The New Era of Enterprise Business Intelligence

Using Analytics to Achieve a Global Competitive Advantage

Mike Biere

The author and publisher have taken care in the preparation of this book, but make no expressed or implied warranty of any kind and assume no responsibility for errors or omissions. No liability is assumed for incidental or consequential damages in connection with or arising out of the use of the information or programs contained herein.

© Copyright 2011 by International Business Machines Corporation. All rights reserved.

Note to U.S. Government Users: Documentation related to restricted right. Use, duplication, or disclosure is subject to restrictions set forth in GSA ADP Schedule Contract with IBM Corporation.

IBM Press Program Managers: Steven M. Stansel, Ellice Uffer Cover design: IBM Corporation Associate Publisher: Greg Wiegand Marketing Manager: Stephane Nakib Acquisitions Editor: Katherine Bull Publicist: Heather Fox Development Editor: Susan Zahn Managing Editor: Kristy Hart Designer: Alan Clements Project Editor: Andy Beaster Copy Editor: Water Crest Publishing, Inc. Indexer: Lisa Stumpf Compositors: Nonie Ratcliff Proofreader: Williams Woods Publishing Services Manufacturing Buyer: Dan Uhrig

Published by Pearson plc Publishing as IBM Press

IBM Press offers excellent discounts on this book when ordered in quantity for bulk purchases or special sales, which may include electronic versions and/or custom covers and content particular to your business, training goals, marketing focus, and branding interests. For more information, please contact:

U.S. Corporate and Government Sales 1-800-382-3419 corpsales@pearsontechgroup.com.

For sales outside the U.S., please contact:

International Sales international@pearson.com.

The following terms are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both: IBM, the IBM logo, IBM Press, System z, CICS, IMS, Cognos, OmniFind, LanguageWare, Lotus, WebSphere, and DB2. Microsoft and Excel are trademarks of Microsoft Corporation in the United States, other countries, or both. Java and JDBC are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both. Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both. Other company, product, or service names may be trademarks or service marks of others. Library of Congress Cataloging-in-Publication Data

Biere, Mike.

The new era of enterprise business intelligence : using analytics to achieve a global competitive advantage / Mike Biere.

p. cm. ISBN-13: 978-0-13-707542-3 (pbk. : alk. paper) ISBN-10: 0-13-707542-1 (pbk. : alk. paper) 1. Business intelligence. I. Title. HD38.7.B534 2011 658.4'72--dc22

2010022974

All rights reserved. This publication is protected by copyright, and permission must be obtained from the publisher prior to any prohibited reproduction, storage in a retrieval system, or transmission in any form or by any means, electronic, mechanical, photocopying, recording, or likewise. For information regarding permissions, write to:

Pearson Education, Inc Rights and Contracts Department 501 Boylston Street, Suite 900 Boston, MA 02116 Fax (617) 671-3447

ISBN-13: 978-0-13-707542-3 ISBN-10: 0-13-707542-1

Text printed in the United States on recycled paper at Courier Stoughton in Stoughton, Massachusetts.

First printing August 2010.

Contents

Chapter 1	•	Introduction to Business Intelligence Today	1
		Setting Expectations	3
		The Face of Business Intelligence Now	5
		The Characteristics of a BI Vision and Strategy	8
		Setting the Stage for BI Success	9
		Within the IT Organization	9
		Within the End User Community	11
		Summary	12
Chapter 2	-	Defining Business Intelligence Today	13
		Defining Business Intelligence within Your Organization	13
		Platform Implications	15
		What Is "Mission Critical"?	17
		BI Solution Elements	
		Business Intelligence and Data Warehouse: Are They Synonymous?	21
		Business Intelligence as a Key Differentiator	22
		Productivity Factors–Working Smarter	
		Summary	27
Chapter 3	-	The History of Business Intelligence	
		within Your Organization	29
		Mapping Your Environment to the BI Evolutionary Tree	29
		Creating an Internal Record of BI Usage	34
		Analysis of Displacement	
		Summary	40

Chapter 4		The Scope of BI Solutions Today and How They
		May Relate to You
		The BI Infrastructure
		BI Drivers, Trends, Sources, and Deployment Options
		Mergers and Acquisitions—The Emergence of BI "Mega-Vendors"
		BI Suites/Platforms versus Independents
		Open Source BI Tools
		Software as a Service (SaaS)
		Cloud Computing
		BI Appliances
		Dynamic Warehousing–Extending Beyond Structured Information
		Operational and Real-Time BI54
		ETL and Change Data Capture–Their Impact and Importance on BI
		Master Data Management (MDM) and Its Role within a BI Infrastructure
		The Impact of XML Data59
		BI Provisioning Models–What Is Best for You?61
		Establishing a BI Competency Center (BICC)
		Creating an Information Agenda
		Summary
Chapter 5	•	Elements of BI Solutions: The End User Experience 65
		End User Assumptions65
		Setting Up Data for BI67
		The Functional Area of BI Tools69
		Query Tools and Reporting69
		OLAP and Advanced Analytics
		ROLAP Solutions Versus OLAP73
		Understanding the Critical Role of Time Dimensionality
		Data Mining76
		Text Analytics
		Spreadsheets–Effective Use and the Implications on Security/Compliance
		Executive Information Systems (EIS)

