

# Business Intelligence in Support of Business Strategy

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*Abstract:* - While all organizations start their business intelligence (BI) initiatives with the expectation of success, many struggle to align their technology approach to BI with specific business goals and objectives and as a result, deliver solutions that fail to meet business needs. But the fact is that organizational and political realities often prevent BI efforts from being fully aligned with the business. It can be difficult to get around organizational and political issues to open up the lines of communication between business and IT. Even if business and IT have a great relationship in the organization, maybe a more structured approach for helping promote a common understanding around the alignment of business goals and objectives for BI with the technology investments being made to support them will be needed. In the paper we suggest and explain such an approach that we call Mission Driven BI Architecture (MDBIA).

*Key-Words:* - Business strategy, business intelligence, business intelligence architecture, mission driven business intelligence architecture, alignment, business intelligence program mission statement,

## 1 Introduction

While all organizations start their business intelligence (BI) initiatives with the expectation of success, many struggle to align their technology approach to BI with specific business goals and objectives and as a result, deliver solutions that fail to meet business needs. But the fact is that organizational and political realities often prevent BI efforts from being fully aligned with the business.

According to one respectable survey [1], successful BI initiatives are almost five times more likely to have project teams in which information technology (IT) is 'very aligned' with the business.

This report defines successful BI initiatives as those that:

- support critical business processes,
- are seen by users as mission critical, and
- are meeting major users' needs.

It can be difficult to get around organizational and political issues to open up the lines of communication between business and IT. The 'If you build it, they will come' approach is likely to fail. And even if business and IT have a great relationship in the organization, maybe a more structured approach for helping promote a common understanding around the alignment of business goals and objectives for BI with the technology investments being made to support them will be needed [2].

We are going to suggest and explain such an approach that we call Mission Driven BI Architecture (MDBIA).

## 2 Mission Driven BI Architecture (MDBIA)

A subset of a broader business alignment methodology based on strategy and mission mapping [3], the approach melds business strategy mapping with information management strategy generation to provide a continuous alignment process. MDBIA is focused on data and related architectural requirements of BI programs- Its output informs and guides the design process used by the BI program to reflect and satisfy business imperatives.

### 2.1 A Step-Down Process

An MDBIA is developed through a 'step-down' process that creates specific linkages between high-level set of business needs for information and the technical architecture designed to support those needs. The linkage is achieved by 'stepping down' from a high-level, business-driven mission statement to a set of more specific business and IT objectives, then to a set of specific implementation criteria, and finally to the conceptual design of a long-term technical architecture for an improved BI program.

Each step in the process is linked to its predecessor and validated by both the business and IT communities, ensuring that the initial mission is supported. This method of architectural definition and validation ensures that the business understands how the chosen design and implementation to the BI architecture matches the goals and objectives they have set for the BI program.

In this way, MDBIA provides for dual authorship of BI architecture, mapping business imperatives with technology expertise. The MDBIA approach provides therefore the organization a structured method for involving both the business and IT in its BI efforts and builds credibility and momentum for all related initiatives.

## 2.2 Requirements Gathering

In order to begin the MDBIA process, the business drivers for improved business intelligence should be understood.

Gathering business driver information involves first identifying the leaders of organization's key customer groups. These individuals should be at a decision-making level of management, responsible for setting business goals and direction for their group.

The IT staff in charge should meet with each individual to discuss the general function of his or her group and try to identify, at a high level, what decisions the group is making and what information they need to make those decisions in an informed manner.

This will help identify the business drivers for business intelligence in the organization and will serve as the basis for drafting a 'straw man' business mission statement for the BI program.

## 2.3 Writing the BI Program Mission Statement

After collection of information on organization's business drivers, the MDBIA definition process begins with the creation and validation of a business-based mission statement for the BI program.

The group of key business leaders – individuals who lead the functional departments as potential users of business intelligence – should be brought together to discuss and come to consensus on a business mission statement for the BI program. These working sessions are structured to provide a careful blend of brainstorming and group resolution and validation. A well-trained and/or experienced facilitator provides structure, guidance, and cadence to ensure productive outcomes.

The group can start from scratch, although it is often very helpful to use a straw man mission statement, drafted based on business driver interview information, to discuss, modify, and validate. The mission statement should be drafted in such a way that its applicability could be extended beyond the initial BI program scope and be applied to a true enterprise scope.

The mission statement should address the information content and access capabilities necessary to support the general business drivers previously discussed.

An example of a BI program mission statement could be the following:

'The primary mission of the BI program is the empowerment of business improvement opportunities for its sponsors through the delivery of information to the business community reflective of business processes and outcomes with appropriate levels of formatting, timeliness, history, detail, and quality to provide a reliable foundation for targeted business improvements.'

