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2012 Americas School of Mines

Spend Analysis and the Supply Chain
Presenter: Walter Lee

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Agenda

1. Course Introduction
2. Commonly Observed Mining Industry Obstacles
3. The Strategic Importance of Spend Management
4. The Framework for Performing Spend Management
5. The Bigger Picture
6. Getting Started – Vendor Market Scan

Section One

Course Introduction

Spend Analysis and the Supply Chain

In this course, participants will:

- Learn about the strategic importance of spend analytics as a precursor to Procurement and Supply Chain Transformation
- Be presented with a framework of where spend analytics fits in the value creation continuum
- Take a deep dive into the intricacies of performing a comprehensive spend analysis
- Walk through examples drawn from mining engagements with a focus on practical solutions to address common mining industry obstacles to quality data and information
- Be given a preview of Procurement category management and strategic sourcing as a means to understanding why spend analytics is critical and the opportunities it can enable.

Spend Analysis and the Supply Chain

Upon completion of this course, participants will be able to:

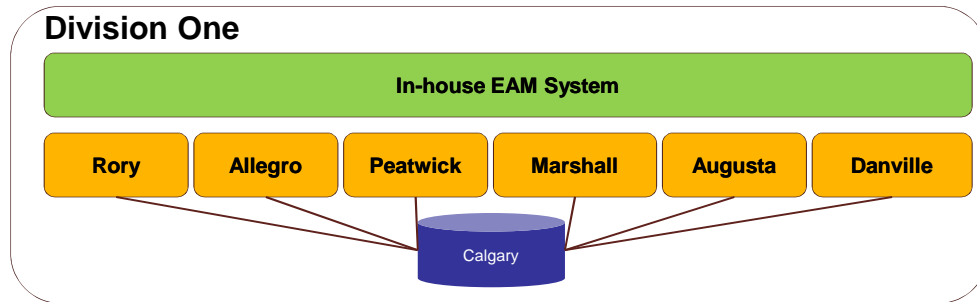
- Clearly articulate the value proposition of performing a spend analytics initiative
- Describe the necessary steps to delivering a successful project
- Understand where spend analytics fits in the overall evolution of an organization's Procurement Transformation journey
- Describe what spend analytics enables in terms of strategic sourcing and category management
- Name some of the top spend analysis software players in the North American marketplace

Section Two

Commonly Observed Mining Industry Obstacles

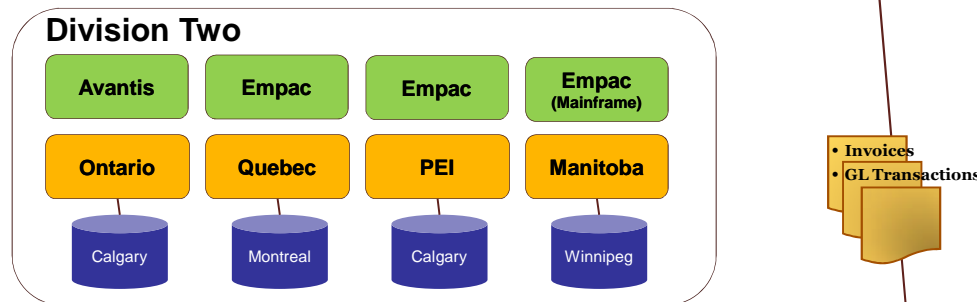
Typical Observations in Mining

Legacy Systems Hindering Spend Visibility



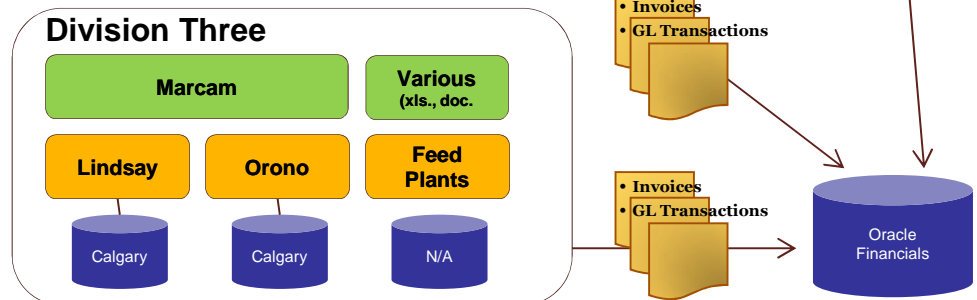
Division One

- One customized (in-house), single instance EAM application with sites set-up as separate organizations
- One single database for data residing in Calgary
- Each site can see the other site's inventory levels and item numbers
- Each site has its own set of item numbers; numbers are different for the same material
- Sites are not standardized on the items or vendors being used



Division Two

- Quebec, PEI and Manitoba each have their own instance of the Empac application; all three instances are three different versions of Empac and have varying degrees of customization
- Each site has its own set of item numbers; numbers are different for the same material
- Systems are not integrated, except for integration to Oracle (HQ ERP)



Division Three

- Lindsay and Orono share one instance of the Marcam application; sites are set up as separate organizations
- Lindsay and Orono can view each other's inventory levels and item numbers
- The Feed Plants all use various off-the-shelf applications (e.g., MS Excel, MS Word, MS Access, etc.) to make up their EAM capability
- Each site has its own set of item numbers; number are different for the same material
- Systems are not integrated, except for integration to Oracle (corporate)



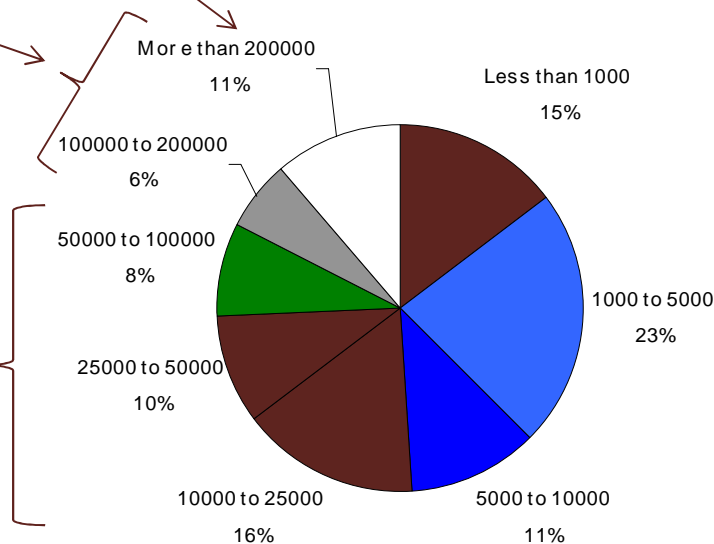
Typical Observations in Mining

Illustrative Example One: Tiered Spending

Significance:

- Illustrates the distribution of spend, that is directed at each vendor annually. E.g., 11% of vendors will consider the company a strategic customer and treat them accordingly
- 65% of vendors who receive less than \$25,000 annually will generally consider the company to be an opportunistic customer which generally precludes favourable pricing, terms or service.*

- Only 11% of suppliers have more than \$200K in spend directed to them
- 17% of suppliers receive more than \$100K in spend annually
- 65% of suppliers receive under \$25K annually



Average Vendor Spend by Tier

Vendor Spend Tier	Average
0 to 1,000	165
1,000 to 5,000	2,576
5,000 to 10,000	7,311
10,000 to 25,000	16,397
25,000 to 50,000	35,375
50,000 to 100,000	71,577
100,000 to 200,000	139,611
More than 200,000	1,611,715
All Vendors	203,346

Typical Observations in Mining

Illustrative Example Two: Spend Disaggregation

- **Significance:**

- By examining the distribution of spend within a nutrient group allows Users to identify leakage (in the case where a strategic contract is in place) and/or volume/ vendor consolidation opportunities

1. Total bearing spend for Div 1 is approx. \$2.1M – of which Ann Arbour Ind. supplies \$997K under a strategic alliance contract

2. The next three vendors supply approx. \$1.015M

3. Total bearing spend for Div 2 is approx. \$2.4M – of which Ann Arbour Ind. supplies \$2.01K under a strategic alliance contract

4. Source Alliances supplies an unusually large amount of spend for Bearings with an amount of \$309K. Is this leakage off-contract or is it a case of Source supplying a site where Ann Arbour cannot reach?

