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MySQL AB® & O'Reilly Media, Inc.



Achieving Operational BI on a Budget

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Vice President, Product
Management and Marketing

Pentaho

Agenda

- Pentaho Introduction
- Operational BI Definition(s)
- Key Challenges of Operational BI
 - Technology
 - Economics
 - Change management
- Real-world examples
- Q&A

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Pentaho Introduction

- Commercial open source alternative for business intelligence (BI)
 - Founded in 2004: Pioneer in Commercial open source BI
 - Large referenceable customer base, wide range of BI/DW deployments
- Management - proven BI and open source veterans
 - from Business Objects, Cognos, Hyperion, JBoss, Oracle, Red Hat, SAS
- Board of Directors – deep expertise and proven success in open source
- Widely recognized as the leader in open source BI



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Operational BI Defined

- The use of business intelligence (BI) to support
- Operational workers
“Frontline” employees - customer service reps, order entry staff, etc.
- Operational processes
Handling a customer issue, processing orders, intra-day inventory management
- Operational goals and metrics
Process completion / throughput – orders processed, customer cases handled
Process quality – number of defects, customer satisfaction



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Understanding the “Continuum”

- Traditional BI
 - High data latency (weeks, months)
 - Strategic metrics and benefits
 - “Standalone” BI application
 - Used by executives and analysts
 - Minority of employees
 - Traditional data warehouse
- Operational BI
 - Low data latency (hours, minutes)
 - Tactical metrics and benefits
 - “Embedded” BI application
 - Used by frontline workers
 - Majority of employees
 - Operational application or operational data store

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Key Challenges of Operational BI

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Technology Challenges (A Partial List)

- Information latency
 - How “real-time” is real-time?
 - What does “real time” cost?
- Information quality
 - “garbage in, garbage out”
 - Conflict of timeliness vs. quality
- Presentation and delivery
 - What can users consume?
- Process integration
 - Where and how does BI intersect the operational process?
- Availability and reliability
 - BI as an operational system



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Dilbert on Data Quality



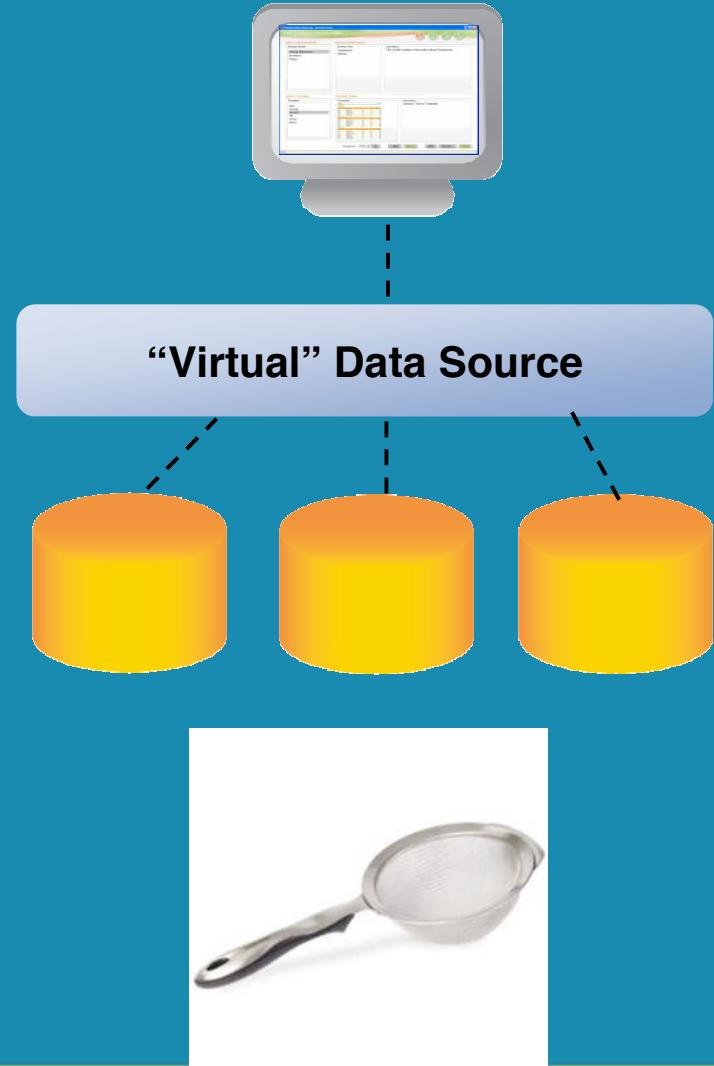
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Technology Solutions

- Information latency
 - Architecture for dynamic data
 - Data federation
 - Real-time / active data warehousing
 - Operational Data Stores
- Information quality
 - Data filtering / profiling
 - Reject erroneous data based on rules
 - Data cleansing
 - Ex. Identifying duplicate customers
 - Data integration / ETL



