- 11 billion Web hits per day

Millions of subscribers

# of CPUs

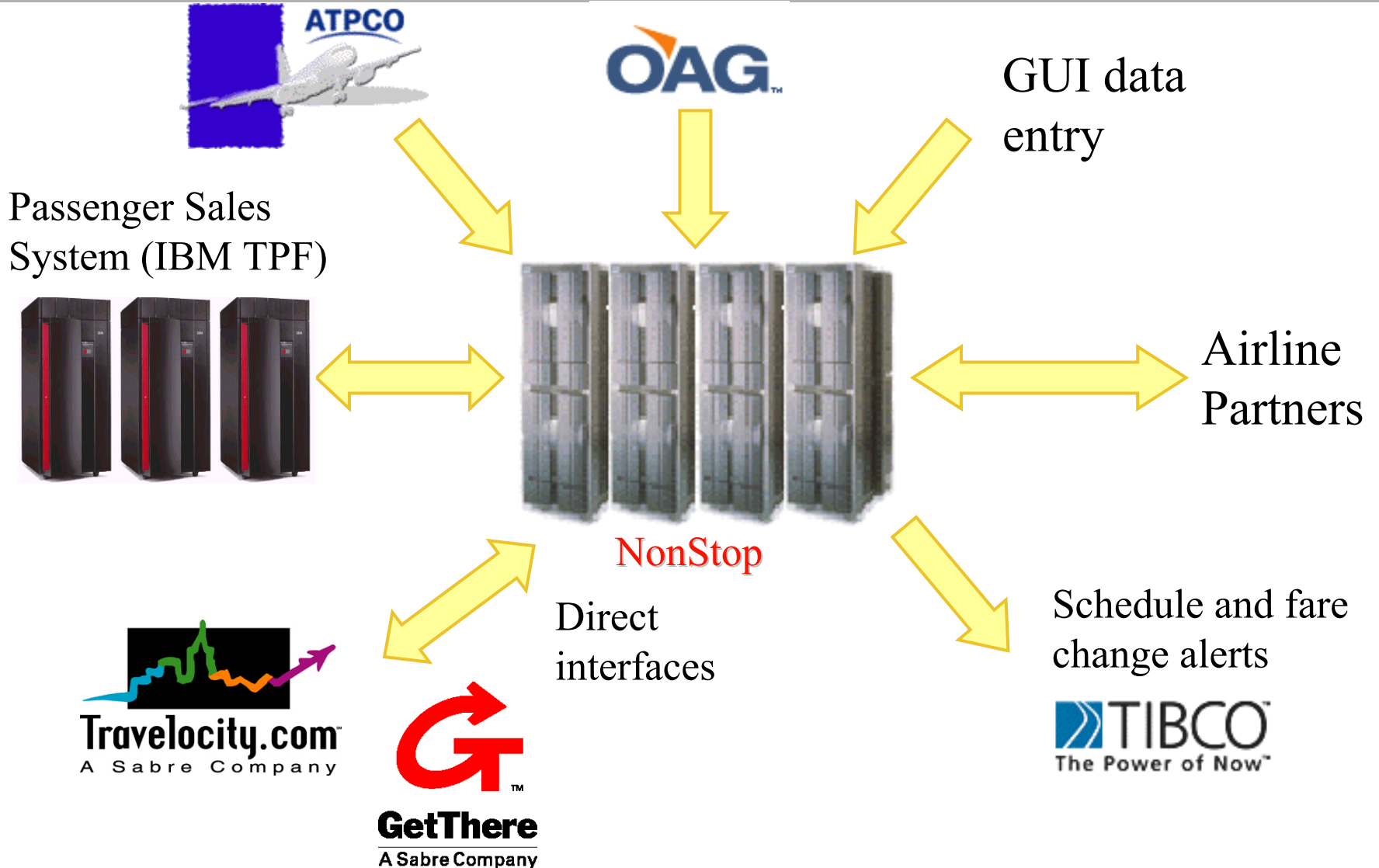1994 1995 1996 1997 1998 1999 2000 2001
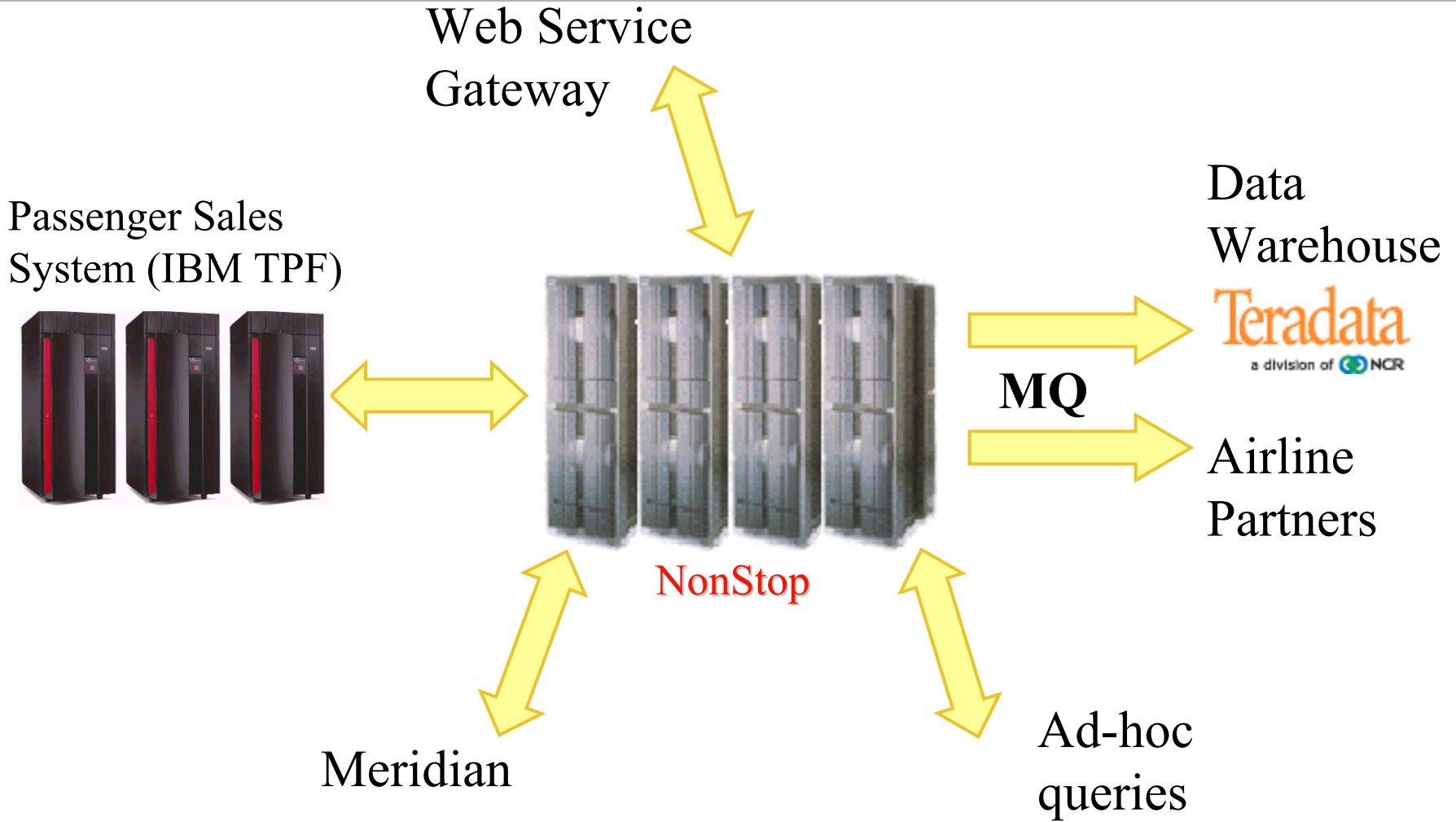
Managing 24X7Xforever: Staff

