



Business Intelligence at the Crossroads

Michael Goul Professor and Chair, W. P. Carey School of Business, Arizona State University

32nd Conference on Information Technology Interfaces, ITI 2010

Agenda

A Snapshot

Business Intelligence Trends

Pervasive BI, Advanced Analytics, Self-Service BI, Real-time BI

The Issues

BI at the Crossroads

Will M&A Activity Foster Innovation Stagnation?

A Service-Based Vision

'Servitizing' BI

Doing BI will be different in the future

But How?

Research Implications: American Express and Intel

From Global Card Services to Value Chain Service Metaphors

Convergence or Confusion

Service Industrialization: an Oxymoron?

Beyond Servitizing BI: BI for the Services Industry

The Challenges

Research and Teaching Directions

The global mobile services research lab

The Teradata University Network



Business Intelligence Trends

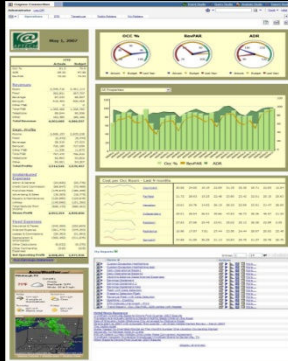
[Warzecha, A. 2010; Russom, P. 2009; Kash, W. 2010]



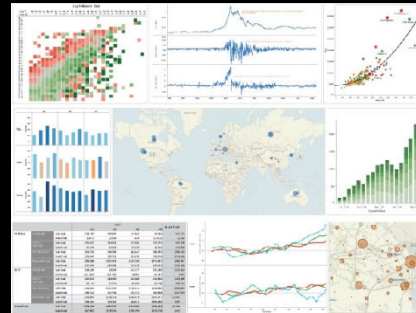
- Data volume in world today:
 - 988 Exabytes = Stack of books from the Sun to Pluto and back
 - Larger organizations will double their data warehouse size by 2012
 - In 2010, mobile data volume (2 exabytes) will exceed voice data volume for the first time
- Where data is coming from:
 - 80% of data growth generated by email - with more coming from documents, images and video
 - Scaling up current data warehouses is a key concern
- BI Defined –
 - BI is a set of methodologies, processes, architectures, and technologies that transform raw data into meaningful and useful information to enable more effective strategic, tactical, and operational insight and decision-making



Examples of Business Intelligence



- A hotel franchise uses BI analytical applications to compile statistics on average occupancy and average room rate to determine revenue generated per room



- A bank gives branch managers and other users access to BI applications to determine who the most profitable customers are, and what mortgage loan amounts might be applied for in a future period



- A store tracks sales in near real-time; a shopping concierge on your cart steers you to the right aisle and tries to cross/up-sell you

The Business Intelligence Puzzle Pieces

[Bardoliwalla, N. 2010; Luckham, D. 2010; Davenport and Harris, 2007]



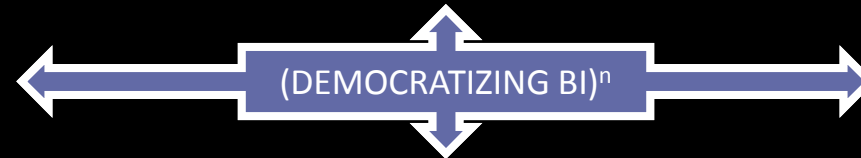
1. BI Value Proposition Shifting To **ADVANCED ANALYTICS**

- Classic analytic tools and applications help users understand what has happened and then analyze the root causes, but information value is often stale before it reaches its intended audience
- The holy grail of analytic technologies is the promise of being able to predict future outcomes by sensing and responding, with minimal latency between event and decision point
- This has become manifested in the resurgence of interest in event-driven architectures that leverage *complex event processing*, *predictive analytics* and *fact-based management* to drive decisions and actions



2. Pervasive BI

Expanding BI beyond the power user and analyst skill sets throughout an organization



- The value of content in a data warehouse is amplified when access is provided throughout an organization
- *Decisioning services* provided to front-line knowledge workers help transform the strategic vision of an organization to operational reality
- The next step will be to deliver such capabilities to suppliers, distributors, customers and government agencies
- More aggressive service levels will be required for performance, availability and data freshness
- Business rules engines, business activity monitoring and advanced visualization will be necessary for effective deployment"

Brobst, S., CTO, Teradata



3. Self-Service BI



- **Give users virtually unlimited data access.** Encapsulate mission-critical enterprise data sources for ad-hoc analysis by using SQL Server Reporting Services data feeds and PowerPivot workbooks as data sources.

Combine data from multiple sources. Use PowerPivot workbooks like a cube by taking advantage of a new version of Analysis Services and Reporting Services included in SQL Server 2008 R2 and

- **Discover mission-critical self-service BI applications.** Leverage the PowerPivot Management Dashboard to monitor your shared applications. Track usage patterns over time, drill down to obtain more details, discover mission-critical solutions, and make sure appropriate server resources are provisioned to ensure high availability and performance.

enjoy an attractive user interface in SharePoint—browsing at its best—and

Microsoft

the same performance and features as in the Excel client.

- **Make decisions based on most recent data.** Schedule automatic data refresh for workbooks in SharePoint to ensure the data remains current automatically.
- **Maximize business insight.** Reuse available shared applications as data sources and use SharePoint permissions and workflows to coordinate how users share and collaborate on their own solutions.

Increase IT Efficiency

Drive efficiency in your IT department by centralizing BI and data management and encapsulating enterprise data sources:

- **Give users virtually unlimited data access.** Encapsulate mission-critical enterprise data sources for ad-hoc analysis by using SQL Server Reporting Services data feeds and PowerPivot workbooks as data sources.
- **Ensure data quality, integrity and security.** Support your business units in their decision making by taking advantage of all technologies in the Microsoft BI Solution Stack. Provide your PowerPivot users with trustworthy data in a secure and compliant way.
- **Discover mission-critical self-service BI applications.** Leverage the PowerPivot Management Dashboard to monitor your shared applications. Track usage patterns over time, drill down to obtain more details, discover mission-critical solutions, and make sure appropriate server resources are provisioned to ensure high availability and performance.

The Microsoft BI Solution Stack

BUSINESS USER EXPERIENCE



BUSINESS COLLABORATION PLATFORM



Platform

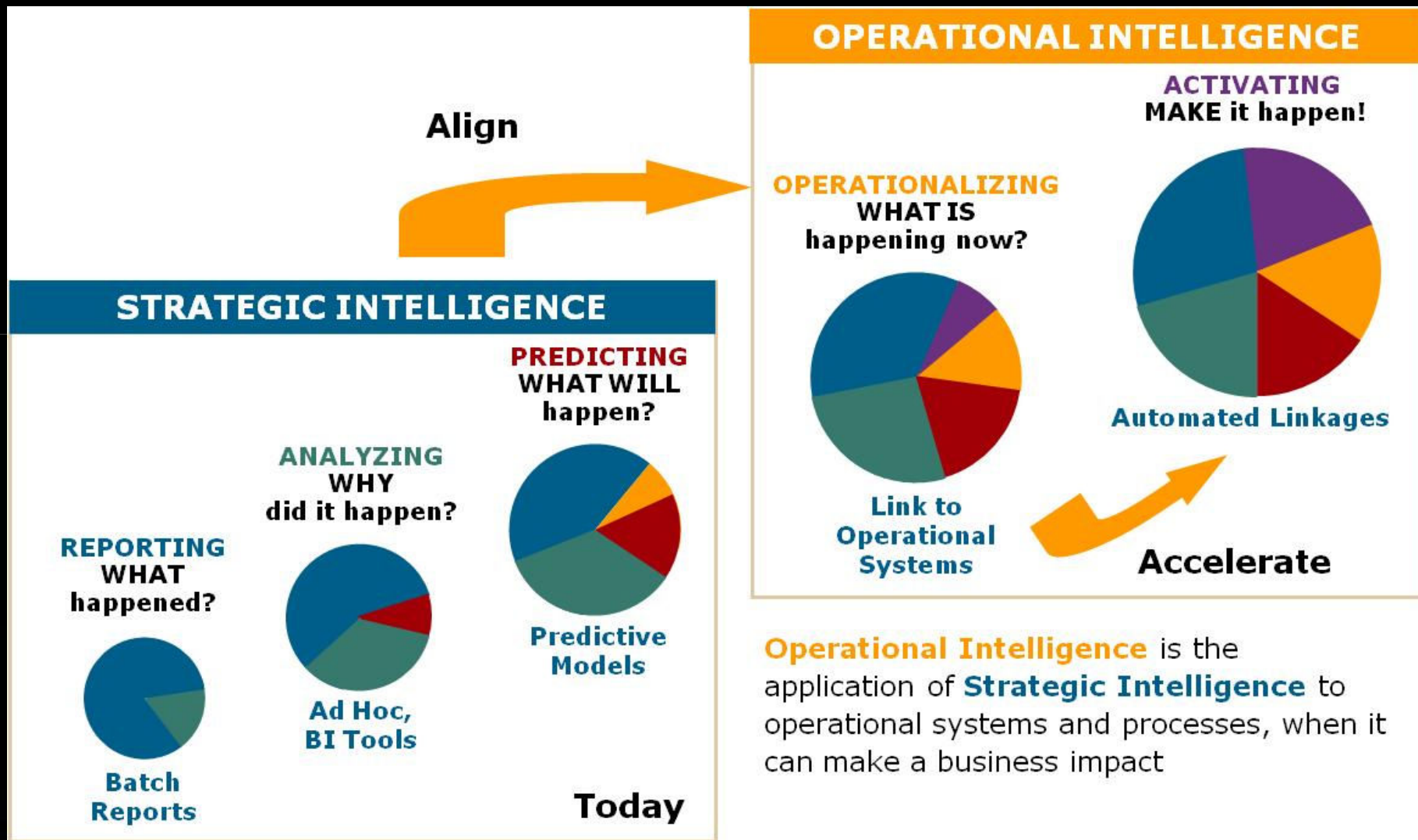
- Analysis Services
- Reporting Services
- Master Data Services
- Integration Services
- Data Mining
- Data Warehousing