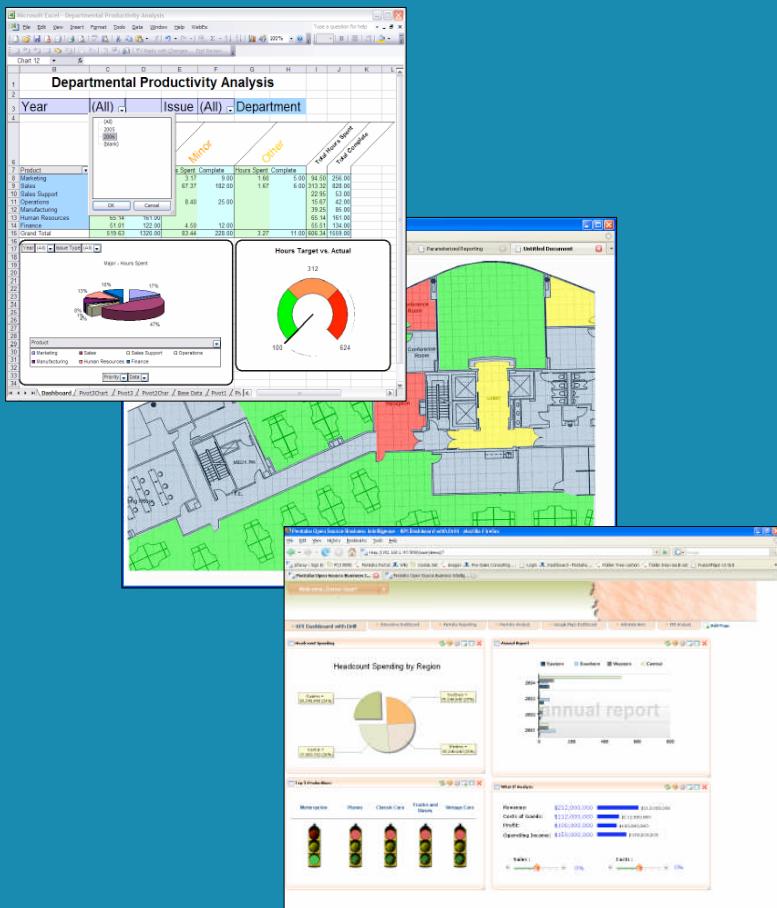
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Technology Solutions (cont.)

- Presentation and delivery
 - Application integration
 - Desktop integration
 - Portal integration
- Process integration
 - Embedded business rules
 - External orchestration



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Economic Challenges to Operational BI

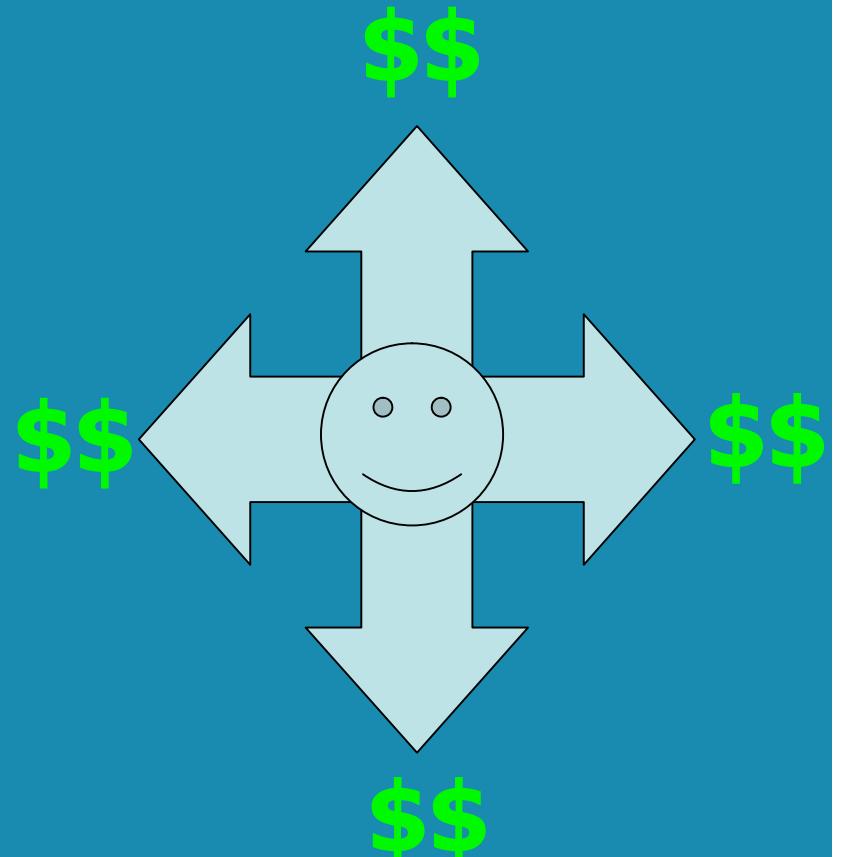
- “BI for the Masses” is the oldest line in business intelligence....
- BUT traditional licensing models limit large-scale deployment

Per user pricing

Multiple modules required

Granular user roles (Viewer?
Interactive viewer? Creator?)