- 4 Developers

- 3 QA Analysts

- 6 Operations Support people
  - 2 DBA's
  - 4 Operations Administrators

This group manages over 1400 NonStop processors, ~1200 processors used for mailbox system application

Air Shopping & Pricing

ATPCO

OAG

GUI data entry

Passenger Sales System (IBM TPF)

Airline Partners

NonStop

Direct interfaces

Schedule and fare change alerts

Travelocity.com A Sabre Company

GetThere A Sabre Company

TIBCO The Power of Now

Consolidated Customer Content

Sabre

Web Service
Gateway

Data
Warehouse

Teradata
a division of NCR

Passenger Sales
System (IBM TPF)

NonStop

MQ

Airline
Partners

Meridian

Ad-hoc
queries

HP World 2003 Solutions and Technology Conference & Expo

HP World 2003 Solutions and Technology Conference & Expo
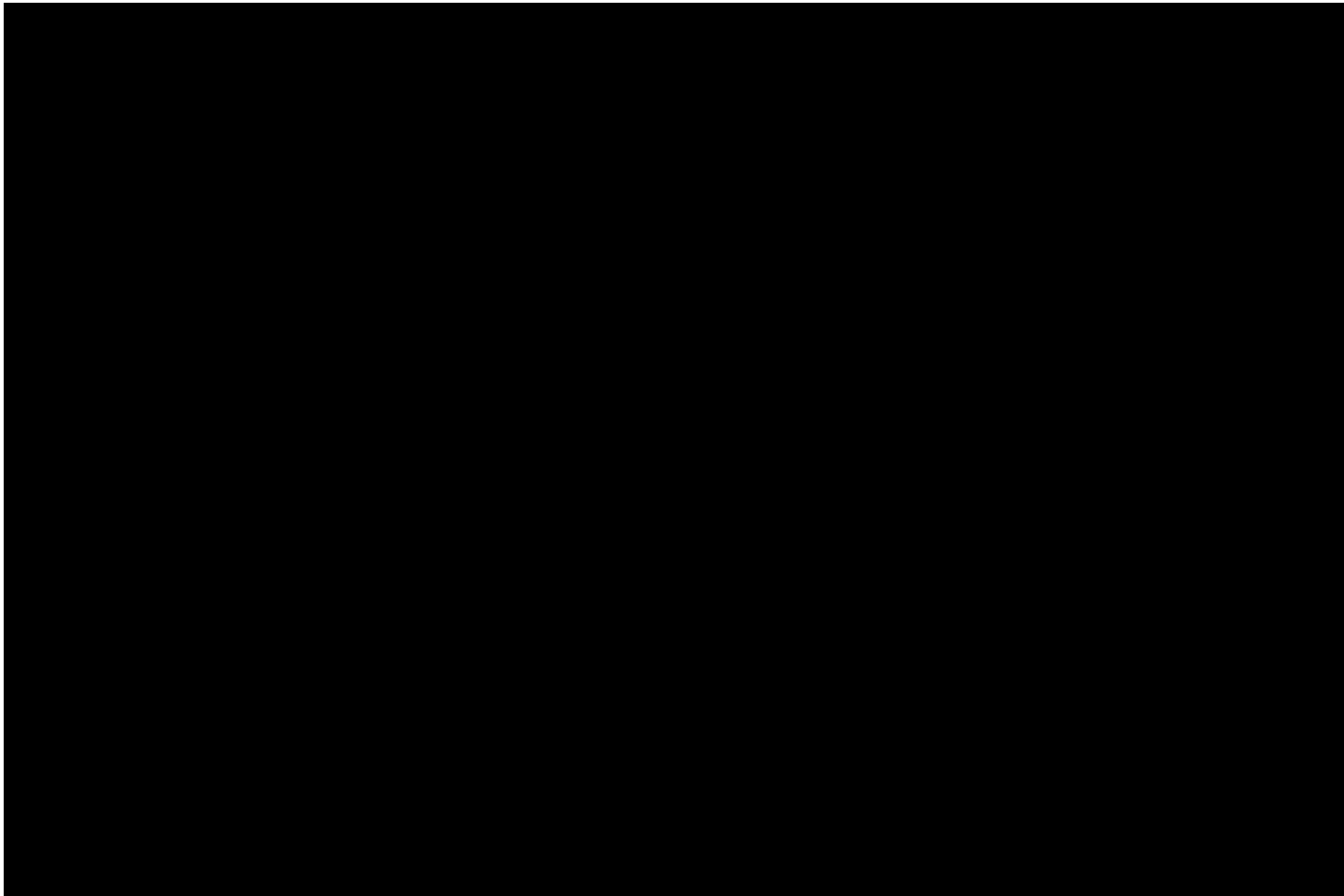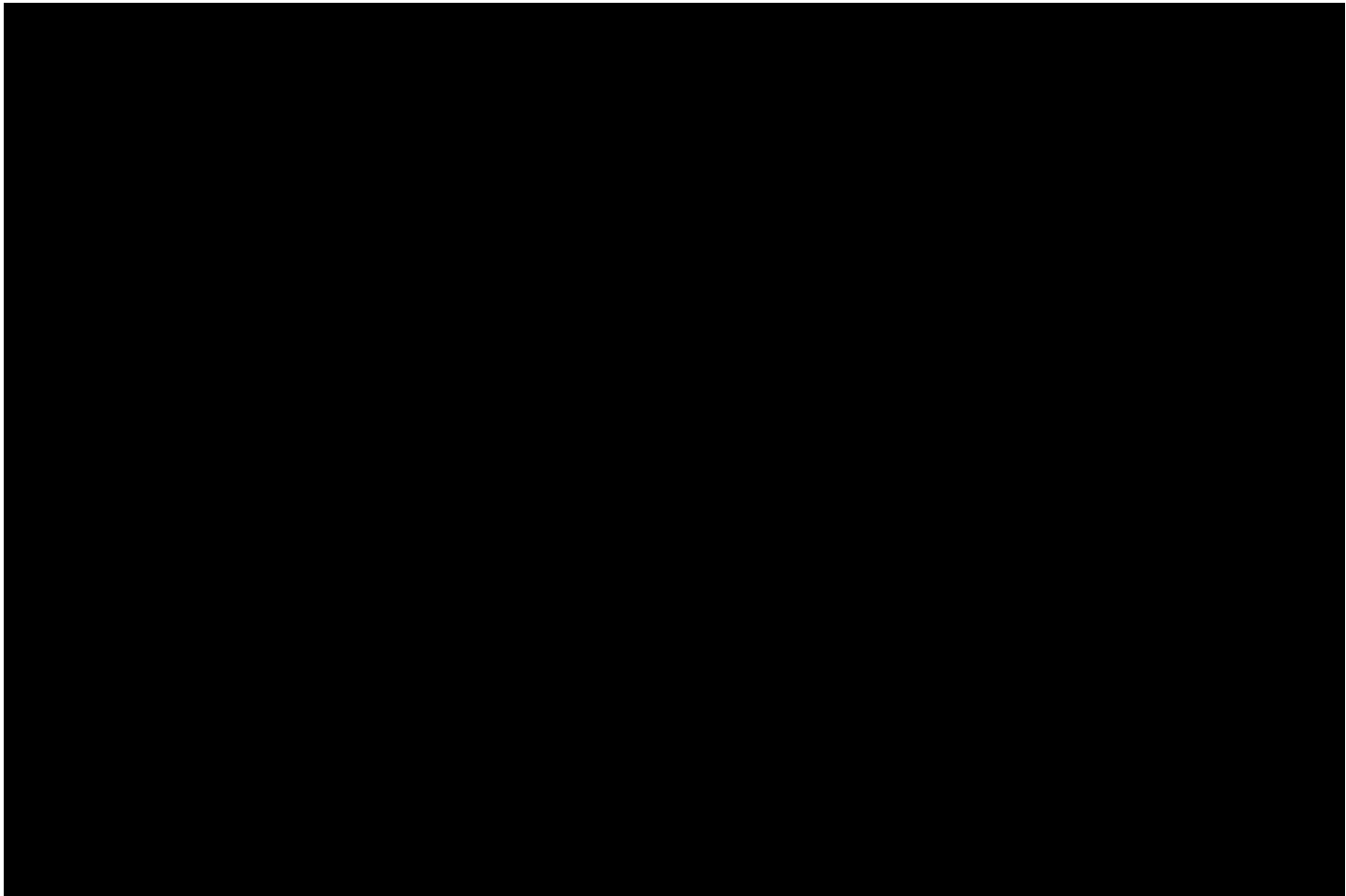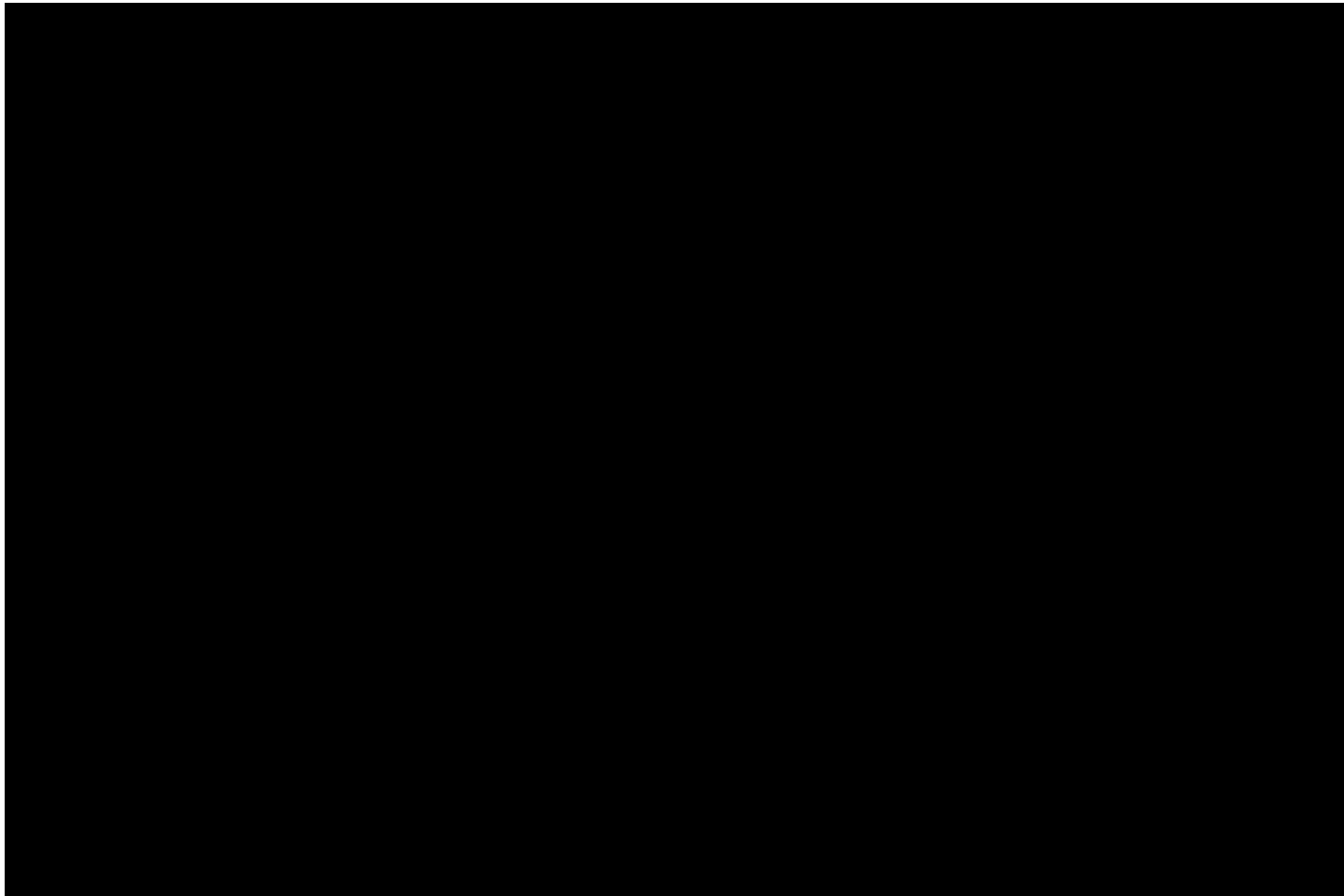
Experience so far...