		Operational BI	83
		Embedded BI and Event-Driven Processes	86
		ETL/ELT and Real-Time Change Data Capture (CDC) Options	87
		Summary	
Chanter 6	-	The Impact of Rusiness Intelligence on Roles	
Unapter U	-	within the Enterprise	93
		End User Categories	93
		End User Management	96
		Skills Definitions	98
		IT Support Roles	100
		BI Tools Support Staff and Business Analysts	101
		The Executive/Managerial Role	102
		Non-Technical and Casual Users	104
		Summary	105
Chapter 7		Corporate Performance Management and the	
-		Executive View of Business Intelligence	107
		Defining CPM	108
		Elements of a CPM System	109
		Vision	111
		Strategy Map	111
		Balanced Scorecard	112
		Dashboards	
		The "DM" Are: 1.11 Te dee	
		The FM S Available loday	115
			11/
		Summary	118
Chapter 8	-	Enterprise Content Management, Unstructured Data	l, 101
		lext Analytics, and Enterprise Search	121
		Enterprise Content Management (ECM)	123
		Enterprise Search	125
		Using RSS as a Conduit for External Information	129

		Text Analytics	130
		The Search and Text Analytics Project	132
		Text Analytics as a Part of the Complete BI Picture	133
		The Impact of XML on BI	134
		Summary	135
Chapter 9	•	Key Influencers in the Enterprise	137
		User Segmentation Reality Check	138
		Identifying the Power Brokers–Key Influencers	140
		Attributes of Key Influencers	143
		Extending BI Beyond the Enterprise	144
		Summary	145
Chapter 10		Justifying Business Intelligence Solutions	
		and Measuring Success	147
		Iustification Scenarios	148
		BI Roadmaps	148
		Articulating Potential Benefits	150
		Business Unit Impact on Justification	151
		Big PurchaseNo Plan	153
		ROI, TCO, and TCA	156
		Measuring BI Success	158
		BI Clouds and Outsourcing	160
		Summary	161
Chapter 11	-	Platform Selection. Technology Biases.	
		and Other "Traps"	163
		Platform Selection for BI Tools– The Database View	164
		Platform Selection for BI Tools– The Tools View	166
		Technology Biases	168
		Other BI "Traps"	170
		Handling Biases	170
		Summary	172

Chapter 12	•	Intelligent Responses to an RFI/RFP and Setting	
		Up a Proof of Concept/Technology	175
		Creating a Better RFI/RFP	176
		Get into the Details	176
		Coordinating IT and Business Users–Ranking the Proper Criteria	179
		Data Access and Performance Aspects of an RFI/RFP	179
		Documenting RFP/RFI Information for the Future	181
		The PoC/PoT Scenario	182
		Matching RFI/RFP Checklists to a PoC/PoT and Documentation	184
		Summary	185
Chapter 13	•	End-User Support and Productivity	187
		WYNTK–What You Need to Know About BI Support	188
		Centralized Support–A BI Competency Center (BICC)	191
		Methodology of Work Submission and Success	195
		Vendor BICCs	196
		Productivity–A Valuable Offshoot of Effective BI .	197
		What Is End-User Productivity?	197
		Summary	199
Chapter 14	•	Implementation of Business Intelligence Solutions	201
		Setting User Expectations Early and Coping with the First Project	202
		How to Scope the First Project	203
		BI Skills Required	205
		End-User Provisos	207
		BI Solution Elements–Query, Reporting, OLAP	208
		Query and Reporting Application Elements	208
		OLAP Application Elements	210
		System Sizing, Backup, and Recovery Issues	212
		System Sizing	213
		Backup and Recovery	214
		Summary	215

Chapter 15	•	The Impact of Service-Oriented Architectures (SOA)	217
		SOASo What?	218
		Is SOA Practical for BI?	220
		Getting Started with a BISOA	221
		Summary	···· 223
			221
Chapter 16	•	Enterprise Portals, Mashups,	
		and Other User Interfaces	229
		The Enterprise Portal–Its Purpose and Potential	230
		Mashups-A Perfect BI Delivery Model	234
		Understanding BI in the Context of Portals, Mashups, and Collaboration	235
		Summary	239
Chapter 17	•	An End User Survival Guide	241
		BI Basics	242
		Ease of Use, Leprechauns, and the Yeti	243
		Interacting with BI Tools and Features	244
		The BI Skills Conundrum	247
		So Who Are You?	248
		BI Skills Assessment	250
		Do You Have a Standard for Naming BI Objects?	253
		White Board the Data Sources and Combinations	
		Summary	256
Chapter 18	•	Checklists for BI Planning	257
		An Enterprise Checklist	258
		The Business Unit Level Checklist	260
		A BICC Checklist	262
		An IT Checklist	264
		Summary	266

Chapter 19 🛛	Speculation on the Future of Business Intelligence	269
	Emerging BI Technologies	270
	Technology Gaps	274
	Trends to Monitor	276
	Responding to Trends	278
	Summary	279
	Index	281

Ι

Introduction to Business Intelligence Today

Business intelligence is defined as "mission critical" by many senior executives today. The emphasis and interest in BI, as we will often refer to it, has placed it in the forefront of the list of major corporate objectives. This adjective is quite valid because the value of unlocking critical information held in corporate and external data sources can be a significant game changer. At the enterprise level, BI is often just a stated goal with little actual practice other than perhaps setting a standard for a suite of tools. Having an enterprise goal and set of standards does not end with creating an approved vendor list—it is just the beginning. BI at the enterprise level suggests that there is a common vision and set of goals in the deployment and use of BI on a broad scale within the entire organization.