Administrator licenses



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Economic Solutions for Operational BI

- Licensing and packaging for Operational BI Needs to accommodate
 - Nearly “frictionless” growth
 - Changes in user profiles
 - Widely-varying frontline employee costs
 - Evolution of use-cases – i.e. extranet deployments
 - Embedded and “invisible” deployment
- Envision large and growing BI success, and consider the licensing implications



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Customer Examples: Operational BI on a Budget

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Pentaho at Terra Industries (NYSE: TRA)

“We chose Pentaho because it has a full range of functionality, exceptional flexibility, and a low total cost of ownership because of its open source business model. We can start delivering value to our business users quickly with embedded, web-based reporting, while integrating our disparate data sources for more strategic benefits down the road.”



\$2B Global Nitrogen Products Leader

Key Challenges

- Aligning pricing and delivery with inventory and supply
- Obtaining an integrated view of operations across multiple disparate operational systems

Pentaho Solution

- Pentaho Reporting, Data Integration
- Sourcing data from SAP R/3, Peoplesoft, Tabware, and home-grown systems
- MySQL Enterprise

Results

- Rapid time-to-value via embedded operational reporting for front-line workers

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Pentaho at University of Montreal Registrar Bureau

“Pentaho was the clear choice for us after reviewing the alternatives from Business Objects, Oracle, and SAS. Pentaho’s flexible architecture lets us build our operational business rules directly into the BI system, and integrate easily into our IT infrastructure as well as our strategic business processes.”



Canada's Second Largest University

Key Challenges

- Managing daily operations with a clear picture of student enrollment, performance, and staffing

Pentaho Solution

- Pentaho Open BI Suite

Results

- Ability to align University resources, staffing, and investment on a daily basis

Why Pentaho

- Flexible architecture
- Easier integration into existing infrastructure
- Cost of ownership

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Pentaho at Boyne Resorts

“We’ve advanced a major step forward for our business users by leveraging Pentaho...With professional support and a comprehensive BI offering from Pentaho, we’ve significantly upgraded our functional capabilities for a fraction of the cost of proprietary alternatives..”



North America's Largest Family Run Four-Season Resort Company

Key Challenges

- Understanding customer behavior and customer loyalty to drive marketing programs
- Tracking food and beverage sales, labor utilization, and profit throughout the day

Pentaho Solution

- Pentaho Open BI Suite replacing Crystal Reports from Business Objects

Results

- Critical insight into customer trends to maximize results from marketing programs
- Ability to monitor operations to benchmark within and across resorts

Why Pentaho

- Breadth of functionality in open source
- Ability to deliver results quickly
- Cost of ownership

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Pentaho - U.S. Naval Air Systems Command

“[Open technologies] reduce the cost of software development and they reduce the time in which innovations in software can be incorporated in systems. ‘If the project is of a sufficient scale, you cannot get there without an open-source approach,’ said Dewey Houck, a senior engineer at Boeing, who spoke at a conference last month about DOD’s use of open source.”

- Government Computer News, Jan 2008, ([link](#))



NAVAIR

Key Challenges

- Analyzing flight data to reduce operational risk and improve training (human error is a causal factor in 70% of aviation mishaps)

Pentaho Solution

- Pentaho Open BI Suite – 70 instances
- Pentaho Training and Consulting services
- Selected after extensive evaluation of Business Objects, Cognos, and Oracle

Results

- Ability to leverage recorded electronic sensor data to reduce risk and improve crew performance

Why Pentaho

- Breadth of capabilities
- Proven success and large-scale referenceable deployments
- Dramatically lower costs



Product Highlights: MySQL and Pentaho for Operational BI

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Pentaho Reporting and Analysis for Operational BI