DATA INFRASTRUCTURE & BI PLATFORM



4. Real-Time BI

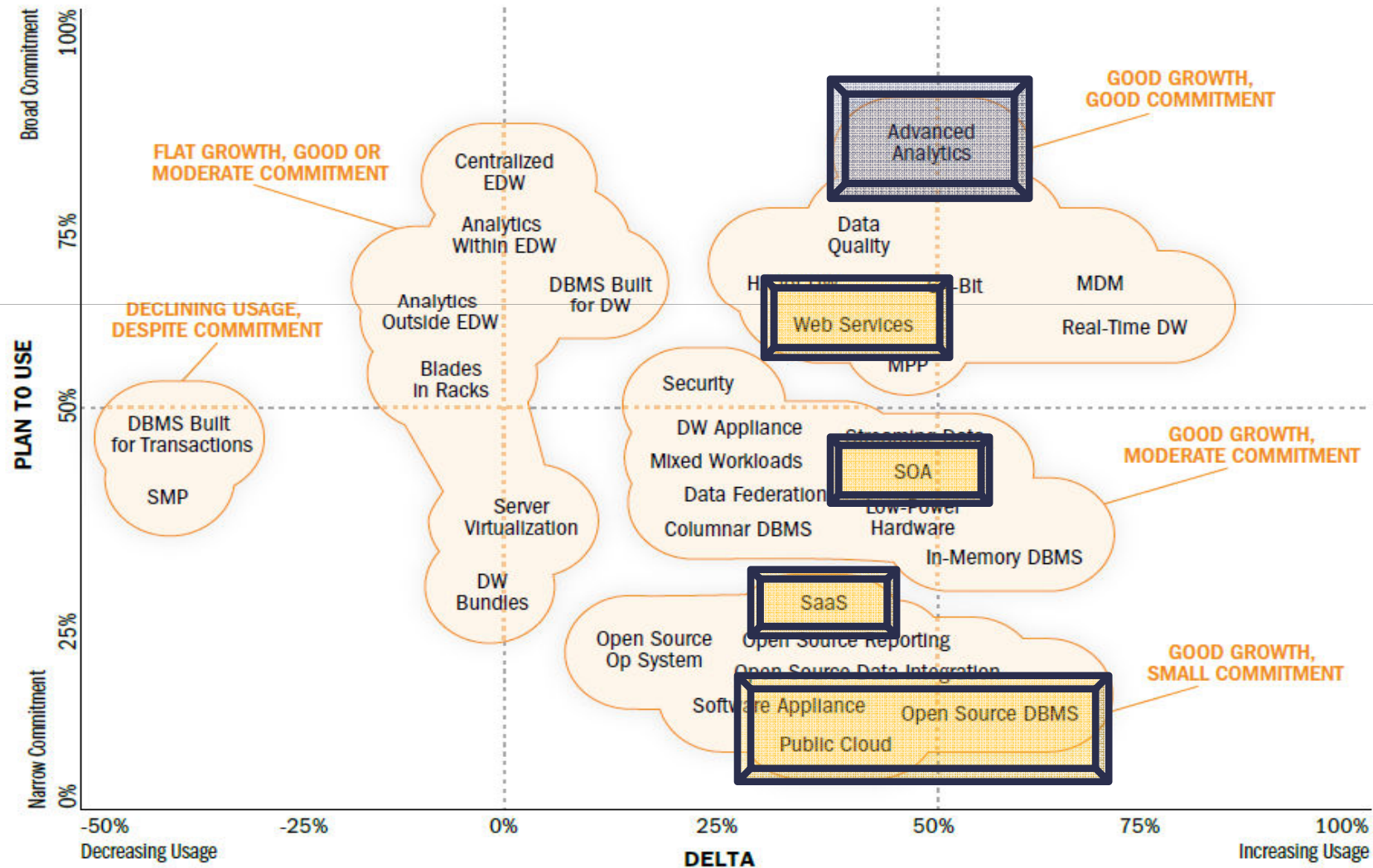
[after Schrader, D., 2010]



5. The Changing Infrastructure

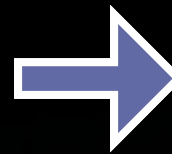
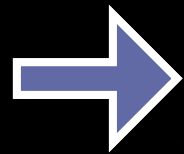
[Russom, P. 2009]

DW Platform Features and Techniques Plotted for Delta (Growth) and Plan To Use (Commitment)



The Issues

Where will the next breakthrough BI research come from?



- M&A frenzy has characterized the BI space: SAP <- Business Objects and Sybase, IBM <- Cognos and SPSS, Oracle <- Hyperion, Microsoft <- DATAlegro
- The economic downturn limited BI activity– turned markets to ‘data warehouse appliances’

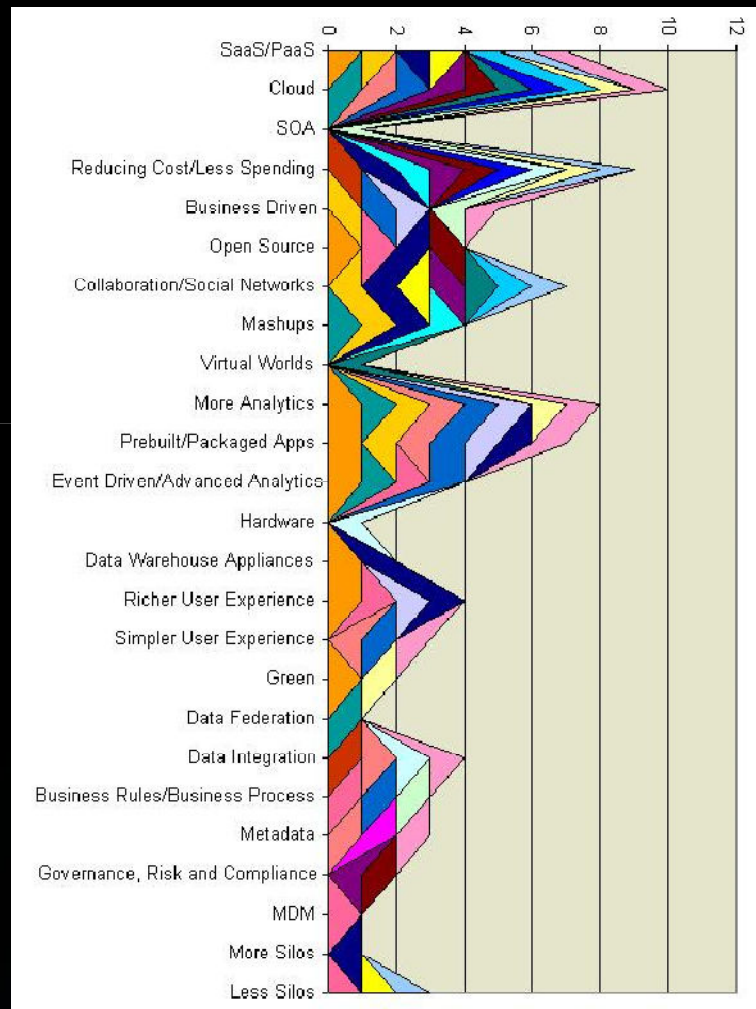
- M&A organizations involved in integrating and consolidating; combined R&D capabilities not yet ready for primetime innovation
- Appliances rule; Approaches for servitizing BI to address data growth, scale and speed for active enterprise intelligence remain untested

- Convergence or confusion?



What could be at this intersection?

[McBurney, V., 2009]



Looking Ahead – Different Directions?

SaaS/PaaS, Cloud, Business Driven,
Reducing Costs, Open Source,
Collaboration/Social Networks,
More/Advanced Analytics, Prebuilt Apps,
Richer User Experience,
Data Integration



Servitizing BI

[Goul, M., 2009]



WHAT: Rent or Open- Out-Source BI Infrastructure

HOW: BI PaaS, On-Demand Analytics, Data Warehouse Cloud

The Traditional (Structured) Way

Collect information about data sources; document entities and attributes; create a data warehouse or data mart (ETL, ELT); gather specifications for BI applications...

WHAT: Amass Loosely Coupled Internal and External Structured and Unstructured Data Sources

HOW: Integration services, self-service, etc.

WHAT: Turn It On, Load it up, Analyze Fast, Learn, Iterate, then De-Provision

HOW TECHNICAL: Elastic Data Marts

HOW METHODS: Agile



Research Needs

SERVITIZING BI

- How can we best explore the tensions between traditional and agile BI methodologies to improve understandings for the future?
 - We need to address reconciling alternate technical approaches with business-driven contingencies
 - Should we Hadoop?
 - Freely licensed, distributed file system, commodity hardware, assume failure - but not data structure, move operators to the data - not the other way around, apply map/reduce framework

TO WHAT END?

- Where is BI's next killer app?
 - Personal Analytics
 - Collaborative Analytics
 - Sentiment Analysis
 - Mobile BI
 - Text Analytics



ring it
roast is
the palate
the same
when used

Descafeinado

☐

Shots

☐

Jarabe / Xarope

☐

Leche / Leite

☐

Personalizado

☐

Bebida

☐

106 Lily

Chk 8949 May24'07 02:22PM Gst 0

To Go		
1 大杯咖啡冰乐		28.00
加搅打奶油		5.00
现金		50.00



106 TANO

Fra 1012 07Dic'09 12:52 Clt 0

LLEVAR	
MOCCA BLAN.(Gr.)	
# 3,60	3,60
8995252483448400	
DINER VIPS M	0,00
EFFECTIVO	5,00

Let's look at the **Services Economy** for Possibilities

07682 0282 697656 0
09/28/07
--- DUPLICATE
Visit starbucks.com to learn
why Coffee is Culinary. Find
coffee pairing ideas and
recipes from renowned chef
Marcus Samuelsson

```

***      I.V.A. INCLUIDO      ***
-----
      BASE      IVA      TOTAL

```

Sortenreine Kaffees

KAPFEN AUS SPEZIFISCHEN LÄNDERN		
Columbia Marfillo Supremo altmännlich, mit aromatischem Duft nach Vanillebaumholz	10.40	● Mittel
Guatemalas Antigua mit elegant-wildem, mit dunklen Kakaonoten	10.40	● Smooth
Somaras Tafel, stark und vollmundig	10.40	● Bold
Schokoni mit, nach Geschmack mit karamelligen Schokoladen	10.40	● Bold
Elizabets Elizabets Bungas Aroma, gewöhnlich und leicht	10.40	● Bold
Wang Erdbeere, viel und süß, mit leichter Zitrusnote	10.40	● Bold
Organic Elizabets Wang fruchtig, süß und leicht, mit einem Hauch Zitrus	10.90	● Bold