In my opinion, business intelligence is the application of end-user query, reporting, dashboards, and other non-programming technologies to provide information that is not available to the business using traditional programming methods and services. BI requires a clear direction at the enterprise level with the realistic expectation of the skills required to deliver BI output that is mission critical. It also requires a support infrastructure to ensure accuray of results produced and that the proper skills are in place.

Let's think about how you would proceed with a corporate-wide ERP or CRM system and the resources, dedication, and critical scrutiny you would apply in selecting, implementing, and supporting one of these major application solutions. Would you have the system installed, show a few people how to use it, tell everyone it's now the corporate standard, and then trust its acceptance to mere synergy? I certainly hope not! Yet, this is often the case when a BI solution has been chosen.

In this book, I have taken the approach of opening a frank, personal dialogue with you. It is an open discussion about enabling BI at the enterprise level. It rarely mentions any product, but rather addresses the requirements and thought processes necessary to succeed at the macro level of BI. It is intended to assist in forming, articulating, and defending a global BI strategy and vision. For the most part, the days of acquiring a set of independent BI tools and turning them loose in the enterprise are over. However, the majority of clients I talk to have an already-established set of BI tools in-house. They may have from three to a dozen different BI tools with overlapping functions. One of the first steps in establishing enterprise BI sanity is a bit of winnowing out of the less productive or dated ones. I will have much more to say about this later.

One of the first rules of thumb today regarding BI enablement is to totally avoid the "Fire! Ready! Aim!" approach. Uncoordinated, anarchistic BI has never been effective, and it can be costly. Your end users can easily populate a spreadsheet in a myriad of ways and run amok without much assistance. When you do not have a plan for BI, this is the most common form of analysis within any enterprise. End users will always find their own way if they are not led in a positive, orderly manner.

If you believe that a BI solution can change your corporate world, there must be an internal paradigm you adhere to. Typically, BI is thought to have the following characteristics, at a minimum:

- An effective set of tools for accessing data and delivering business information
- A means to gain insight into areas of the business not accessible with existing systems
- Advanced analytics that, if applied, can actually "discover" new information

- The capability to make people more productive and less reliant upon IT
- The capability to provide a different interpretation of critical information than we have today

The corporate BI quagmire becomes deep when a mismatch between desire and commitment becomes apparent. I often get engaged in BI conversations where a client will talk about his avid interest in BI and how he feels it can make a significant difference in his success. Then, as I probe a bit about the overall plan, it becomes apparent far too often that much of the "plan" is based upon assumptions about what BI solutions really do, along with the ease of use factors the client believes will be in play but that have not been proven.

In this chapter, we discuss overall BI scenarios today, the view of the CIO, the IT perspective, the end user perspective, and establishing a vision. Lewis Carroll wrote in *Alice in Wonderland*, "If you don't know where you are going, any road will take you there." I would also add: "How do you know when you've arrived?"

Setting Expectations

"I am not sure what BI really is these days, but our execs tell me we need it." This was quoted in a seminar on business intelligence by an experienced IT individual who had been forced to attend the event in mid-2009. You may be tempted to snicker at this naïveté in this day and age but, as the old saying goes, sometimes ignorance is bliss. When probed a little further regarding his inquiry, what he was really asking was: "Why is BI suddenly such a hot topic with our senior management team? We are already using several end-user tools and yet they want more!"

Having worked in this arena since 1981, I can think of countless customer engagements where this question arose in some manner or another. My answer in 2003 (Mike Biere, *Business Intelligence for the Enterprise*, Upper Saddle River, NJ: Prentice Hall PTR) was, "Business intelligence is a *word problem*!" What I meant was that BI transcends simple query and reporting. It eclipses dashboards and charts and portals. It is often applied to solve complex business problems and provide an answer heretofore unknown. It often requires complex logic to be applied. I also constantly ranted about the lack of BI skills that fell short of the desire to deliver BI analyses. There is a certain level of skill required for the various degrees of BI complexity being addressed that many end users ignore until they get in over their heads. There is a continuing gap between user groups where "power users" still produce the bulk of the output for consumers, regardless of how much easier to use many BI tools are touted to be.

BI skills are not easily mastered; nor are they acquired by those who do not have the proper technical skills to work with a tool that may require extensive manipulation of data. This text is not a rehash of the first edition but a guide on BI today. The world of BI today is dramatically different than a few years ago and must be examined in a new light.

The emerging tidal wave of BI interest was beginning to dramatically build in 2003 and, at that time, the emphasis was on making people aware that BI efforts needed to be properly supported, that skills had to be assessed realistically, and that we must not assume that just anyone in the enterprise would be able to use a tool effectively. The ongoing myth of ease-of-use and universal applicability of a BI tool being a trivial exercise had to be addressed. The transition toward self-service, on-demand BI was beginning to take place, and it deeply affected the marketplace and how many viewed BI in a new light.

BI should be considered a "potentially" powerful weapon in the hands of all employees within an enterprise. In today's world, it is best to think of BI as an integrated solution suite, where its power and functionality may be utilized by anyone who touches data within a particular context. It is all about equipping individuals with the proper functions based upon their needs and skills. It is far less about equipping everyone to be a BI hands-on tools "mechanic." The push today is to drive BI deployments as broadly and deeply into the organization as possible. It is also about providing BI functions that add tremendous value without the end user having any skills in the tools being used. This is referred to as "embedded BI." The age of the BI consumer is here.