Row Labels	Div 1	Div 2	Grand Total
BEARING	\$ 2,142,206	\$ 2,389,908	\$ 4,532,114
Ann Arbour Industrial Supply	\$ 997,227	\$ 2,013,681	\$ 3,010,908
Northbrook Industries	\$ 532,707	\$ -	\$ 532,707
Motive Industries	\$ 391,299		\$ 391,299
Source Alliances		\$ 309,646	\$ 309,646
Weitz & Co.	\$ 91,348		\$ 91,348
Weitz & Bro.		\$ 66,581	\$ 66,581
Minacs Tool Co.	\$ 36,137		\$ 36,137
Algorithmics Electric Inc.	\$ 35,046		\$ 35,046
	\$ 32,808		\$ 32,808
Fujitsu Motors	\$ 25,634		\$ 25,634

Typical Observations in Mining

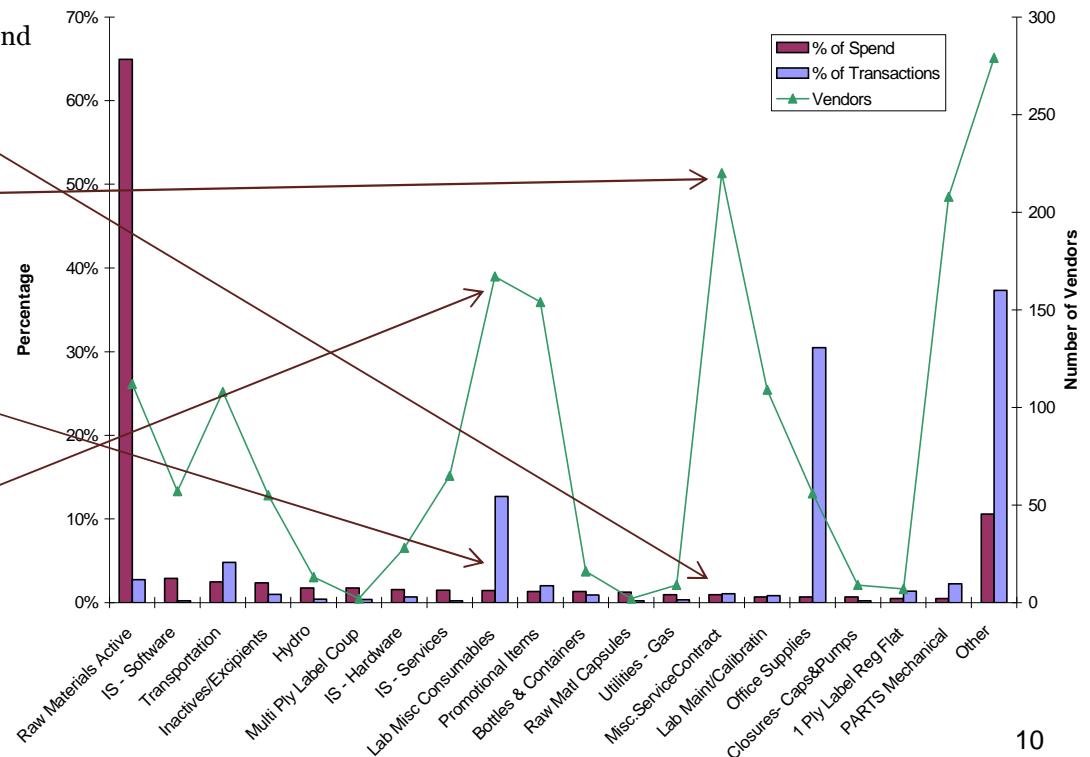
Illustrative Example Three: Spend vs. Vendor Count vs. Transaction Count

- **Requirement:** the ability to examine and compare spend levels against transaction count as well as vendor count.

- **Significance:**

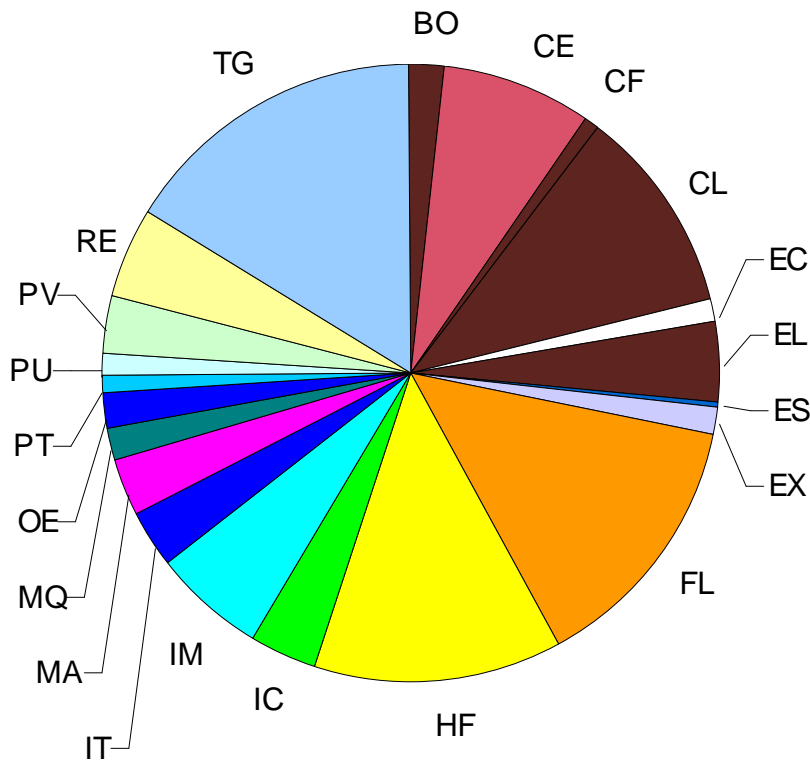
- By examining the distribution of spend against transaction count and vendor count, for a given category, the User is able to identify anomalies that would drive higher total cost of ownership. In the case identified below, having to manage more than 200 vendors for less than 3% of total spend is not strategic.

1. For this category, % of spend and % of transactions is under 3% of total spend and transactions
2. For this same category, the number of vendors is > 200, a number that is significantly disproportionate to the overall percentage of spend
3. For this category, % of transactions is more than 10% of total transactions while % of spend is less than 3% of total spend.
4. For the same category, the number of vendors is >160, a number that is significantly high given the overall percentage of spend and transactions



Sample Spend Reporting

Material Categories

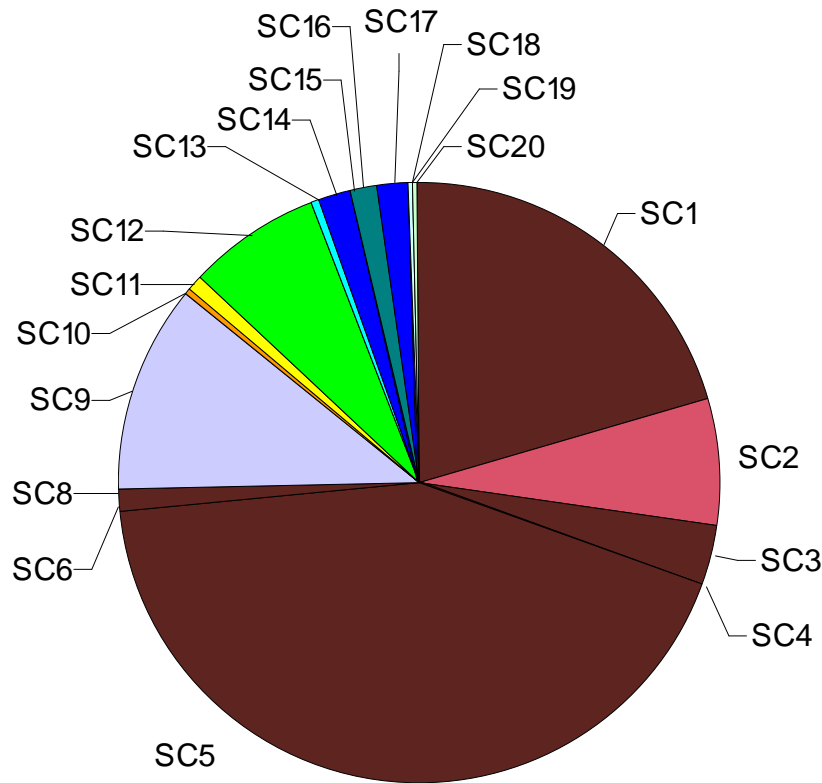


- **The most spend is directed towards Turbines & Generators, Fuels and Lubes, and Heavy & Fleet Vehicles, with these 3 categories comprising 42.1% of qualified materials spend.**

Code	Category Description	Spend	Vendors
BM	Building Materials	7,392,005	99
BO	Boilers, Sootblowers, Ash Handling and Fans	6,020,055	90
CE	Chemicals, Gases & Lab Supplies	22,911,114	141
CF	Coal Optimization Feeders & Parts	3,179,063	38
CL	Coal Fuel and Transportation	32,001,817	2
EC	Electronic Equipment, Resistors, Capacitors	3,246,735	140
EL	Electrical, Motors & Transformers	12,788,289	343
ES	Electrostatic Precipitators & Scrubbers	410,722	17
EX	Explosives and Accessories	4,348,972	4
FL	Fuels & Lubricants	40,975,932	80
HF	Heavy Equipment and Fleet Vehicles	39,482,133	145
IC	Instrumentation, Controls and Meters	9,642,204	240
IM	Integrated Materials	17,471,648	746
IT	Information Technology	9,740,449	127
MA	Metals and Plastics	8,492,778	135
MQ	Machines and Equipment, Other	5,555,965	129
OE	Office Equipment and Supplies	5,786,649	272
PT	Power Transmission Equipment	2,550,849	91
PU	Pumps & Parts	3,458,093	143
PV	Pipes, Valves & Fittings	9,157,678	316
RE	Rental Equipment	14,095,259	199
TG	Turbines, Generators, Heat Exchgrs & HRSG	49,099,711	70
		307,808,118	

