Is your Datawarehouse futureproof ?
And what does it take to make it…

Pieter Willig, Teradata Netherlands B.V.
Pieter.Willig@Teradata.com

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One event can lead to many decissions to be taken

Flight Delay

Customer Management

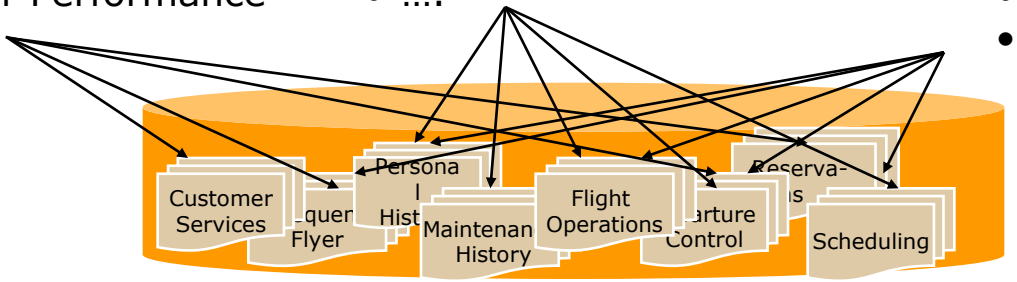
- **Customer Value**
- Customer Communication
- **Customer Re-accommodation**
- Customer Event History
- Cargo Customer Performance
- ….

Maintenance Management

- Parts Inventory
- Resource Availability
- Parts History
- Repair History
- ….

Capacity Management

- Gate Availability
- Aircraft Availability
- Crew Availability
- Customer Value
- Cargo Commitments
- ….



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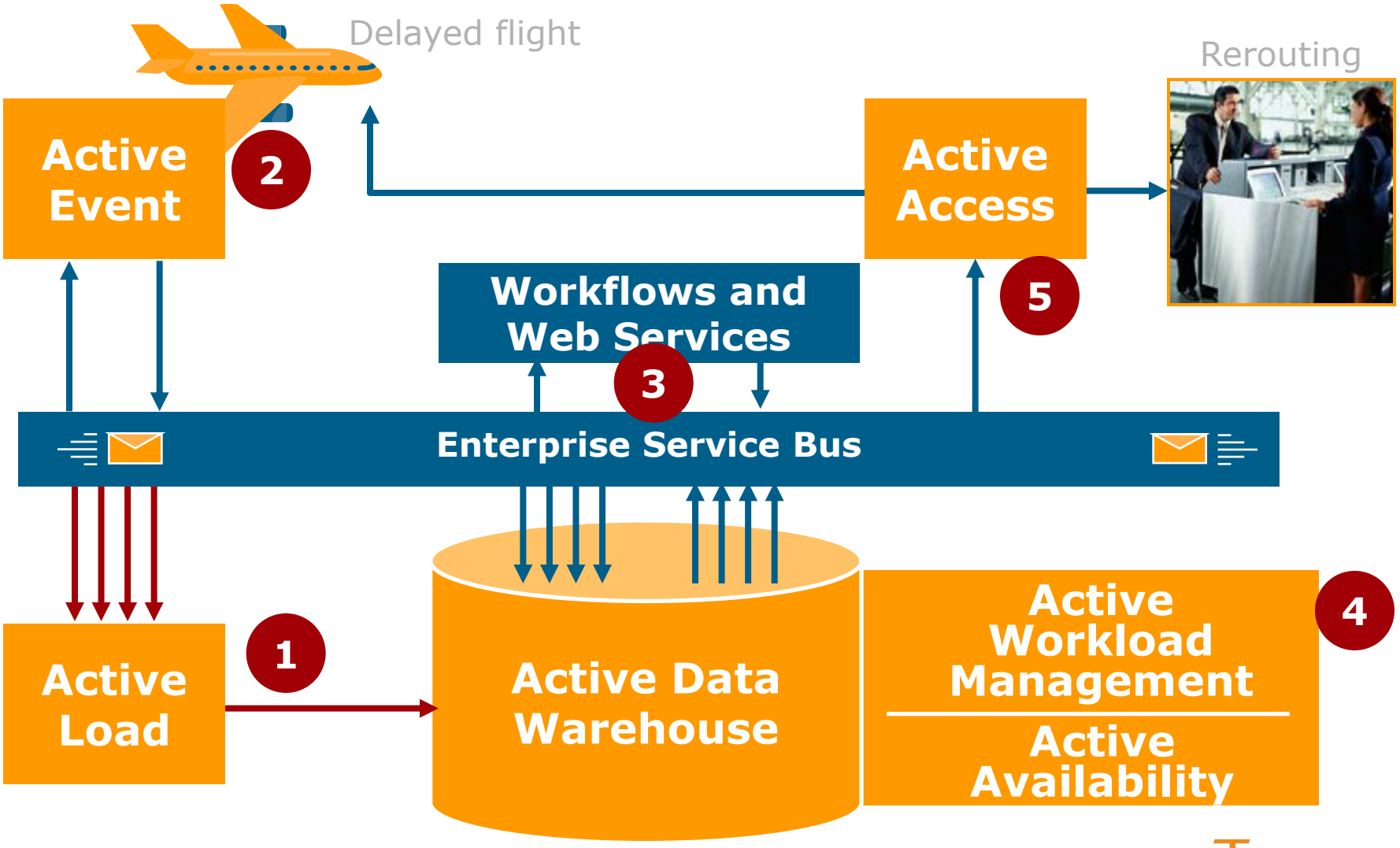
Event to Actions: Transportation Logistics