The business intelligence market is heating up but with an entirely new suite of players, such as options available on the open source market. Well-established vendors are piling on to this enormous market by acquiring others to fill in portfolio gaps, and thus we see a series of mergers absorbing some of the longer-standing independents. This is wonderful news to a BI vendor but, for anyone involved in the acquisition process, it can be a nightmare. There are decision points and options not available in the past, but the options have also become far more complex in many ways.

The Face of Business Intelligence Now

Business Intelligence today is vastly different than in years past in so many ways, as follows:

- Mergers and acquisitions have dramatically altered the marketplace.
- Economic influences have driven initiatives such as server consolidations and BI tool consolidations.
- BI solutions have emerged as integrated platforms, not loose collections of tools.
- Service providers have offered alternatives (Software as a Service—SaaS) to in-house infrastructure and support.
- Initiatives such as cloud computing have changed the deployment strategies for many.
- Appliances have emerged with "black box" BI solutions.
- Real-time or near real-time BI projects have appeared.
- Increased emphasis has been placed upon the merger of BI and collaboration.
- ...and many more.

At the enterprise level, we see a keen interest in providing a corporate infrastructure for BI solutions that is extensible, cost-effective, secure, highly available, and scalable. BI for the Enterprise is all about having vision and goals to attain that vision. Recent surveys have shown BI to be the top priority of most CIOs—CIO surveys for the past four years have placed BI at the top of the list. I suggest that you use your favorite search engine to query CIO surveys rather than have me cite specific ones. With these surveys suffice it to say, there have been many, and the responses have consistently placed BI and analytics at the top of the list (see Figure 1-1).

Why do we find BI to be such a critical initiative after all these years of applying end user-oriented technology to solve business problems? Don't most enterprises have it under control today? The answer is, no.

BI is on the agendas of the majority of CIOs because they have become extremely aware of its importance in providing a competitive differentiator at all levels of the business. They read about some competitor who is using a BI infrastructure to cut costs, improve customer

A Typical CIO Survey

Topics you may see listed on a CIO survey today might encompass the following when asked "What do you believe will add the greatest impact upon your business today?"



Business Intelligence and Analytics has emerged as #1 every time!

Figure 1-1 A typical CIO survey

satisfaction, shorten sales cycles, and more. They may have had some success internally with a new BI project and now want more.

Regardless of the vision held, there is an ongoing dilemma with most BI initiatives—effective deployment. As shown in Figure 1-2, there is a definite "gap" in the intended usage of BI technologies and the actual application of them. The casual users are often locked out of participation due to a number of factors, as follows:

- The data provided is too difficult to work with.
- The end user has no time to develop skills other than rudimentary usage.
- The tool provided is too difficult for the user based upon his level of technology skills.
- The business problem faced is too complex for the casual user.
- The software provider has overstated their case for ease of use and deployment.
- The training is inadequate, and there is no support organization, such as a BI competency center.
- All of the above.



The BI utilization and uptake 'gap'

Figure 1-2 The BI utilization and uptake gap

As shown in Figure 1-2, there is a wide gap between deployment and usage, with a preponderance of BI usage on the IT and power user end of the chart. The desire by most is to drive the bar to the right. For a vendor, this often translates to trying to make their wares easier. For the organization, it most often translates to thinking, "There has to be something out there that our end users can use more effectively."

Shifts in closing the gap and moving to the right will not occur by maintaining the present course and speed, hoping that momentum will naturally build. Any BI tool has its unique strengths as well as a set of end users who find it to their liking. To assume that others should be able to use a BI tool because a few have taken to it easily is a severe error. "We don't understand why those other folks in sales aren't using our new BI gadget! Why, Ray and Frieda worked with it for a week, and look what they can do now!" There is a natural tendency to cover your struggles on the job when you see others having great success with a new gadget. Allowing users to flounder because they don't quite "get" the tool is inexcusable. I'll cover this more when we discuss the impact of BI on roles within the enterprise.

The Characteristics of a BI Vision and Strategy

BI visionaries today see an enterprise approach from vastly different perspectives depending upon where they reside in the corporate infrastructure. If you are a part of the IT organization, the emphasis is clearly upon the technology. How does any proposed BI tool comply with our standards? What is its behavior within our infrastructure? Does it use our data sources effectively? How does the vendor support it? The usual IT concerns apply.

From the perspective of end users, the issues are more functionally oriented and business related. They want to know how to use the tool. How easy is it to learn? How do they access their data and how do they perform a specific task? What do they need on their workstation? Can they access their BI "stuff" from their PDA? It's all about usage and results.

So, now we face a real conundrum with our BI plans. The CIO and other "C Level" individuals have made BI a priority for our enterprise. We already have a smattering of tools, each with their own population of loyal users, as well as processes and possibly applications in place. Do we just make changes in how we operate and support BI within the organization, or do we take a step back and map our vision to a set of clear goals and objectives? Why not start with a clear, concise vision statement? I'm not talking about one where someone has it printed in pretty lettering and hangs it on the walls in corporate meeting rooms (well...maybe I am), but where everyone involved and responsible could articulate it when asked: "What is your strategy—your enterprise vision of BI?"

It may sound a bit trite, but I have seen some very senior people go blank when I ask them this question. It is imperative that a person be able to articulate his BI plan, or we will watch him continue down the same path with little or no hope of change.

A sample vision statement might look something like this:

Our corporate vision for BI is to create and support an infrastructure with secure and authorized access to data held anywhere in the enterprise. Our corporate standard for a BI tool is ______. We staff and measure our BI competency center based upon end-user satisfaction surveys and successful deployments. An important segment of our end-user community requires near real-time data access. Therefore, we have provided such an infrastructure to accommodate them. We currently support _____ users representing _____% of our

user population. Our goal is to increase the usage by _____ % by (date). We weigh the potential costs of increased BI usage against the business value and ROI we receive. Thus, we have a clear view of our success that is measured, accountable, and defensible.