Sample Spend Reporting

Service Categories

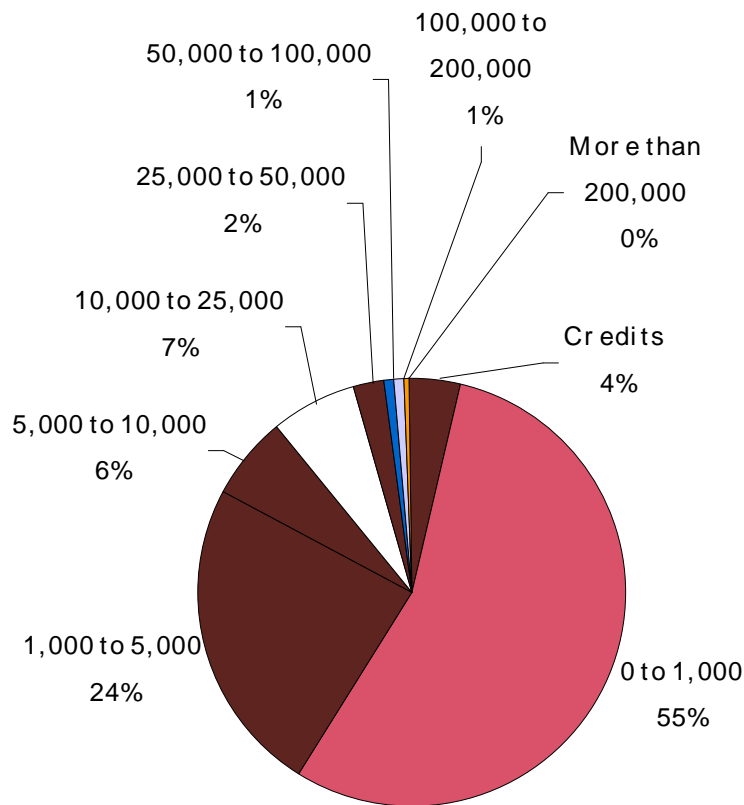


Code	Commodity Description	Spend
SC1	Construction Services	70,142,570
SC2	Engineering Services	24,236,441
SC3	IT Services	10,400,309
SC4	Laundry Services	275,527
SC5	Maintenance Services	146,552,459
SC6	Maintenance Srvcs - Thermal Units	3,666,869
SC8	Pest Control	211,001
SC9	Professional Services - Consulting	38,623,056
SC10	Security Services	1,462,395
SC11	Temp Services	2,422,048
SC12	Professional Services - Legal	24,509,756
SC13	Professional Services - Audit	1,843,893
SC14	Freight	5,847,385
SC15	Food Service / Cafeteria / Catering	28,063
SC16	Janitorial & Septic Services	4,675,721
SC17	Telecom and Data Network Srvcs	5,764,155
SC18	Laboratory Services	766,863
SC19	Diving and Underwater Services	980,242
SC20	HR/Payroll/Benefits Services	484,702
		342,893,454

- ***Maintenance (incl. testing and inspection) services comprised the vast majority of Services, with about 43.8% of the spend.***

Sample Spend Reporting

Distribution of Spend per Transaction



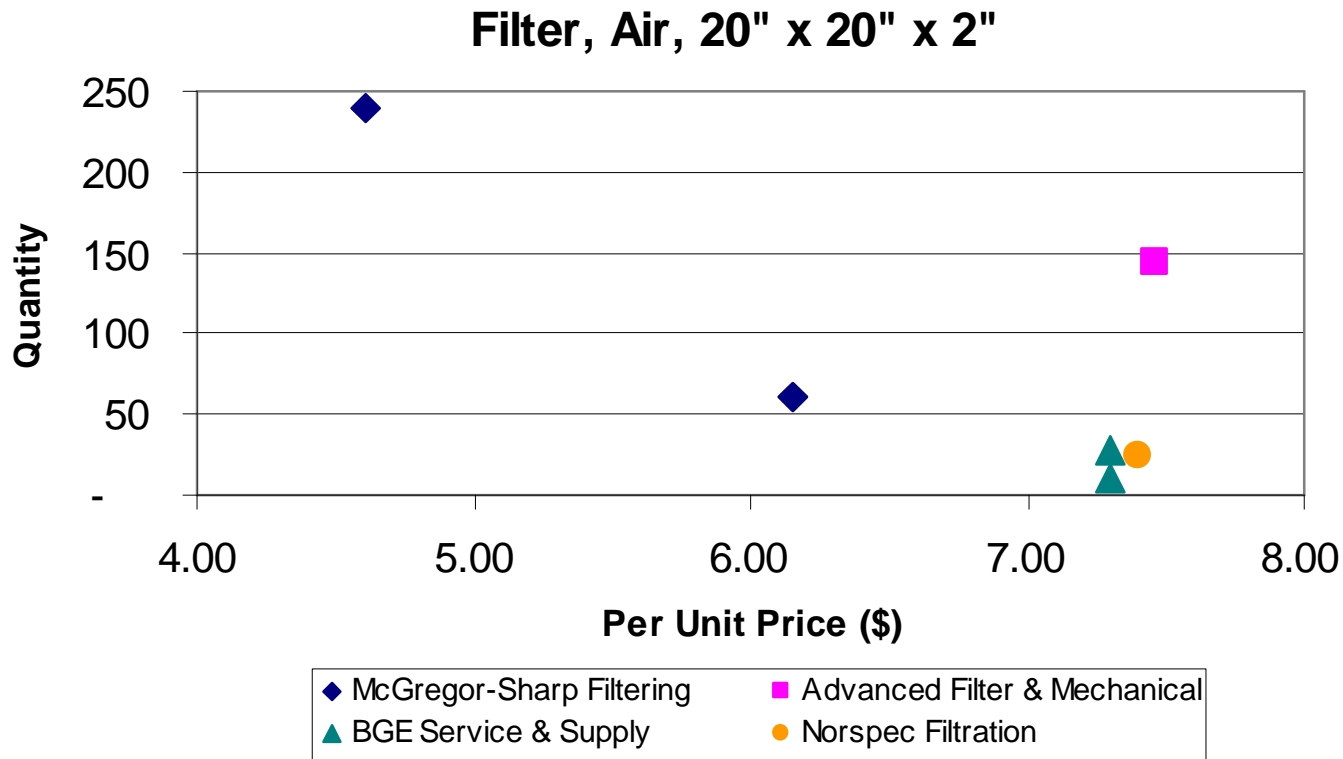
- This chart illustrates the distribution, along spend tiers, of spend per transaction (e.g., 55% of transactions are under \$1,000)
- Similarly, 79% of transactions are under \$5,000, and they only comprise 3% of qualified spend.
- **652 or 20.4% of all vendors had only one transaction during this period**

Trx Value Tier	Average
Credits	(13,139)
0 to 1,000	297
1,000 to 5,000	2,376
5,000 to 10,000	7,015
10,000 to 25,000	15,435
25,000 to 50,000	34,748
50,000 to 100,000	68,682
100,000 to 200,000	140,361
More than 200,000	708,630
All Transactions	7,326

Average Transaction Value by Tier

Sample Spend Reporting

Price Differentials for Duplicate Items



The same item was purchased 7 times from 4 vendors at a range from \$4.16 to \$7.47 with a \$2.01 (30%) spread from the lowest price to the average.

Section Three

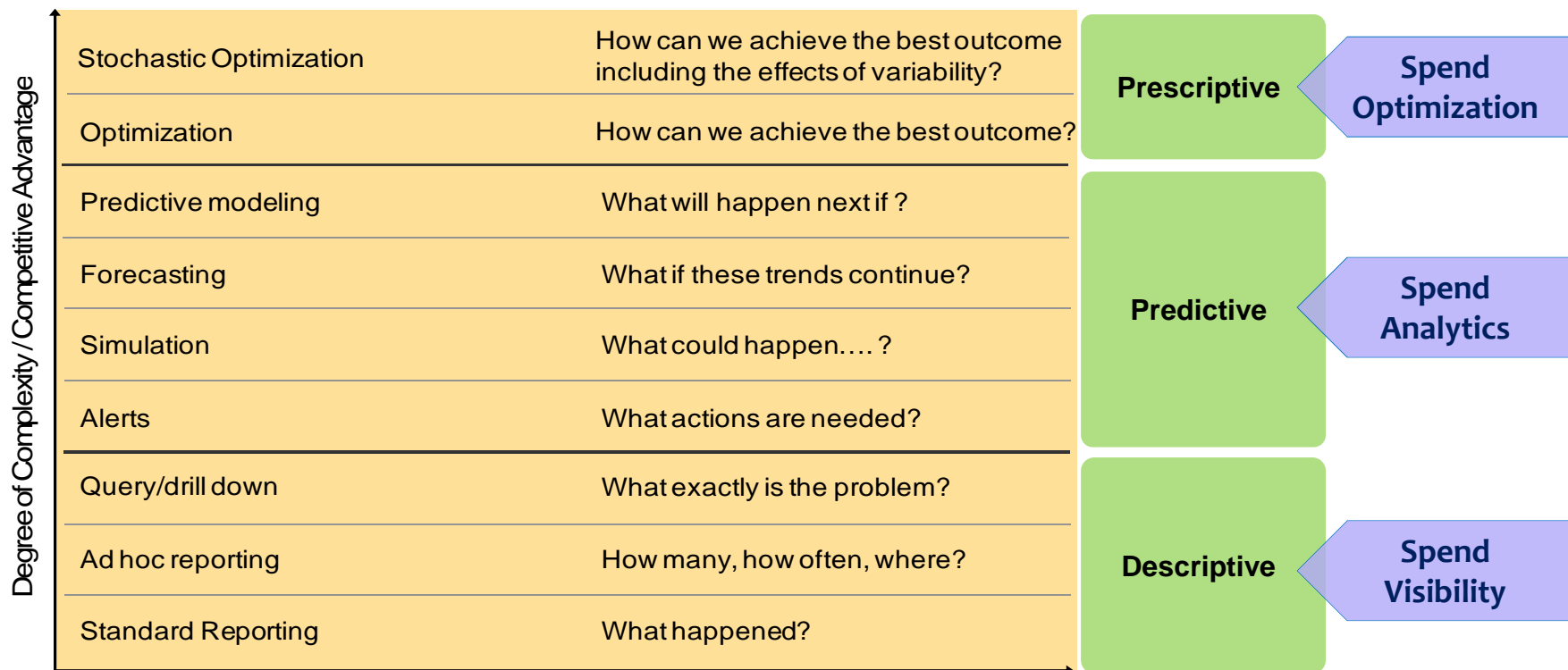
The Strategic Importance of Spend Management