Charakteristische Blends

KAPITEL 1 KAPFERKUCHEN UND SCHOKOLADEN KAPITEL 2 SCHOKOLADEN	
Hause Brand / Kaffeebohnen Haus Brand Great Selections from the Estate	9.90 • Mild
Breakfast Blend Mittelmäßig und köstlich, mit herrlichem Körper	9.90 • Mild
Café Verona® Kaffee und Kakao	10.40 • Smooth
Verona Blend / Kaffeebohnen Espresso Blend Herrlich und überaus	10.40 • Smooth
Café Estima Blend® Ausgewogen, sehr fein	10.40 • Smooth
Arabica Mocha Java Einfach mit saftigen, weichen Noten	10.90 • Smooth
Gold Coast Blend® Herrlich, köstlich und gewagt, etwas exotisch	9.90 • Mild
French Roast Kaffeebohnen	10.40 • Mild



Starbucks Coffee Korea

현금(소득공제)
(고객용)

스타벅스커피코리아 센텀시티점
부산 해운대 우 1468 1층
대표: 이석구 201-81-21515 T: 051-743-1928
[POS 9385-01] 2009-09-28 14:52:06

Amer i cano (gr ande)	3,800	1	3,800
-----------------------	-------	---	-------

Item Amount	->	3,800
NET Amount	->	3,455
TAX Charge	[+]	345

Grand Total	->	3,800
-------------	----	-------

PAID * 3,800

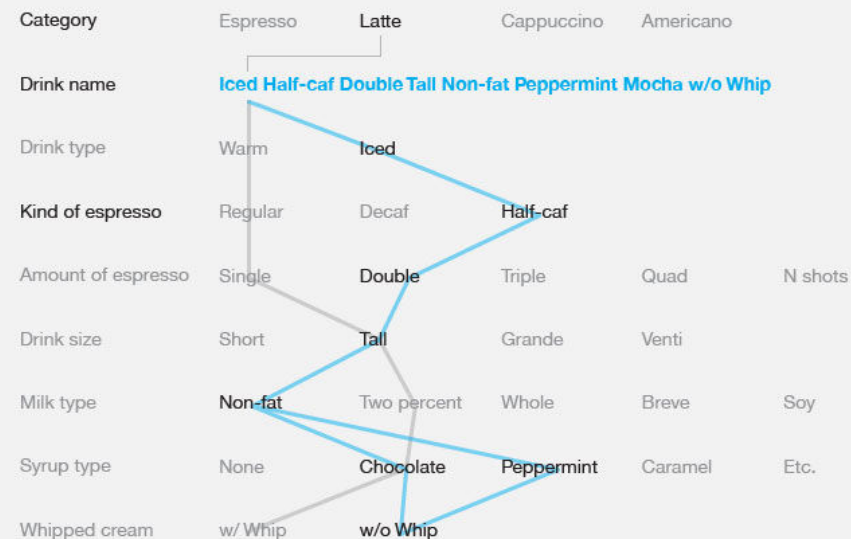
Cash	*	10,000
Change	*	6,200

© 2010 Carey School of Business

Background Case : Starbucks teaches us how to order - we learn their 'business action language' - and we like it!

- Learning the language gives the customer more control—the power to order a drink precisely to preference
- It creates a sense of belonging—of having insider knowledge and status
- Empowerment and belonging make customers feel that they are a part of Starbucks
- They encourage repeated visits and build loyalty
- It shows how progressive disclosure and unfolding complexity can support co-creation of products and services
- These lessons can be applied to many other interaction design and service design problems

Durham, S. "Simple for beginners, rich for aficionados: How Starbucks's drink framework and ordering language engage customers at all levels," www.dubberly.com, 12/2007



Advantages to Starbucks Approach



- Business intelligence is streamlined and globalized
 - Common semantics for all employees minimizes errors, enhances report interpretation, facilitates product and service agility
 - Global strategy implications: Supports an aggregation/scale approach, enhances local adaptation with some standardization and facilitates labor arbitrage as employee training is streamlined and costs kept low



- Customer Service is a Delight
 - Personalization
 - The 'Starbucks experience'
 - Customers recognize the experience globally
 - Marketing strategy is consistent



Case 1: American Express

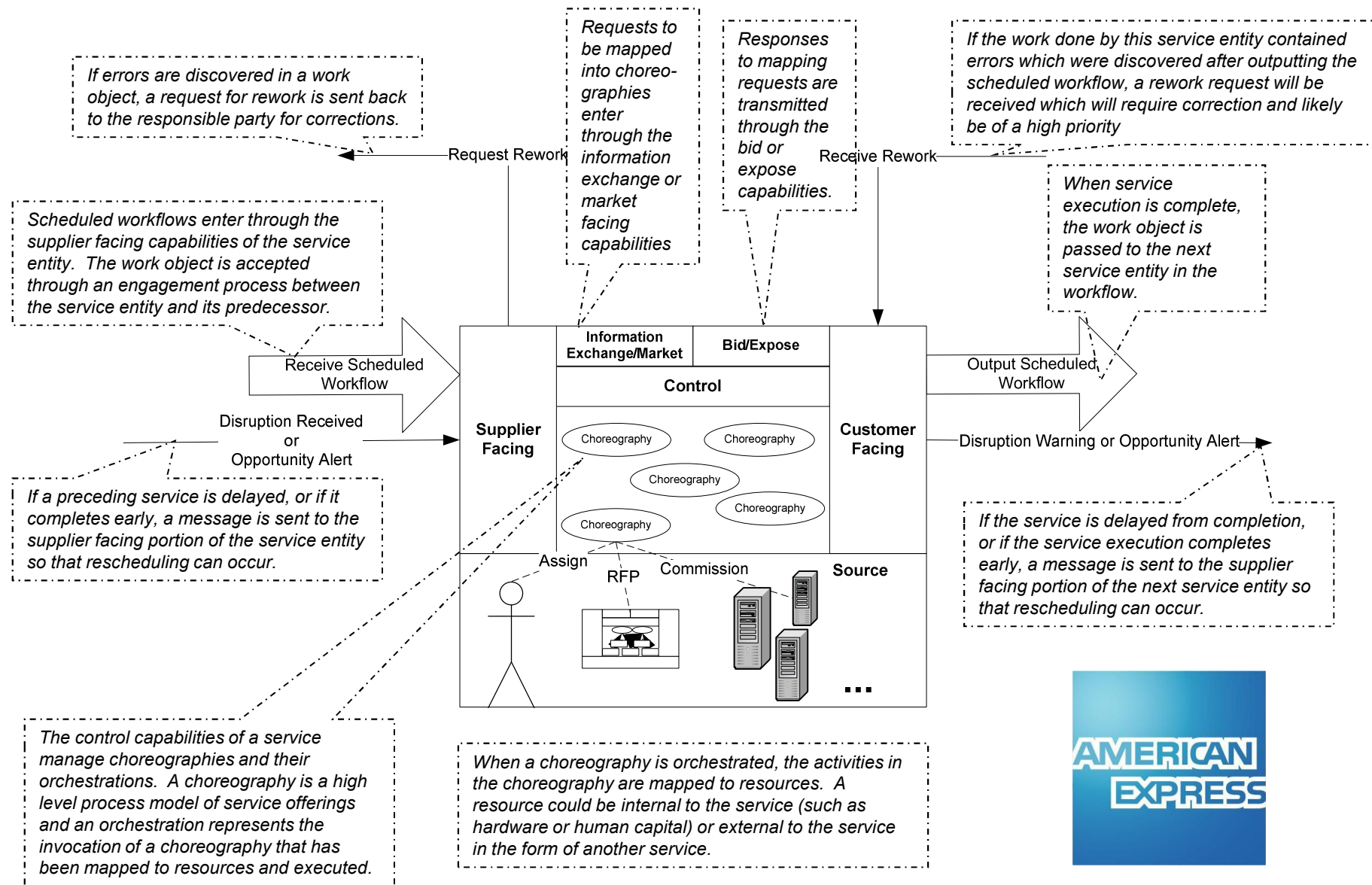
B2B: Global Card Services, e.g., 'Zap the Gap'



- AmEx is very mature in SOA, Grid, Business Process Management and Cloud, and its business model is to be superior in delivering financial services with maximum agility
- At issue was the different vocabulary and definitions of services and their constructs between business, software developers and infrastructure service providers (both internal and external)
- We studied the organization for 24 months and implemented a new way of integrating their perspectives consistent with OASIS' movement towards cloud, SOA and business process management convergence – and then we tested the approach with solid results
- The different orientations were causing high overhead in projects – most notably in the area of Business Intelligence (BI)
- Each BI project had different business requirements, there was too much overhead in mapping from requirements to BI service design, there was too much overhead in BI service development /delivery, and there was excessive overhead in BI service execution