- **Reporting**

- Access and format data from disparate sources
 - RDBMS, XML / Web Services

- Run directly against sources or using centralized metadata layer

- **Analysis**

- Relational OLAP architecture

- Active Data Warehouse support

- Controllable cache balances performance and data latency

- **Portal integration**

- **Office applications integration**

- OpenOffice or Microsoft Office



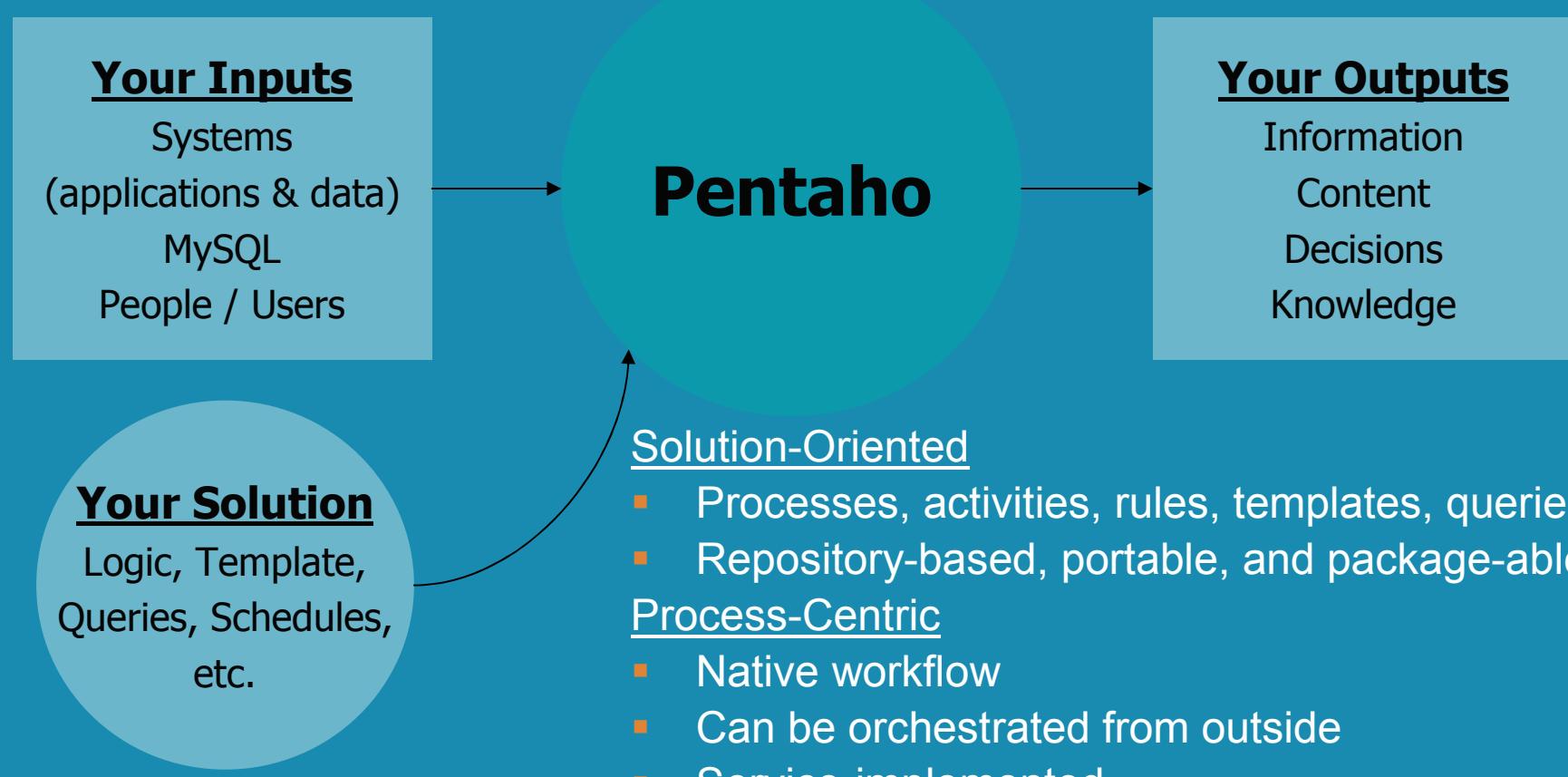
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Pentaho BI Platform for Operational BI