- **TCO**
  - Initially forecast 40% reduction
  - Some parallel development on legacy and new systems for some necessary functionality
  - Have experienced 2:1 or better gains in programmer productivity

Compelling advantages of NonStop™ server for Sabre

- Raise development staff productivity by 100%

- Reduce new application cycle time by 75%

- Reduce total cost of ownership (TCO) 40%

- Position Sabre on an open platform

  to rapidly adopt new technologies

- Proven ability to scale to any demand
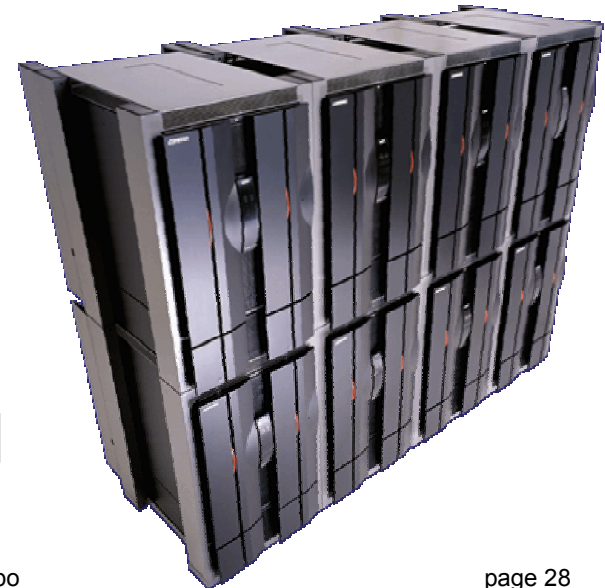
Banamex—Mexico's largest bank
Finance case study

- **Situation**
  - Largest bank in Mexico; one of the most profitable Mexican banks by a large margin
  - Has a strong customer focus
- **Challenge**
  - Customer-focused solution that matches the scalability of business initiatives
  - Maintain security, privacy, and data integrity
  - Deliver strategic new features and services to customers quickly and effectively
- **Key components**
  - Platform open to standards like CORBA, Tuxedo, TCP/IP, and Java
  - Software including HP Pathway and Pathway/XM, HP NonStop Transaction Management Facility (NonStop TMF), NonStop SQL, and NonStop Tuxedo

"We want to be supported by a reliable company, by a reliable environment, by a reliable platform... We need to be able to introduce changes very quickly. This is precisely the ability that HP delivers in the ZLE architecture... Partnering with HP has given us the time to deal with banking issues rather than technology issues."

– Enrique Grapa
CIO/CTO
Banamex

Banamex –
Finance case study

- **Solution**
  - Phased implementation beginning with enterprise application integration (EAI) layer
  - High-performance technology with integrated, up-to-the-second view of information
  - Layered architecture with ability to access channels and bring up new devices without affecting back-end business

- **Impact**

  The ability to
  - Understand their customers' total relationship with their bank, via ATM, Web, or personally in a branch or a call center
  - Offer customers the right products and services at the right time in a consistent manner across all channels
  - Evolve over time and add new functionality
  - Feed several management information systems online

"The Intelligent Channel will help us gain speed in delivering new products and services to the marketplace, and it will also provide greater consistency in dealing with our customers. Clearly, the processes we have today will evolve, and the software we require today will become more sophisticated."