If your view of BI is the provisioning of a suite of tools and gadgets that are low cost and designed to get the end users out of your hair so you can do the real work, this book is not for you. If, however, your goal is to establish something akin to the vision statement articulated previously, please read on.

Setting the Stage for BI Success

No successful BI endeavor occurs within the full synergistic cooperation of IT and the business users. This is particularly true at the enterprise level, although you will find occasional pockets of success where the end users prevailed despite their poor relationship with IT. You need to keep in mind that everyone involved should be acknowledged as having taken part in a challenging journey that has reaped significant rewards and is far from over.

I reference the enterprise throughout this book. The enterprise encompasses all facets, all functional areas, and all business processes that interact to drive the entire organization. I mean that an enterprise cannot provide an effective infrastructure for BI by allowing multiple tools to be disseminated throughout the organization. I mean that an enterprise cannot have BI success without a plan and a proper support organization in place. I do not mean that you need to drop all BI tools except for one thought that would make life far easier. I do mean that it is not wise to maintain 5 tools that perform query and reporting just because they have all been adopted over time. It is an organizational nightmare to continue to maintain a poorly planned BI infrastructure that is not cohesive and clearly understood by all throughout the enterprise.

Within the IT Organization

IT must be equipped to handle BI from an infrastructure perspective as well as a business standpoint. The primary factor driving most IT decisions today is cost. Perceived platform costs (for example, a distributed environment versus a mainframe) often drive a BI decision without any thought being given to the incremental work and loss of productivity associated with data capture, replication, increased server growth, staff to support a large distributed environment, lag time in replicated data, and more. Looking at BI through cost-covered glasses will often result in a disconnection within the organization.

Such a disconnection is usually due to the lack of emphasis upon aligning the BI infrastructure with clearly understood business goals. One CIO told me: "All anyone seems to pay attention to is my overall cost; they don't understand the value my organization brings to the business." Was this the CIO's fault, or was the organization myopic in their view of IT? I don't know, but I suspect it may be a little bit of both.

Here is an example of aligning BI efforts in IT with key business areas. There is the emerging trend of operational intelligence where there is an increased emphasis on near real-time BI to provide a better experience for customers. Customer service reps are being equipped with up-to-date information about a customer's buying records so they can have a closer, more personal conversation with the prospect.

In order to deliver operational intelligence solutions, IT often has to make significant changes in their infrastructure. For an enterprise whose directions in data warehousing and BI have been to offload data from a mainframe, reversing course to take advantage of the information without offloading is not a trivial pursuit. If such realignment is required, then the effort and additional cost for IT must be understood and approved. IT must be made to understand the significance of such a change, and the end users need to support this fully.

In an operational intelligence scenario, it is imperative to place the BI functionality as close to the data as possible at point of capture. These applications traditionally utilize more highly detailed data than what may be fed to a data warehouse. In many scenarios, an operational data store (ODS) is provided as an intermediary source for capturing the data in a real-time mode and then being a source to an operational scenario as well as trickle-feeding a data warehouse. I will cover this more in-depth in Chapter 4, "The Scope of BI Solutions Today and How They May Relate to You," when we discuss the scope of BI solutions today.

If we map the business requirement (an operational scenario) to the current infrastructure, and we have a clear understanding of the business value and ROI associated with it, the challenge now facing IT is to construct the most effective delivery system for the end users, where business value is the primary driver and cost is second.

Within the End User Community

The first and foremost issue end users have to grapple with is being able to articulate their requirements and associated business value to complete the IT mission in crafting an enterprise BI framework. "We just need to get to the data and get some reports out and maybe create a few dashboards for our management team." There is nothing in that statement that suggests one iota of business value, yet it is often the best that many end users can articulate.

If you are an end user, spend some time assessing how much time and effort you are willing to invest in any BI project; make sure you have the time. Once you have a clear evaluation and realistic view, it is time to spend some quality time with your IT folks to understand the data they will provide and how you will access it. It will be critically important to map your analysis requirements to the proposed data structure. Later, I will discuss BI efforts based upon roles and skills within the organization.

Figure 1-3 shows a theoretical graph of BI skills in contrast to the complexity of the business problem and analysis required. This is not an uncommon mismatch seen in many organizations. When we look at the right-hand side of the chart, we see a horrendous mismatch between the user skills and the problem at hand. If we have a realistic view of our own situation, we may evolve a better approach to our proposed BI infrastructure. In particular, we may drastically alter our data structure we provide.

You will not make up for the skills gap in such situations by acquiring a tool that is considerably easier to use than what you have in-house (unless you are writing in the assembler language or Sanskrit). Such a tool does not exist. At this point, it is more important to have a proper business case handy for the potential ROI for the required BI process and to make sure it is understood and agreed upon. If the return is high enough, additional resources are easily justified.



Skills versus Complexity of the Business Problem

Figure 1-3 Skills versus complexity of the business problem

Summary

As we continue our story about how best to enable and utilize BI at the enterprise level, it is beneficial to keep our vision statement in mind. If you really don't have one, it may help to take a moment and see if you can write one down. BI at the enterprise level is drastically different than departmental, localized efforts. It requires a holistic view of the organization, as well as a more altruistic approach to creating a BI infrastructure that benefits all associates.