## 2.4 Segmentation of the Mission Statement

In order to promote a common understanding and to facilitate consensus and validation of the mission statement, it may be useful to decompose the mission statement into few segments. This process is undertaken using input from original interviewers with information customer group leaders. This information is essential to accurately dissect the mission statement.

Organizations often choose to customize a draft or a straw statement based on the information provided in interviews. Parsing the initial statement can stimulate discussion around the relevance of each piece, as well as facilitate a better understanding of its overall meaning.

An example of how the BI program mission statement above can be segmented is as follows:

'The primary mission of the BI program is the empowerment of business improvement for its sponsors through

- the delivery of information to the business community
- reflective of business processes and outcomes with appropriate levels of:
  - formatting,
  - timeliness,
  - history,
  - detail, and
  - quality

to provide a reliable foundation for targeted business improvements.'

Most initial mission statement attempts will not parse so easily as they are not written for this purpose. Some time and revision is needed to establish a strong statement with appropriate levels of detail.

## 2.5 Creating a Set of Strategic Objectives

Once the mission statement has been created and validated, a group of key business architects are identified to define and ratify the strategic objectives that follow from the mission statement with more specific and actionable statements around the goals of the BI program.

The objectives should then map to a segmented version of the mission to ensure that all aspects of the mission are supported by the set of objectives.

Three distinct strategic can be identified from the mission statement presented earlier:

- Provide business sponsors with clear opportunities to improve their business performance through information delivery.
- Deliver information to the business community reflective of its processes and their outcomes.
- Provide appropriate levels of formatting, timeliness, history, detail and quality as are specified in business validated release or project specifications.

As it can be seen, these strategic objectives are high-level action statements that address enabling the various aspects of the mission. During this process, it is acceptable for the group to make slight changes to the mission statement in order to properly align its objectives.

## 2.6 Generating Strategic Measures

A combined group of business and technology leaders dedicated to the BI program can generate meaningful

measures for its success from the forgoing work. It is important to note that these are not data architecture measures; they are strategic business measures for the performance of the program against the strategic objectives.

This enables IT to understand the basis for their performance reviews, funding process, and sponsorship support. It also serves to further decompose the business semantic and ontology to a level at which translation into a technical semantic can be accomplished.

Once these are drafted, a simple template or table can be constructed tracking the lineage of the mission statement to strategic objective to strategic measure. This provides a summary document for validation with various sponsors and stewards as well as a change control platform.

Table 1 is an example of a document summarizing all important information related to the BI program mission statement cited earlier in the paper (see chapter 2.3).

Sample	Mission Statement Item	Strategic Objective	Sample Strategic Measure
1.	Empowerment of business improvement opportunities for its sponsors	Provide business sponsors with clear opportunities to improve their business performance through information delivery.	Defined value increments with time-based delivery windows that equate to business opportunities for improvement such as campaign management and product delivery channel changes.
2.	Delivery of information to the business community reflective of business processes and outcomes	Deliver information to the business community reflective of its processes and outcomes.	Number of accepted delivery mechanisms providing 3Cs (comparability, consistency, convenience) of information to support better processes and execution (outcomes).
3.	Appropriate levels of formatting, timeliness, history, detail, and quality	Provide appropriate levels of formatting, timeliness, history, detail, and quality as specified in business validated release or project specifications.	Number of users, groups, and business functions accepting new information delivery as primary or exclusive source of decision support including summary, detailed, current, and historical requirements.

Table 1 – Document summarizing all important information related to the BI program mission statement

## 2.7 Generating and Validating Requirements

The next step in the MDBIA definition process is to translate the business semantic and ontology into the basis for an IT semantic. The translation process takes the strategic objectives and measures and derives more technical program requirements.

These are expressed in business terms but are developed specifically to support more technical requirements and program standards going forward.

These will support reference architecture standards as well as specific program requirements at the information architecture level.

The process of deriving and defining key program requirements is more involved than time and space permit in this paper. An example of one set of requirements that follows logically from its precedents might be as it is shown in Table 2.

Sample	Strategic Statement	Strategic Measure	Sample Program Requirements
1.	Provide business sponsors with clear opportunities to improve their business performance through information delivery	Defined value increments with time-based delivery windows that equate to business opportunities for improvement such as campaign management and product delivery channel changes.	BI program must operate to provide a standard cadence of value delivery in discernable and agreed upon increments (releases) over set periods of time with constant resource levels. Further, the program must maintain a business priority validation process to ensure that each release support currently required business improvement opportunities. Finally, the program must operate in such a manner that it can support rapidly changing business opportunities without excessive scrap and re-work.