Spend Visibility vs. Analytics vs. Optimization

Spend Visibility is capability to view an organization's spend data. It is the process of collecting, mapping, cleaning, standardizing, normalizing and refreshing enterprise spend data.

Spend Analytics is the capability to interpret cleansed data so that conclusions can be made. Analytics goes beyond visualizing (describing) data by helping Users to predict what may happen in future scenarios.

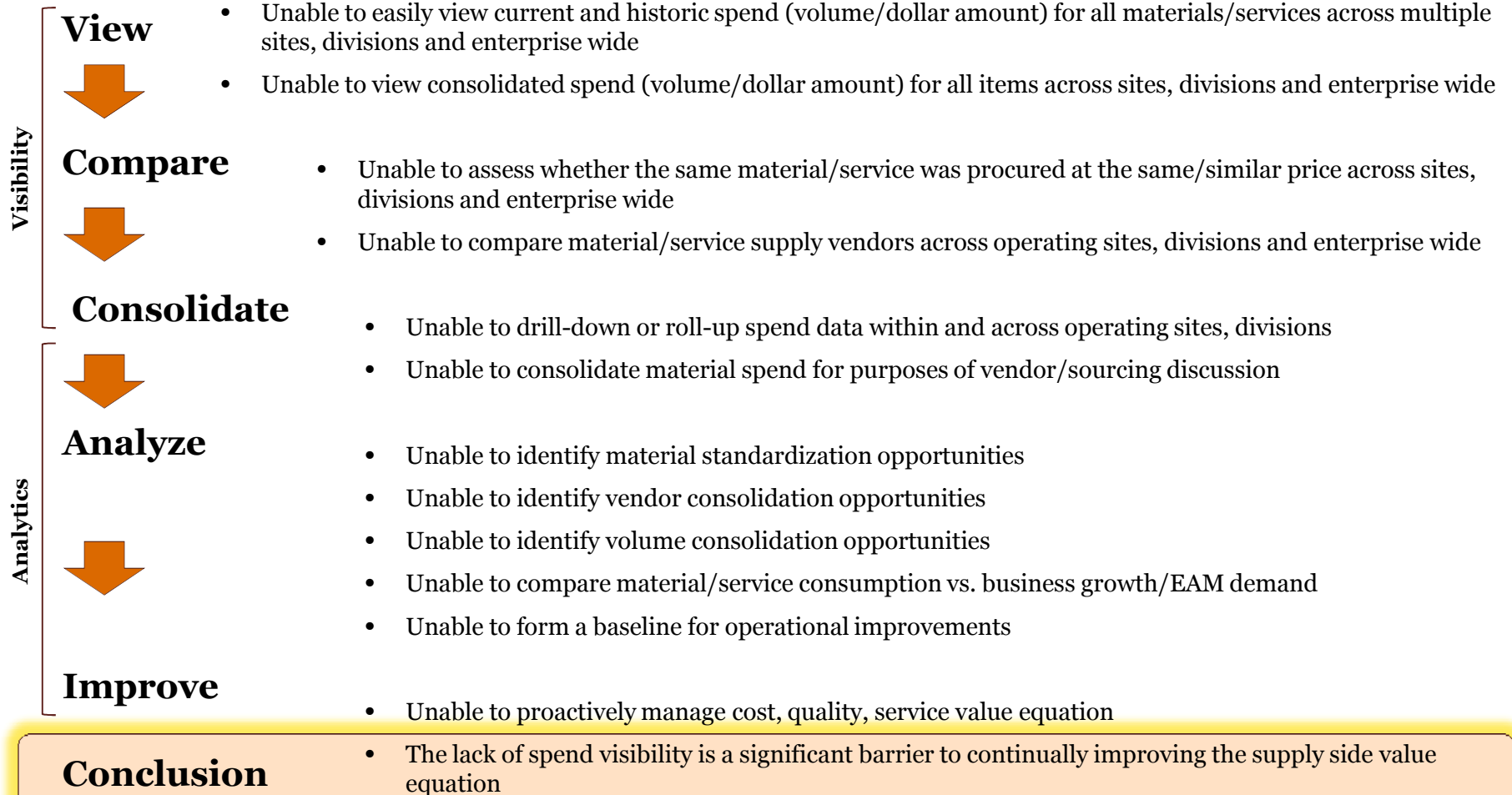
Spend Optimization is the capability to prescribe and manage future outcomes. In the case of Procurement, category management is the prescriptive capability to manage business benefits.



Spend Management

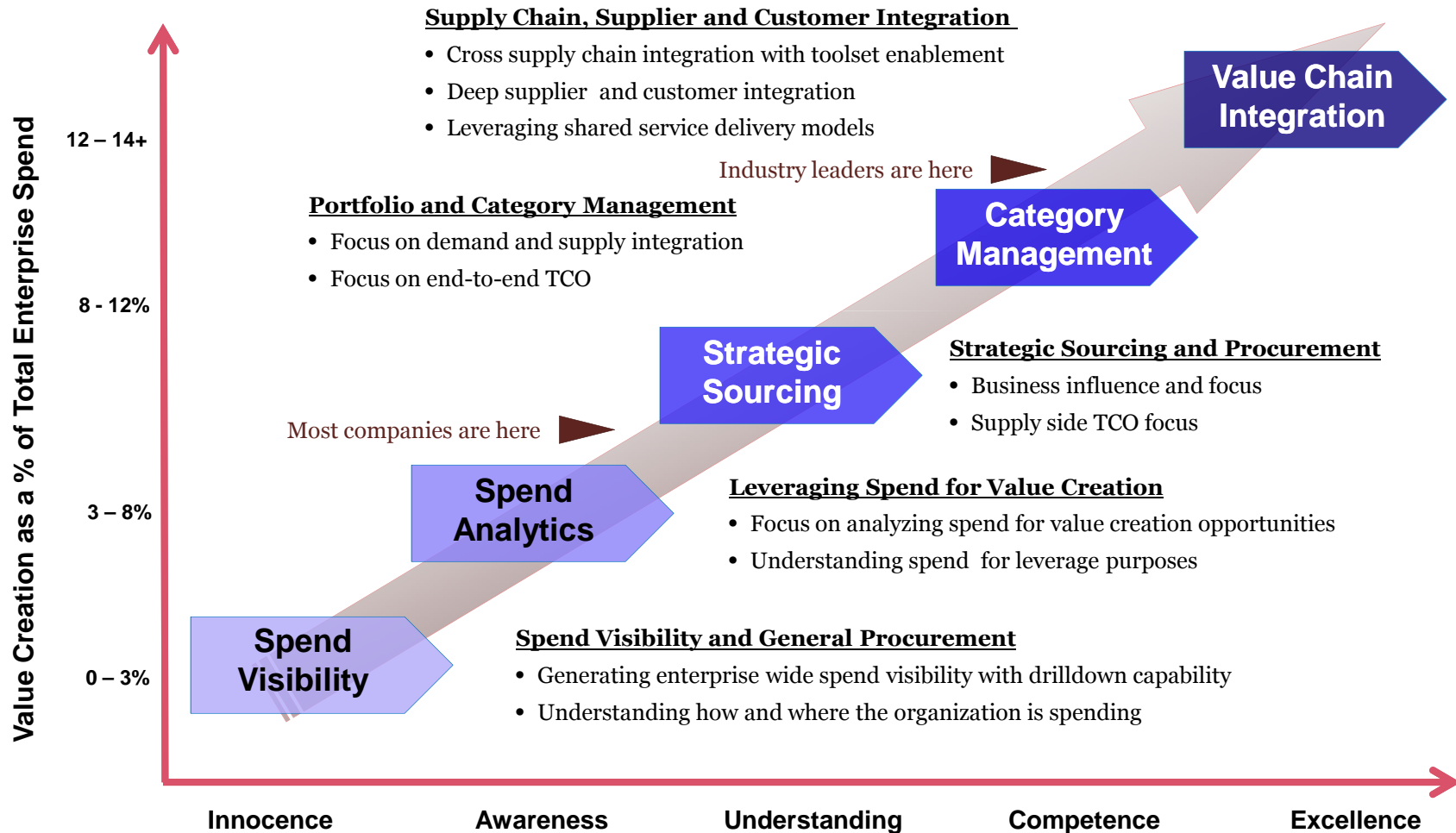
The Underlying Inability to Improve

Commonly observed gaps in mining:



Evolution of Spend Management

Visibility, Analytics and Beyond..



