

TDWI EDUCATION

**In-Depth Business Intelligence and
Data Warehousing Education**

Thursday Keynote

The Intelligent Enterprise: Optimizing Your Business with Pervasive Business Intelligence

Thursday, November 11, 2010
Boris Evelson

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Keynote: The Intelligent Enterprise: Optimizing Your Business with Pervasive Business Intelligence

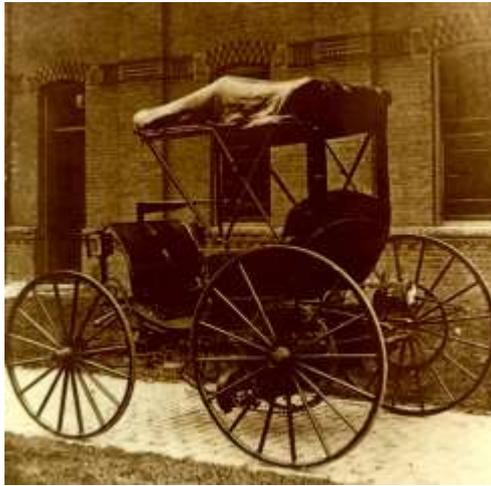
Boris Evelson

Vice President, Principal Analyst

November 11, 2010

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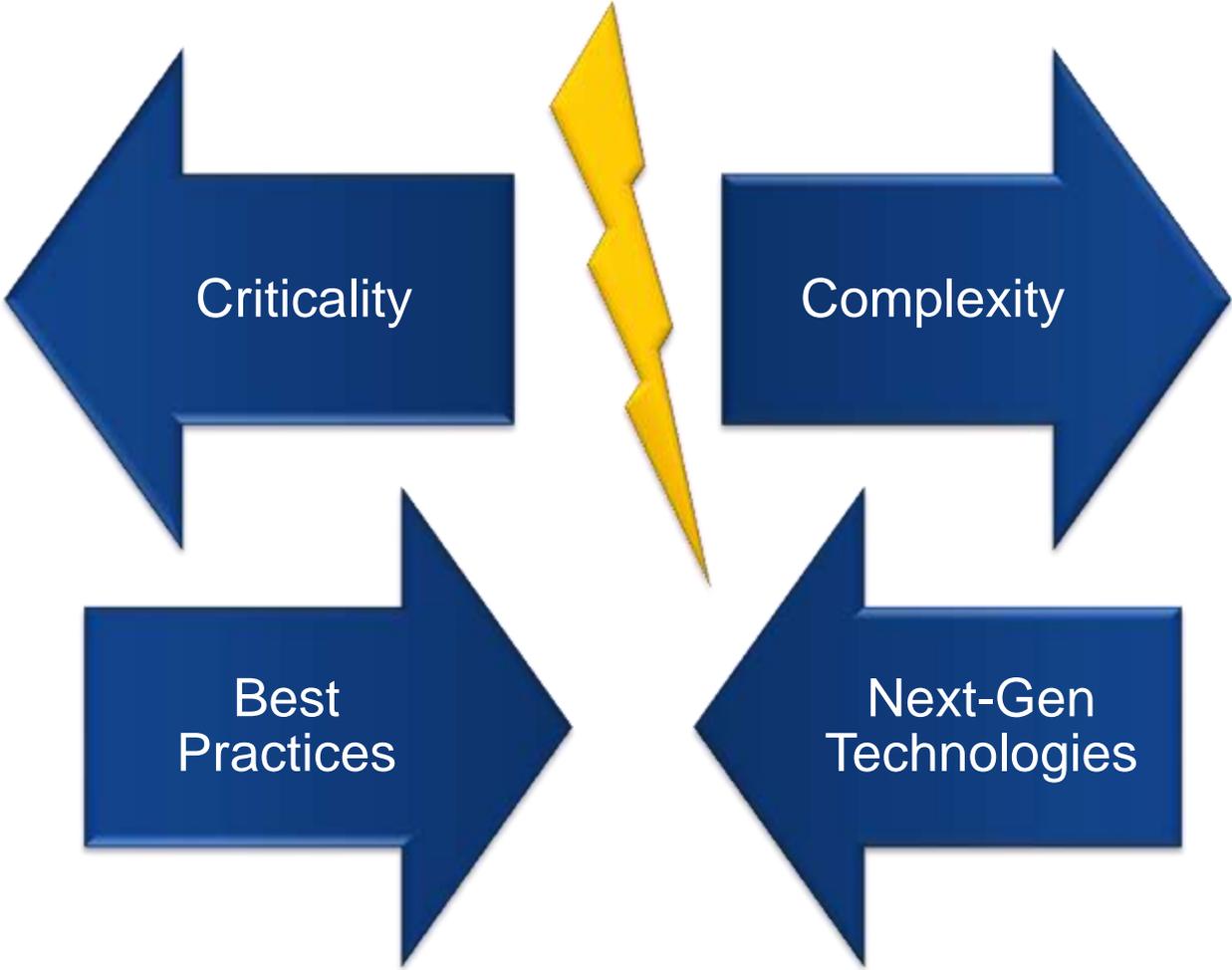
Evolution of BI – we've gone a long way!



Evolution of BI – not just more powerful, but simpler



A rift and an opportunity in BI market



Agenda

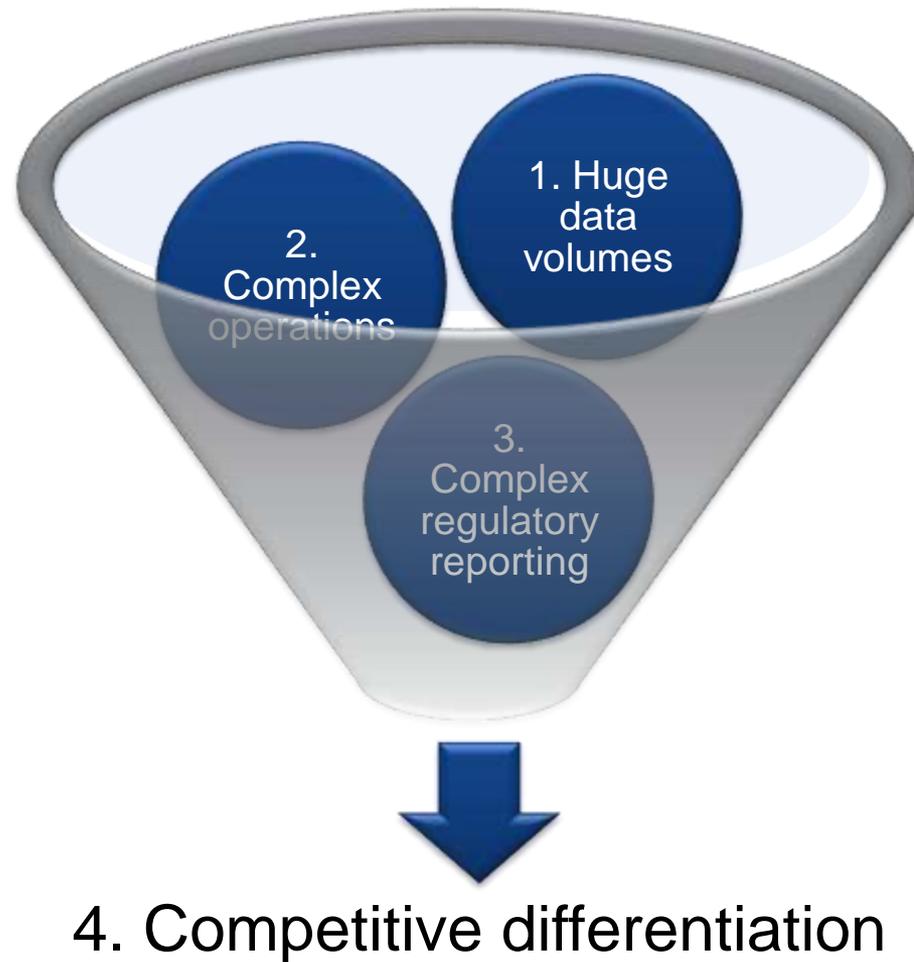
Why is BI on top of everyone's agendas?

What are the typical BI implementation challenges?