The primary goal of BI at the enterprise level is to deliver critical business information and analysis from all data sources in context and in a timely manner. It requires a rock-solid infrastructure, a set of common goals by all, and a crystal-clear vision statement in which everyone truly believes. Terms such as "best effort" and "attempt" have no place here. It is not a game of horseshoes, where coming close to the stake may earn you a point; it is about speed and accuracy. Coming in #2 in a race may bring you more money than the others, but you are still behind #1. Being #1 is what it's all about.

We now begin looking at business intelligence in today's world and define it in today's terms.

Index

Α

acquisitions, mega-vendors, 45-46 administrators, 94 advanced analytics, OLAP and, 71-73 advanced authors, 94 agendas, creating information agendas, 62-64 aligning data with usage, 68 AMI Partners, 22 appliances, 51-52 application services tier, BI infrastructure, 43 articulating potential benefits, 150-151 assessing skills, 250-253 assumptions, end users, 65-67 setting up data for BI, 67-68 attributes of key influencers, 143-144

B

backup and recovery, 214-215 balanced scorecards, CPM systems, 112-113 basic authors, 94 benefits, articulating, 150-151 Besemer, David, 222 Betts, Mitch, 168 BI (business intelligence), 1 basics of, 242-243 ease of use, 243-244 characteristics of, 2, 5-7 versus data warehouse, 21-22 defining within your organization, 13-15 evolution of, 29-34 expectations of, 3-4 extending beyond the enterprise, 144-145

setting stage for success, 9 within end user community, 11 within IT organization, 9-10 setting up data for, 67-68 SOA and, 220-221 frameworks, 225-227 getting started, 221-224 vision and strategies, 8-9 BI appliances, 32, 51-52, 277 BI Competency Center (BICC), 62 BI infrastructure, 42-44 BI provisioning models, 61-62 establishing BICC (BI Competency Center), 62 BI roadmaps, 148-150 BI solutions, 18, 20-21 BI support, 188-191 BICC, 191-195 methodology of work submission and success, 195-196 vendors. 196 BI tools, 33, 69 data mining, 76-77 displacement, 38 EIS (Executive Information Systems), 80-82 ELT and real-time CDC options, 88-90 embedded BI and event-driven processes, 86-87 interacting with, 244-247 OLAP and advanced analytics, 71-73 open source, 47-48 operational BI, 83-85 platform selection database view. 164-166 tools view. 166-172 purchasers of, 36 query tools and reporting, 69-71 ROLAP versus OLAP, 73-74 spreadsheets, security/compliance, 79-80 text analytics, 77-79 time dimensionality, 74-75 BI tools support staff, 101-102

biases, platform selection for BI tools, 170-172 BICC (BI Competency Center), 62 checklists, 262-263 support for BI, 190-195 methodology of work submission and success, 195-196 vendors, 196 big purchases, justification, 153-156 BPM (business process management), 107-108 Brio. 45 business analysts, 101-102 business intelligence specialists, 206-207 business intelligence (BI), 1 basics of, 242-243 ease of use, 243-244 characteristics of, 2, 5-7 versus data warehouse, 21-22 defining within your organization, 13-15 evolution of, 29-34 expectations of, 3-4 extending beyond the enterprise, 144-145 setting stage for success, 9 within end user community, 11 within IT organization, 9-10 setting up data for, 67-68 SOA and, 220-221 frameworks, 225-227 getting started, 221-224 vision and strategies, 8-9 Business Objects/Crystal Reports, 45 business process management (BPM), 107-108 business unit level checklists, 260-261 business units, impact on justification, 151-153 business users, coordinating, 179

С

casual users, 104-105 categories, end users, 93-96 CDC (change data capture), 42, 55-57,87 Celequest, 52 characteristics of BI (business intelligence), 2, 5-7 charge-back systems, 30 charts, 176 checklists, 257 BICC checklists, 262-263 business unit level checklists, 260-261 enterprise checklists, 258-260 IT checklists, 264-266 CIO surveys, 5 Clarry, Maureen, 97 client/server technologies, evolution of BI, 30 cloud computing, 49-51, 277 clouds, measuring BI success, 160-161 Cognos, 45, 50 Cognos Connection, 231 CognosNow!, 52 collaboration, 23, 235-238 competition, BI as a key differentiator from, 22-24 compliance, spreadsheets, 79-80 consumers, 94 coordinating IT and business users, RFI/RFP, 179 CPM (corporate performance management), 108, 115-116 defined, 108-109 elements of, 109-111 balanced scorecards, 112-113 dashboards. 113-114 feedback, 114-115 strategy maps, 111-112 vision, 111 criteria, ranking, 179

D

dashboards, CPM systems, 113-114 data aligning with usage, 68 setting up for BI, 67-68 data access, RFI/RFP, 179-181 data mining, 76-77 data sources, 254-256 mapping by, 20 data warehouse versus BI (business intelligence), 21-22 data warehousing, 165 evolution of BI, 31 database view, platform selection for BI tools, 164-166 de Jonge, Kasper, 270 deployment versus product cost, 36 details, RFI/RFP, 176-178 displacement, 38-39 documentation, RFI/RFP, 181-182 dynamic warehousing, 52-53

E

ease of use, BI, 243-244 EBI (Enterprise Business Intelligence), 13-15 Eckerson, Wayne, 275 ECM (enterprise content management), 123-125 EDMS (electronic document management systems), 124 EIP (enterprise information portal), 229 EIS (Executive Information Systems), 80-82, 107 electronic document management systems (EDMS), 124 elements of CPM systems, 109-111 balanced scorecards, 112-113 dashboards, 113-114 feedback, 114-115 strategy maps, 111-112 vision, 111