– Enrique Grapa
CIO/CTO
Banamex

J. P. Morgan Invest, LLC -
CapitalMarkets case study

- **Challenges**
  - Maintain continuity for one of the largest deep-discount online brokerage firms in the U. S.
  - Continue to meet sophisticated customer expectations for real-time trade confirmation
  - Ensure disaster tolerance in the face of stringent customer requirements
- **Solutions delivered**
  - Dual HP S74012 NonStop servers with all disaster tolerant products
  - HP implementation & business continuity plan rehearsal services
- **Results**
  - Disaster recovery POC successfully completed in 42 days with demonstrated recovery in <7 minutes
  - Full production implementation complete in <6 weeks after POC
  - Demonstrated success in critical element in overall corporate business continuity plan

"Working with HP has been a true partnership, both for the Proof of Concept and the production implementation. The HP NonStop products are critical to our recovery objectives and HP Services exceeded out expectations in meeting the production implementation objectives."

– Robert Cline
VP of Technology
JPMI

Visa DPS Clients
1B transactions every 70 days

Visa DPS Statistics

- Largest processor of Visa check card transactions in the U.S.

- Third largest issuing processor of all Visa transactions in the U.S.

- Processes **27%** of all Visa check cards in the U.S.

- Processes over **1** billion transactions every 70 days

- Processes for **4** of the top 6 Visa check card issuers

- Processes for **23** of the top 100 credit unions in U.S. based on assets

Visa DPS Case Study
Site Location & Back-Up

Englewood, Colorado

Online System

- HP NonStop Servers
  - K20000, S70000, S72000
- Falcon Fraud Detection System

Batch System

- IBM ES/9000 Models R55 and RC6

Visa/PLUS ATM Network Switch

- HP S74000 NonStop Server

Visa DPS Clients

Sun Message Gateway

McLean, Virginia

- Redundant Hardware, Software, Database
- Test Facilities
- Certification Site

Remote Offices Sales & Development

Milwaukee, WI

Seattle, WA

Charlotte, NC

Atlanta, GA

Benefits for financial sector

Relevance in all aspects of financial services in a 24 x 7 global environment

- ZLE in corporate banking
  - Intraday liquidity and cash management
  - Treasury management
- ZLE in retail banking
  - Fraud detection across delivery channels
  - Enterprise CRM
  - Integrated retail delivery
- ZLE in capital markets
  - T+1 settlement and straight-through processing
  - Real-time enterprise front- to back-office integration
  - Enterprise risk management

GZS – Case study

- **Situation**
  - GZS is a joint venture of Germany's private banks, savings banks, and cooperative banks and the leading credit card processing company in Germany. GZS has a long and successful history in fighting credit card fraud.

Challenge

- As fraud patterns evolved and GZS's existing fraud system (a neural network based on a large UNIX system) became less effective, GZS needed:
  - A very powerful and extremely flexible system.
  - The ability to react in real time.
- Therefore, GZS developed its own fraud detection software, IRIS (Integrated Intelligent Risk Information System), which employs important principles of the ZLE architecture.

"You need a very powerful and extremely flexible system, and you have to be able to react in real time," says Hanns-Michael Hepp, head of Security Management at GZS. Mr. Hepp sees [HP's] Zero Latency Enterprise architecture as a powerful foundation for advanced systems like IRIS, while IRIS in turn is already a very good proof point for the new ZLE architecture.

GZS – Case study (cont.)

Key components

– The decision engine uses three technologies in parallel to detect potential fraud, along with the HP NonStop SQL database—for demanding mixed-workload capabilities.
  • Rule-based expert logic
  • Fuzzy logic
  • Neuro-fuzzy technology

Solution

– Adapted zero latency concepts to develop a powerful ZLE framework
– Extended the credit card authorization system to provide ODS capabilities
– The database is now accessed in real time by two separate applications (authorization and fraud detection).

Impact

– ZLE implementation has meant the following:
  • Fraud detection rate three times higher
  • Works in real time and stops fraud much earlier
  • "Learns" fraud patterns much earlier
  • Investment paid for itself in two months