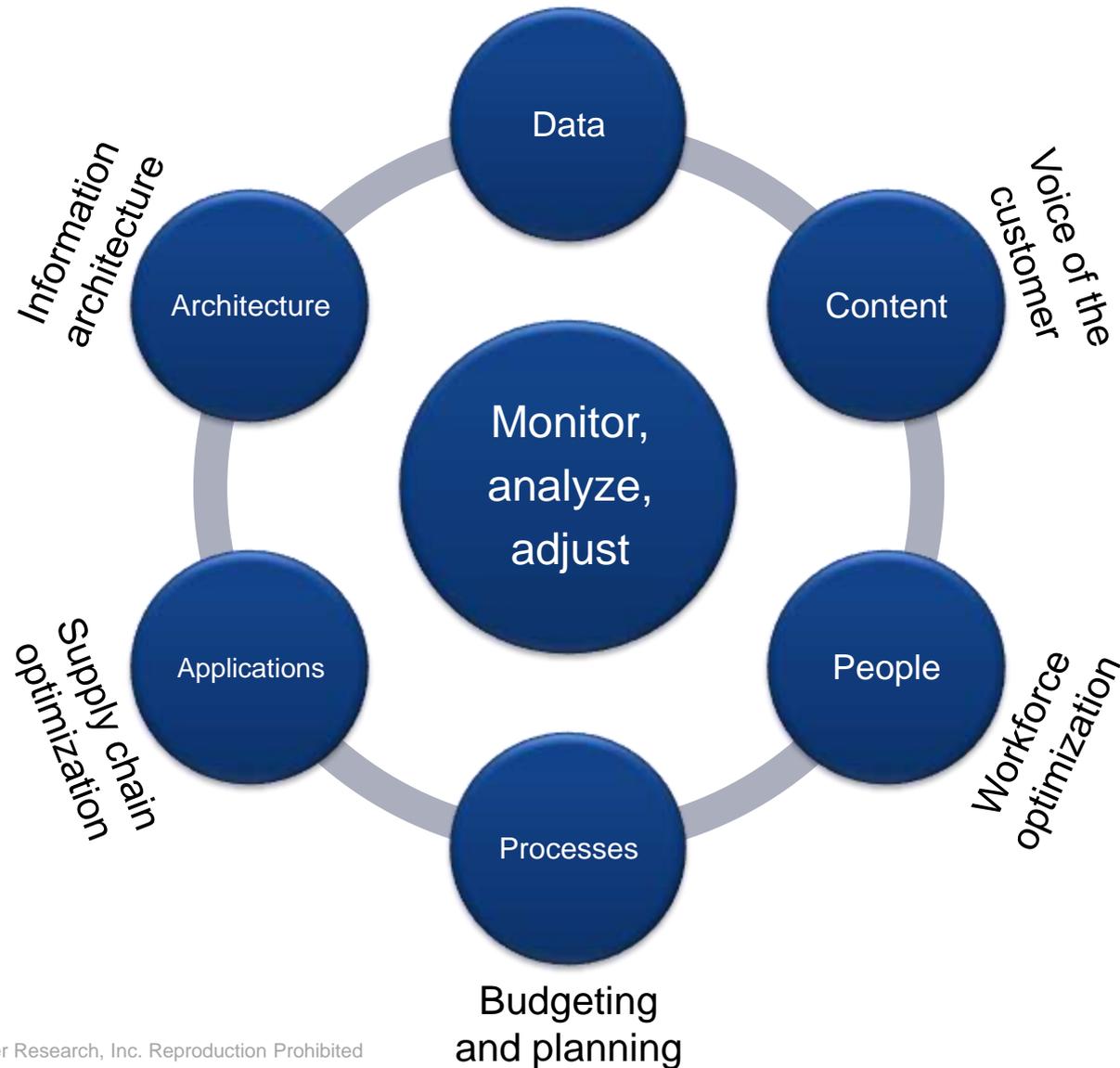
BI best practices

Next generation BI

Why is BI so hot? Major reasons (among many others)

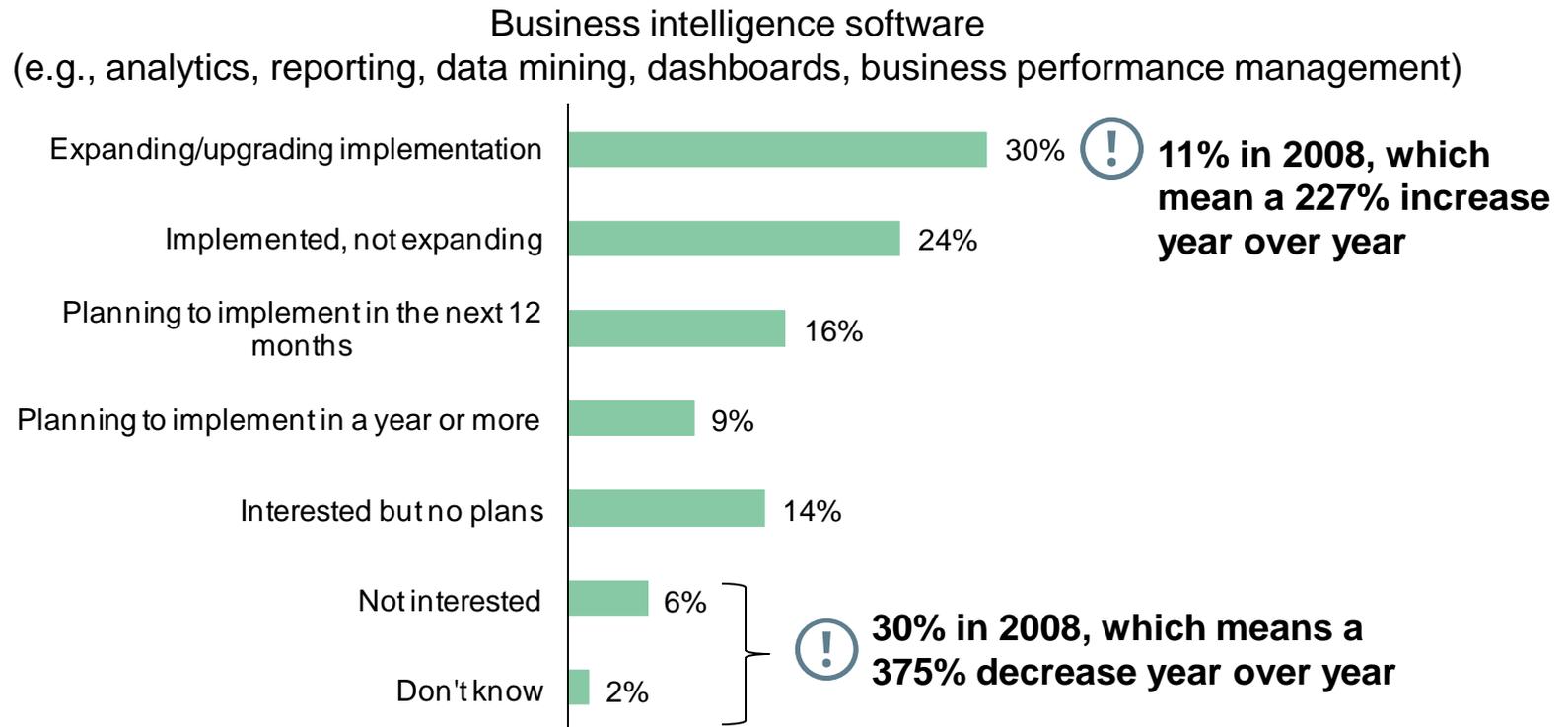


BI is the glue that ties it all together



BI adoption and levels of interest continue to skyrocket as compared to last year

“What are your firm's plans to adopt the following information and knowledge management software technologies?”