Evolution of Spend Management

Benchmarking the Usage of Spend Analytics

- 60%** of organizations currently rely on **manual tools to collect and analyze spend** data, resulting in limited spend visibility and the inability to improve cost savings
- 42%** of organizations identified **data quality as the top challenge** to an effective spend analysis program.
- 38%** of enterprises indicated that **leveraging technology** for spend analysis is a top strategy
- 30%** **higher contract compliance** for Best-in-Class organizations compared to All Others, after spend analysis initiatives have been implemented
- 40%** more likely to provide **reporting down to the transaction level** for Best-in-Class enterprises, resulting in **savings rates that are 9% higher** than all other enterprises
- 60%** more likely to use **spend solutions to capture spend** data from multiple sources, for Best-in-Class enterprises, thus enhancing spend visibility and resulting in **80% more spend placed under the management** of Procurement than in other enterprises

Innocence

Source: AberdeenGroup, Spend Analysis : Working Too Hard for the Money

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Excellence

Leading companies with Spend Management solutions achieved the following:

- A 2% to 12% reduction in material costs through informed sourcing
- A 50% reduction in off-contract spending
- A 20% to 70% reduction in inventory levels
- A 5% to 50% reduction in inventory costs
- A 20% decrease in redundant or unnecessary part introductions

Source: AberdeenGroup, Spend Analysis : Working Too Hard for the Money

Table 1: Spend Analysis Benchmark Performance

Maturity Class	Average Performance
Best in Class: Top 20% of aggregate performers	• More than 90% of enterprise spend is under management
Industry Average: Middle 50% of aggregate performers	• 51 to 90% of enterprise spend is under management
Laggard: Bottom 30% of aggregate performers	• Less than 50% of enterprise spend is under management

Source: AberdeenGroup, Spend Analysis : Working Too Hard for the Money

Evolution of Spend Management

Positively Impacting the Value Equation

Spend analytics forms the foundation for making better, more informed Sourcing decisions. Benefits are typically achieved by:

1. Identifying opportunities to aggregate spend and negotiate superior contracts

- Aggregating spend volume enhances buyer influence on the overall supply market → stronger value equation in service, quality and cost

2. Identifying and reducing non-compliant spend

- Tangible data on contract and vendor compliance
- Continuously improve spend compliance → fulfill buying commitments to the Vendor community
- Tie Vendor commitments to contracts and Buyer commitments to contracts → improve the value delivered for the total cost of ownership and/or maintain its value delivered with lower total cost of ownership

3. Improving Procurement operations, the use of Procurement resources and Supplier performance

- Gives Procurement a foundation to focus on strategic management
- Procurement can base Sourcing decisions on real data and manage change through the tracking of Vendor performance on the backend.

Managing the Value Equation:

Quality ~ Cost ~ Service

Using the Procurement levers:

Contracting + Compliance + Performance Mgmt

Results in:

Reduced Total Cost of Ownership (TCO)



Evolution of Spend Management

Benefits in Mining, Chemicals, and Petroleum

Observed **Mining, Chemicals and Petroleum**
Industry Benefits:

1. Sourcing and Supplier Management:

- Unleveraged spend – identified new opportunities to proactively manage spend into current contracts
- Purchasing leverage – demand aggregation and volume discounts
- Supplier consolidation – reduced base
- Vendor management – rebate management
- Product standardization – reduced variability results lower cost of ownership
- Merger integration – overlapping spend with vendors under different contracts, items, vendor/ distributors

2. Compliance:

- Off-contract spend reduction – achievement of volume commitments
- Management oversight – consequences applied for non-compliance
- Contract management – compliance and monitoring for overcharges, service levels, etc.

- Commodity budget compliance – control demand to impact/align with budget

3. Quality and Safety:

- Visibility into materials and services being consumed → better manage quality
- Visibility into Supplier spend and volumes → embed quality into Supplier contracts
- Quality is a total cost of ownership component

4. Inventory Reduction:

- Spend visibility allows the Procurement group to track how much is bought, vs. how much is consumed, vs. how much is stocked, vs. how much is lost to waste
- Visibility to frequency of use and order cycle time leads to enhanced demand management which has a direct impact on inventory management and/or reduction

Section Four

The Framework for Performing Spend Management

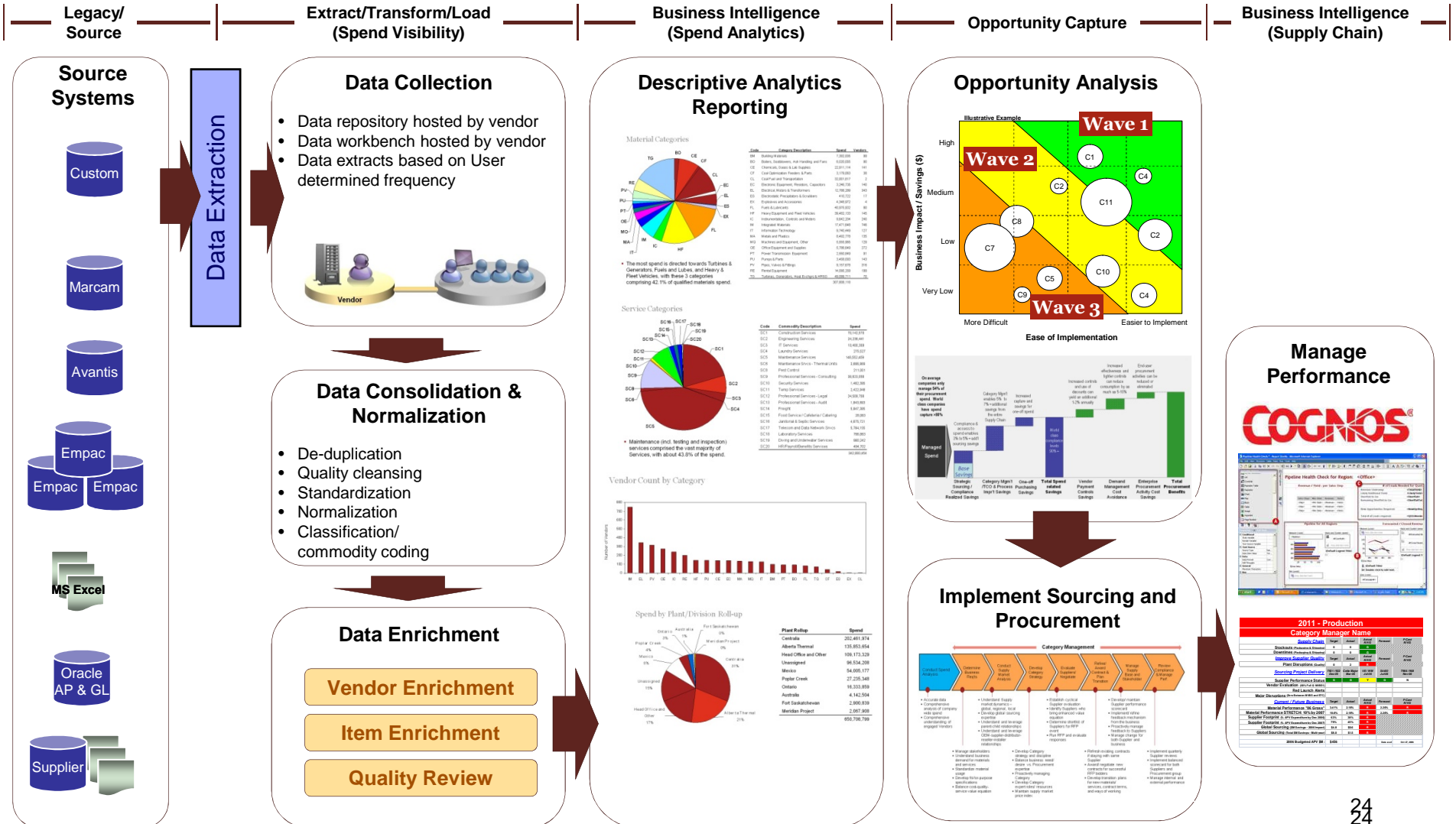
Strategic Guiding Principles

Business Drivers	Implication on Spend Visibility
<p>Inability to accurately comment on spend levels for specific vendors or categories.</p>	<p>In order to generate accurate views of spend levels:</p> <ul style="list-style-type: none"> • Data must be cleansed, categorized and standardized • The right data elements must exist and must be populated • Tools must be adopted to consolidate, analyze and report on data sets
<p>Examining ways to reduce total cost of ownership</p>	<p>In order to determine (and reduce) the total cost of ownership, the organization must have:</p> <ul style="list-style-type: none"> • A deep understanding of its spending and what it is getting (quality, service, value) in return for those dollars • A feedback mechanism to determine whether Vendor contracts are being adhered to, and whether volume commitments to strategic alliances are being fulfilled • A reporting/dashboard mechanism to summarize both Buyer and Vendor performance so that continual improvements can be made on both sides
<p>Examining ways to leverage enterprise-wide spend volume</p>	<p>In order to leverage enterprise-wide spend volume:</p> <ul style="list-style-type: none"> • View applicable spend data (item level, costs, contracts, vendor level) across divisions, operating sites • Sign contracts with a focus on TCO
<p>Desire to increase Procurement visibility and effectiveness</p>	<ul style="list-style-type: none"> • Must focus its collective efforts on strategic initiatives while leveraging technology to enable transactional activities • Must first understand where supply chain value is generated and at what (total) cost to the organization.