- The Ideal Situation = Your Process



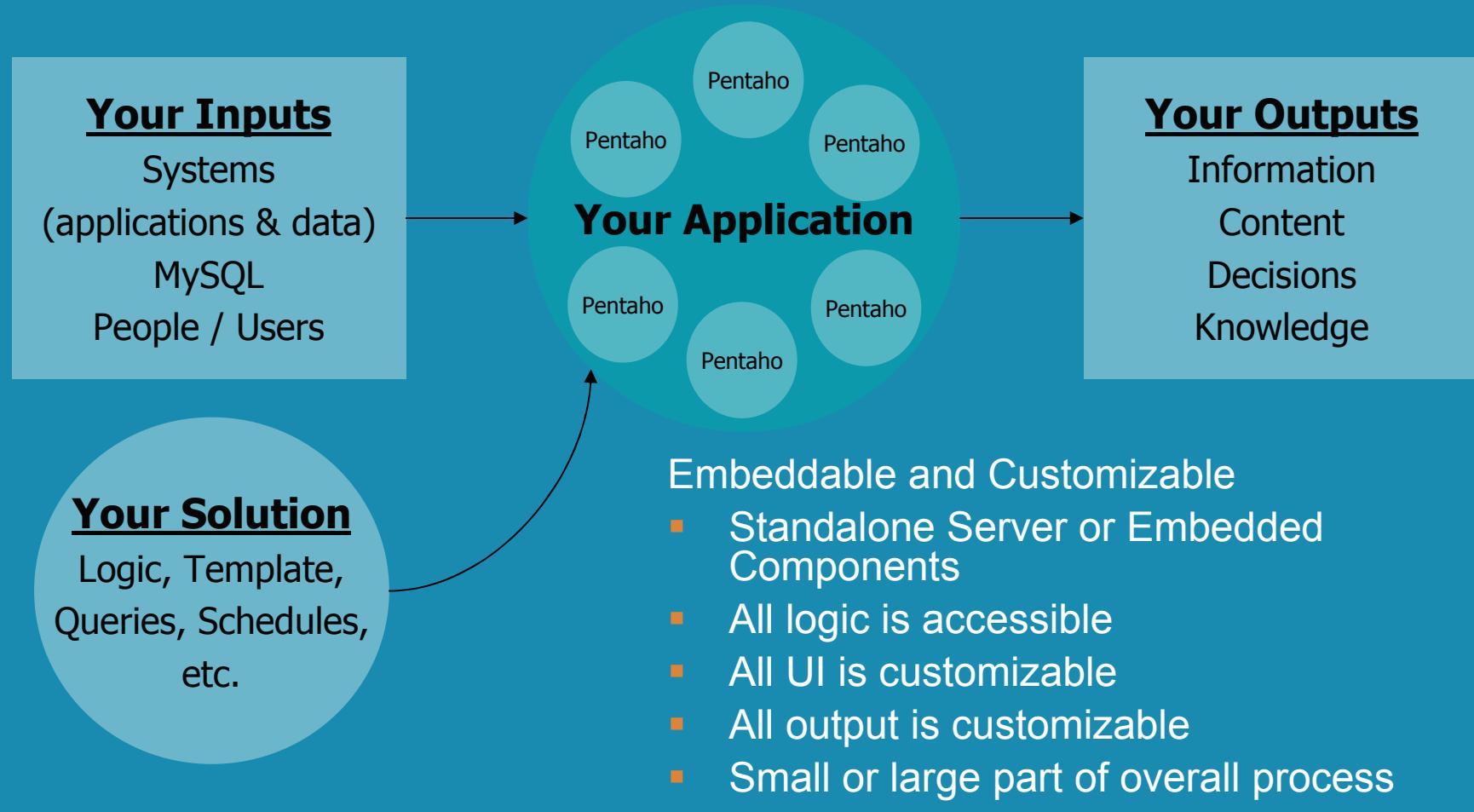
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Pentaho BI Platform for Operational BI

- The Ideal Situation = Your Process



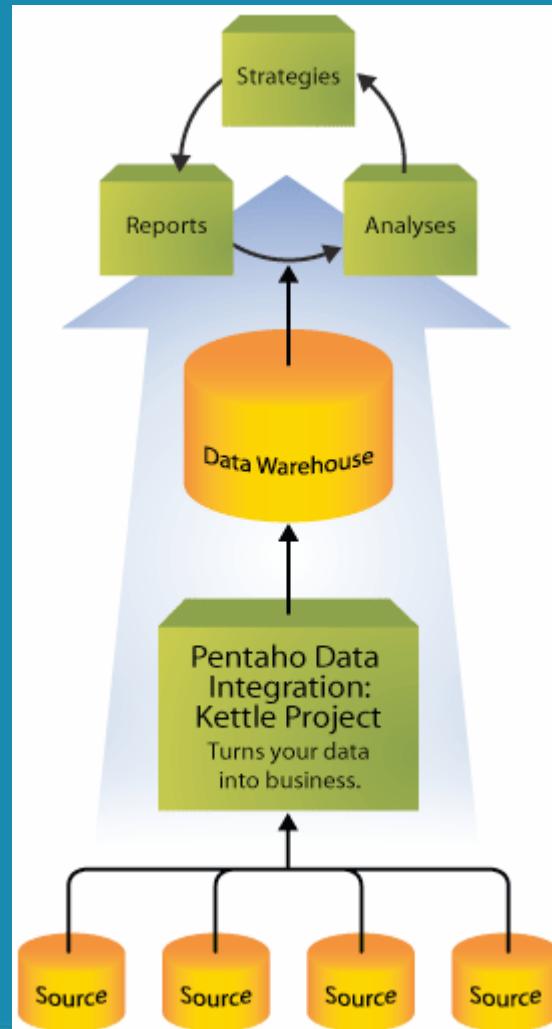
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Pentaho Data Integration for Operational BI