Base: 921 North American and European IT software decision-makers (2009) ; 1,015 North American and European IT decision-makers (2008)

Source: Enterprise And SMB Software Survey, North America And Europe, Q4 2009

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Agenda

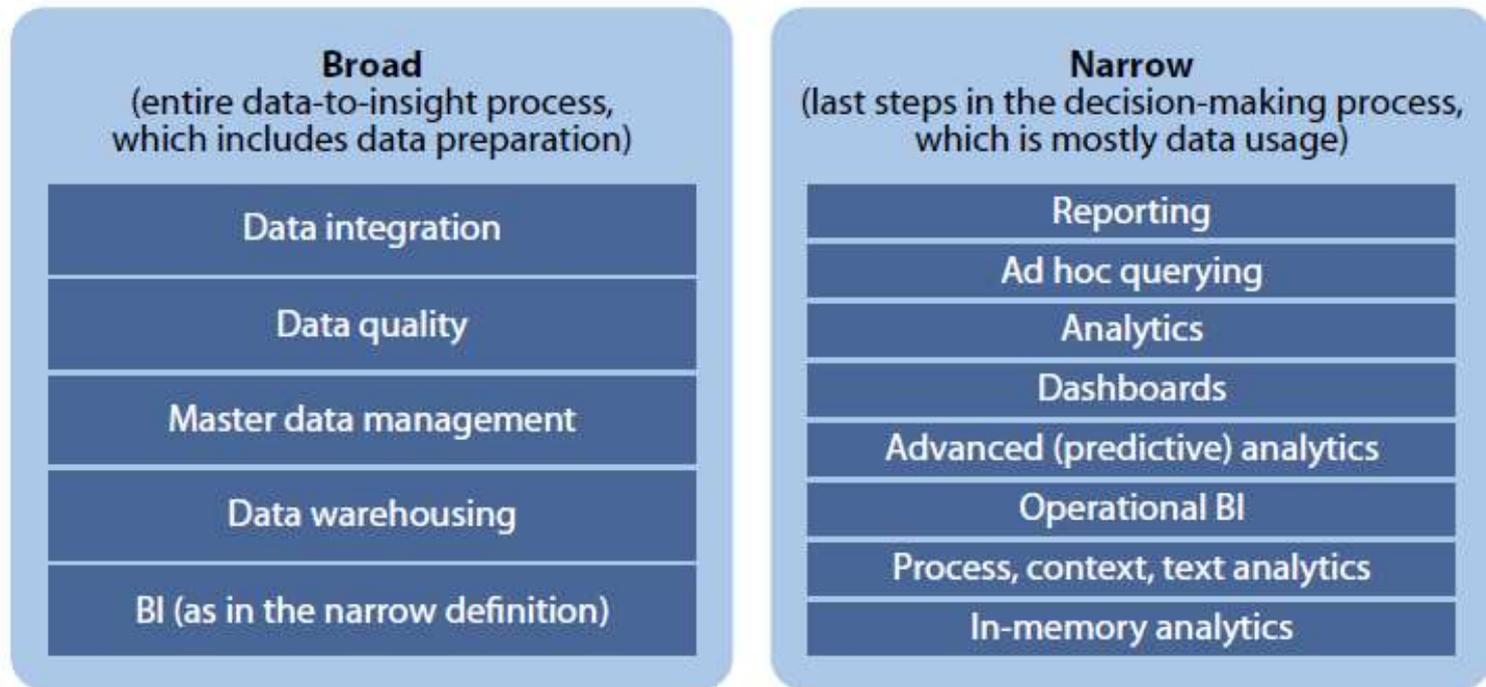
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Forrester defines BI in two ways



Source: October 20, 2010 "The Forrester Wave™: Enterprise Business Intelligence Platforms, Q4 2010"

BI architecture consists of multiple loosely and tightly coupled components . . .

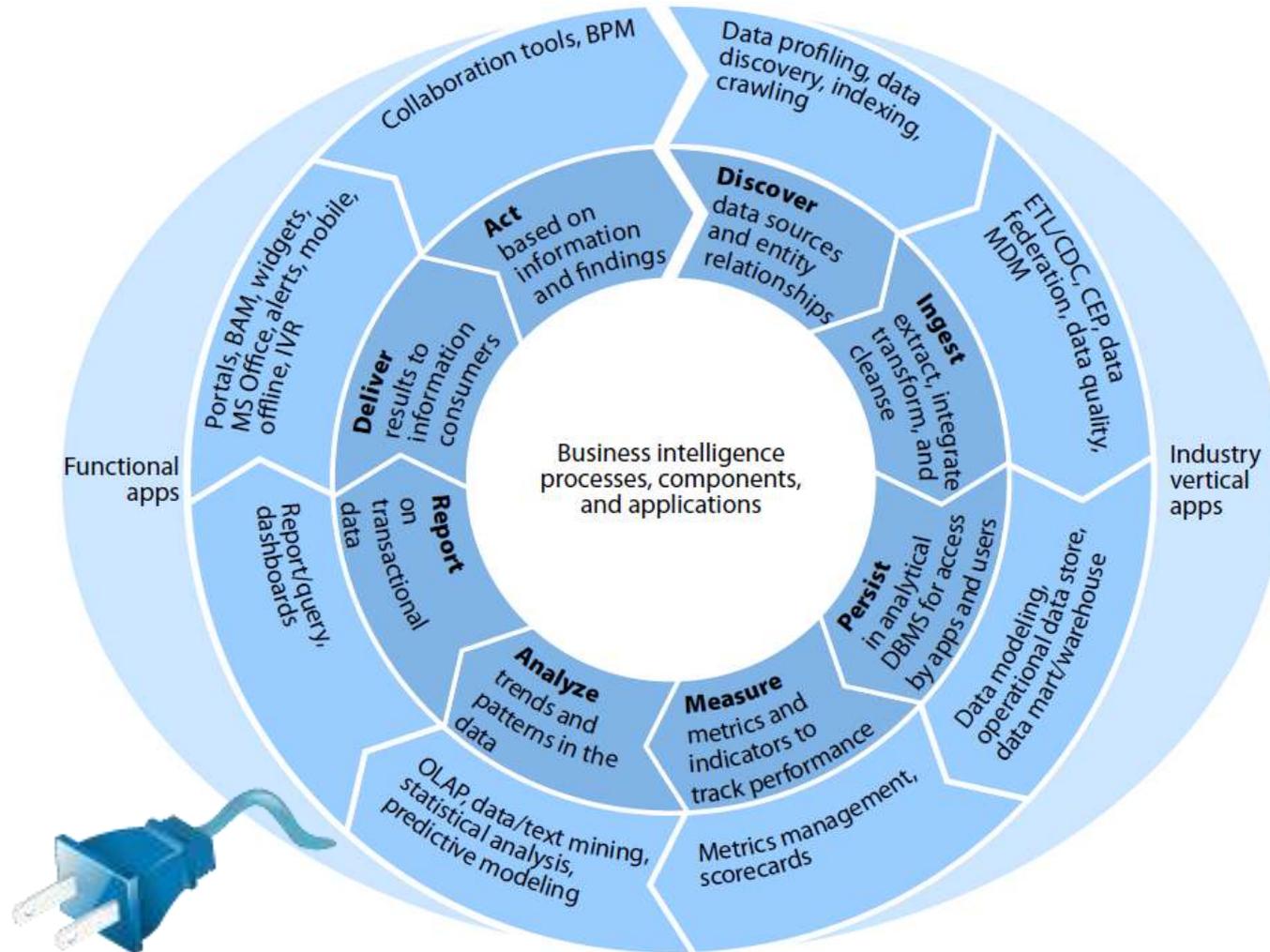
Delivery	Desktop gadgets	Office suites	Mobile	Disconnected	Apps	Form factor	PSO
	Portals	Interactive voice response, ATM, point-of-sale					
Reporting	Dashboards	Alerts	Advanced data visualization		Industry vertical applications	Appliance	Strategy
	Search	Geospatial	Reporting — ad hoc, analytical, production				
Performance management	Metrics/KPIs	Planning	Scorecards		BI SaaS	MSP/application outsourcing	SI
	Strategy/objectives management						
Supporting applications	Collaboration	Life-cycle mgt.	Localization	QA	Version control	Methodology	
	Metadata — integration, repositories		ECM	eLearning	MDM		
Analytics	Guided decisions	NLP	Guided search		Enterprise applications: ERP, CRM, SCM, ERM	Hosted BI (ASP)	Center of excellence
	Time series	OLAP	Operational DSS				
Discovery and Integration	Usage analytics		Web analytics		BPO	Governance	
	Advanced analytics						
Data	Accelerators/query optimization		Adapters/tool kits		Center of excellence	Governance	
	BAM/CEP	BPM/BRE integration	Discovery accelerators				
Infrastructure	DQ — cleansing, profiling		EAI/SOA	EII	ETL/CDC	Governance	
	Integration — third-party applications						
Infrastructure	Operational data stores (ODS), data warehouses (DW), data marts (DM)					Governance	
	Report mining	Services registry and repository					
Infrastructure	Columnar DBMS	Hierarchical/XML	In-memory DBMS		Governance		
	Multidimensional OLAP	Multivalue DBMS	RDBMS				
Infrastructure	Streaming DBMS		Search DBMS		Governance		
	Network	Servers	Storage				

BI is a set of methodologies, processes, architectures, and technologies that transform raw data into meaningful and useful information used to enable more effective strategic, tactical, and operational insight and decision-making.