"While everybody else experiences strong growth in fraud, partly also due to e-commerce over the Internet, we at GZS have been able to break the trend," says Mr. Hepp. "Fraud prevention makes very good business sense; the IRIS investment paid for itself in about two months."
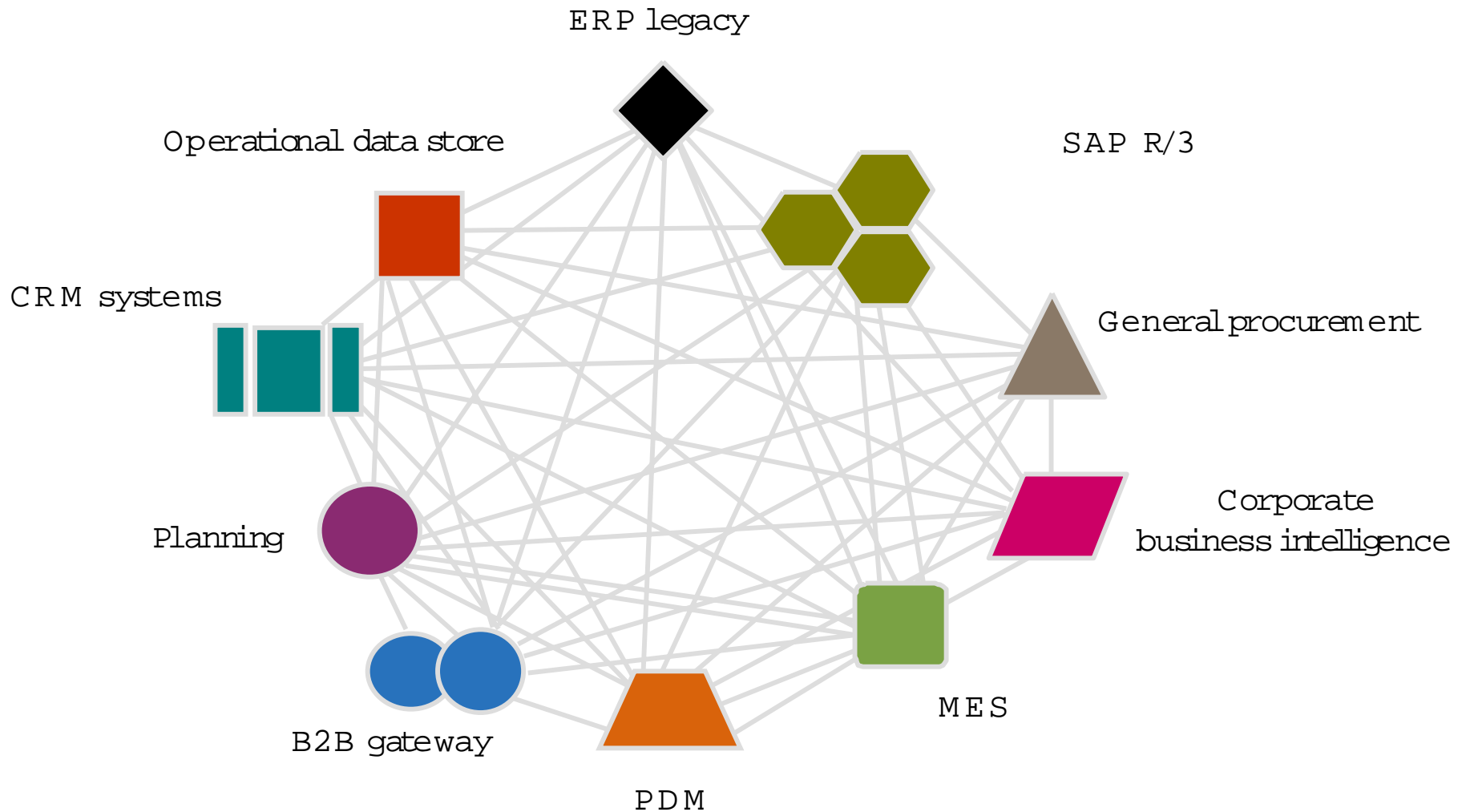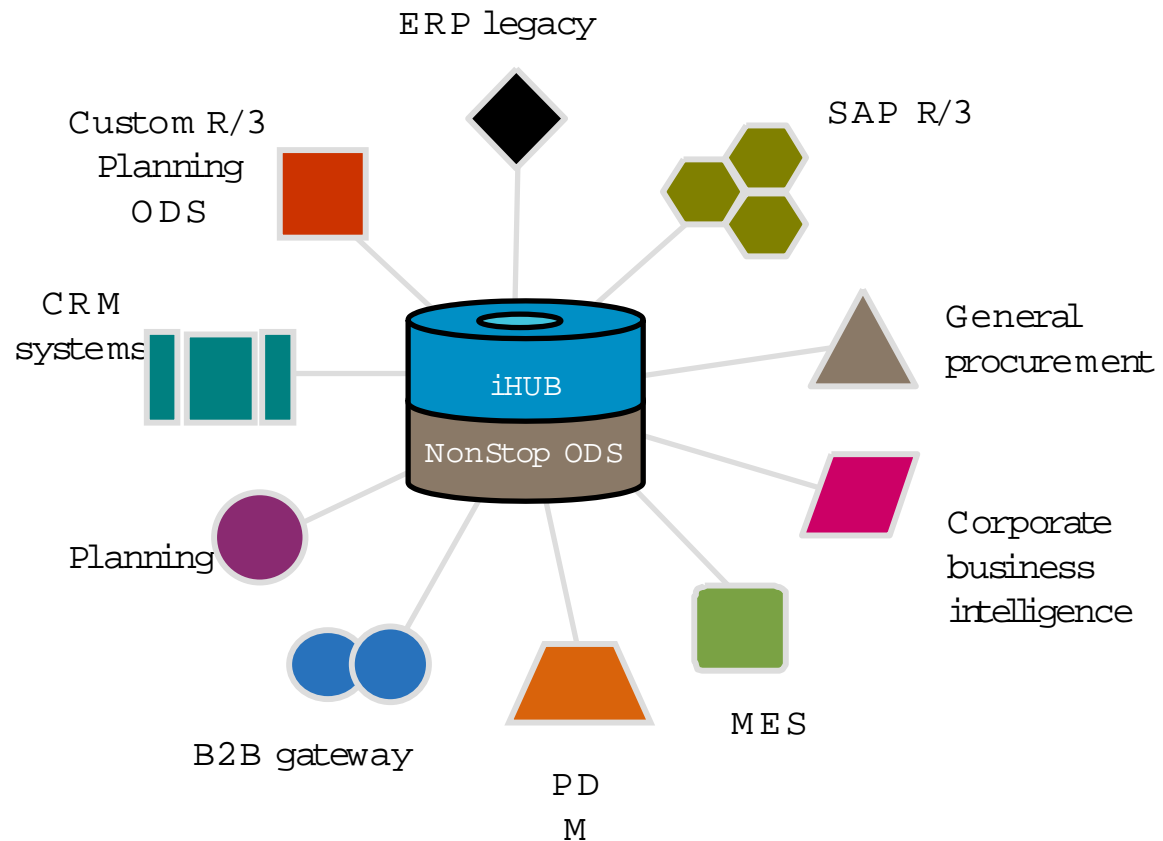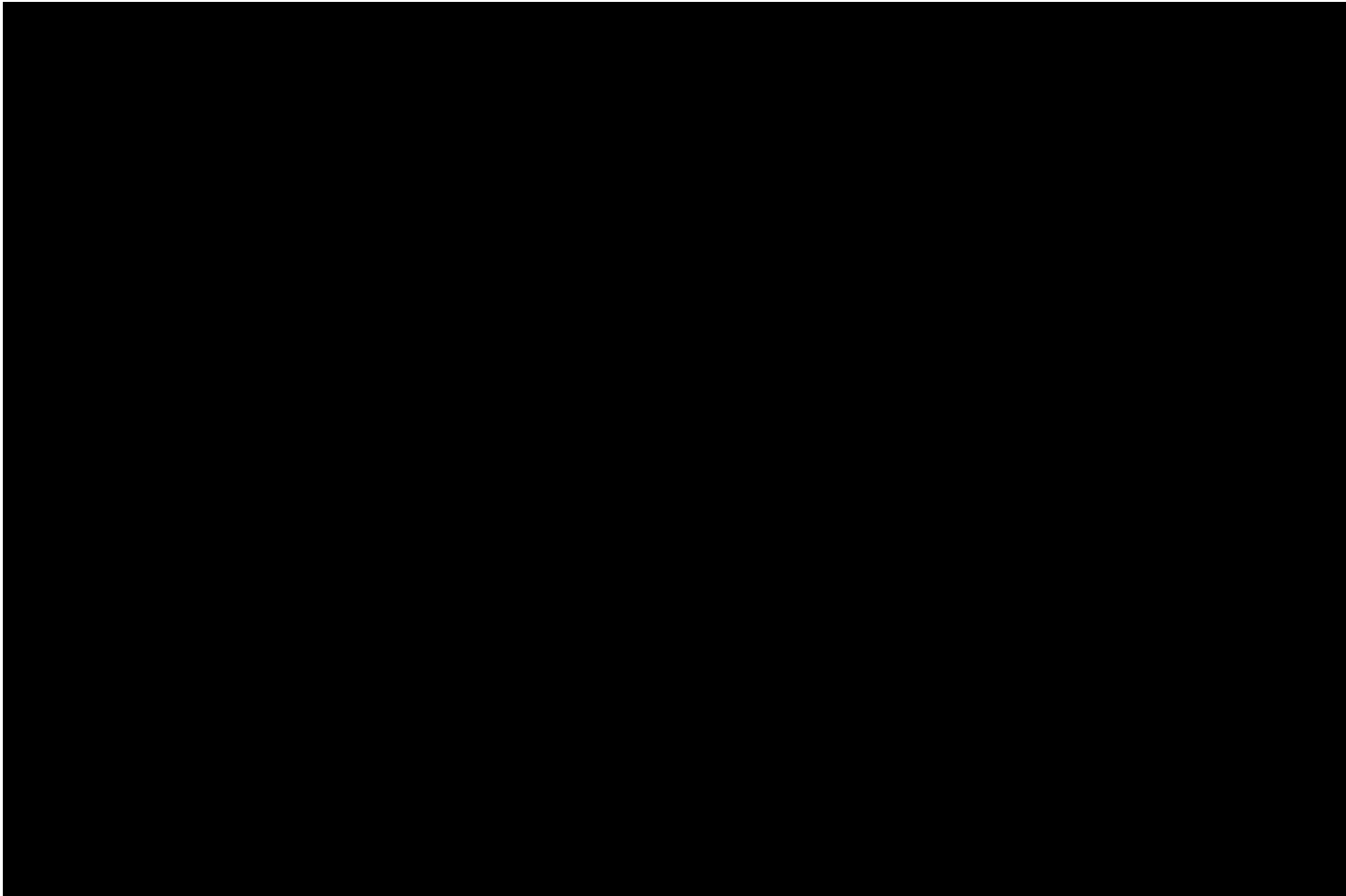
The H P Integration Hub
project