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Continental Airlines

- Before Active Enterprise Datawarehouse
  - > Ranked as the worst airline across all measures – **worst customer satisfaction, worst airline performance** – rating 5 years ago, according to J.D. Power.
  - > **Had traditional batch-loaded** non-real-time data warehouse.
  - > **Data scattered** across numerous operational systems, nearly impossible to pull information about the entire business together to see how events influenced or related to one another.
  - > Received **financial information monthly**; couldn't make good, fast business decisions.
  - > **Didn't differentiate customer treatment** based on most valuable customers, so if there were only a few seats left on a flight, there was no guideline as to how to assign the seat.

From "Worst to First, First to Favorite"

Problem

- Flight cancellations or delays cause customer defections
- High fuel and vehicle usage costs
- Low profit per customer

Solution

- Gate agents and Active EDW handle "bumped" passengers
  - > Personalized attention
  - > With historical context
- Demand driven dispatch
  - > Maximize aircraft usage
  - > Change vehicle schedules to increase revenue, cut costs
- Real time price optimization

Impact

- Adjust flight and overbooking models quickly
- $150M in additional revenues in one year
- $2M/year outsourcing costs saved
- Increased subscriptions to "Presidents Club"

Continental Airlines

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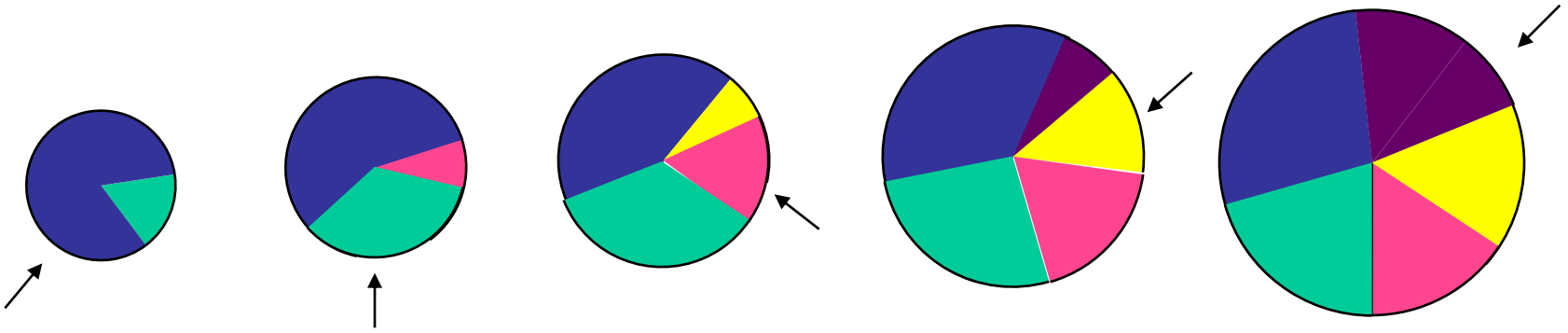
Information Evolution in a Data Warehouse Environment

STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5
REPORTING	ANALYZING	PREDICTING	OPERATIONALIZING	ACTIVE WAREHOUSING