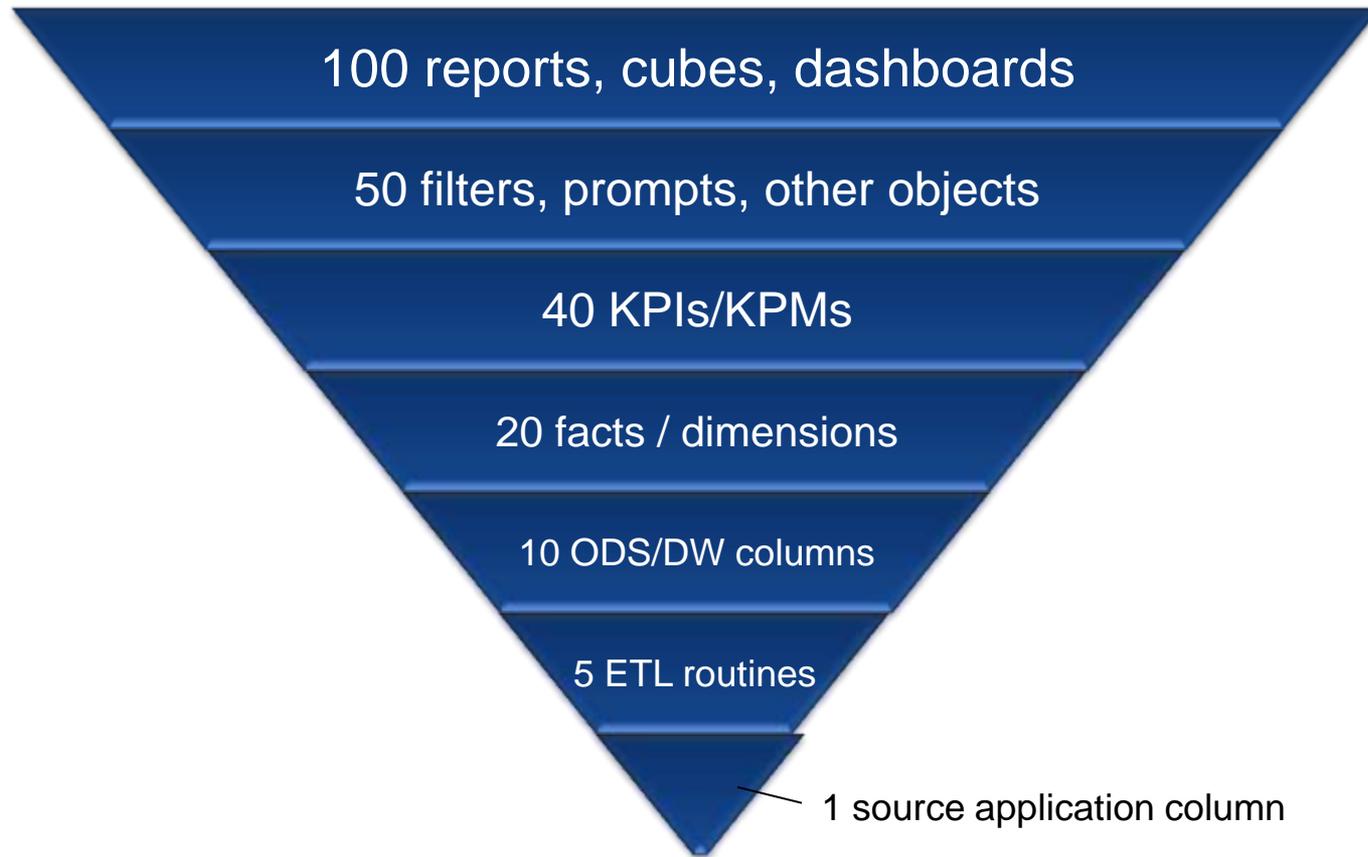
Source: August 18, 2009, “Business Intelligence (BI) Polishes Its Crystal Ball” Forrester report

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. . . That work together to enable a complete loop of business processes



Implications of even the smallest change can be significant

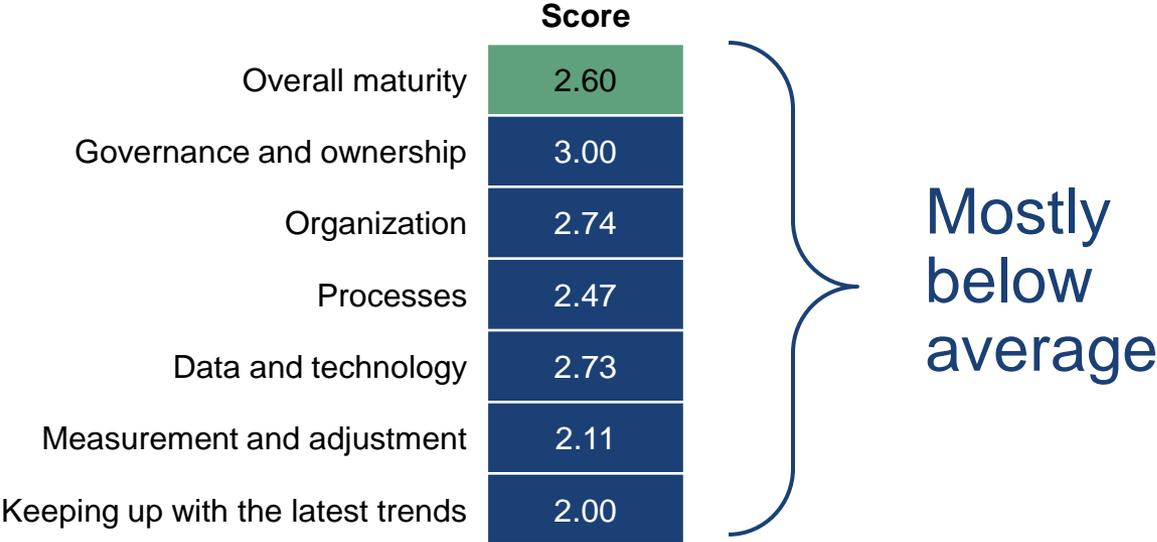


Why traditional BI approaches just don't cut it anymore

- Requirements change way too fast for IT and traditional tech to keep up
- Lines between producers and consumers of information have largely disappeared
- Knowledge workers spend too much time looking for, not enough time analyzing the information
- Canned reports just don't cut it anymore
- IT builds too many special purpose datamarts

Organizations that use BI show increased levels of maturity, although it's still a long road ahead

Average maturity:



Maturity is evaluated on a scale of 1 to 5 (low to high).

Base: 214 technology professionals familiar with their respective organization's BI efforts

Source: Q4 2009 Global BI Maturity Online Survey

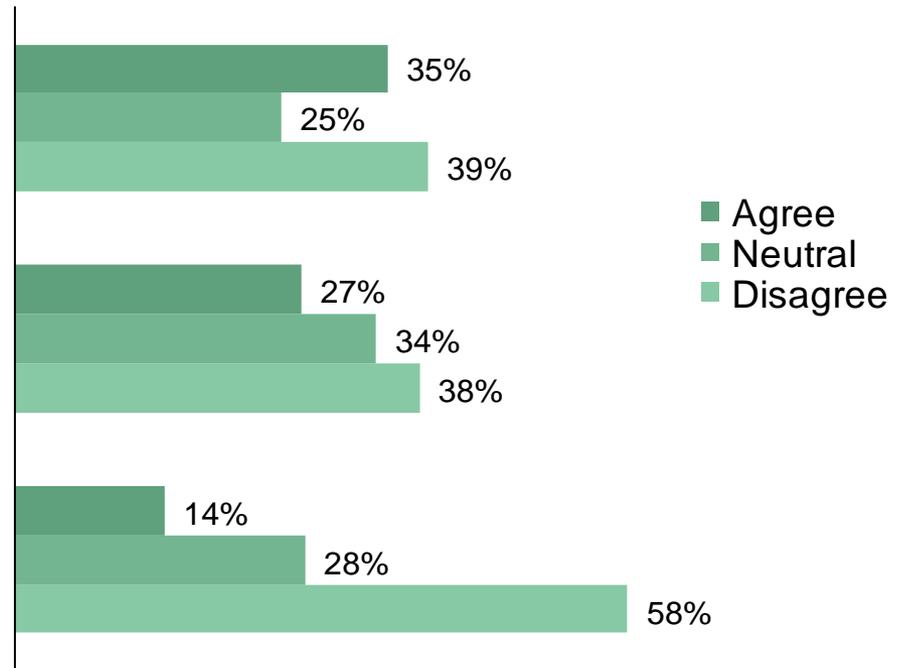
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As a result “pervasive” BI still has a long way to go

Pervasiveness: Enterprise BI applications are available to most strategic and operational decision-makers.