Supply chain landscape: Integration challenge

ERP legacy

Operational data store

SAP R/3

CRM systems

General procurement

Planning

Corporate business intelligence

B2B gateway

MES

PDM

HP internal project solution— Adaptive supply chain Integration Hub
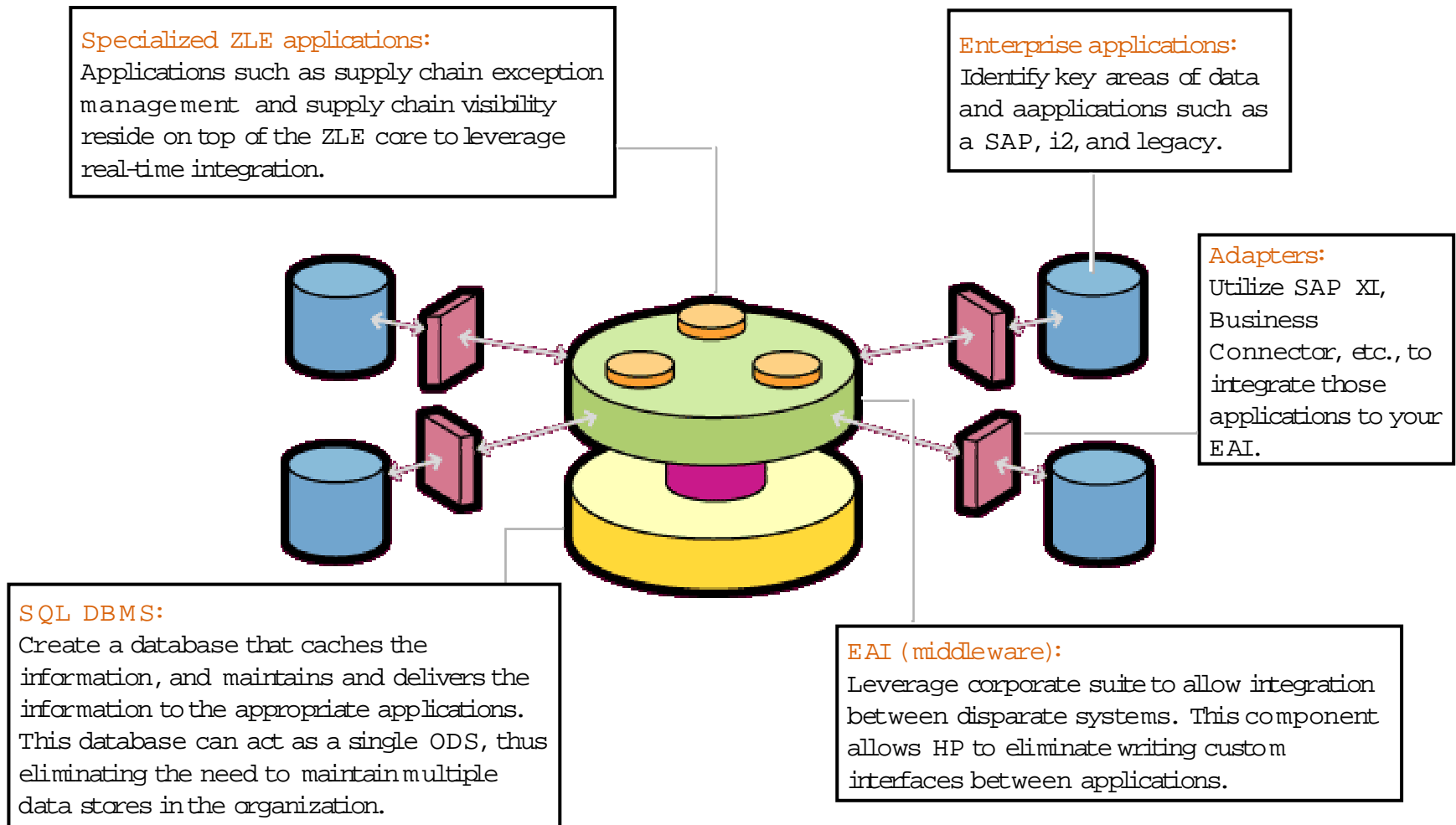
- Enhances existing applications portfolio

- 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

ERP legacy

Custom R/3
Planning
ODS

SAP R/3

CRM
systems

iHUB

NonStop ODS

General
procurement

Planning

Corporate
business
intelligence

B2B gateway

PDM

MES
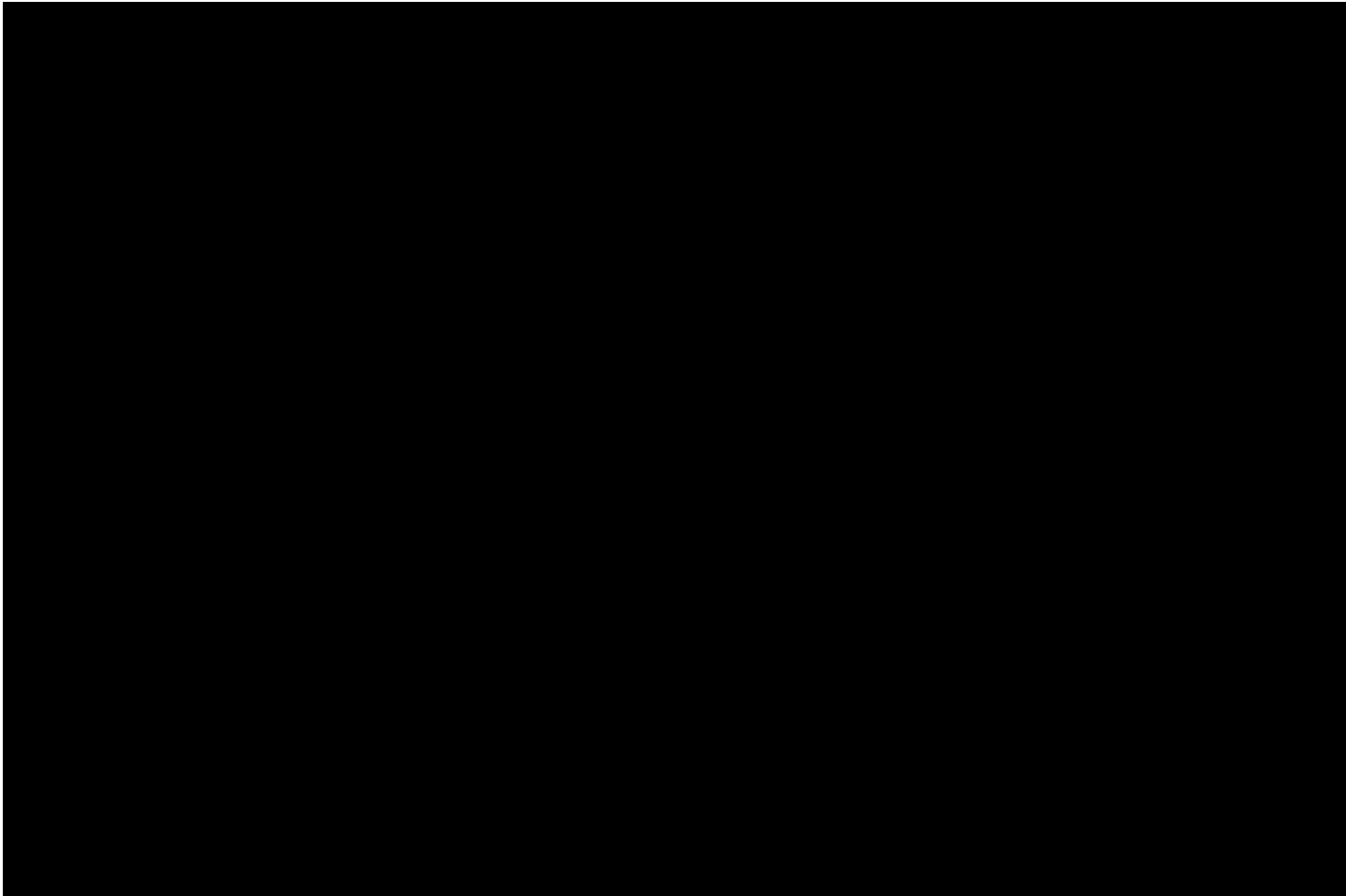
HP Integration Hub solution architecture

Specialized ZLE applications:
Applications such as supply chain exception `management` and supply chain visibility reside on top of the ZLE core to leverage real-time integration.