Spend Management Framework

An Interim Solution to Enable Opportunity Capture

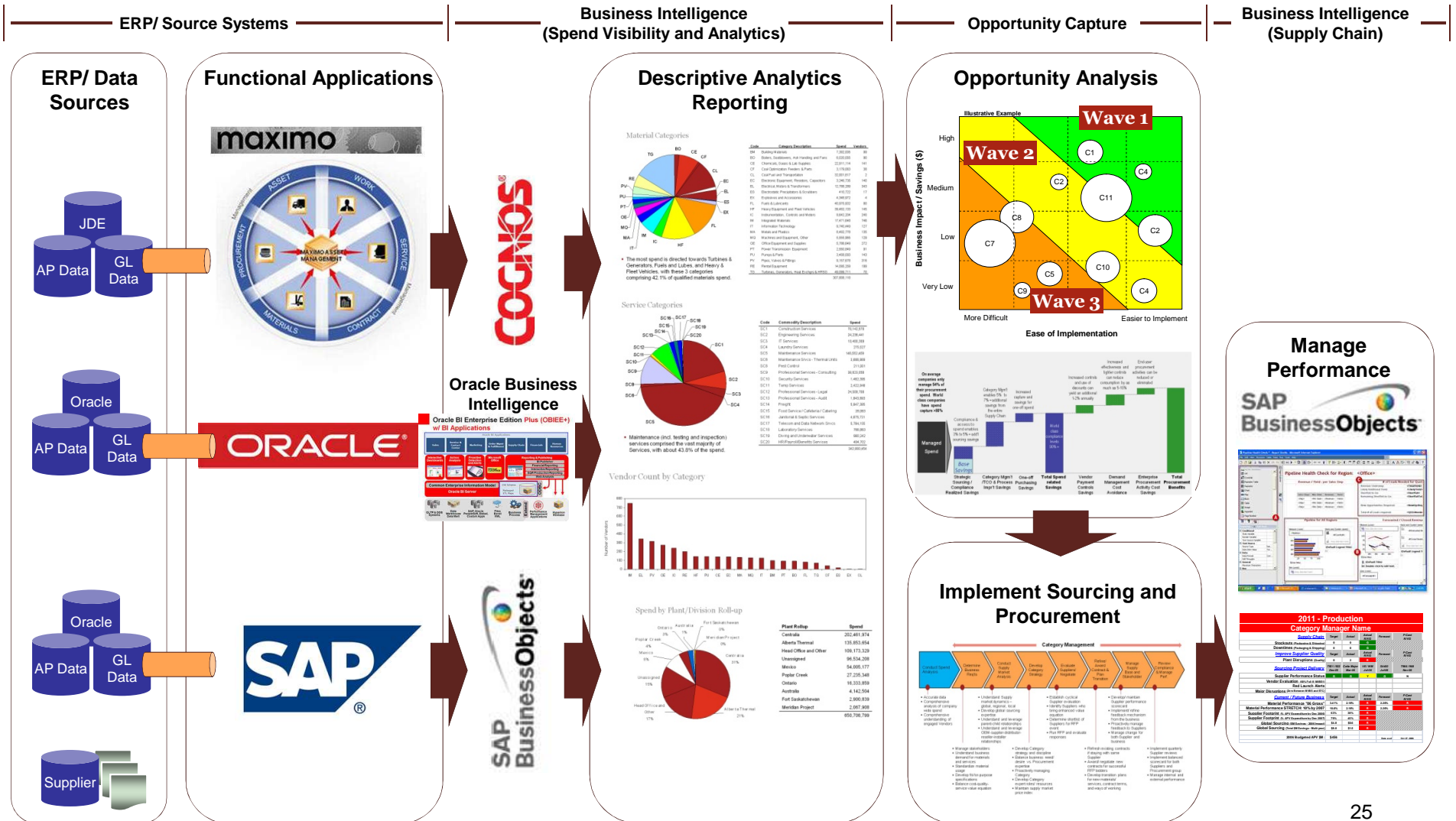
Illustrative



Spend Management Framework

A Longer Term Solution Aligned with Corporate Applications

Illustrative



ERP/ Source Systems

Business Intelligence
(Spend Visibility and Analytics)

Opportunity Capture

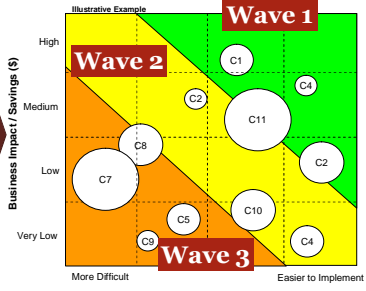
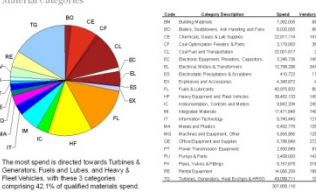
Business Intelligence
(Supply Chain)

ERP/ Data Sources

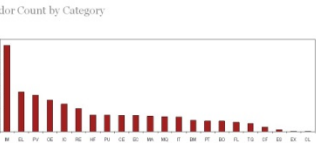
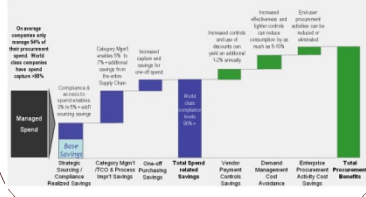
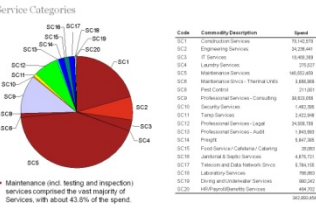
Functional Applications

Descriptive Analytics Reporting

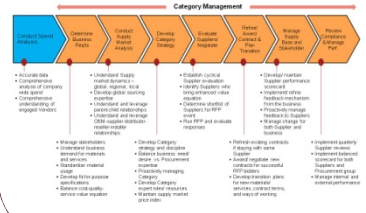
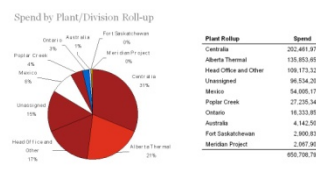
Opportunity Analysis