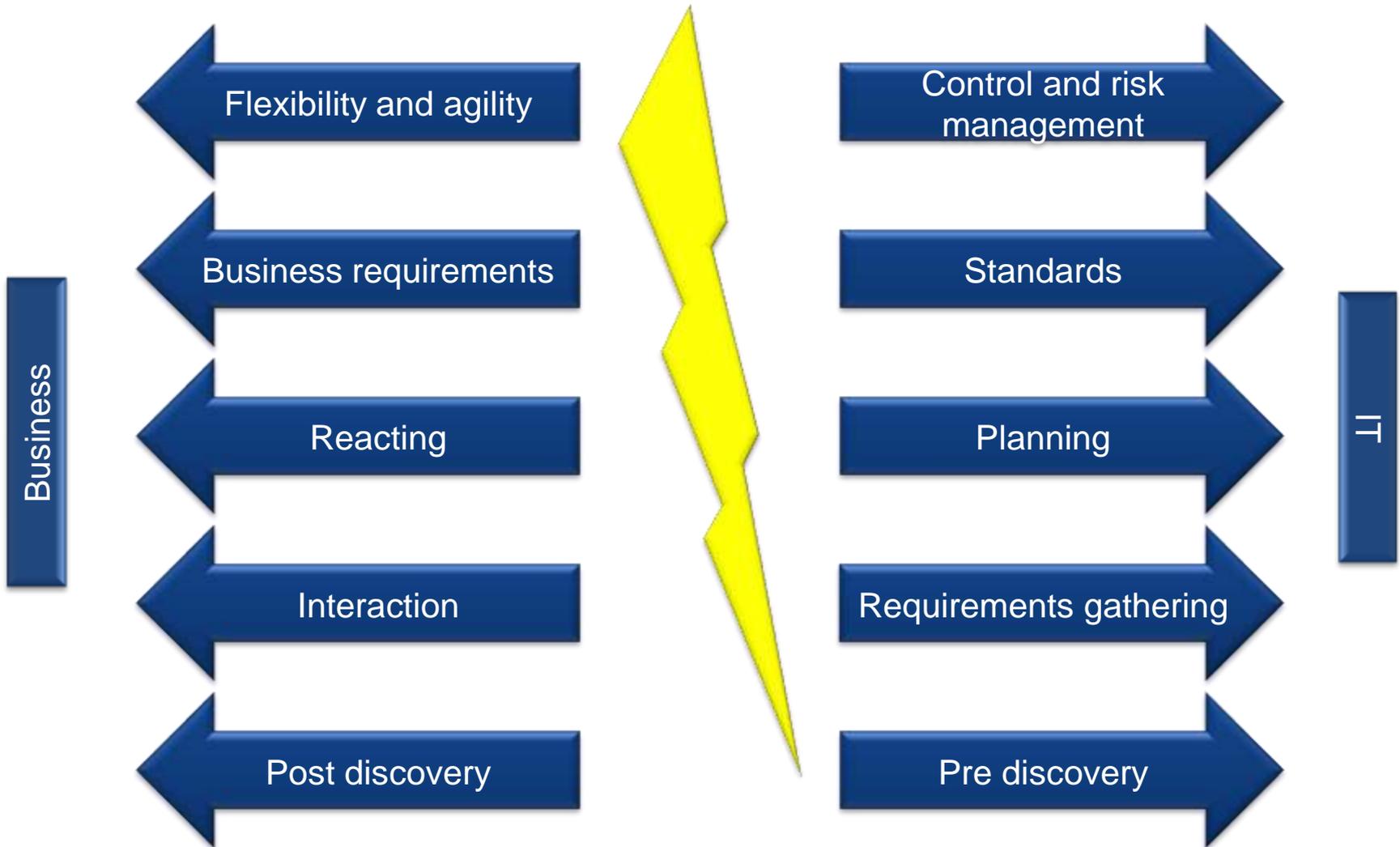
Enterprise BI application usage by tactical and operational decision-makers is above, the same, or below average compared with most organizations, where the average is 25%.

Enterprise BI application usage by strategic decision-makers is above, the same, or below average compared with most organizations, where the average is 50%.

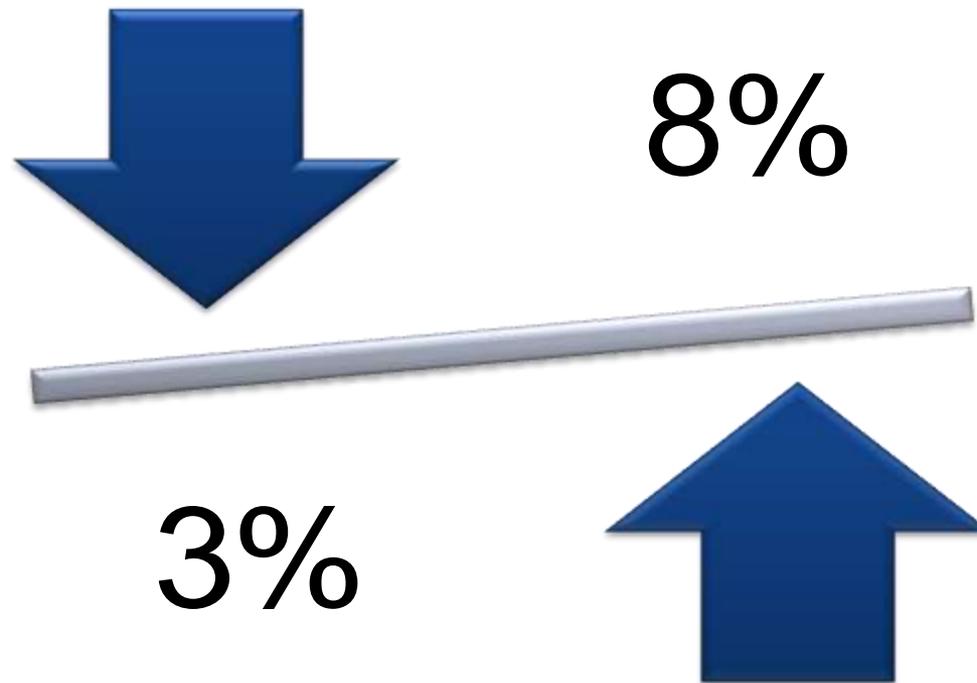


Base: 214 technology professionals familiar with their respective organization’s BI efforts
(percentages may not total 100 because of rounding)

IT / Business alignment challenges



And anecdotal evidence suggests that the # of people using BI in the average enterprise is in an abysmal 3% — 8% range



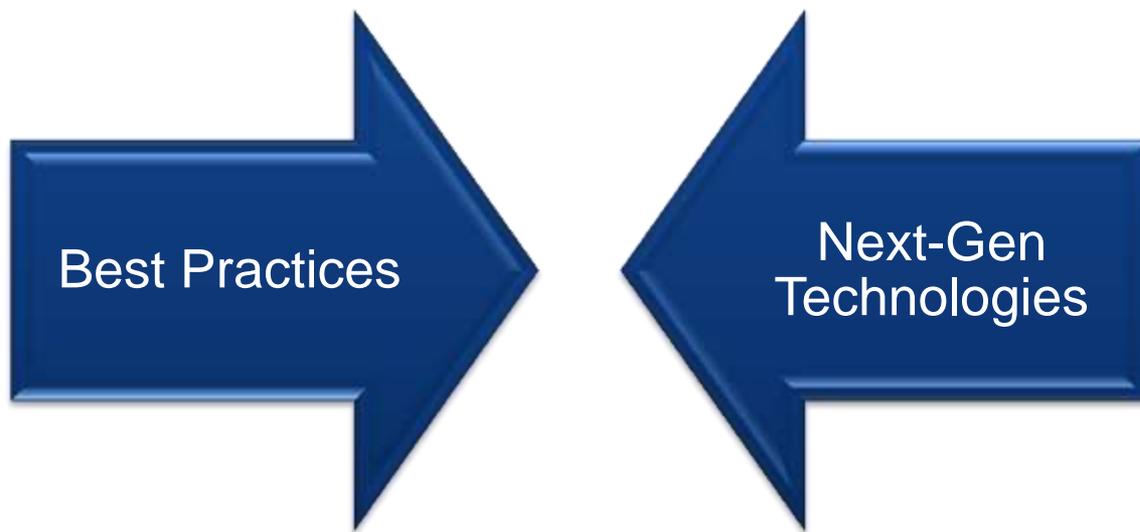
Source: http://blogs.forrester.com/boris_evelson/10-03-20-number_people_using_bi

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So what's the answer?