Enterprise applications:
Identify key areas of data and aapplications such as a SAP, i2, and legacy.

Adapters:
Utilize SAP XI, Business Connector, etc., to integrate those applications to your EAI.

SQL DBMS:
Create a database that caches the information, and `maintains` and delivers the information to the appropriate applications. This database can act as a single ODS, thus eliminating the need to `maintain multiple` data stores in the organization.

EAI (middleware):
Leverage corporate suite to allow integration between disparate systems. This component allows HP to eliminate writing custom interfaces between applications.

HP Integration Hub: Financial benefits

Estimated savings on implementation

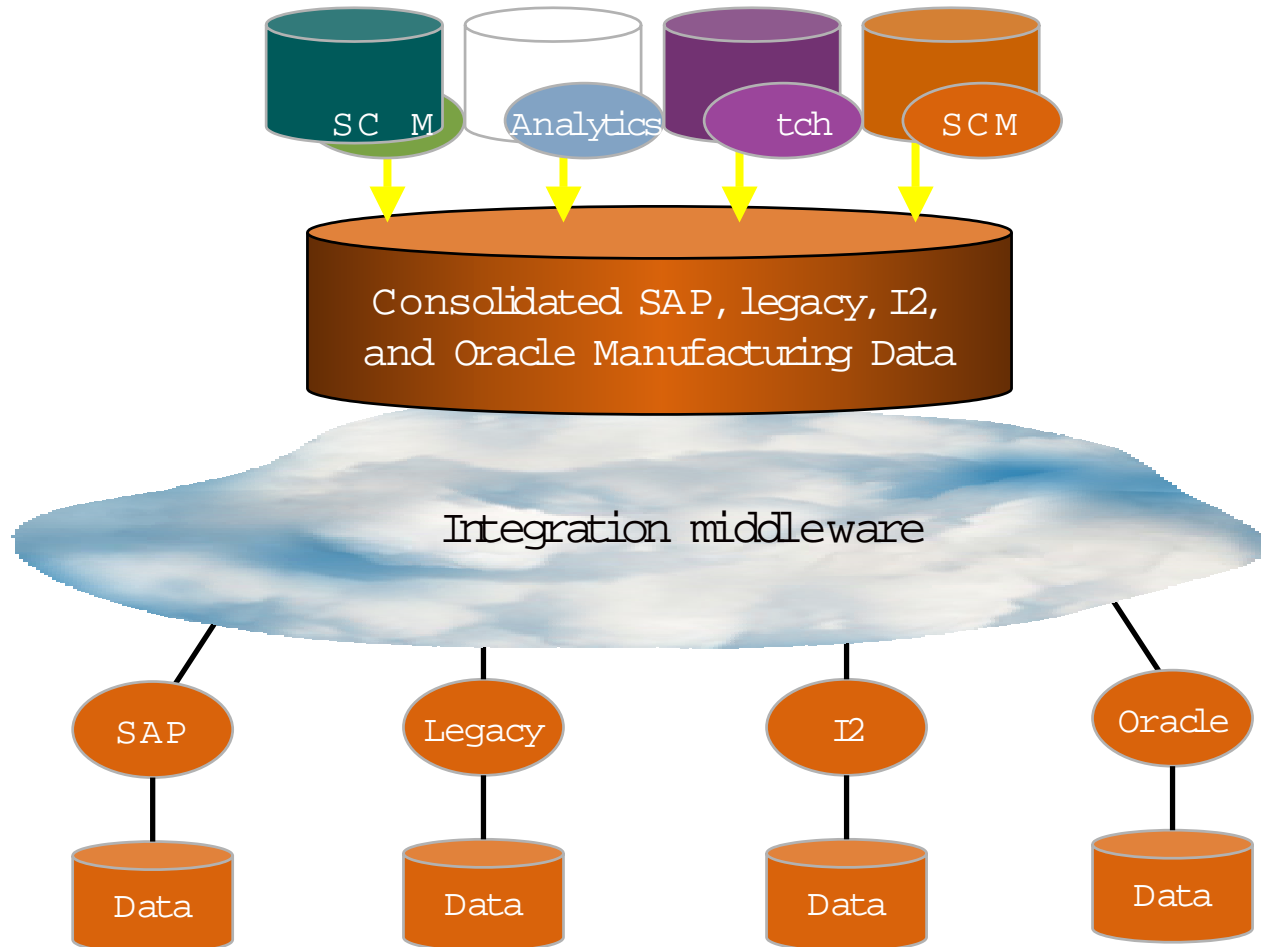|	
Total IT benefits	More than US$6 million per year
Total operational benefits	More than US$1 million per year
Total strategic benefits	More than US$2 million per year
Order cycle time	Improved by 15%
Net present value	US$37 million over a 5-year period

Non-quantified and intangible IT benefits

- Improved end-user productivity
  - Enables the interoperability of information through the consistent use of shared data for business intelligence assets
  - Establishes "the" authoritative source of data
  - Improves critical business response time
- Faster system deployment
  - Leverages an available platform for other HP projects (e.g., utilizes the ZLE iHub for CRM, metrics, and reporting, etc.)
  - Simplifies system integration due to more efficient architecture and technology, resulting in a faster capture of business benefits from system deployments
- Improved IT infrastructure
  - Enables continual deployment of the iHub with nominal incremental hardware and software costs using a highly scalable architecture
  - Improves system reliability with HP NonStop server technology

RTSC approach

SC M   Analytics   tch   SCM

Consolidated SAP, legacy, I2,
and Oracle Manufacturing Data

Integration middleware

SAP   Legacy   I2   Oracle

Data   Data   Data   Data

RTSC success scenario: Improve distribution agility

Situation: Large alcohol manufacturer

Challenge:
- Need greater agility in supply chain to territories
- Need global visibility into total supply chain

Solution:
- Implement RTSC solution to support local business environments and four different planning systems
- Provide global visibility to distribute the right products at the right time
- Integrate local data to improve agility

Impact: With global visibility, goods can be routed where they are needed, improving efficiency and revenue

RTSC success scenario: Reduce costly inventory

Situation: Large automobile manufacturer needs to reduce costly inventory

Challenge: More than 100 days of stock on hand

Solution: RTSC to enable build-to-order manufacturing

Impact:
- Visibility of the entire supply chain to make informed decisions in real time
- Reduce inventory and its costs
- Improve service level agreements
- Enhance customer satisfaction by enabling custom orders

RTSC success scenario: Improve production costs

Situation: Specialty steel manufacturer

Challenge: Competitive pressures brought about by recent merger/acquisition, requirement for IT cost reduction, lower cost of goods sold

Solution: HP Services designs cost-effective integration of existing applications based on Real Time Supply Chain

Impact: Lower cost to deploy new interfaces using EAI tools and a hub infrastructure

- Enriched application messaging infrastructure
- Provide a central, single data access point
- Offer application services instead of point solutions

NonStop™ is central to HP strategy

"The Tandem NonStop platform is a hugely important piece of our strategy going forward .... In fact ... I believe we cannot deliver our strategy without the NonStop platform. It is front and center." February 2003

"… one of the major successes of HP's IT integration has been our Integration Hub project, which is also known as iHUB. And based on our NonStop systems and NonStop operational data stores, the iHUB provides real time integration of multiple SAP supply chain applications, versions, and data. It delivers today a single, up-to-the-second view of our entire supply chain. And just so you know, when we started, we had more than 70 SAP production instances across the combined company. iHUB is all about getting the greatest value out of our SAP investments, which is, again, one of the reasons we think you are here this week." SAPPHIRE '03 – June 2003

Resources

- HP Success Stories

  http://h18006.www1.hp.com/casestudies/ or

  h71033.www7.hp.com/page/CustSuccess.html

- NonStop Computing Update Newsletter (external)
  http://h71033.www7.hp.com/page/himupdate.html

- Zero Latency Enterprise (general information)

  http://h30089.www3.hp.com/page/ZLE_HomeExt.html

- NonStop Computing main page

  http://himalaya.compaq.com or h71033.www7.hp.com

- NonStop Products

  http://himalaya.compaq.com/page/Products.html

Interex, Encompass and HP bring you a powerful new HP World.