Oracle Business Intelligence

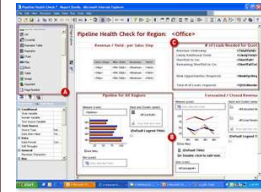


Implement Sourcing and Procurement



Manage Performance

SAP BusinessObjects



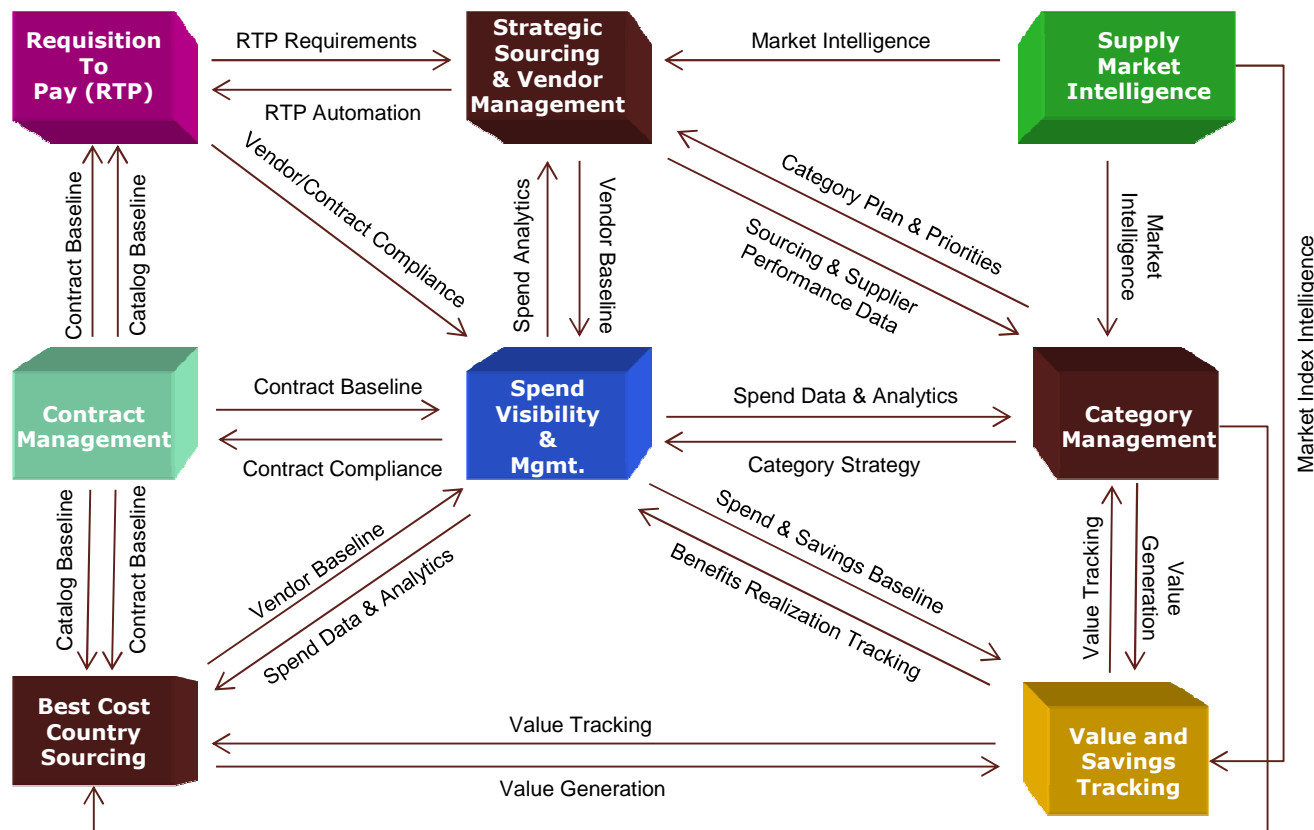
2011 - Production

Category Manager Name	Actual	Target	Variance
Global Procurement - Chemicals	100%	100%	0%
Global Procurement - Electrical	100%	100%	0%
Global Procurement - Mechanical	100%	100%	0%
Global Procurement - Services	100%	100%	0%
Global Procurement - Other	100%	100%	0%

Spend Management Framework

Integrated Procurement Framework: Visibility is the Focal Point

- Spend visibility is both an enabler and a gatekeeper for the different dimensions of an integrated Procurement framework
- Spend management allows the other stakeholders to form a baseline and report against compliance and performance



Section Five

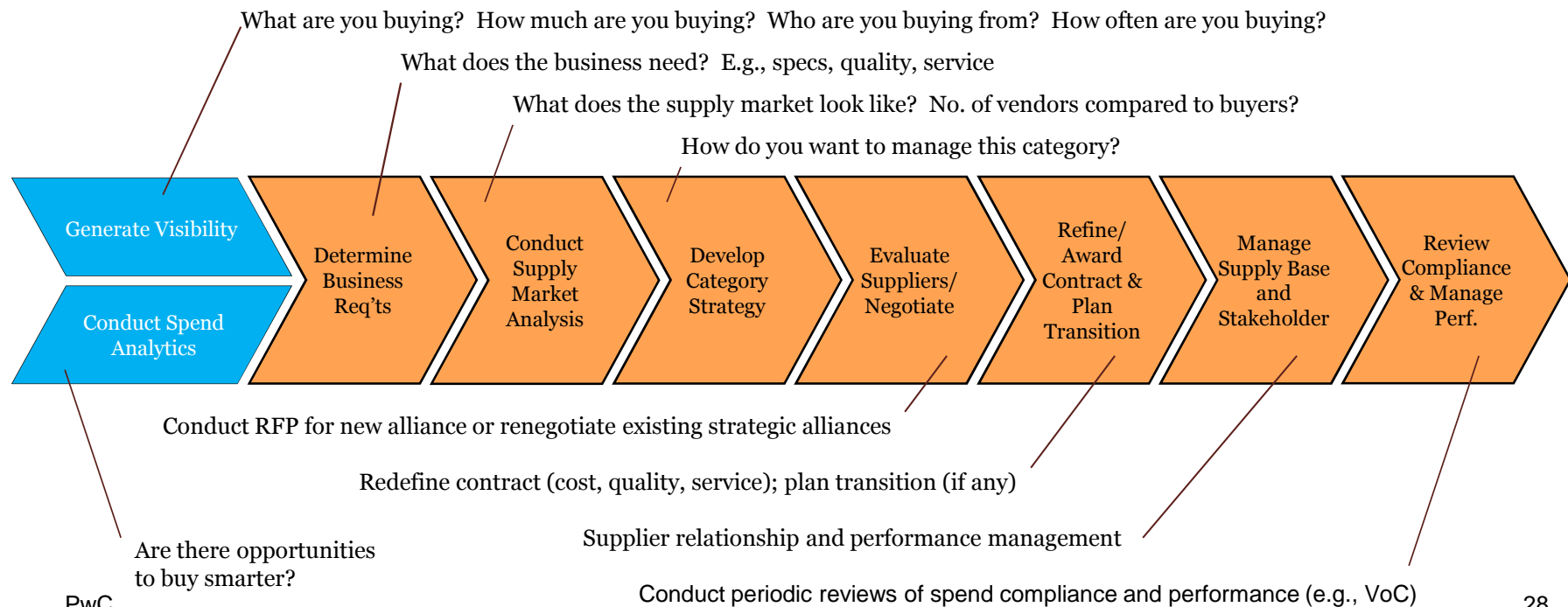
The Bigger Picture

Strategic Spend Management

Vision and Strategy to Enable Category Management

Procurement's Role in Enabling the Business

- As energy, commodity and labour prices continue to fluctuate, so will supply prices, lead time and constraints
- Businesses need to constantly review and monitor their supply bases and modify the contracts and working agreements to collaboratively respond to supply market challenges
- Procurement can proactively enable category management and the basis of accuracy is the constant renewal of spend data so the organization is constantly aware of its current spend and buying positions
- A proper category management approach will allow the organization to better manage its business goals and total cost of ownership