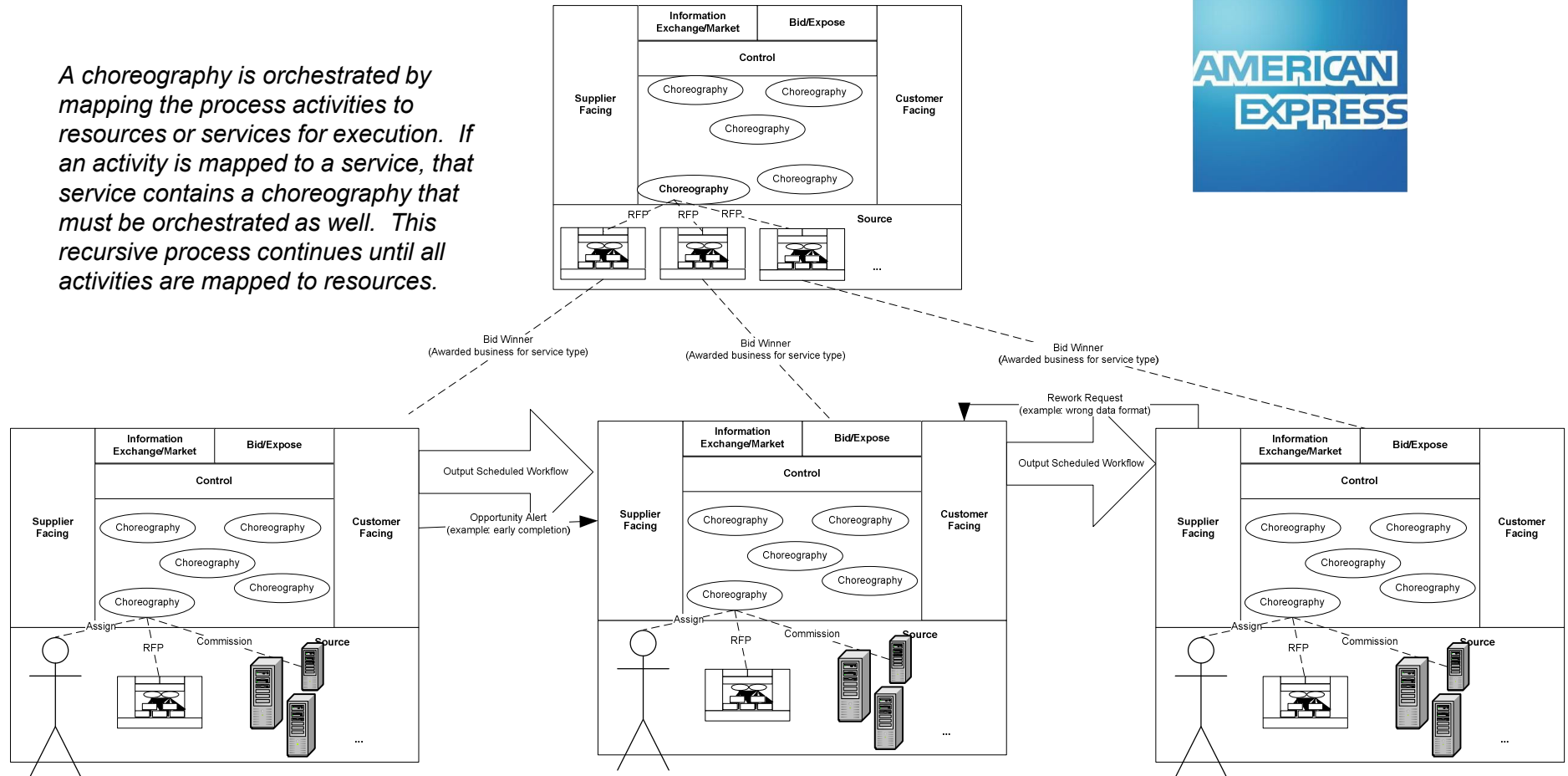


Creating a Business Action Language



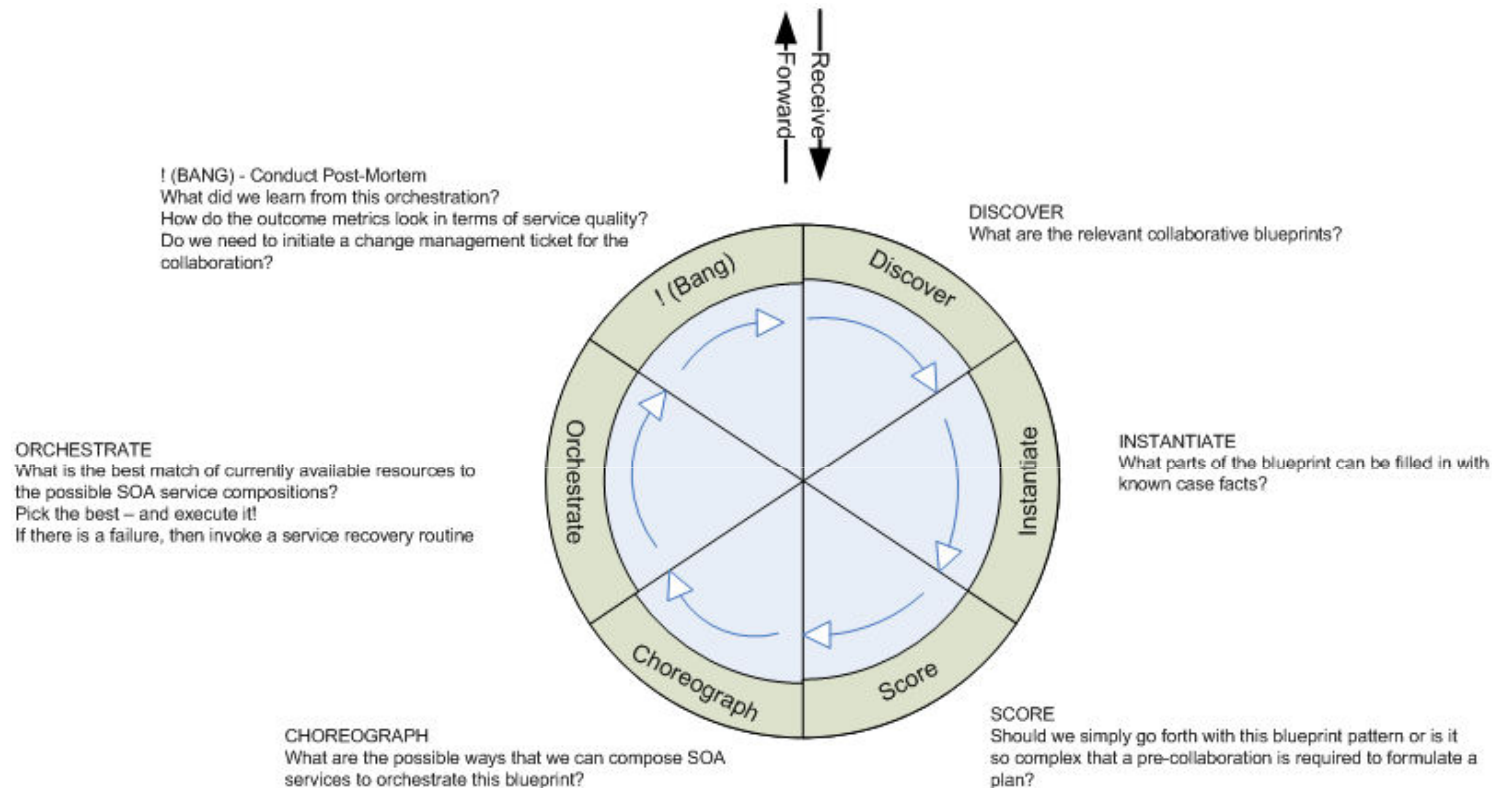
Modeling for Processes and Services at AmEx: From Service Entities to Service Engagements

A choreography is orchestrated by mapping the process activities to resources or services for execution. If an activity is mapped to a service, that service contains a choreography that must be orchestrated as well. This recursive process continues until all activities are mapped to resources.



After a choreography begins being orchestrated, work executes along the process defined by the choreography with the work object traveling along the process flow, and messages concerning errors, disruptions, or opportunities - and the associated scheduling adjustments - constitute engagement overhead for orchestration.

What happens inside every service entity in executing an engagement—be it a human work group, automaton or some combination?



Note: We use the terms choreography and blueprint interchangeably. Blueprint is more of a business service term, and choreography is used more in the SOA arena.



So, what did these constructs actually achieve for AmEx?

- Thinking in terms of a services process modeling approach and the DISCO! model, all parties (business process, software development, infrastructure provider, SOA adherents, etc.) have a new common vocabulary and vision for how different abstractions fit together
- We were able to build a **common semantics for performance management metrics that could be generalized across the enterprise**
- Necessary to develop a 'service semantics' (many are out there now)
- Those semantics dealt with **engagement overhead measures that targeted efficient service unit handoffs and collaboration to identify bottlenecks and manage them**



Shifting to Intel: Another B2B Services Context

- Showed Intel R&D Leadership the work at AmEx on semantics and service/engagement models
- Brown and Carpenter of Intel had described a similar approach to envision the future supply chain – as extended to be a ‘value chain’ where each participant is actually a service entity
- Common semantics were deemed as the way to advance the R&D vision, but there were obstacles – most notably the need to learn from the exercise about the future of enterprise computing, the role of virtualization and how cloud computing would apply at the infrastructure level – potentially impacting the chip market
- Turned into a unique project in that all prior Intel R&D on virtualizing resources had ignored combining business process, SOA and semantics-based approaches
- Supply chain gurus led the effort, and they saw a need to translate detailed business process information from layer to layer in the traditional organizational computing platform/stack
- Intel’s intent was to shape standards at the global level



Extending the Idea

- Of main interest was the translation of business process information into value-add information for sourcing software and infrastructure as a service
- Intel called their current approach to SOA the Federated Enterprise Reference Model (FERA), and planned to rely on the Value Reference Model semantics (called Value Chain Operations Reference or VCOR)
- The idea is that companies outsource business processes across the value chain at the same time as they take advantage of SaaS and IaaS
- The dynamics and complexities of the implied value chain and its participants' organizational platforms led to considering automating layer translations
BP -> SaaS (SOA) -> IaaS (SOI)