Fonts, capitalization, emphasis and subdues

- Titles are Verdana bold 30 point
- Main bullet items are Arial 26 point
  - Sub bullets Arial 24 point
- Initial cap first word all titles and text
- Emphasize **keywords** Arial bold… R217, G99, B11
- Subdued text (including the bullet)should be treated as such… R128, G128, B128
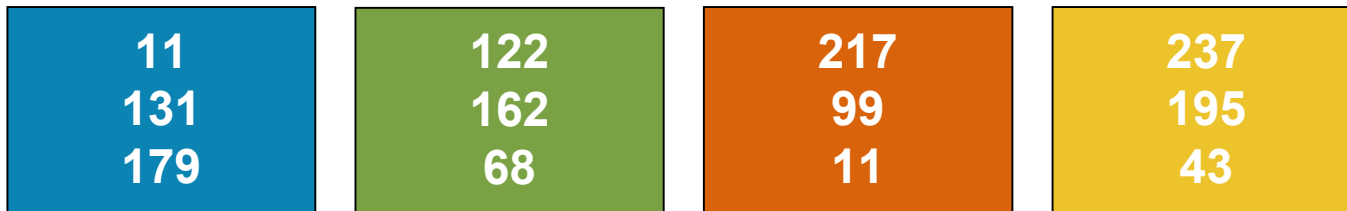
Sample bar chart

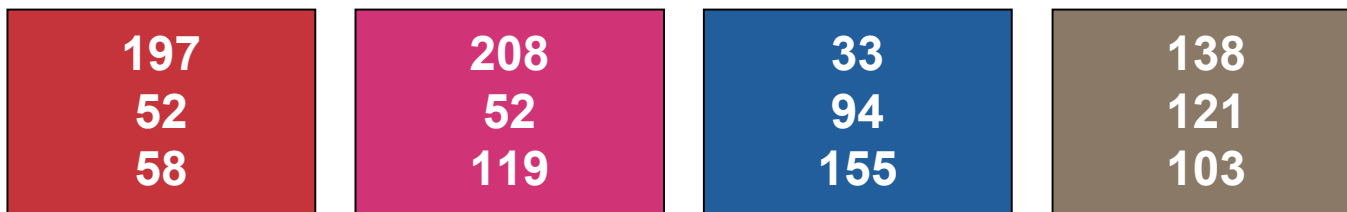*Subtitle (or chart title) here*
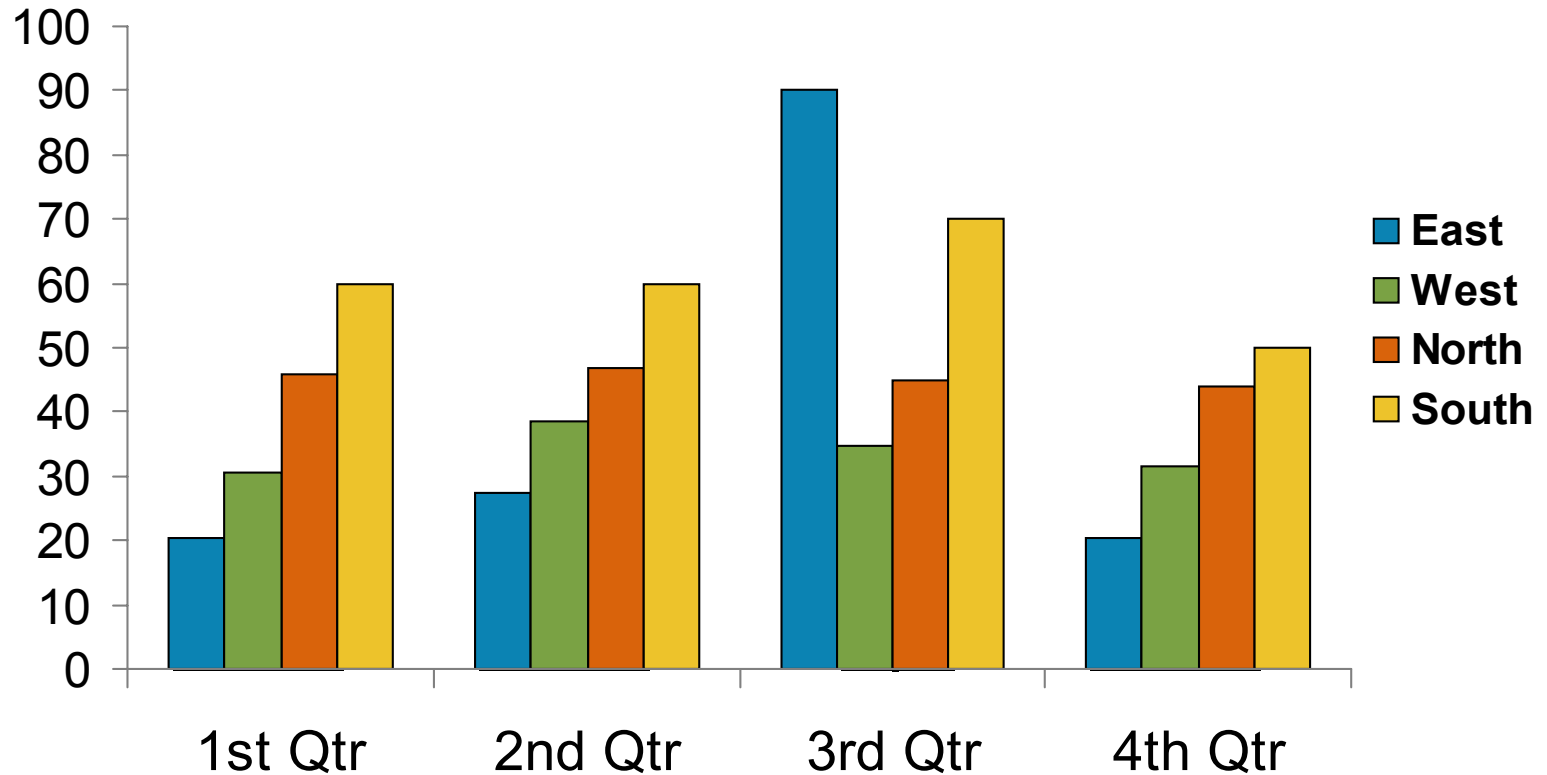
Source: Use this size and position for source information

Color palette

Fill and accent colors

11 131 179	122 162 68	217 99 11	237 195 43

Additional colors

197 52 58	208 52 119	33 94 155	138 121 103

On ALL slides, DO NOT extend text beyond this safe area

Use this sample for bullet slides that require a subtitle

Subtitles are Arial italic 28 point

- Copy and paste the above subtitle text box as needed