- Traditional Extract, Transform and Load capabilities
 - “One version of the truth”
 - Rapid query response
- Data filtering
 - Reject bad records
- “In-line EII”
 - Ability to call multiple systems on-the-fly, integrate/transform data, and provide it to the application
- Robust data profiling and cleansing available through partners



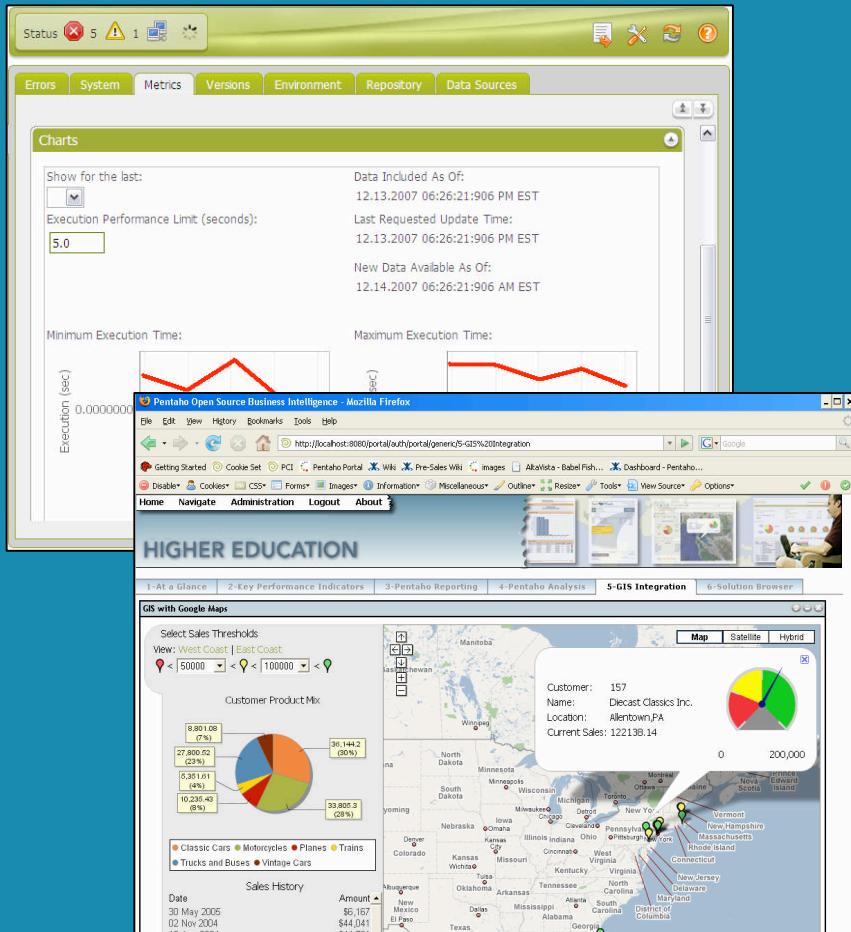
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Pentaho Management Services

- Simplify deployment
 - Single Sign On (SSO) integration
 - Style editor
- Improve reliability
 - Application diagnostics
 - Lifecycle management
 - Audit reporting
 - Automated content expiration
- Increase performance and scalability
 - Clustered deployment
 - Performance monitoring