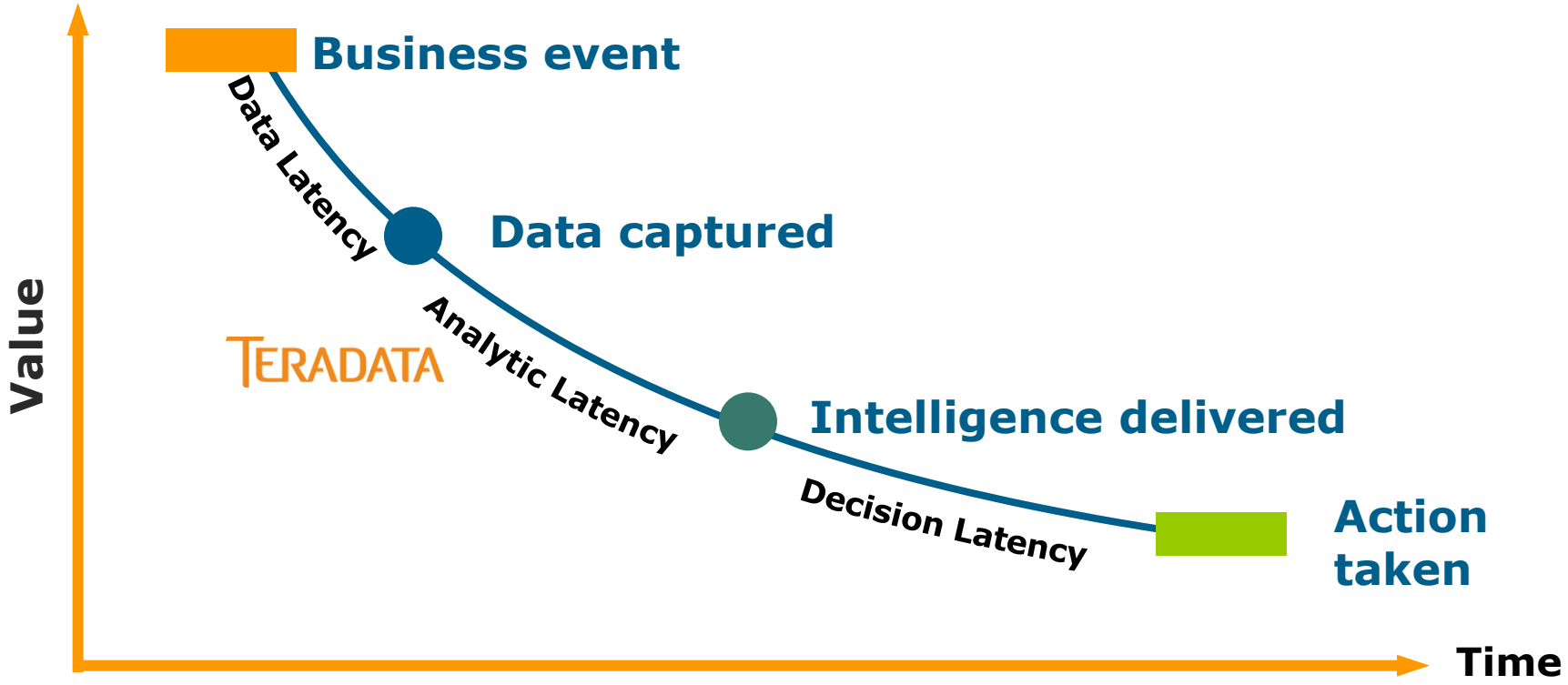
WHAT happened? WHY did it happen? WHY will it happen? WHAT IS Happening? MAKING it happen!



Primarily Batch	Increase in Ad Hoc Queries	Analytical Modeling Grows	Continuous Update & Time Sensitive Queries Become Important	Event Initiated Actions Take Hold

Batch | Ad Hoc | Analytics | Continuous Update/Short Queries | Event Initiated Actions

Accelerating Decisions



TDWI The Business Case for Real-Time BI
Based on concept developed by Richard Hackathorn, Bolder Technology

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Gartner

The Data Warehouse *Is* the Repository –

- Data warehouses *are* mission-critical.
- When the data warehouse goes down, business process applications will *stop*!

"By the close of 2009, 90% of Global 2000 companies will have at least one operational application dependent on data warehouse data for daily processing needs."

Gartner

Data warehouses built as non-mission-critical systems, then integrated with mission-critical systems, creates an unmanaged point of failure.

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Active Enterprise Intelligence

Hundreds of
Strategic Decisions

Hundreds of Thousands of
Operational Decisions

Intelligence + Speed = AEI

- **Intelligence** – Treat information as a strategic corporate asset – integrate data from across the enterprise for better decision making
- **Speed** – Extending that intelligence to more decision-makers – front-line workers, partners, suppliers and customers – to enable decision making at the right time and place
- **More decisions, better decisions, faster decisions**

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Active Enterprise Intelligence