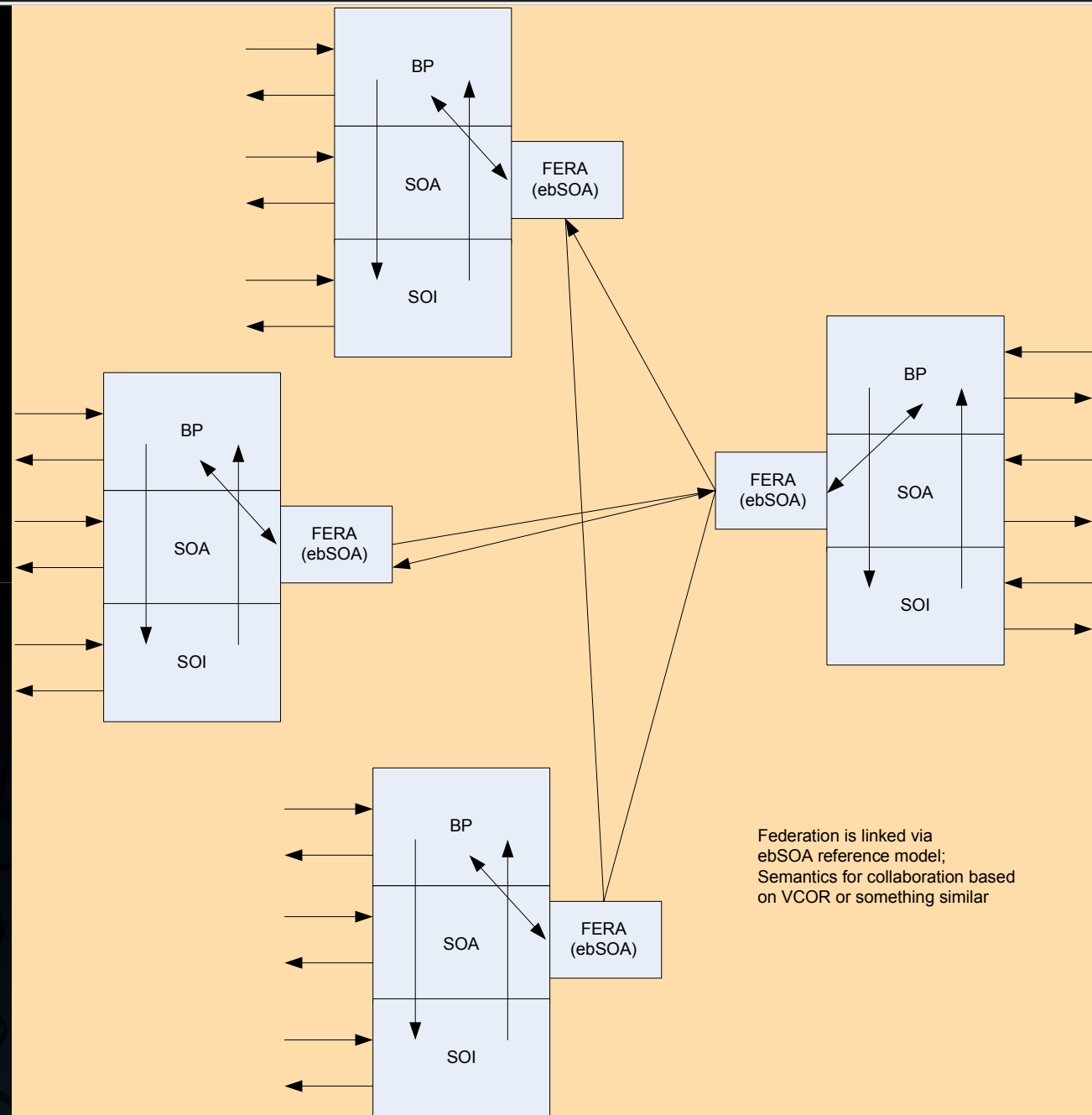
KEY

BP: Business
Process layer
SOA: SaaS layer
SOI: IaaS, Private
and Public Cloud

-> Layer by layer
<- Outsourcing

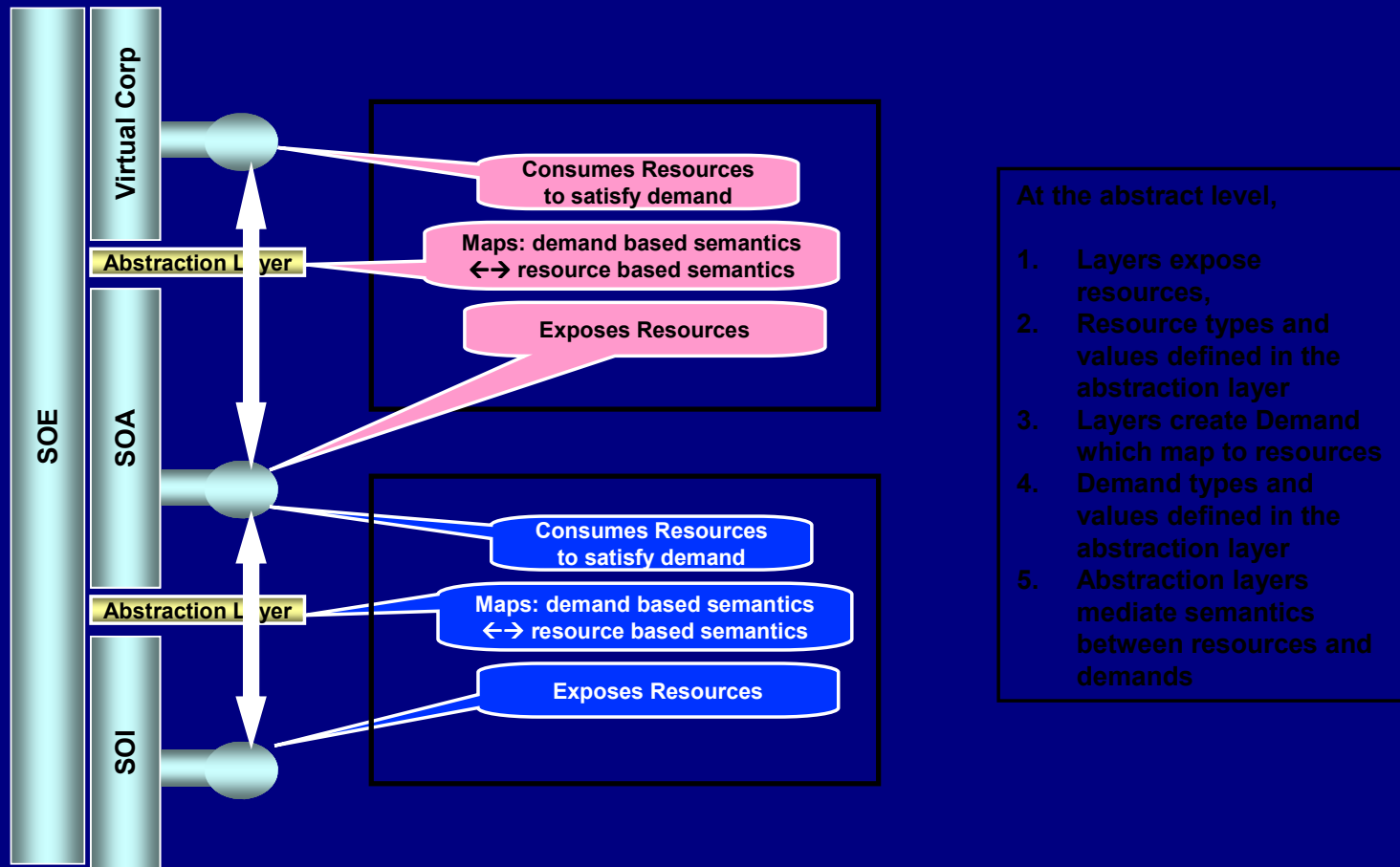
Up and down
arrows:
Translations
between layers

FERA (ebSOA): The
standard Intel
initiated

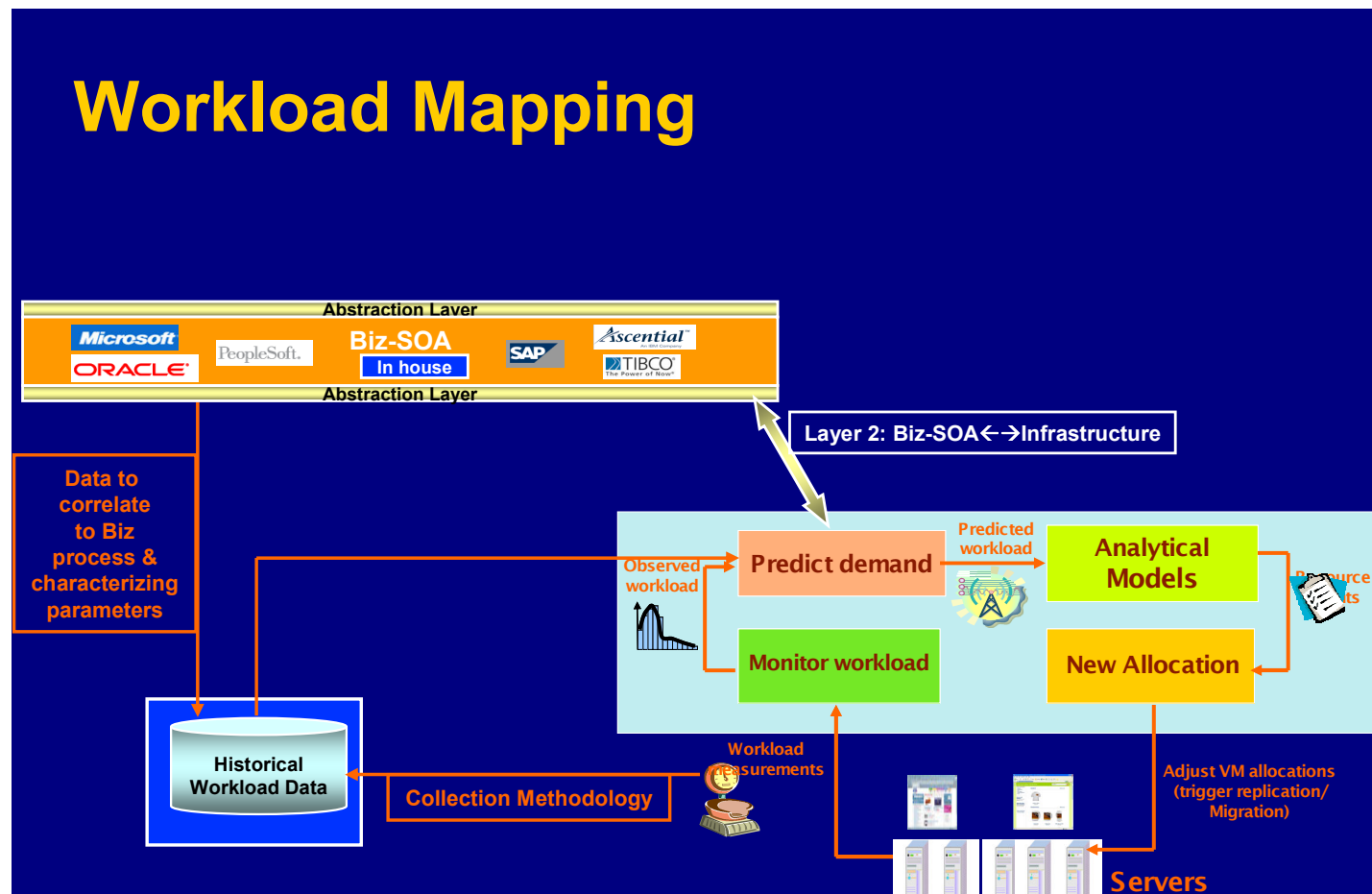


Demand-based semantics must be mapped to resource-based semantics through the SOA to SOI abstraction layer...