ELT, real-time CDC options, 88-90 ELT-ELT, 56-57 embedded BI, 86-87 emerging BI technologies, 270-274 end users assumptions, 65-67 setting up data for BI, 67-68 categories, 93-96 expectations end-user provisos, 207-208 required skills, 205-207 scoping the first project, 203-205 setting, 202-203 IT support roles, 100-101 management, 96-97 non-technical and casual users, 104-105 populations by roles, 95 skills, definitions, 98-100 end-user productivity, 197-199 Enterprise Business Intelligence (EBI), 13-15 enterprise checklists, 258-260 enterprise content management (ECM), 123-125 enterprise information portal. See EIP (enterprise information portal), 229 enterprise portals, 229-232, 234 enterprise search, 125-128 RSS as a conduit for external information, 129 Essbase, 171 ETL (extract, transform, and load), 55-57 event-driven processes, 86-87 evolution of BI (business intelligence), 29 - 34Executive Information Systems (EIS), 80-82, 107 executive roles, 102-103 executive view of BI, 117-118 executives and senior management, 139

expectations for BI (business intelligence), 3-4 user expectations end-user provisos, 207-208 required skills, 205-207 scoping the first project, 203-205 setting, 202-203 extending BI beyond the enterprise, 144-145 external information, RSS as a conduit for, 129 external sources, 121 extract, transform, load (ETL) processes, 42

F

Federal Rules of Civil Procedure (FRCP), 122 feedback, CPM systems, 114-115 frameworks, BI SOA, 225-227 FRCP (Federal Rules of Civil Procedure), 122

G

gaps in technology, 274-276 Gartner Group, 191 Gartner, Inc., 270 Gentry, Jeff, 147 graphs, 176 Grimes, Seth, 133 GUI (graphical user interface), 69

Η

Heller, Martha, 138 Hyperion, 45

Ι

IBM, 45, 50-52 Cognos Connection, 231 enterprise search, 126 Texas Education Agency (TEA), 77 WebSphere Portal, 231 IBM Workplace, 236 ideal BI portal, 232 identifying power brokers, 140-143 Imhoff, Claudia, 54, 83 independents versus suites/platforms, 46-47 industry-oriented BI applications, 277 information agendas, creating, 62-64 Information Management online, 48 infrastructure of BI, 42-44 instant messaging systems, 237 interacting with BI tools, 244-247 internal record of BI usage, 34-38 internal sources, 121 Internet, evolution of BI, 31 IT, support roles, 100-101 IT checklists, 264-266 IT users, coordinating with business users, 179

J

justification articulating potential benefits, 150-151 BI roadmaps, 148-150 big purchases, 153-156 business unit impact, 151-153 ROI (return on investment), 156-158 scenarios, 148 TCA (total cost of acquisition), 156 TCO (total cost of ownership), 156

K

Kelly, Jeff, 238 key influencers, 140-143 attributes of, 143-144 extending BI beyond the enterprise, 144-145 killer criteria, 19

L

large purchases, justification, 153-156

М

management, end users, 96-97 managerial roles, 102-103 mapping by data source, 20 marginal players, 140 mashups, 234-235 versus portals, 235 Web 2.0, 277 Master Data Management (MDM), 58-59 matching RFI/RFP checklists to PoC/PoT and documentation, 184-185 MDM (Master Data Management), 58-59 MDX (multi-dimensional expressions), 73 measuring BI success, 158-160 clouds and outsourcing, 160-161 mega-vendors, 45-46 mergers, mega-vendors, 45-46 metadata access layer, BI infrastructure, 43 metadata layer, BI infrastructure, 43 Miller, Dorothy, 159 mission critical, 17-18 Mistri, Sunil, 48 MOLAP (multi-dimensional OLAP), 210 monitoring trends, 276-278 Morrison, Scott, 224 MS Excel, 172 multi-dimensional expressions (MDX), 73

Ν

naming conventions, 253-254 non-technical users, 104-105

0

ODS (operational data store), 10, 165 offsite hosting environments, 32 **OLAP. 67** advanced analytics and, 71-73 application elements, 210-211 evolution of BI, 30 versus query and reporting, 211 versus ROLAP, 73-74 open source BI tools, 47-48 open source providers, 277 operational BI, 54-55, 83-85 operational data store (ODS), 10, 165 operational intelligence, evolution of BI, 31 Oracle, 45 organizations, defining business intelligence within, 13-15 outsourcing, measuring BI success, 160-161

Р

performance, 212 RFI/RFP, 179-181 platforms, 15-16 selection for BI tools *database view, 164-166 tools view, 166-172* versus independents, 46-47 PM systems, 115-116 POC (proof of concept), 18 PoC/PoT, 182-183 documentation, matching RFI/RFP checklists, 184-185 portals, 235-238 versus mashups, 235 portlets, 230 power brokers, identifying, 140-143 presentation tier, BI infrastructure, 43 product cost versus deployment, 36 productivity, 25-27, 197 end-user productivity, 197-199 proof of concept (POC), 18 purchases, justification, 153-156