Strategic Intelligence

Operational Intelligence

BI Tools

Active Infrastructure

Teradata Active Data Warehouse

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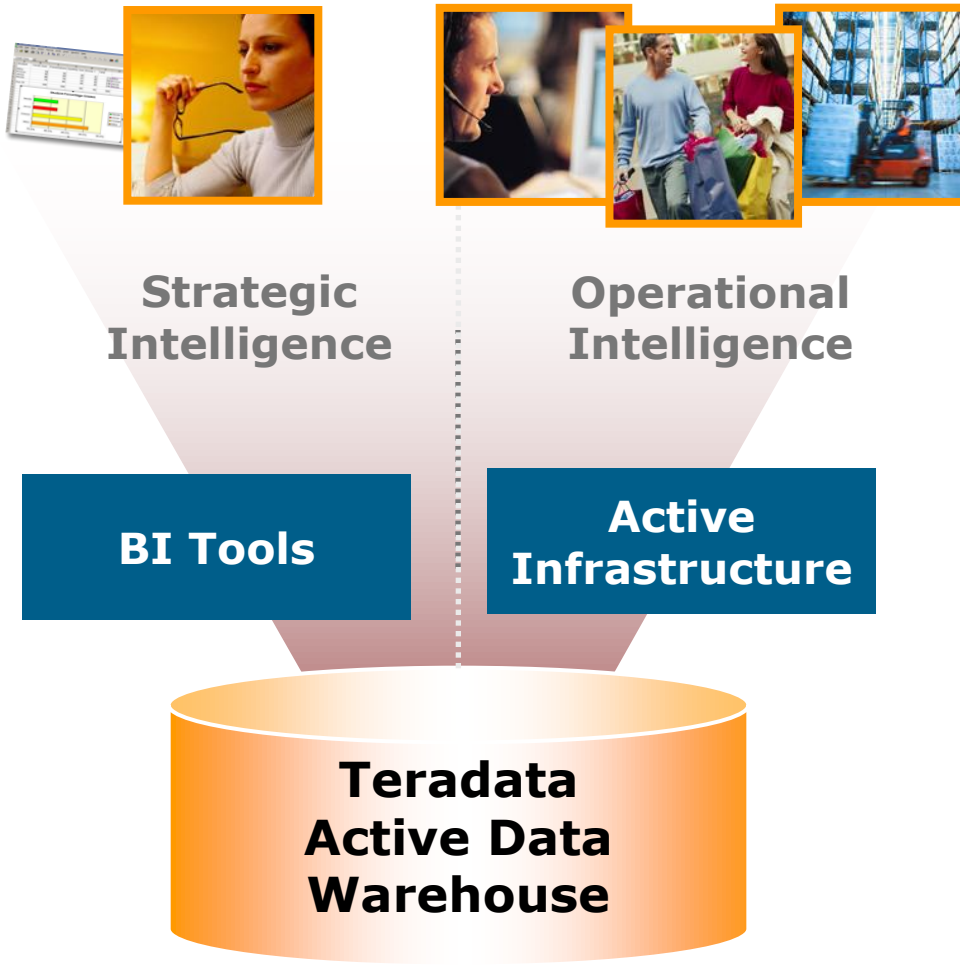
What is an Active Data Warehouse?

- ADW is a traditional data warehouse extended to front-line users, suppliers, and enterprise customers
  - > Supplies analytic answers to operational users & systems
  - > Multiple concurrent workloads in one database
  - > Using fresh detail data
  - > Fits into event driven SOA architectures
  - > Mission critical availability



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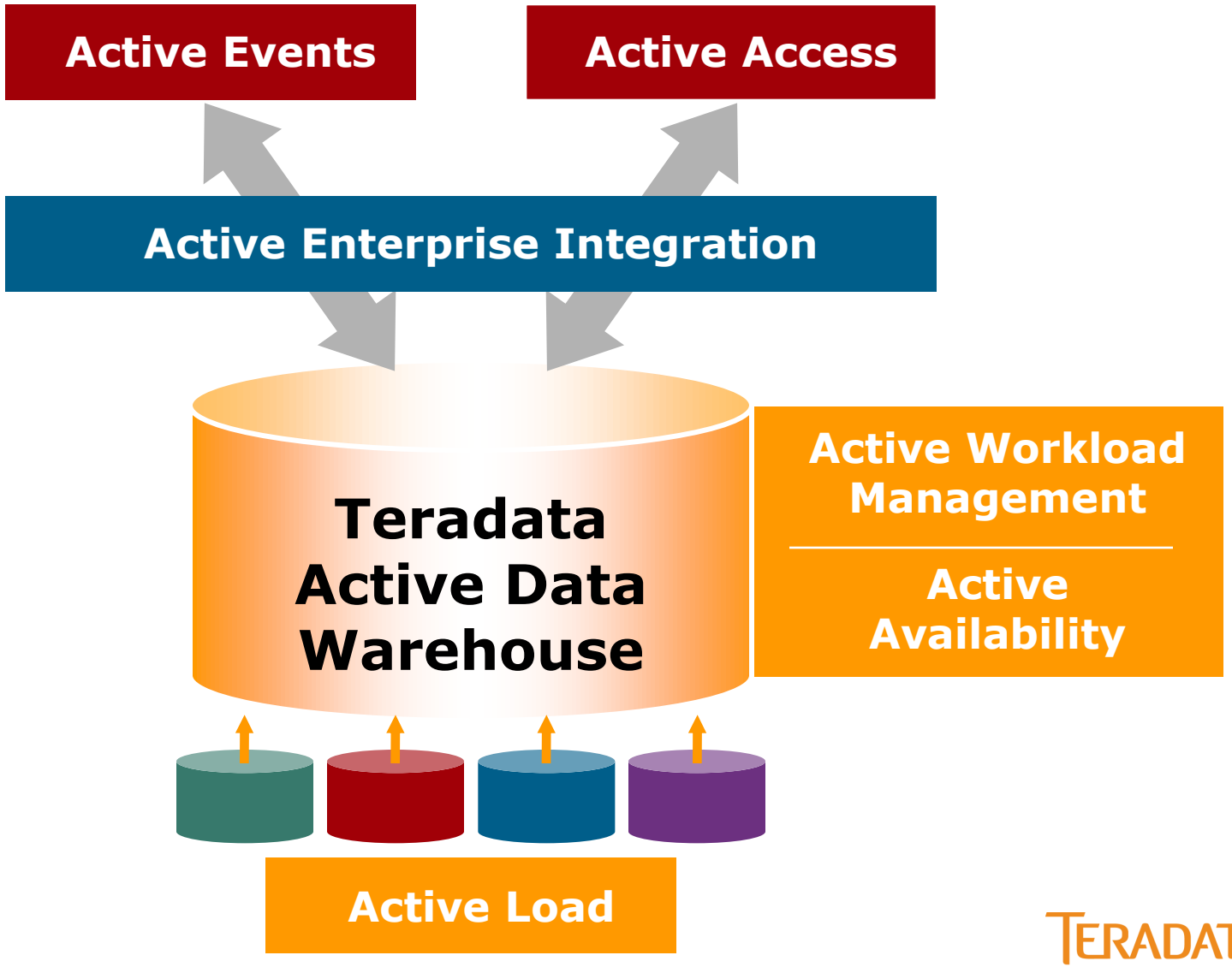
Active Data Warehouse Elements