And the answer is...



Agenda

Why is BI on top of everyone's agendas?

What are the typical BI implementation challenges?

BI best practices

Next generation BI

10 best practices (or causes for failure) and ...

1. Business ownership and Data Governance

2. Performance Management

3. Change Management

4. Data preparation vs. usage

5. Front vs. back office

6. Hub and spoke model w/data federation

7. Agile

8. Working with SMEs

9. BI on BI and misalignment of BI and incentive comp

10. Tangible ROI

Agenda

Why is BI on top of everyone's agendas?

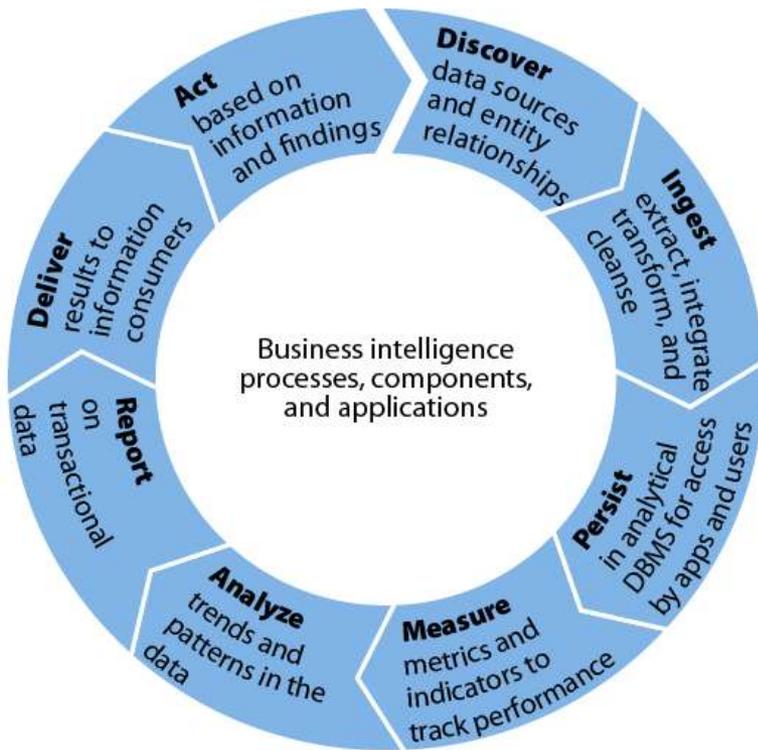
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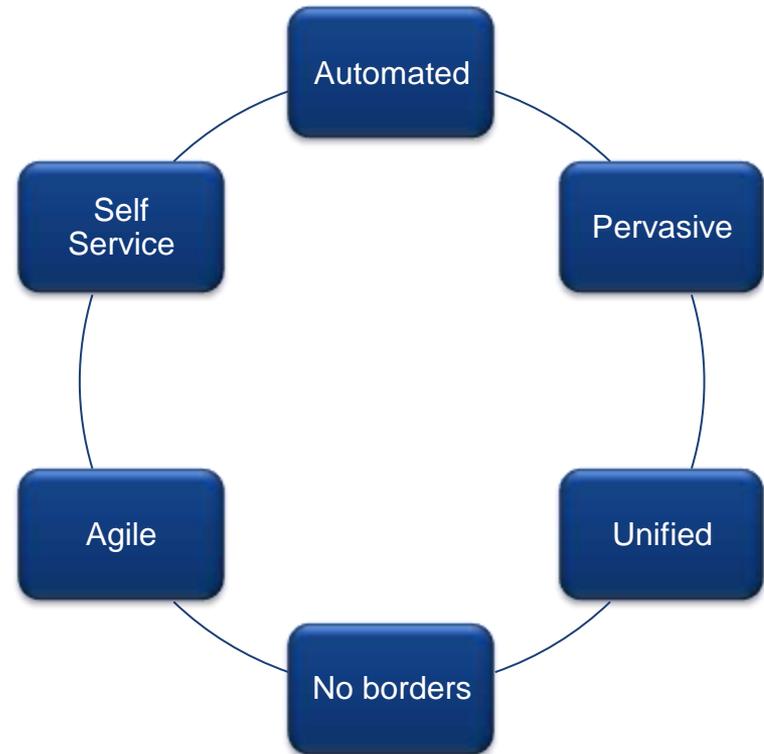
Next generation BI

Next-gen BI

The “whats” are not changing



The “hows” are changing



Next-gen BI — automation

BI trend	What is it?
Automated information discovery	Automatically discovering source data based on metadata, content, and rules
Actionable and collaborative	Automating actions on results gleaned from BI reports and analysis
Contextual (process, desktop, visual)	<ul style="list-style-type: none">• Process: BI is aware of process context.• Desktop: BI is aware of desktop (open documents, open emails) context.• Visual: gestural, not instrumented, visualization manipulation
End-to-end life-cycle management or metadata generated apps	Automatically changing, updating all BI components, mostly achieved by metadata generated BI applications
Decision management	Documenting and automating all business decisions

Next-gen BI — unification

BI trend	What is it?
Logically unified sources	Logical views independent of physical data location and model
Data and content	Seamless integration of structured data and unstructured content. Ability to handle sparse data.
Disk and streaming	Seamless integration of data stored in disk-based database management system (DBMS) (historical, batch) and in streaming, in-memory DBMS (real-time)
Historical, current, and predictive	Seamless integration of historical, current, and predictive reporting and analysis, often requiring technologies beyond SQL (like MapReduce)
Metadata	Unified ETL, data quality, BI, portal, content, process, rules metadata

Next-gen BI — pervasiveness

BI trend	What is it?
Within processes	BI in processes, automatically comes up when a decision needs to be made by a human
Within the IW	Integration with all IW components: search, enterprise content management (ECM), email
Self-service	Casual user and power user self-service
Offline/disconnected	Seamless operation in offline/disconnected mode
Mobile	Delivery and analysis on mobile devices