Workload Mappings Between Layers

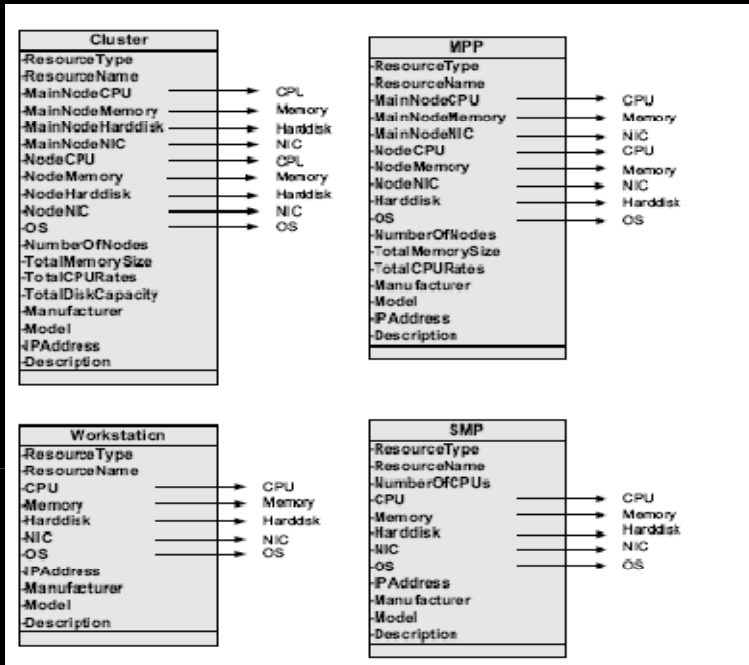


...for that mapping, it seems appropriate to apply analytical models to historical performance data to inform accurate demand prediction (BI!), and to monitor existing workload to make timely new allocation decisions....

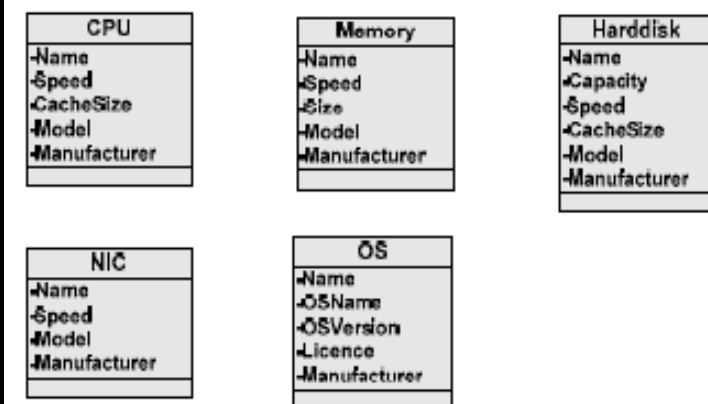
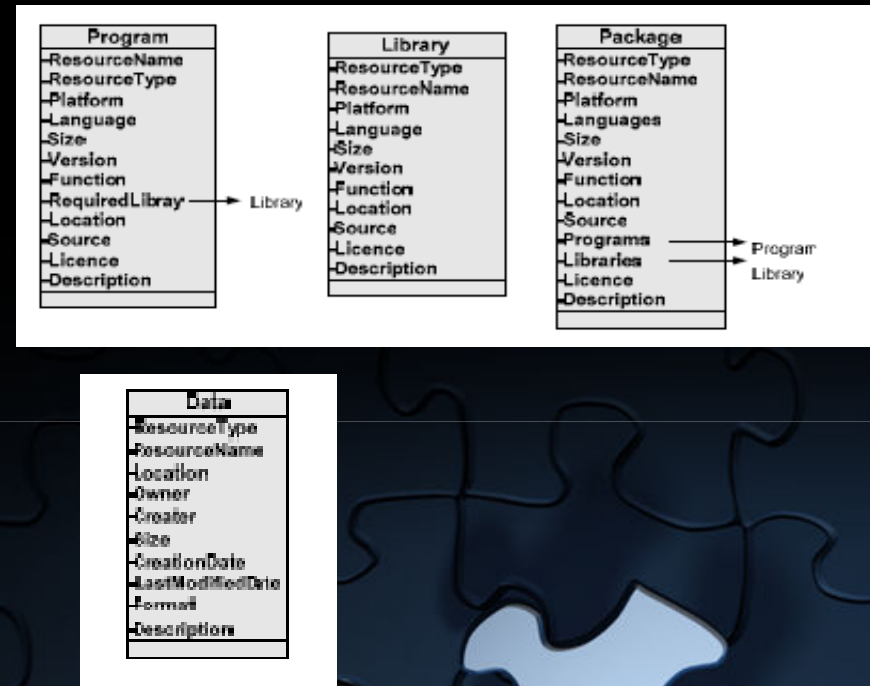


An approach to resource semantics

Hardware:

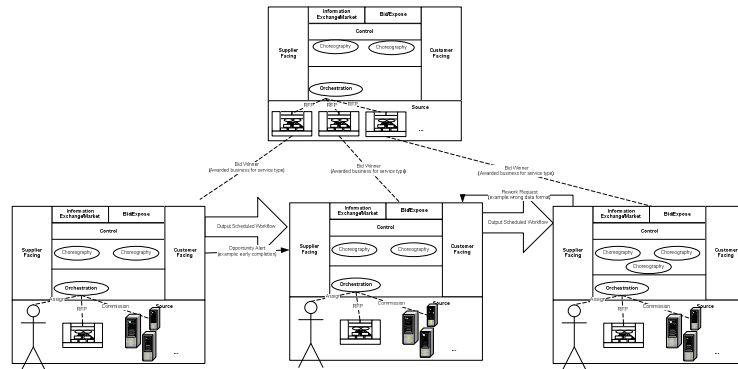


Software and Data:



Adapted from Bai,
et al., 2004

Resource expression example for a service



```

ResourceType == "Cluster" &
(NodeMemory.Size >= 1 GB) &
(NodeCPU.Speed >= 1.6 GHz) &
(NodeHarddisk.Capacity >= 30 GB) &
TotalDiskCapacity > 40 GB) &
((if (NodeMemory.Size > 4 GB) then 1 else (NodeMemory.Size/4 GB)) &&
(if (NumberofNodes>40) then 1 else (NumberofNodes/40)))
    
```


B2B Case Summary

INTEL

“Owned, fabricated, consumed, tangible, involve logistics”

Questions of how to minimize cost by enabling switching agility and ‘cost information’ sharing

Services traditionally relegated to a product support role

FEDERATION SEMANTICS ARE KEY TO BI FOR AUTOMATED PROCESS FLOW AND TO AVOID BULLWHIP AND OTHER UNDESIRABLE EFFECTS IN REAL-TIME

Common Ground

- *Need for BI*
- *Fragmentation*
- *Common Semantics key*
- *Performance management is crucial*
- *Service execution model applicable to both*

AMERICAN EXPRESS

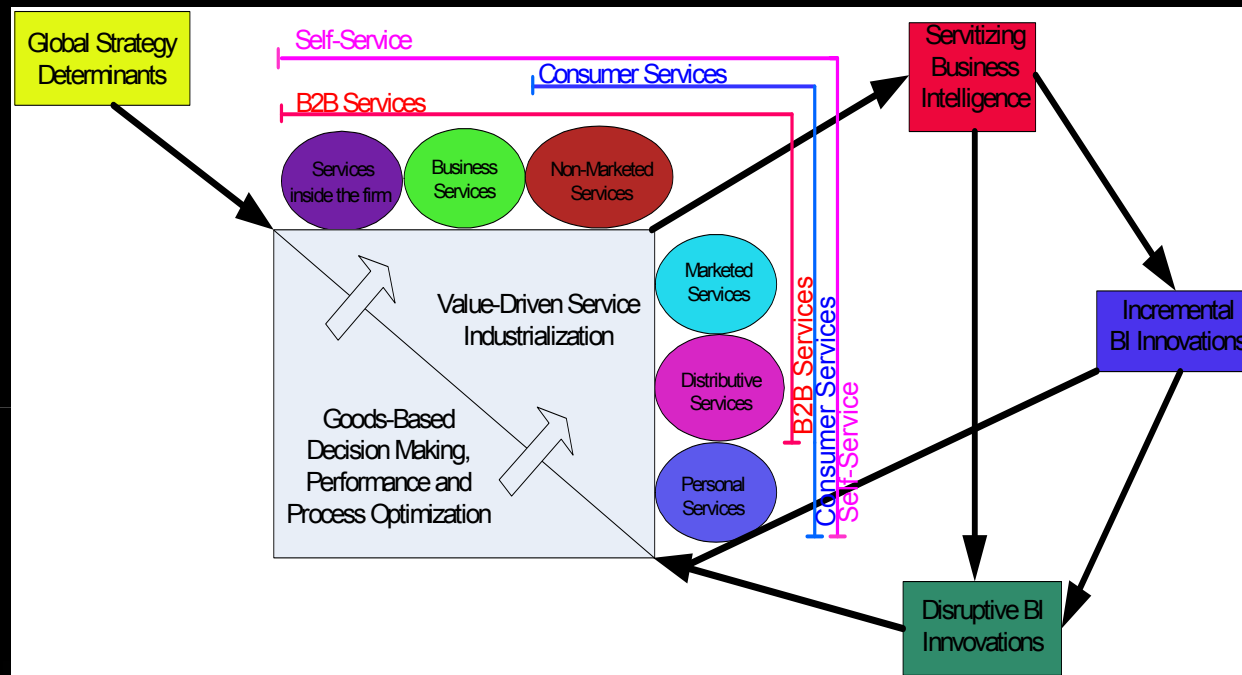
“Access, performed, intangible, variable, involve touchpoints”

Questions of how to scale, deliver, delight customers and ‘revenue info’ sharing

Integration across inter- and intra-organizational boundaries is significant

COLLABORATION SEMANTICS ARE KEY TO SERVICE INTERGRATION BI

So What is Next?



BI Opportunities – The Global Mobile Lab is now OPEN FOR BUSINESS

[Adapted from Rudy De Waele and Steffen Becker, 2010]

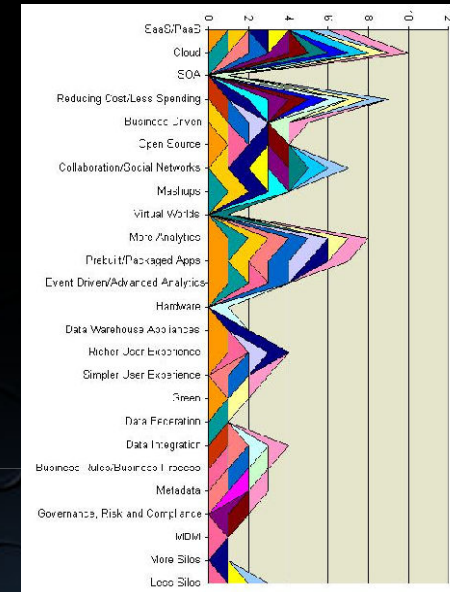
- Health care delivery, elections (and other forms of political expression) and environmental monitoring will all go to mobile services contexts
- We're all going to become mobile service value creators
- The Internet of Things will deluge us with our daily data, and we'll need BI to help us focus on the things that matter
- Mobile smart phones will be free; we'll pay for data services
- Content will be bundled into mobile service contracts
- Digital garbage collection services will be big
- Social marketing intelligence will be gold
- We'll need human 'service connection managers'
 - it will be a new job classification
- \$100M/year business in apps in 2011



Goul, W. P. Carey School of Business, ITI 2010

BI Opportunities (continued)

- Non-humans (objects, animals, places) will generate more data than humans
- Education is the next vertical to be revolutionized
- Half of the total economy in many countries will transit through mobile payments; 3 billion people will carry a mobile phone
- Location-based social networking
- Our phone will become our personal concierge
- Services purchased once and become available across all devices
- Wireless connectivity will be built-into every product with a microprocessor
- People will share more and more personal information
- SERVICE ANALYTICS WILL BE HUGE
- You will travel (pay \$) to go to a no-airwaves national park
- Augmented reality and mixed reality services will combine the physical and digital worlds
- A global mobile security attack will lead to mobile security services



Whew! — Now for some final questions for you today...