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Active Elements

Active Access	High-speed inquiries and analysis retrieved from the ADW
Active Load	High frequency data loading throughout the business day
Active Events	Event monitoring, filtering, and escalation
Active Enterprise Integration	Links the EDW to applications, portals, web services, and ESBs
Active Workload Management	Delivering the right service levels to many workloads within a single database
Active Availability	Increasing high availability from business-critical to mission-critical

Active Elements Examples

Active Access	Ticket Lookup; record lookup; obtain a pre-defined offer upon login; customer lookup
Active Load	PNR data; flight information; fuel data; ticket data; operations data
Active Events	Web visit; inbound call; delayed flight; misconnection; mishandled/found baggage
Active Enterprise Integration	Dashboards with drill down; employee resource portals; operations performance portals
Active Workload Management	Prioritizing tactical queries above strategic queries
Active Availability	Access to the data warehouse 24/7

Active Products Map

Teradata Warehouse	Teradata 5450 Server, Teradata Enterprise Storage 6842 Teradata Warehouse 8.1 or higher
Active Events	• Teradata stored procedures, triggers, queue tables, external table functions • BAM/BPM tools, rules engines
Active Access	• Join Indexes, PPI, tactical queries, macros • BAM/BPM dashboards, rules engines, EII query tools
Active Load	• Teradata Parallel Transporter 8.1 or higher • ETL/ELT tools, Message Oriented Middleware (MQ)
Active Enterprise Integration	• Teradata Application Platform • Enterprise Service Bus, Application servers, Message Oriented Middleware, EAI
Active Workload Management	• Teradata Active System Management 8.1 or higher • Teradata Dynamic Query Manager 8.1 or higher
Active Availability	• Large cliques, hot standby nodes, fallback, Backup Archive-Recovery, Teradata Dual Active Solution