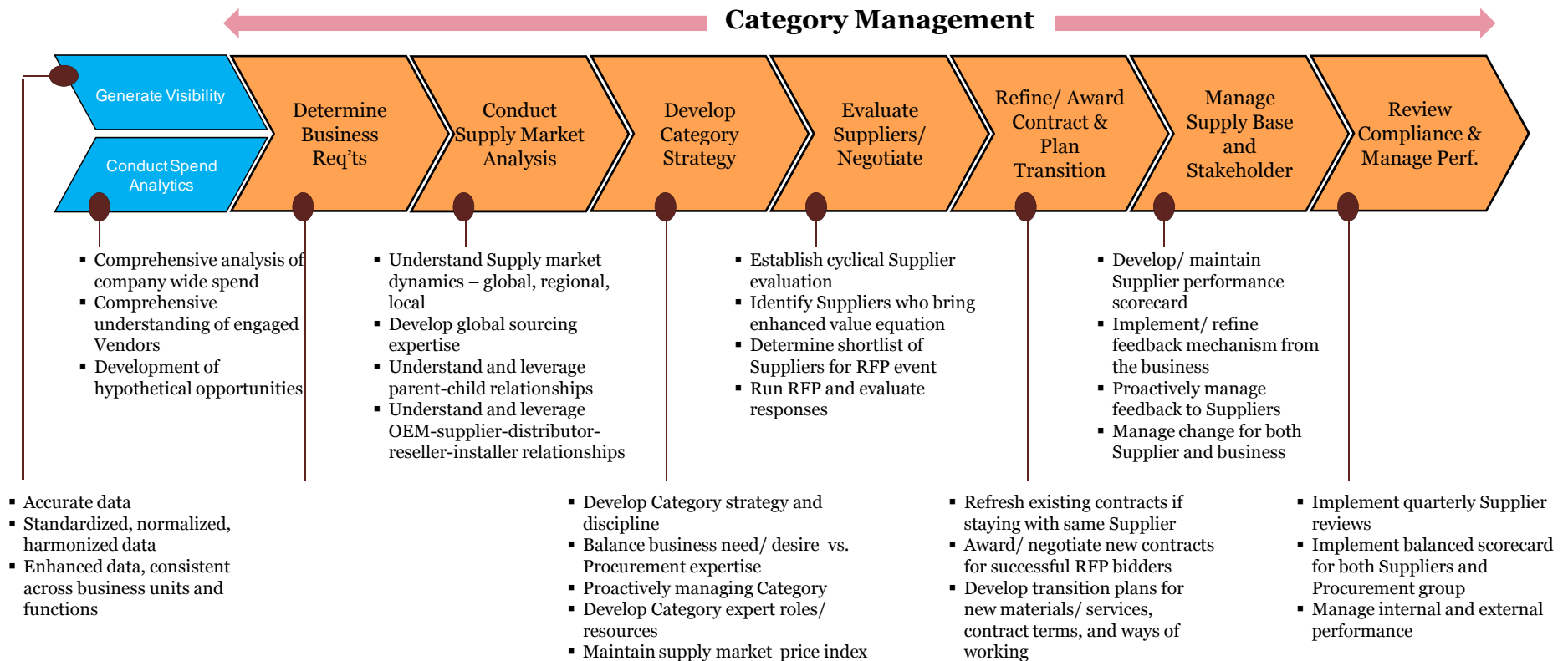


Strategic Spend Management

Vision and Strategy to Enable Category Management

Procurement's Role in Enabling the Business

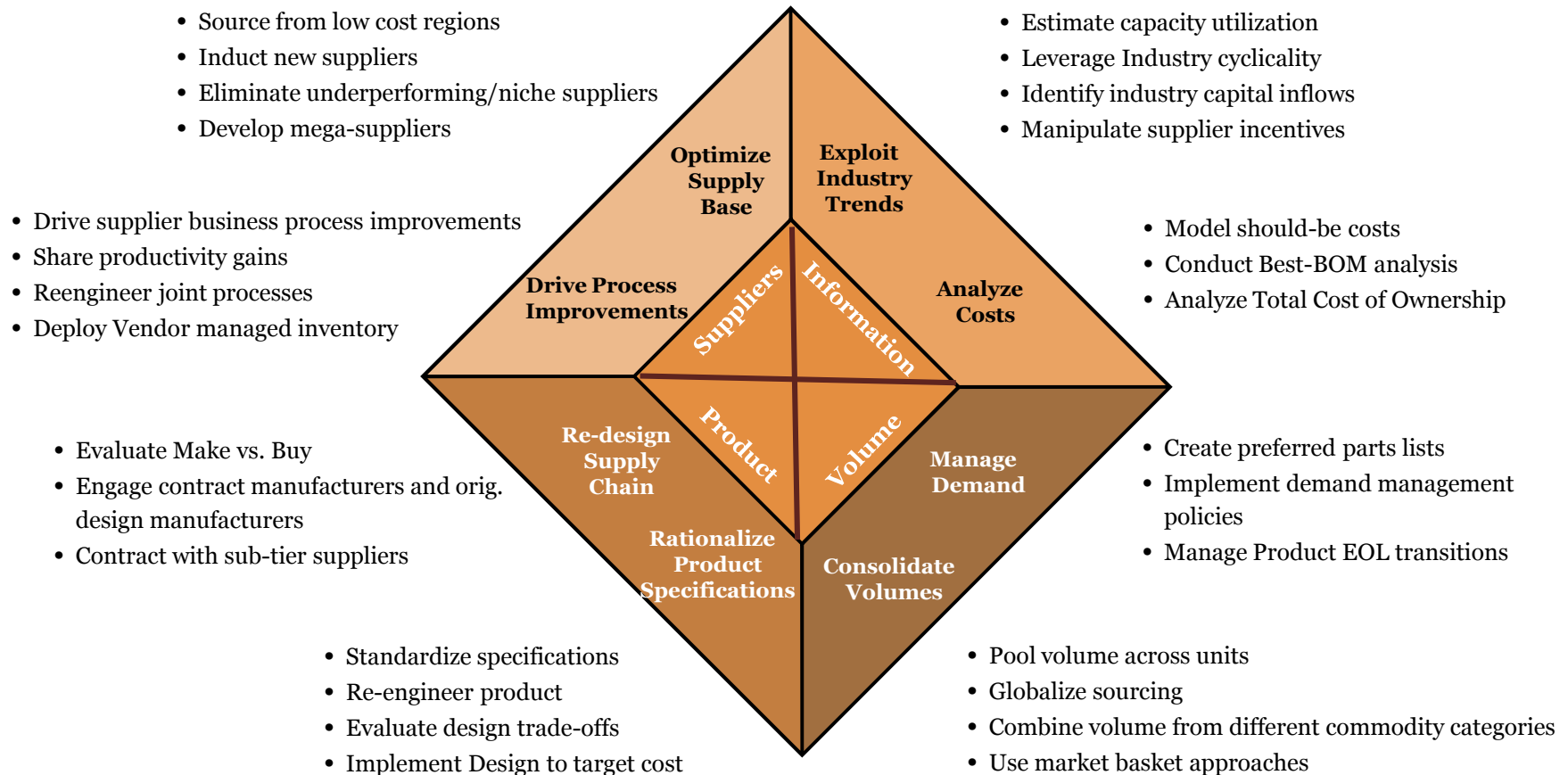
- The following is a typical approach for the business and Procurement to collectively leverage the various spend reports coming out of a spend analysis evaluation.
- Each category of spend will have specific findings associated to that category and its spend profile. Typically, the category management approach is used to course correct and capture opportunities identified in the spend analysis



Spend Analytics Framework

Strategic Spend Management Use Cases Enabled by Spend Visibility

Levers of Sourcing Strategy



Section Six

Getting Started – Vendor Market Scan

Market Scan of Spend Analytics Tools

Vendor Marketplace

Spend Analysis Leading Practices

- Start with a standard classification code schema such as the UNSPSC (United Nations Standard Products and Services Code) for category level spend analysis, and append it when the standard schema is insufficient
- Maximize spend analysis output by governing master data informally, maintaining classification codes in e-catalogs, utilizing purchase orders for line item detail and leveraging data from any source system that contains purchase transaction details.
- Get as much spending as possible into electronic catalogs, because you can hard-code the desired category classification into product and service descriptions.
- Get as much as spending as possible on purchase orders so you have line item descriptions to work with.
- If you use a scanning service for incoming invoice data entry, inquire whether your scanning vendor can utilize data from the invoice to assign category classification codes while they are scanning.
- Ask targeted suppliers to provide a download of details of their transactions with you as a supplement to your internal data, especially when delving into a particular category of spending as a project.
- Hard-code the desired category into internal item part master records.
- Assign stewardship roles in the business to govern and maintain the rules regarding who can create new supplier master records and under what circumstances.
- Define process steps, and assign stewardship roles for creating and changing category code schemas

Source: Gartner Research: Spend Analysis Best Practices 2 September 2011

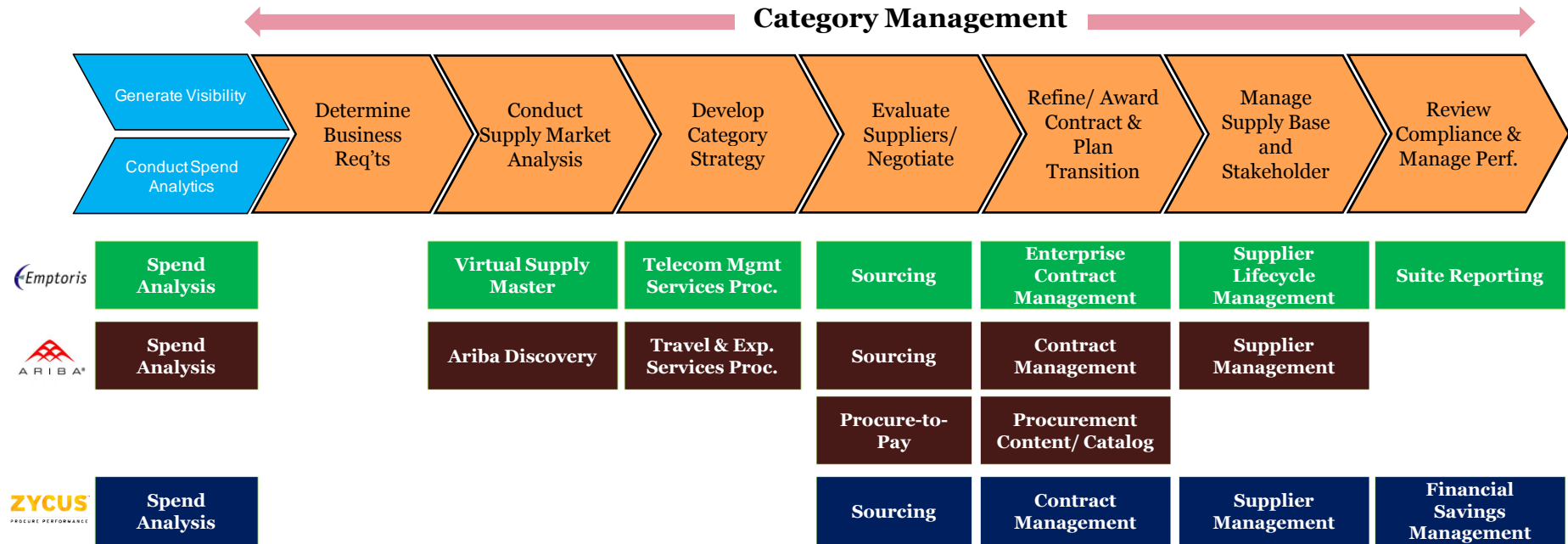
Top Vendors in the Spend Analysis Marketplace



Source: Gartner Research: Spend Analysis Best Practices 2 September 2011

Market Scan of Spend Analytics Tools

Product Suite Coverage



Section Seven

Summary

Summary

- Spend visibility vs. analytics vs. optimization
 - *“Find the money, Get the money, Keep the money”*
- The evolution of spend management
 - *Visibility → Analytics → Sourcing → Category Management → Value Chain Integration*
- Spend management is not about squeezing the supplier
 - *Value equation: Service, Cost, Quality*
- Spend management framework
 - Accurate, comprehensive, analytics, opportunity prioritization, leverage points, backend monitoring