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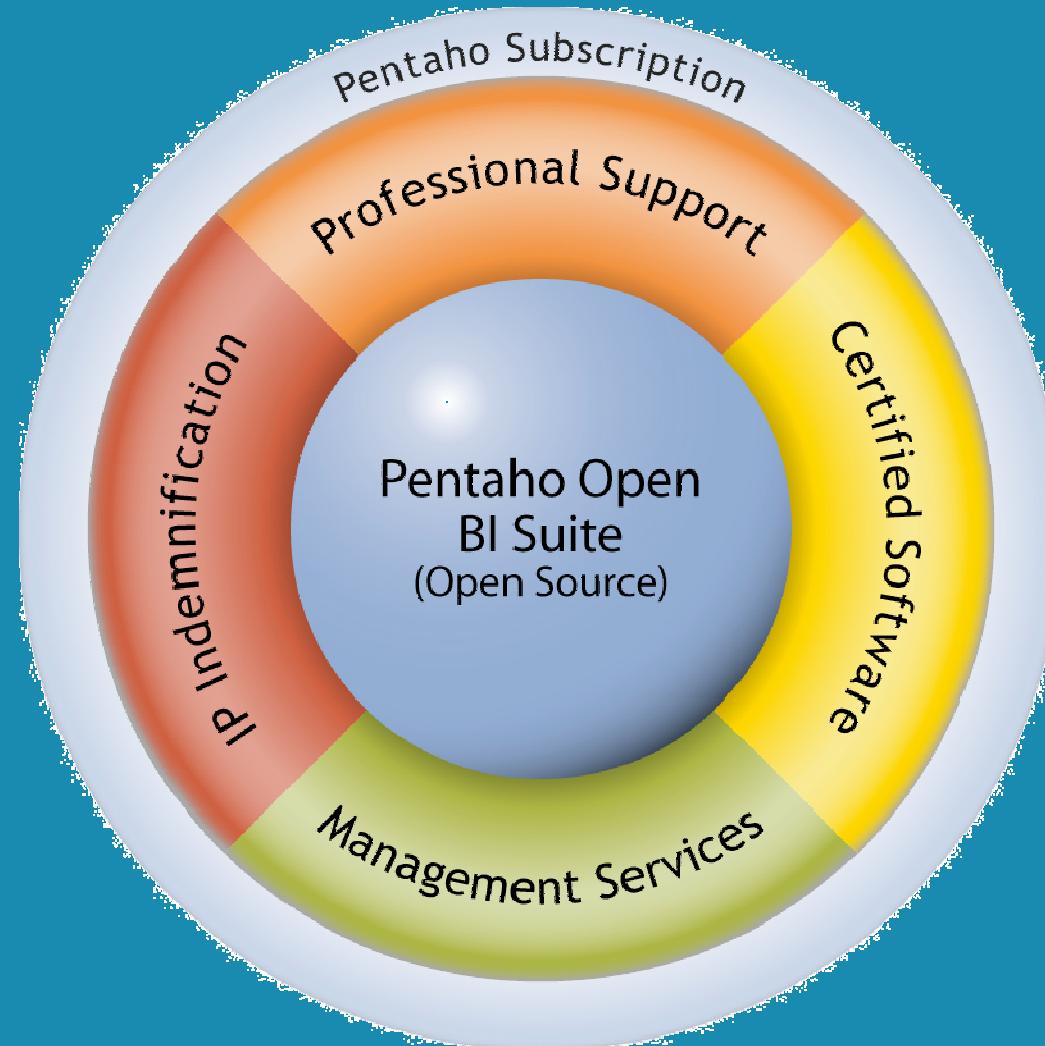
Demonstration: Pentaho and MySQL for Operational BI

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Pentaho Subscription



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What is MySQL Enterprise?

Software solution delivered as an annual subscription.

A MySQL Enterprise subscription includes everything listed here:

Enterprise Grade Software	MySQL Enterprise Server
Proactive Monitoring and Advisors	MySQL Enterprise Monitor
Maintenance and Update Services	<ul style="list-style-type: none">■ Software Update Service■ Technical Alert Service
Self-Help and Technical Support	<ul style="list-style-type: none">■ On line Knowledge Base■ MySQL Production Support

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Why MySQL Enterprise?

Feature	Benefit
	
Enterprise-Grade Software	Recommended and configured for the Enterprise
Certified for popular platforms/applications	Most popular platforms = Confidence for deployment
Timely Service Packs and Production Hot Fixes	Maximum reliability and stability
Community/MySQL/3rd-Party Quality Assurance	The highest possible code quality
Benchmarked with thousands of connections	Proven for Enterprise workloads
Open Source	Customizable and flexibility based on open standards
24 x 7 Production Support	Around-the-clock protection for MySQL systems
Automated Software Update and Alert Service	Help for general and security updates
MySQL Enterprise Monitor	Ensures optimal and efficient database operations
Online Knowledge Base	MySQL expertise and experience at your fingertips
Legal Assurance	Worry-free open source development and deployment

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Our Development Priorities

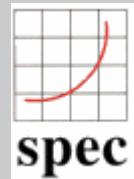
1. RELIABILITY



Study: **Few bugs in MySQL database.**

By Robert Lemos CNET News.com Feb 4, 2005

2. PERFORMANCE



MySQL, Sun and BEA WebLogic Set
New World Records for Speed &
Price/Performance in SPEC
Benchmarks

3. EASE OF USE

15 Minute Rule

Download, install and have MySQL up and running in 15 minutes.