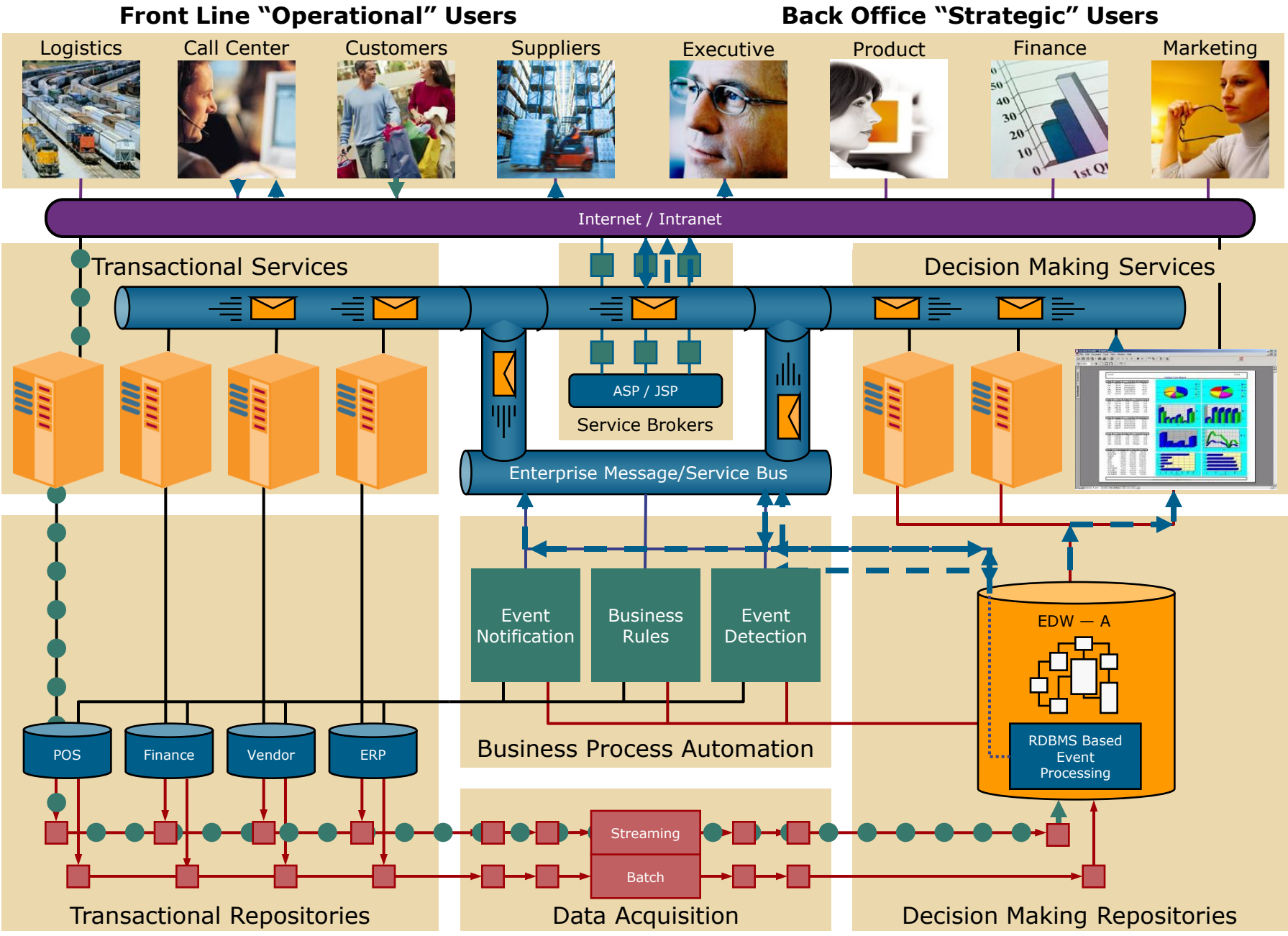
Some of Our ADW Partners

	Key Partners
Active Access	TIBCO BusinessWorks, Hyperion System 9, KXEN, MicroStrategy 8, Business Objects Dashboard Manager, Cognos Business Event Management, BEA Liquid Data, WebSphere Information Integrator
Active Load	Golden Gate TDM, IBM WebSphere MQ, Microsoft MQ, JMS, Iways
Active Events	TIBCO BusinessFactor, webMethods, IBM WebSphere Business Monitor, Fair Isaac Blaze
Active Integration	BEA WebLogic, BEA Aqualogic, IBM WebSphere, IBM WebSphere ESB, SAP NetWeaver Web Application Server, TIBCO BusinessWorks, JBoss, Microsoft BizTalk, webMethods Fabric
Active Workload Mgmt	Not applicable – internal to RDBMS
Active Availability	Golden Gate TDM

Making an Active Warehouse

"Activates" the Data Warehouse	Supporting Infrastructure
Active Access	**Active Enterprise Integration**
Active Load	**Active Workload Management**
Active Events	**Active Availability**
One or more in this column qualifies as *Active*	**All are required in varying degrees**

ADW – Brings It All Together



Enterprise Case Study: Sunrise TDC

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Company Overview

- Second largest Swiss telecommunications company
- Voice, Internet and mobile services
- $1.4B revenue in 2003
  - > Increase of 9.8% over previous year
  - > Growth in all three areas; strongest growth in mobile services

Management Challenges

- Relatively mature market means limited growth opportunities
  - > Win customers from competitors
  - > Increase number of services each customer buys
  - > Increase usage of each service
- High customer satisfaction did not translate into loyalty (customer retention was not managed well)
- CRM campaigns were segmented and executed manually; few per year
  - > Planning took 12 weeks
  - > Launch took up to 16 weeks
- Company's services were siloed
  - > Separate marketing organizations, data warehouses and billing systems