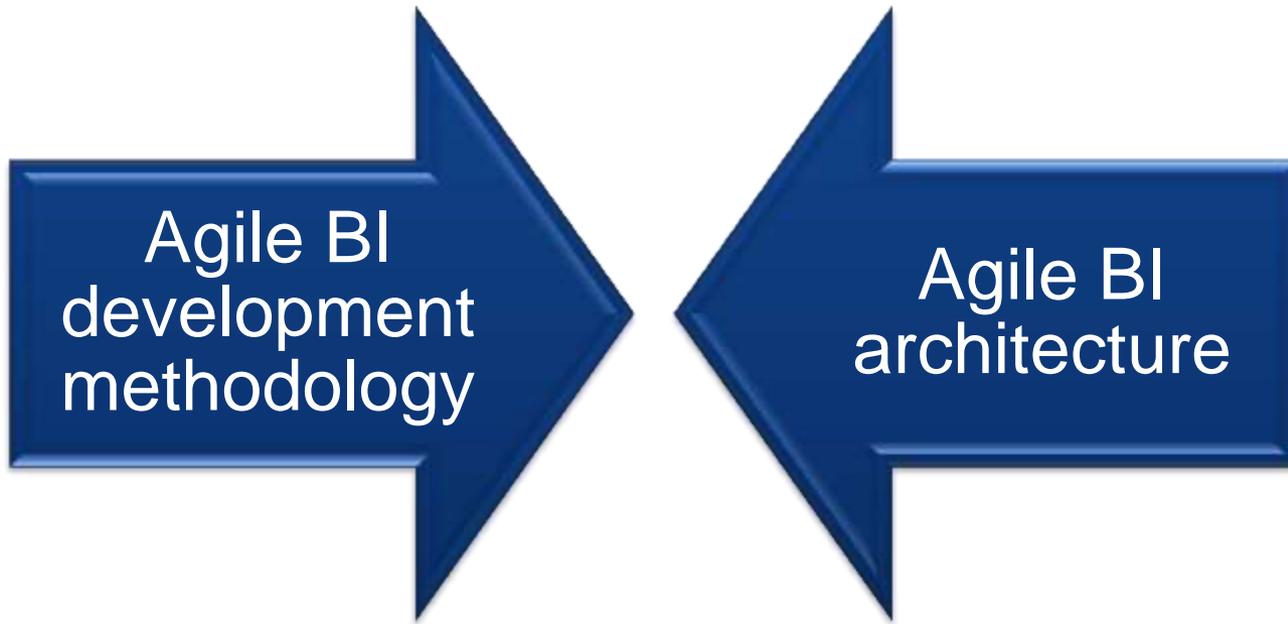
Next-gen BI — no borders

BI trend	What is it?
On-demand, adaptive data models	Reporting and analysis without limitations of underlying data models, aka “postdiscovery”
Unlimited dimensionality — advanced data visualization	Ability to visually analyze many dimensions at the same time
Exploration + analysis (guided analysis)	Seamless integration of search-like technology to find the data and BI-like technology to report and analyze the results of the search

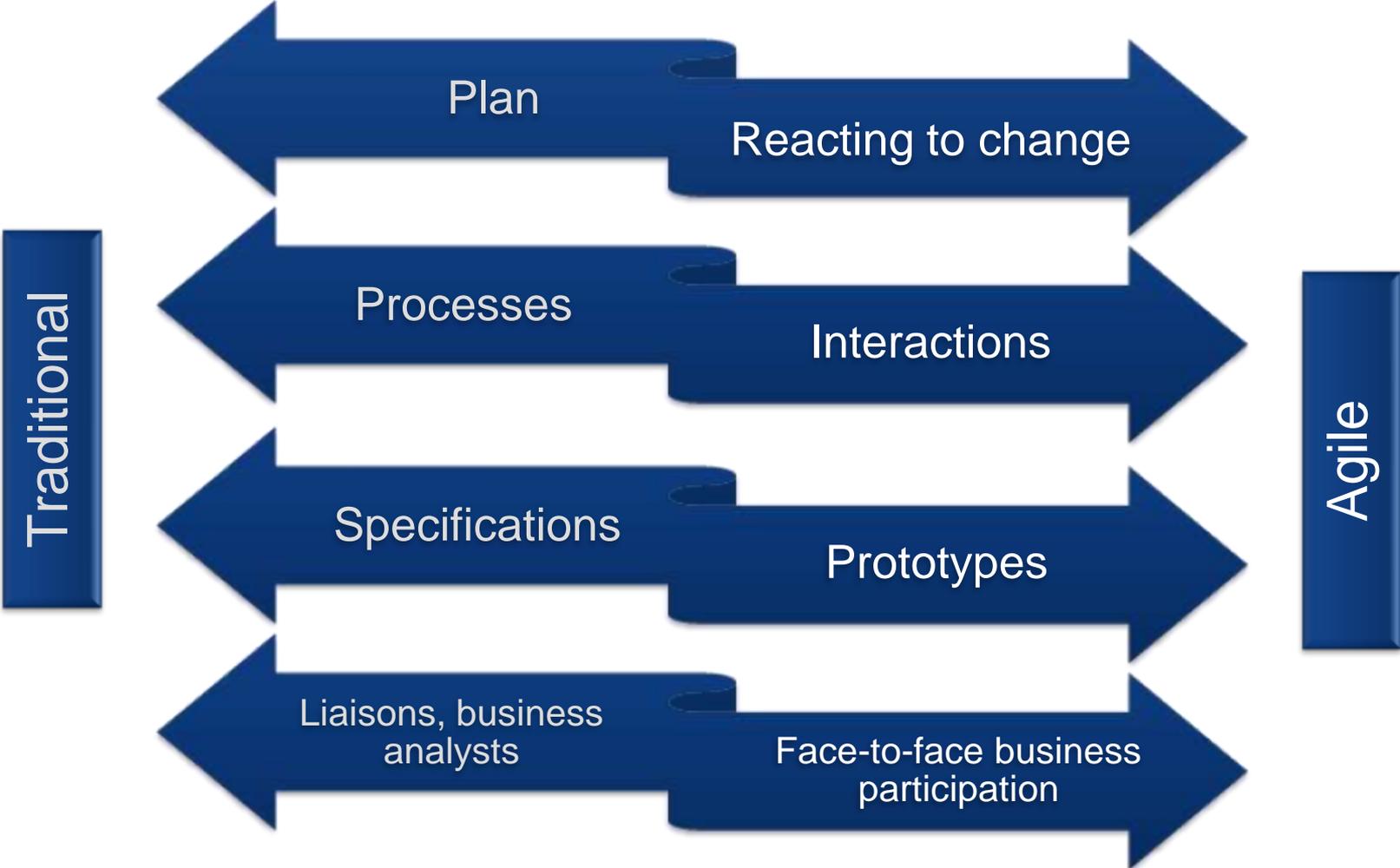
Build it and they will come — why Agile and Self Service are critical for effective BI implementations

- Initial estimates are always low
- BI requirements change faster than IT can keep up
- Conventional SDLC approaches are poorly suited for BI
- Deployment efforts are often underestimated
 - Growing and ever changing requirements
 - Growing user base
 - Growing breadth, depth, volumes, and complexity