- Do you want to teach business intelligence?
- Where will you get your inspiration, validation and newest content ideas?
- Are you tired of rinky-dink hands-on software experiences for your students? Flaky demos? Shabby cookbook examples? Begging for more resource\$ to support your student experiences?
- Have you given up on trying to install, troubleshoot and maintain software, hardware, etc. for your classes? Keeping things going 24/7?
- Do you find it difficult to connect with other faculty colleagues teaching similar content?
- Want to participate in a community of like-minded BI/DW scholars at the next “BI Congress?”



Visiting the BI Virtual Campus

A Donation to the Academic Community from Teradata through its Teradata Cares Program

Welcome, Michael | Preferences | Site Map | Log out | Student View | Teradata.com

Search

TERADATA.
UNIVERSITY NETWORK

TEACH & LEARN | CONNECT & COLLABORATE | APPLY & DO | ABOUT US

Attention: The Teradata Database, Teradata SQL Assistant Trial, and MicroStrategy BI sites will be down Saturday, January 9th, 2010 from 10 AM EST to 6 PM EST.

A premier teaching resource for Data Warehousing, DSS and Business Intelligence

Teach & Learn
A library of teaching resources is at your fingertips

Connect & Collaborate
Connect with your peers, share ideas and get the answers you need

Apply & Do
Access the latest technology and software

What's New
What's New
NEW! Video from TUN Executive Directors on Upcoming BI Congress
Hear from the TUN Executive Directors on our plans

Featured Content
Arizona Court Rules Records Law Covers Metadata

Quick Links

General
Mission Statement
Advisory Board
Related Web Sites
Professor Discussion Forums

Access Content
Content Library
Integrated Material Sets
Submit Content
Submit Integrated Material Set
Teradata SQL Assistant Trial

Content Types
Articles
Assignments
Book Chapters
Case Studies
Course Web Sites
Powerpoint Presentations
Projects
Research Reports
Syllabi
Tutorials
Web Seminars
Podcasts
Student Work
White Papers
Quick Start Guides
Software and Resources

A Unique FREE Academic P2P Service

What's New

What's New

NEW! Video from TUN Executive Directors on Upcoming BI Congress
Hear from the TUN Executive Directors on our plans for the BI Congress in Phoenix on Dec. 15th.
[>View Video](#)

The 2009 pre-IGIS SIGDSS event will feature a joint SIGDSS and Teradata University Network (TUN) **Business Intelligence Congress** in the 2nd week of December 2009 in Phoenix AZ. The 2009 Business Intelligence Congress will provide a first-of-its-kind collaborative opportunity for academic professionals and industry representatives who share a common passion for research and education innovation in the field of business intelligence. In the spirit of open innovation, learn from, contribute your knowledge to, and brainstorm with key industry and academic movers and shakers in BI!


Student Password

The Teradata University Network web site student **PASSWORD is ExtremeData** (not case sensitive) until 7/31/2010. Reminder: The student password is for students of registered faculty only. Please do not post on public sites or make available to general audiences (ie: blogs, twitter, etc.).

Partner News

As you know, MicroStrategy (MSTR) announced their most current MSTR platform called MSTR 9 this year. MicroStrategy 9, MSTR's most feature-rich release in nearly a decade, offers new products and major platform enhancements that help companies seamlessly extend BI from small, individual applications into an integrated enterprise BI operation. We are planning to start updating the MSTR platform from 8.1 (current) to 9, and provide new content after release of the new Teradata University Network (and Teradata Student Network) websites. If you would to provide any improvement suggestions on MSTR content and product pages, please reach contact Haluk Demirkan. [| Read More](#)

Featured Content




Arizona Court Rules Records Law Covers Metadata

Submitted By: [Barbara Wixom](#) | Date: 1-4-2010

Description: My students constantly ask me why we should care about metadata. Here is a legal reason! This article talks about a recent decision by an Arizona cour...

[| Read More](#)




Business Intelligence

Submitted By: [Hugh Watson](#) | Date: 12-18-2009

Description: This is the syllabus for my BI course that is offered as an elective for undergraduate MIS majors. The teaching resources used in the course come almo...

[| Read More](#)




CIO Talk Radio Podcast: Delivering Smarter, More Competitive BI

Submitted By: [Barbara Wixom](#) | Date: 12-9-2009

Description: Great podcast discussion with CTOs from both IBM and Teradata. The abstract from the website is: What is "Business intelligence" for, if not to give...

[| Read More](#)



Demo of Palantir Software and Subprime Lenders

- Powerpoint Presentations
- Projects
- Research Reports
- Syllabi
- Tutorials
- Web Seminars
- Podcasts
- Student Work
- White Papers
- Quick Start Guides
- Software and Resources



Teach & Learn: A Variety of Content Types, Course Types, etc.


UNIVERSITY NETWORK

TEACH & LEARN | CONNECT & COLLABORATE | APPLY & DO | ABOUT US

Home > Teach & Learn

Teach & Learn

A library of teaching resources is at your fingertips



View Content Library

Search the library for resources

Integrated Material Sets

Created by professors to fast-track resources on a specific topic

Submit Content

Do you have a resource to share? Submitting is easy!

Browse Content

Course Type

Data Warehousing
Database
DSS/BI

Audience

Undergraduate
Graduate
Executive Education

Content Type


Popular Topics

Artificial Intelligence
Business Performance Management
Customer Relationship Management
Data Governance or Stewardship
Data Mart
Data Models and

Integrated Material Sets

Browse the list on the left for a topic of interest. These Integrated Material Sets provide an easy way to prepare for your classes.

Featured Content

 **Pervasive BI**
Submitted By: **Hugh Watson** | Date: 2-29-2008
Description: In this podcast, Stephen Brobst, Teradata CTO, discusses pervasive BI and the ability of the Teradata database to support it. *Key*

Teach & Learn

Browse Content

Integrated Material Sets

Submit Content

Submit Integrated Material Set

Quick Links

General

Access Content

Content Types



Tomorrow's Lecture: BPM


TERADATA.
UNIVERSITY NETWORK

TEACH & LEARN | CONNECT & COLLABORATE | APPLY & DO | ABOUT US


Home > Teach & Learn > Integrated Material Sets

Integrated Material Sets

Created by professors to fast-track resources on a specific topic




1 2 Next

 **CRM**

Submitted By: **Hugh Watson** | Date: 6-26-2007

Description: Start by having students read Jill Dyche's "What is CRM? A Primer on Customer Relationship Management" to understand basic CRM concepts. Another excellent introductory reading is James Fordham's "From Masses to Master: How the Individual Came to Matter to Marketers." It traces the evolution of m...


[| Read More](#)

 **Data Integration**

Submitted By: **Thilini Ariyachandra** | Date: 6-26-2007

Description: Data integration is critical to developing successful data warehousing and BI solutions. The web seminar and corresponding report titled "Data Integration: Using ETL, EAI, and EII Tools to Create an Integrated Enterprise" by Colin White provides a good introduction to data integration and describ...

[| Read More](#)

 **Data Mining**

Submitted By: **Thilini Ariyachandra** | Date: 6-26-2007

Description: Start with Zaima and Kashner's article "Data Mining Primer for the Data Warehouse Professional"

Teach & Learn

[Browse Content](#)

[Integrated Material Sets](#)

[Submit Content](#)

[Submit Integrated Material Set](#)

Quick Links

[General](#)


[Access Content](#)


[Content Types](#)

Integrated Materials Combine TUN Content in Classroom Tested Modules

Business Performance Management

Michael Goul, 6-26-2007



 **Integrated Material Set**

Title: Business Performance Management

Submitted: [Michael Goul](#), 6-26-2007
Last Modified: [Michael Goul](#), 6-26-2007

Description:

Business performance management (BPM) is among the fastest-growing areas in data warehousing and business intelligence. In fact, many people view BPM as the next generation of business intelligence. An excellent overview is provided in "[Keys to Successful Performance Management: Getting Past the Excitement of Technology to Achieve Results](#)."

What BPM provides is a framework for organizing, automating and analyzing the key drivers aligned with the success of an organization's strategy. Automated scorecards and dashboards are used within the BPM framework to track metrics, keep tabs on business processes and report up-to-date performance to important stakeholders. A comprehensive class session on BPM using resources available within TUN is described in "[An Introduction to Business Performance Management](#)." This introduction references a demonstration you can use in your classes called, "[Eden Corporation - Flash Demo](#)." The flash demo is an excellent resource for encouraging your students to think about the impacts of BPM on an organization's executive suite.

If you are planning to do more than one session on BPM, TUN has a significant amount of additional materials. I suggest you have your students review "[Designing Executive Dashboards, Part 1](#)" and "[Designing Executive Dashboards, Part 2](#)" for reinforcing operational dashboard best practices. These are especially appropriate if you wish to have them actually develop or evaluate dashboard designs. To support best dashboard design practices, you may want to include "[Dashboard Design: Beyond Meters, Gauges and Traffic Lights](#)" by Stephen Few. "[Dashboard Design: Why Design is Important](#)" is also an excellent source, and it addresses more detail in the area of metrics selection. It also

Teach & Learn

- [Browse Content](#)
- [Integrated Material Sets](#)
- [Submit Content](#)
- [Submit Integrated Material Set](#)

Quick Links

- ▶ [General](#)
- ▶ [Access Content](#)
- ▶ [Content Types](#)



Teaching Notes

An Introduction to Business Performance
Management and Dashboards: A Teaching Note

Materials:

This teaching note references the following materials from the TUN website:

1. The BPM Showcase Flash demo that highlights the use of role-based dashboards at a fictitious company, the Eden Corporation.
2. The suggested Business Performance Management Class Preparation notes for students
3. The “Dashboards at Eden, Inc.” case introduction with Part A&B case extensions and questions.
4. Student reading materials including:
 - [Cranfield University's "State of BPM Study"](#)
 - [The IDC white paper on Master Data Management](#)
 - [Houghton et al.'s MISQE Vigilant Information Systems dashboard case study](#)
 - [Noetix Dashboard Development methodology paper](#)

Introduction:

The purpose of this teaching note is to provide background information on how you may wish to introduce your students to business performance management and dashboards using the BPM Showcase Flash demo. The intent of the materials developed here has been to balance both organizational and technical perspectives to issues surrounding the design and deployment of dashboards. The materials have a definite business management focus, but pedagogical elements should be suitable to dashboard deployment in specific functional areas or for other applied contexts. The materials have been tested in actual class settings, and some of the insights provided are based on those experiences, including post-session student feedback.