Management Goals

- Instill a company-wide vision during implementation to facilitate business process changes that CRM both causes and requires
- Improve customer facing activities
  - > Shorten time to produce CRM campaigns
  - > Increase number of campaigns
  - > Improve overall results
- Implement a 3-tiered CRM model to differentiate the new vision so each area could understand and assist with implementation
  - > Strategic – seamlessly communicate the concept throughout the organization
  - > Tactical – make the business case department-by-department
  - > Emotional – reach out to individual stakeholders to motivate acceptance

The Solution

- Time to implement
  - > Design business requirements – 5 months
  - > Design and implement new system – 2 months
  - > Ready for live campaigns in less than 8 months
- Selection led by an executive
  - > Had elsewhere conducted extensive analysis of solutions from 15 vendors
  - > Previous experience in implementing CRM
  - > Teradata seen as best fit given its scalable, powerful solution

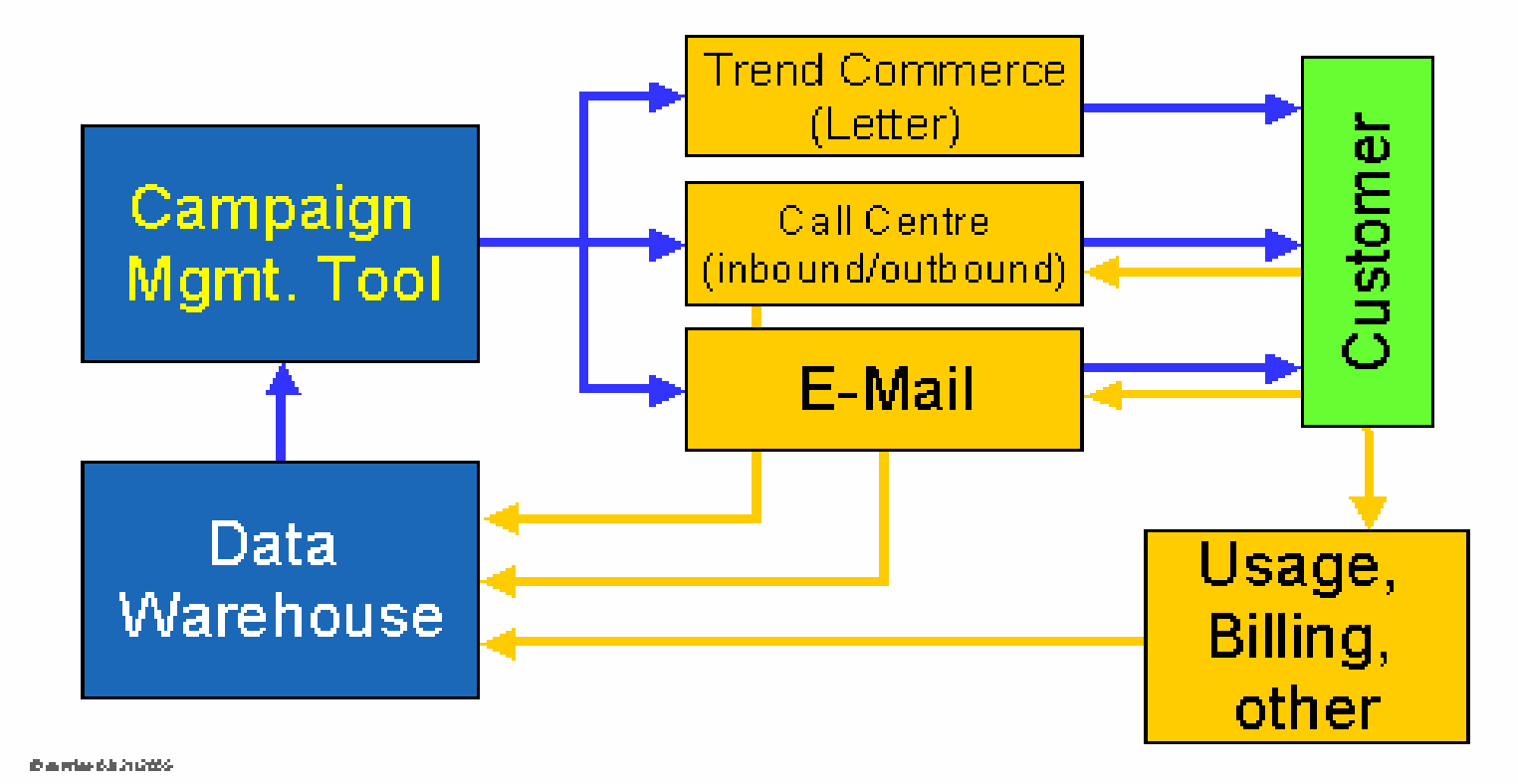
The Solution

- Call Detail Record (CDR) Collector already running on Teradata
  - > "Plugging in" Teradata CRM software would be a speedy process
  - > Linkage allowed refinements that improved relationships
- Implemented in two marketing organizations
  - > WIN (Wireline and Internet)
  - > Mobile
- Managed by 25 people from different customer-facing functions