Agile BI — key for any BI environment



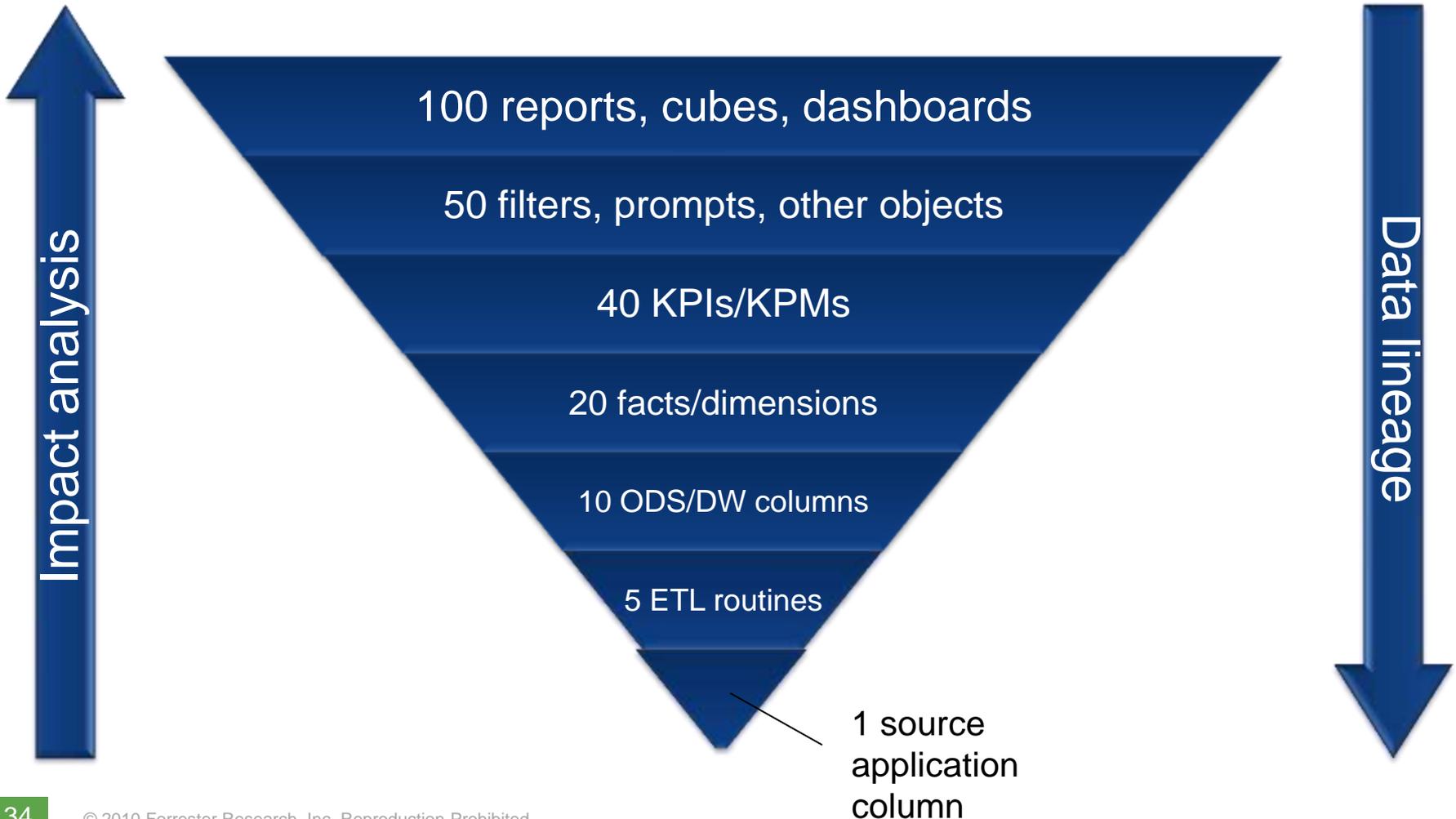
Agile development methodology



Agile BI requires next-gen tech architecture

- Integrated metadata
- End-to-end integrated BI component management
- DBMS built from the ground up for BI
- Data-driven, not schema-driven BI
- Ability to handle complex data structures
- Self service

Integrated metadata for impact and data lineage analysis is hugely important



Metadata-driven BI

Architecture

Does the product support . . .

Multiple platforms?

Top-down and/or bottom-up modeling?

Generating programming code?

Integration with other BI apps metadata?

Differentiation

Does the product generate . . .

Pre-ETL steps?

ETL scripts?

DDL and DML?

OLAP cubes?

Semantic layer?

Packaged apps?

Time dimension?

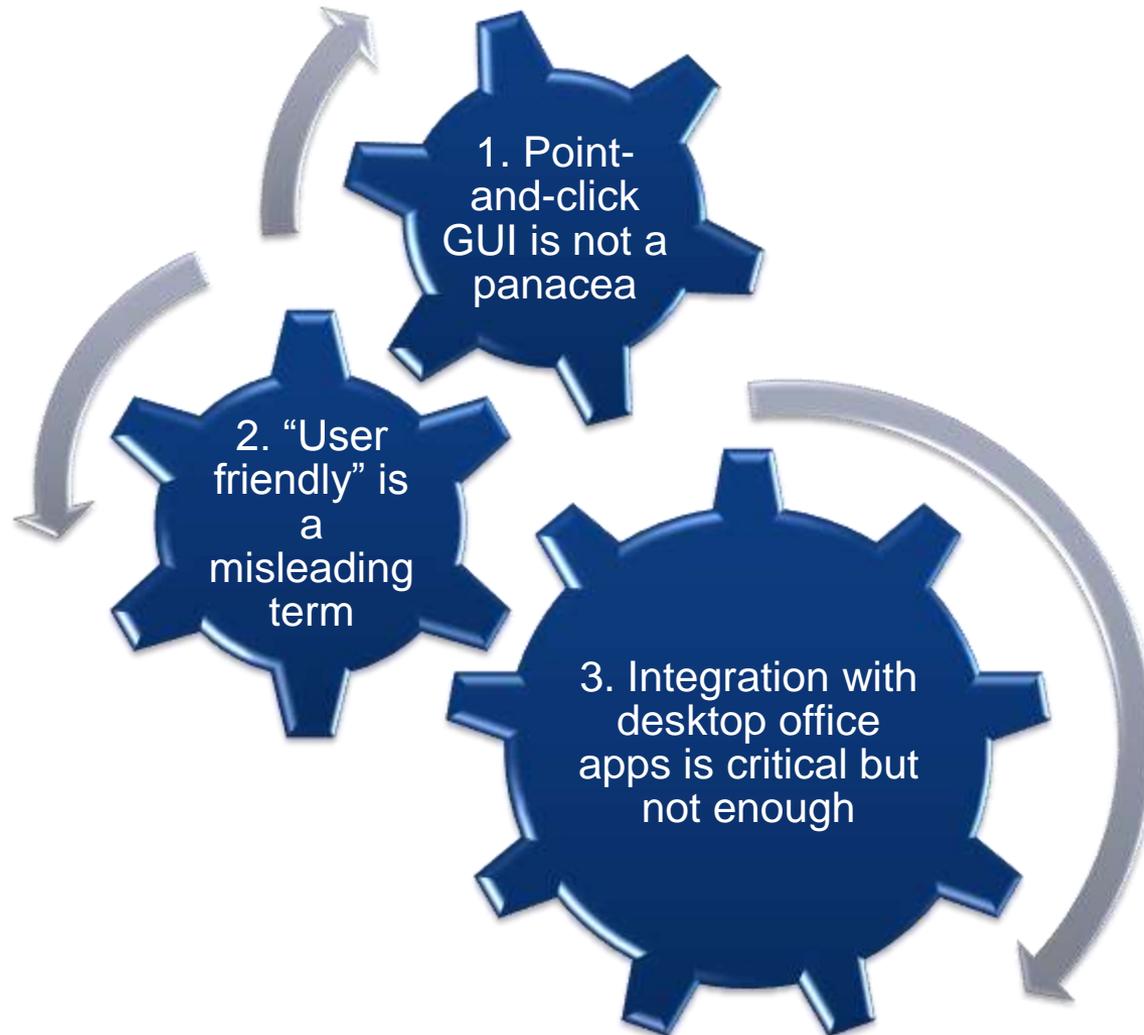
Reports and dashboards?

Source: April 22, 2010 "Agile BI Out Of The Box"

Alternative DBMS for agile BI

Traditional (OLTP) DBMS BI Challenges	Alternative DBMS for BI
<ul style="list-style-type: none"> • Originally architected for OLTP 	<ul style="list-style-type: none"> • Architected for BI
<ul style="list-style-type: none"> • Can be tuned for BI, but often • Require retuning for each application, each query • Changing data model is resource intensive 	<ul style="list-style-type: none"> • Require less tuning for each new application • Some require little or no data modeling
<ul style="list-style-type: none"> • Only allow pre-discovery 	<ul style="list-style-type: none"> • Some allow post-discovery
	<p style="text-align: center;">Alternative DBMS include</p> <p style="text-align: center;">Columnar</p> <p style="text-align: center;">Inverted Index</p> <p style="text-align: center;">Tokenized / Associative</p> <p style="text-align: center;">In memory</p> <p style="text-align: center;">File</p>

3 BI self-service myths



BI self service requirements for average/casual users

Features	Requirements				
	Customized reports	Ad hoc queries and analysis	Customized metrics	Collaboration	Little to no training
Templates	●				●
Customizable prompts, sorts, filters, and rankings	●	●	●		
Report, query-building wizards, and guided prompts	●	●	●		
Portal				●	
Semantic layer	●	●			●
Prompt for columns		●			
Drill-anywhere		●			
Search UI					●

Source: October 26, 2010 “Empower BI HEROes With Self-Service Tools”

BI self service requirements for power users, analysts

- Analyze multiple what-if scenarios
- Explore entity relationships and add hierarchies not supported by the underlying data
- Provision new data sources on demand
- Provision entire BI applications on demand

Functionality required to support BI self service

Commodity

- Customized metrics
- Portal
- Report and dashboard templates
- Report, query, and dashboard building wizards
- Reports customized with prompts, sorts, filters, and ranks
- Semantic layer

Differentiated

- BI SaaS
- Search UI
- Drill anywhere
- Post-discovery
- Prompting for columns
- Write back

Source: October 26, 2010 “Empower BI HEROes With Self-Service Tools”

Recommendations

- Accept the fact that many traditional BI platforms, while function-rich and robust, are not necessarily agile
- Also, accept the fact — with reluctance — that more than one BI platform is often necessary to support agile and next gen BI functionality
- Choose wisely between traditional and agile BI applications
- Work with consultants and systems integrators that understand, practice and support agile and other next generation BI technologies

Thank you

Boris Evelson

+1 617.613.6297

bevelson@forrester.com

www.forrester.com