Q

query and reporting, 208-210 versus OLAP, 211 query tools, reporting and, 69-71

R

ranking criteria, 179 real-time BI, 54-55 real-time CDC options, ELT and, 88-90 records, internal record of BI usage, 34-38 recovery, backup and, 214-215 reporting query tools and, 69-71 requests for information (RFI), 175 requests for proposal (RFP), 175 responding to trends, 278 return on investment (ROI), justification, 156-158 RFI (requests for information), 175 RFI/RFP, 171, 176 coordinating IT and business users, 179 data access and performance, 179-181 details, 176-178 documentation, 181-182 PoC/PoT, 182-183 matching checklists to documentation. 184-185 RFP (requests for proposal), 175 **RFP/RFI**, 171 Robison, Lyn, 220 ROI (return on investment), justification, 156-158 ROLAP (relational OLAP) versus OLAP, 73-74

roles

BI tools support staff and business analysts, 101-102 business intelligence specialists, 206-207 end users, 95 executive/managerial, 102-103 IT support roles, 100-101 Rozenfeld, Joseph, 52 RSS (Real Simple Syndication) as a conduit for external information, 129

S

SaaS (Software as a Service), 48-49, 276 Salesforce.com, 49 SAP. 45 schemas, star schema, 56 Scheps, Swain, 249 Schiff, Craig, 81 scorecards, balanced scorecards, 112-113 search, text analytics and, 132-133 security, spreadsheets, 79-80 server consolidations, 276 server-based BI, evolution of BI, 31 service-oriented architecture. See SOA skills, 247-249 assessing, 250-253 definitions, 98-100 naming conventions, 253-254 required skills, 205-207 SOA (service-oriented architecture), 217-220 BI and, 220-221 frameworks, 225-227 getting started, 221-224 Software as a Service (SaaS), 48-49, 276 spreadsheets, security/compliance, 79-80 star schema, 56 strategies of BI (business intelligence), 8-9

strategy maps, CPM systems, 111-112 success BICC, 195-196 measuring, 158-160 clouds and outsourcing, 160-161 setting stage for, 9 within end user community, 11 within IT organization, 9-10 suites defined, 20 versus independents, 46-47 support for BI, 188-191 BICC, 191-195 methodology of work submission and success, 195-196 vendors. 196 surveys, CIO surveys, 5 Swoyer, Stephen, 153, 272 system sizing, 213-214

T

TCA (total cost of acquisition), justification, 156 TCO (total cost of ownership), 48 justification, 156 TDWI (The Data Warehousing Institute), 97 technology emerging BI technologies, 270-274 gaps in, 274-276 platform selection for BI tools, 168-169 Texas Education Agency (TEA), 77 text analytics, 77-79, 130-131 impact of XML on BI, 134 as part of complete BI picture, 133 search and, 132-133 The Data Warehousing Institute (TDWI), 97 time dimensionality, 74-75 tools, open source, 47-48

tools view, platform selection for BI tools, 166-168 handling biases, 170-172 technology biases, 168-169 traps, 170 total cost of acquisition (TCA), justification, 156 total cost of ownership (TCO), justification, 156 training skills, 247 traps, platform selection for BI tools, 170 trends monitoring, 276-278 responding to, 278

U

undo operation, 251 unstructured information, 122 usage, internal record of BI usage, 34-38 user expectations end-user provisos, 207-208 required skills, 205-207 scoping the first project, 203-205 setting, 202-203 user segmentation, 138-140

V

vendors BICC, 196 mega-vendors, 45-46 suites/platforms versus independents, 46-47 visions of BI (business intelligence), 8-9 CPM systems, 111

W

Watson, Hugh J., 271 Web 2.0 mashups, 277 web browsers, evolution of BI, 31 WebSphere Portal, 231 White, Colin, 50, 86, 108 Wise, Lindsay, 152 work submission, BICC, 195-196

X-Y-Z

XML, impact on BI, 134 XML data, 59-61 XML Query project, 134 XMLA (XML for Analysis), 134 XQuery, 134

Try Safari Books Online FREE

Get online access to 5,000+ Books and Videos





FREE TRIAL—GET STARTED TODAY! www.informit.com/safaritrial

Find trusted answers, fast

Only Safari lets you search across thousands of best-selling books from the top technology publishers, including Addison-Wesley Professional, Cisco Press, O'Reilly, Prentice Hall, Que, and Sams.



Master the latest tools and techniques

In addition to gaining access to an incredible inventory of technical books, Safari's extensive collection of video tutorials lets you learn from the leading video training experts.

WAIT, THERE'S MORE!



Keep your competitive edge

With Rough Cuts, get access to the developing manuscript and be among the first to learn the newest technologies.



Stay current with emerging technologies

Short Cuts and Quick Reference Sheets are short, concise, focused content created to get you up-to-speed quickly on new and cutting-edge technologies.





••> FREE Online Edition

Your purchase of *The New Era of Enterprise Business Intelligence* includes access to a free online edition for 45 days through the Safari Books Online subscription service. Nearly every IBM Press book is available online through Safari Books Online, along with more than 5,000 other technical books and videos from publishers such as Addison-Wesley Professional, Cisco Press, Exam Cram, O'Reilly, Prentice Hall, Que, and Sams.

SAFARI BOOKS ONLINE allows you to search for a specific answer, cut and paste code, download chapters, and stay current with emerging technologies.

Activate your FREE Online Edition at www.informit.com/safarifree

STEP 1: Enter the coupon code: LDRXAZG.

STEP 2: New Safari users, complete the brief registration form. Safari subscribers, just log in.

If you have difficulty registering on Safari or accessing the online edition, please e-mail customer-service@safaribooksonline.com