Table 2 – An example of one set of requirements

Once established and validated with the business, these requirements may be taken by IT management and used to generate program specifications and planning details. This is a key activity in the MDBIA process in that the business is now handing off the process to its IT counterparts for more detailed design.

Attempting to develop an architecture in a vacuum will lead to a lack of acceptance from the business community, and a wasted investment of time and money. As Hostmann and Buytendijk say, 'Architecture is all about communication' [5].

## 2.8 Creating BI Architecture Criteria

After the requirements have been validated, IT personnel should break out into subgroups, delineated by area of responsibility/expertise, to create the design criteria necessary to support the agreed-upon objectives.

These criteria will be composed of specific action statements that must be accomplished in order to

achieve the desired objectives. The architecture criteria will serve to scope, guide, and constrain the design and implementation approach of the BI technical architecture.

The criteria are usually organized into the three implementation components:

- Project criteria
- Release criteria
- Solution criteria

A Project is coordinated set of activities to develop or deliver an application to business users. Projects may deliver reporting and analytic functionality to a set of specific business users in phases [6].

A Release is the delivery of data to certain BI program that satisfies the information requirements of one or more projects or phases.

A Solution is the complete packaging of the comprehensive BI software to business users. It uses a foundation of four pillars or solution architecture; data, processes, organization and includes both a data

component and an application component. Data and application components can be tightly or loosely coupled so that releases and projects may be delivered jointly or separately [7].

For example, it may be desirable to schedule releases that add subject area coverage or additional data that requires no changes to existing BI applications. Similarly, projects may add new analytic capabilities that do not require additional data. But, sometimes linkage is either desirable or unavoidable [8].

Once the breakout groups have developed the implementation criteria for their area of responsibility, all IT participants are brought together to review and discuss the overall set of criteria. The criteria are also mapped to the set of objectives to ensure complete coverage.

It should be noted that the criteria need not be validated by the business, as many of the criteria will be technical in nature. The business should have the access to the criteria-to-objectives mapping so that interested parties can review and ask questions about the relationship between the validated objectives and the resulting implementation criteria.

## 2.9 Mapping and Validating

The organization is now ready to map and gap its current BI architecture against each of the individual architectural criteria to identify areas that must be enhanced to ensure full support of the mission statement and business expectations. These enhancements then can be assembled to create a long-term technical architecture approach, which should be validated against any known and specific documented BI requirements.

Each documented set of requirements should be mapped to the long-term technical architecture approach to verify that the functionality required is supported. In this way, the architecture approach is tested against the specific, known functionality requirements that will most likely be implemented in initial phases.

Once the end-state architecture is validated and cost-beneficial enhancements are identified, phased implementation planning, resource identification, cost estimation, and funding approval for a phased program for improving a Mission Driven BI Architecture can begin.

user acceptance and amplifies the benefits received from the BI investment.

It may be worthwhile to consider the current BI program and validate it with its business sponsorship's mission. The organization should try and attempt to create a 'straw model' mission map for its BI program and validate it with all its relevant and important sponsors.

The broader implications of the translation of strategic objectives and measures into BI program architecture requirements should also be considered. In the first place, it should be considered what is the process for this translation, how can its consistency with business-based objectives be demonstrated, and what is the capacity of the current program to accommodate the specified set of requirements.

## References:

- [1] Colin White, Developing a BI Strategy for CRM/ERP Data, <http://www.tdwi.org>, 08/2004.
- [2] Eckerson, Wayne. *Smart Companies in the 21st Century: The Secrets of Creating Successful Business Intelligence Solutions*. The Data Warehousing Institute, Seattle (WA), 2003.
- [3] Zeljko Panian, Data Protection – A Key Issue when Realigning IT with the Business, *WSEAS Transactions on Computers*, Issue 11, Volume 4, 11/2005, ISSN 1109-2758, pp. 1556-1563.
- [4] Anne Lapkin, The Seven Fatal Mistakes of Enterprise Architecture, <http://www.gartner.com>, 02/2005.
- [5] Bill Hostmann and Frank Buytendijk, The Five 'Fatal Flaws' of BI, <http://www.gartner.com>, 03/2005.
- [6] Melissa Cook, *Building Enterprise Information Architecture*, Prentice Hall, Inc., Englewood Cliffs (NJ), 1996.
- [7] Robert S. Kaplan and David P. Norton, *The Strategy Focused Organization*, Harvard Business School Press, Boston (MA), 2001
- [8] Ted Friedman and Bill Hostmann, The Cornerstones of Business Intelligence Excellence, <http://www.gartner.com>, 04/2004.

## 3 Conclusion

A Mission Driven BI Architecture (MDBIA) provides the tools the organization needs to align its business intelligence efforts with its business strategy, goals, and objectives. Business/IT alignment leads to increased