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MySQL HA Solutions

Clustering &
Geographical
Redundancy

Clustering
Technologies

Replication
Technologies

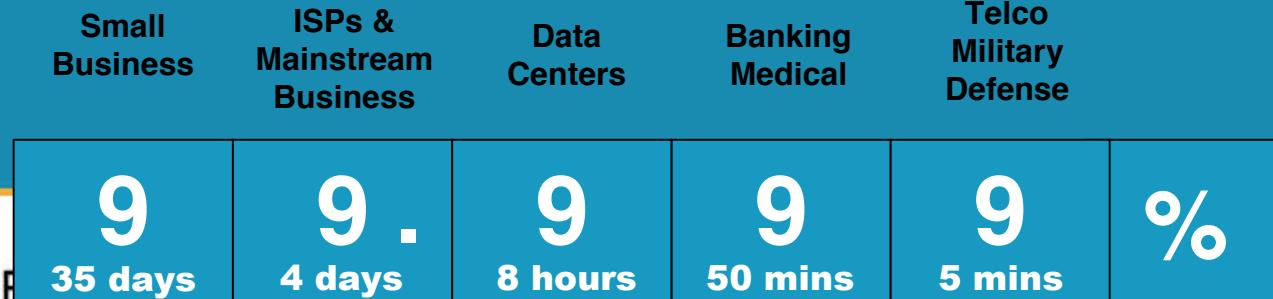
Well-Managed

Unmanaged

MySQL
Replication

MySQL
Cluster

MySQL + DRBD

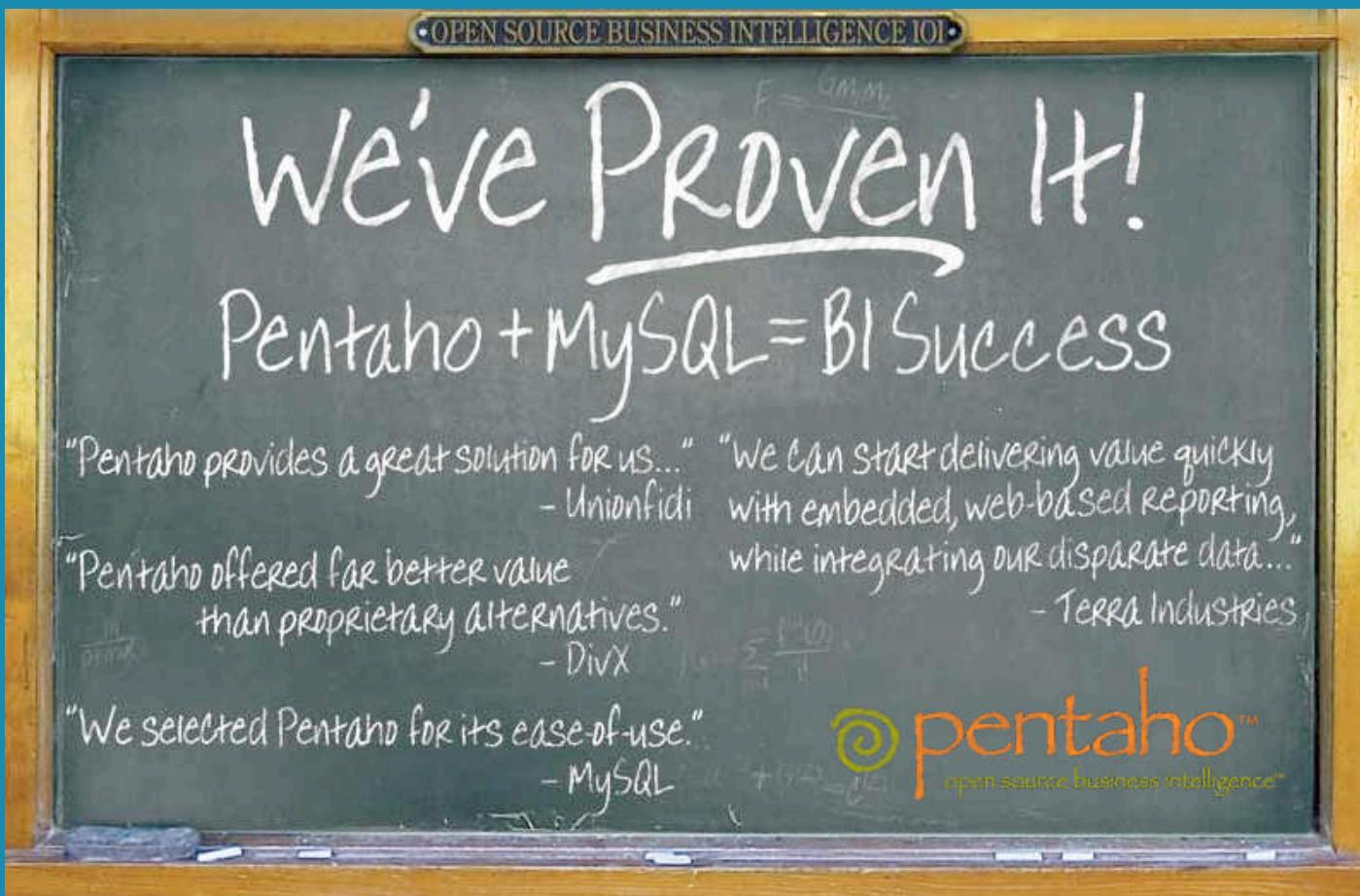


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www.pentaho.com/101



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Resources

- Pentaho website: www.pentaho.com
 - Demos
 - Customer examples
 - Software downloads
 - MySQL-based sample application
 - Developer forums
 - Documentation
- Lance Walter, VP of Marketing
lwalter@pentaho.com, 407-812-6736



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Thank You! **Operational BI On a Budget**

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