The Solution

- Employs two versions of the lifetime value calculation
  1. Revenue, collected costs and common marketing costs
     - Limited accuracy but a quick method to make ongoing campaign decisions
  2. Cost of a particular marketing treatment
- Complete solution combined Teradata campaign management with a Clarify front-end

The Solution – Overview Closed Loop



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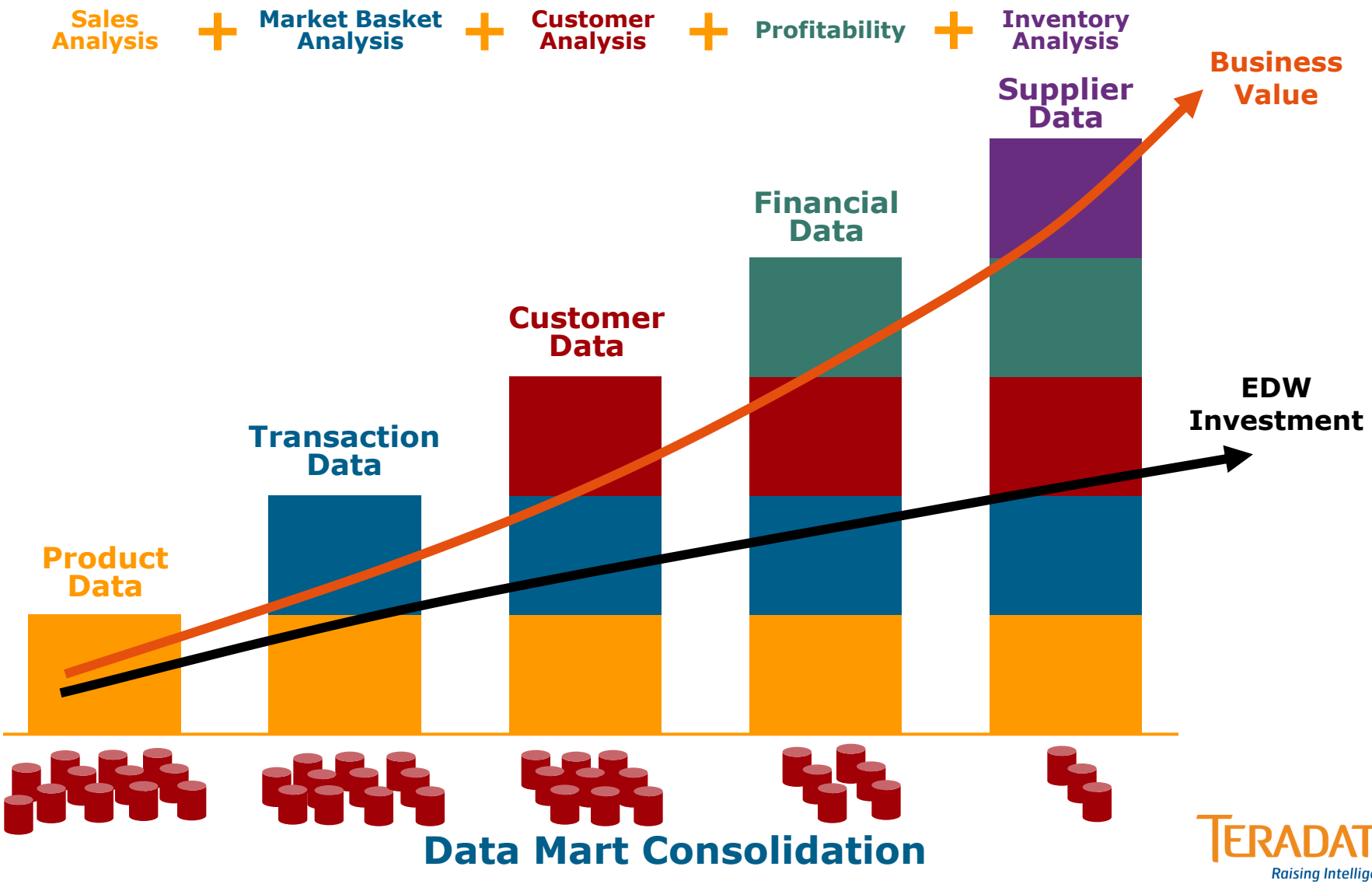
The Value of EDW



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"The world is changing very fast. Big will not beat small anymore. It will be the fast beating the slow."

– Rupert Murdoch, Chairman and CEO, News Corporation

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QUESTIONS?