Class Session Structure:

Prior to the class session dedicated to business performance management and dashboards, assigned reading should include Houghton et al.'s MISQE Vigilant Information Systems (VIS) case involving Western Digital. It could also include the [Noetix Dashboard Development Methodology](#) paper, the [IDC white paper on Master Data Management](#), and the [Business Performance Management Class Preparation notes](#). Of course, other



In-Class Cases with Real Tensions

Dashboards at Eden, Inc.

John Strong, CEO of Eden, Inc., championed business dashboards for improving revenue growth, increasing margins, communicating accurate estimates to the financial community and improving innovation and quality. Dashboards are intended to help John build an organizational culture where there is performance visibility. He wants employees to be held accountable for their actions. Eden deployed Hyperion dashboards using tools that manage the flow of data to customized reports that provide top level executives with relevant views into the enterprise. Inna Karlova is one of those executives. As VP of Sales, Ms. Karlova is able to drill down into detailed sales information by region, territory, salesperson, etc. COO Ken Edwards utilizes a dashboard that provides insights into ongoing operations. His dashboard also incorporates models that support and simulate the impact of different decision scenarios. For example, he can simulate the impact of switching suppliers, and he can even see – in real-time – ongoing assembly line operations. Sue Change, VP of Finance, is clear about how difficult it is to monitor macro and micro financials at the same time – especially in real-time. As finance VP, she does much more than managing P&L reporting. She must address communicating with markets, handling debt, managing cashflows and foreign exchange rates and hedging. All of these must be taken into account in her efforts to build solid forecasts. Sue's dashboard at Eden is one of the few that include a graphical or spatial dashboard capability. CIO David Lee's dashboard components are mostly



High Quality Media, Demos, Podcasts, etc. to Reinforce Learning

The screenshot shows a Microsoft Internet Explorer browser window displaying the 'Integrated Material Set' page for Business Performance Management. The page includes a description of BPM, submission details by Michael Goul, and a 'Quick Links' sidebar. A 'File Download - Security Warning' dialog box is open, asking if the user wants to run or save the file 'BPM workshop Full Flash.exe'. The dialog box also contains a warning about potential harm from Internet files and buttons for 'Run', 'Save', and 'Cancel'. The background page text discusses operational dashboard best practices and provides links to related content like 'Dashboard Design: Beyond Meters, Gauges and Traffic Lights' and 'The New Faces of BI: Dashboards and Scorecards'.

Address: <http://academicprograms.teradata.com/teach-and-learn/integrated-material-set/?IntegratedMaterialSetId=524>

Integrated Material Set

Title: Business Performance Management

Submitted: Michael Goul, 6-26-2007
Last Modified: Michael Goul, 6-26-2007

Description: Business performance management (BPM) is among the fastest-growing areas in data warehousing and business intelligence. In fact, many people view BPM as the next generation of business intelligence. An excellent overview is provided in **"Keys to Successful Performance Management: Getting Past the Excitement of Technology to Achieve Results."**

Submit Integrated Material Set

Quick Links

- General
- Access Content
- Content Types

File Download - Security Warning

Do you want to run or save this file?

Name: BPM workshop Full Flash.exe
Type: Application, 11.5 MB
From: academicprograms.teradata.com

Run Save Cancel

While files from the Internet can be useful, this file type can potentially harm your computer. If you do not trust the source, do not run or save this software. [What's the risk?](#)

operational dashboard best practices. These are especially appropriate if you wish to have them actually develop or evaluate dashboard designs. To support best dashboard design practices, you may want to include **"Dashboard Design: Beyond Meters, Gauges and Traffic Lights"** by Stephen Few. **"Dashboard Design: Why Design is Important"** is also an excellent source, and it addresses more detail in the area of metrics selection. It also includes materials on developing dashboard mock-ups, so you may find this to be an excellent basis for an assignment.

Dashboards and scorecard similarities and differences can be confusing for students, so you might have them read **"The New Faces of BI: Dashboards and Scorecards."** For students with an interest in the more technical materials, the topic of Master Data Management (MDM) is an excellent tie-in for BPM. As data is aggregated from data stores to dashboards and scorecards, MDM is an integral component. An excellent overview is provided in **"Getting Started with Master Data Management"** and a larger term view of MDM in the context of service

The Most Important Ingredient: Hands-on Authentic Software Suites with Industry-Scale Panache



UNIVERSITY NETWORK

TEACH & LEARN | CONNECT & COLLABORATE | APPLY & DO | ABOUT US

Home > Apply & Do

Apply & Do

Access the latest technology and software



Software

- [Teradata Database](#)
- [MicroStrategy](#)
- [The Planners Lab](#)
- [University of Arkansas Resources](#)
- [Downloadable Demonstration](#)

Resources

- [Certified Professional Program](#)
- [Teradata.com Resources](#)
- [Student Employment](#)
- [Related Web Sites](#)

Quick Links

- [General](#)
- [Access Content](#)
- [Content Types](#)

Teradata Database

The Teradata Database allows you to sample the power of Teradata

Demonstration Software

Access software created specifically for classroom demonstrations

Downloadable Software

Readily available software for use with your classes

Software

Teradata Database

Access Teradata Database software and documentation for your classes. Download data sets from leading data management textbooks and from MicroStrategy. Learn the benefits and how to use the Teradata SQL Assistant/Web Edition.

MicroStrategy BI

Access MicroStrategy's BI software demonstrations for use in your classes.

Resources

Certified Professional Program

Learn how your students can achieve Teradata Certification to increase their knowledge of data warehousing technology - and their value to potential employers.

Teradata User Groups

Your place to learn, network and exchange ideas with Teradata users.

White Papers

The TUN BI/DW Community

ASU[®] W. P. CAREY
SCHOOL of BUSINESS

ASU Home | ASU A-Z Index | My ASU | Colleges & Schools | Directory | Map

Search W. P. Carey
W. P. Carey ASU

W. P. CAREY UNDERGRADUATE MBA MASTERS/PH.D. PROFESSIONAL DEVELOPMENT DEPARTMENTS FACULTY/RESEARCH

Conference Home
Tracks
Submissions
Important Dates
Venue
Committees & Advisory Board
Program
Sponsors
Register
Contact Us

BUSINESS INTELLIGENCE CONGRESS



Joint SIGDSS & TUN
Users Group Pre-ICIS
Workshop and Congress
Phoenix, Arizona
December 15, 2009

[BI Congress Now Featured at CNNMoney.com](#)

KEYNOTE SPEAKERS ANNOUNCED!



Tom Davenport, Babson
Scott Gnau, Teradata
Hugh Watson, University of Georgia

Good dialogues start with good questions, and the key is to understand your problems and best determine who has the knowledge to engage them.

McINTIRE
SCHOOL of COMMERCE
UNIVERSITY of VIRGINIA

Joint SIGDSS & TUN
Business Intelligence Congress

BI Congress II: Gateway to the Future of Analytics

Conference Home
Research Track
Teaching Track
Industry Outreach
Submissions
Important Dates
Venue
Committees & Advisory Board
Program
Sponsors
Register
Contact Us

Join us at the BI Congress II in Saint Louis, MO on December 11 and 12, 2010 and help shape the future of analytics!

The 2010 Business Intelligence Congress II will bring together academic professionals and industry representatives who share a common passion for research and education innovation in the field of analytics. In the spirit of open innovation - learn from, contribute your knowledge to, and brainstorm with the key industry and academic movers and shakers!

Keynote Speaker: Thornton May
Thornton May is a futurist, educator and author. His extensive experience researching and consulting on the roles and behaviors of "C" level executives in creating value with information technology has won him an unquestioned place on the short list of serious thinkers on this topic. Thornton combines a scholar's patience for empirical research, a stand-up comics capacity for pattern recognition and a second-to-none gift for storytelling to address the information technology management problems facing executives. The editors at *eWeek* honored Thornton, including him on their list of Top 100 Most Influential People in IT. The editors at *Fast Company* labeled him 'one of the top 50 brains in business.'

We are thrilled to have Thornton kick off the BI Congress II with his forward-thinking ideas on analytics!

Why should you attend the BI Congress?: The field needs your leadership. At the 2009 BI Congress in Phoenix Arizona, academics and practitioners identified current gaps in Business Intelligence teaching and research. BI instruction is not meeting market demand, and numerous research directions remain unattended. The BI Congress II will generate momentum and close these gaps by providing support for those who teach analytics and by facilitating constructive discussions around analytics research-in-progress.

What & When: Plan to attend and be a part of this unique event. You are invited to submit a paper for our research track or pedagogical material for our teaching track. Or you can come to check out the keynote talks and panels we have planned. We've organized a Saturday afternoon tutorial session where analytics vendors will provide hands-on instruction on free resources that you can use in the classroom, followed by an intimate evening where you can get acquainted and network with the BI Congress II academic and practitioner community. Be sure to mark your calendar for the social on the evening of December 11th and a full day of presentations, keynotes and panels on December 12th. See you in Saint Louis!

Program Co-Chairs:
Barbara Wixom, University of Virginia
http://www.commerce.virginia.edu/faculty_research/facultydirectory/Pages/Wixom.aspx
Gloria Phillips-Wren, Loyola University Maryland
<http://www.loyola.edu/sellingnet/essays/ISOMFacultySpots/GWrenSpot>

Join us at the Pre-ICIS BI Congress II in St. Louis, MO on December 11 and 12, 2010 and help shape the future of analytics. Thank you to our Platinum Sponsors: Deloitte, IBM, SAS, and Teradata!



Register Today

<http://www.TeradataUniversityNetwork.com>

Thanks!

Questions?

