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## FROM Strategy TO Execution

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Into the Right Hands Fast

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**LELIA MORRILL** & **HEMANT WARUDKAR**

How can business intelligence improve the whole information value chain? The answer requires a network approach that integrates standalone applications and data resources to deliver timely intelligence across the enterprise

# FROM STRATEGY TO EXECUTION

## Between

the worlds of strategy and execution lies the vast space of BI. On the strategy side, BI answers questions about what has happened: What can be improved? What isn't yielding value to the corporation? What should be discarded? On the execution side, BI is key to answering questions about what's happening now: How is the value chain flowing? Where are the stoppages? Is marketing coordinated with suppliers, logistics, distributors, and stores?

### IMPERATIVE 2

Extend the power of your IT systems to all stakeholders, including external partners and customers, so they can make smarter decisions.

For a complete list of imperatives for the intelligent enterprise, visit [IntelligentEnterprise.com](http://IntelligentEnterprise.com).



**FIGURE 1** *Data marts offer point solutions within each unit, but are not integrated or synced up for value chain flow.*

Some of these questions can be answered with today’s BI technology, but the answers are usually limited to a particular situation and department. Most questions that deal with issues across an enterprise or at a market level go unanswered.

Companies that lack coordinated applications or integrated databases struggle to get a pulse on their value chain throughout the day. Some look to enterprise resource planning (ERP) as the solution to application and data integration; however, transitioning from old systems and cutting over to new ones can be an intricate, multiyear effort.

Many companies have tried using data warehouses with BI applications to deliver valuable information to users, but translating business needs properly can be a complicated undertaking with a delayed return. Another limitation: Warehouses’ focus on historical analysis, not on operating the value chain. Companies of all sizes have implemented data marts, but these marts are usually point solutions that solve analysis questions for a specific business area. Marts are rarely coordinated across the enterprise to communicate with each other. (See Figure 1.) Operational data stores (ODSs) provide a way to integrate operational data; however, they focus on unburdening transactional reporting, not on facilitating value-chain intelligence flow.

So, how can a company monitor the activity across its supply/value chain and coordinate core functions using information to optimize business processes, with very little impact to its current environment? The answer is the BI network infrastructure (BINI), which enables information sharing, exchange, and movement, passing intelligence between core functions so that the business can be monitored across the enterprise. A BINI isn’t about ERP-level integration, data warehouse organization, historical or multidimensional analysis, online analytic processing (OLAP), or predictive modeling. Rather, a successful BINI project focuses on the infrastructure and enterprise processes necessary to integrate and unite information and analytic models from any type of system, whether operational or decision support.

**THE BI NETWORK**

Gartner describes a BI network as supporting “an interconnected, nonhierarchical network of knowledge workers who jointly develop, share, and connect data, metadata, data/process models, analyses, and decisions. [The workers] use a collaborative BI framework to achieve shared insight more quickly, enabling faster, better, and more accountable decision making.”

Gartner forecasts that BI networks will come to mainstream use by 2008. But the BI network Gartner describes includes technology components such as collaboration, workflow, and enterprise application integration (EAI) software. Although these are all valuable, they complicate development of a BI network — which explains the group’s 2008 forecast.

If you focus on building the BINI — the infrastructure — you can start passing core metrics across your BI network today, leveraging the technology you already have with very little spending for new tools. Creating an architectural layer that sits on top of corporate applications and databases will let you cull the high-line information from your operational and historical environments with little or no impact to current systems.

We recently completed a project with the objective of developing an enterprise business activity backbone for a billion dollar corporation that deals with life-cycle management of perishable commodities. The BINI was meant to be the architectural glue for the flow of operational information and intelligence between all stand-alone enterprise applications in near-real time. Executives wanted to monitor the business operations as a whole, not just function by function, in order to optimize portfolio performance. We implemented the BINI with business activity monitoring (BAM) dashboards in just six months, in sync with the company’s acquisition of several new facilities. The system has been running successfully with no hitches since day one.

**KEY BINI ADVANTAGES**

BINI pathways let you pass information across the enterprise, kicking off processes, sending alarms, and keeping the value chain well oiled, through user-defined thresholds. The BINI is all about unstopping the value chain — delivering information where it’s needed, just in time.

Most executives are in a fast-moving vehicle without immediate access to the information they need to stay ahead of the competition. A flexible infrastructure that can unite information from stand-alone, legacy, ERP, and decision-support applications across the company enables executives and managers to easily and effectively monitor business activities day to day and year to year. A BINI provides this adaptable infrastructure, along with the following benefits:

- Enterprise-level exposure to analyzed, core metrics
- Intelligence delivered to operational applications across the value chain, with accompanying triggers and alarms

## A BINI lets you start passing core metrics across your BI network today, leveraging the technology you already have with very little spending for new tools

- Architectural glue for disparate applications, which lifts business units out of their silos
- Implementation with little or no impact to current systems (the BINI sits on top of operational applications)
- Data delivery in near real time via extract, transform, load (ETL) — a much cheaper option than real time via EAI
- Minimal up-front technology investment — most large companies already have ETL and dashboard software
- An intelligence flow that can assist both operational and decision-making workflow.

In BINI, the emphasis is on the operation of enterprise intelligence movement, not the generation of intelligence, which allows for streamlined design and implementation.

### WHAT IS BINI?

Based on our BINI implementation experience, we chiseled out the following objective:

A BINI is designed and implemented to deliver core intelligence across the enterprise to all critical points along the value chain, fully integrating the key metrics of each business unit without affecting stand-alone application and data environments, with an overarching objective of providing executives and management with the means to monitor and optimize operational business activity.

A BINI achieves its greatest value when it enables a smooth running information value chain — with Wal-Mart-like efficiency — that moves intelligence across the enterprise and between all internal and external business units and their applications and databases.

We found the following components necessary to successfully meet the objective we described:

### CRITICAL BINI SUCCESS FACTORS

- Executive requirement to optimize value chain
- Recognized need to move with insight, speed, and flexibility in the marketplace
- Executive-level directive for full cooperation of all business units within the value chain
- Experienced BINI team
- Expert knowledge of business and technology
- Robust ETL tool
- Dashboard strategy.

- An infrastructure for moving intelligence that can be designed and implemented quickly and provides a centralized management framework
- The intelligence, which already exists in whatever form each business unit generates
- An intelligence schema, which should include an operational intelligence store (OIS) focused on housing shared intelligence for reporting and delivery from transactional and decision-support systems and a star schema for efficient dashboard delivery
- Management dashboards.

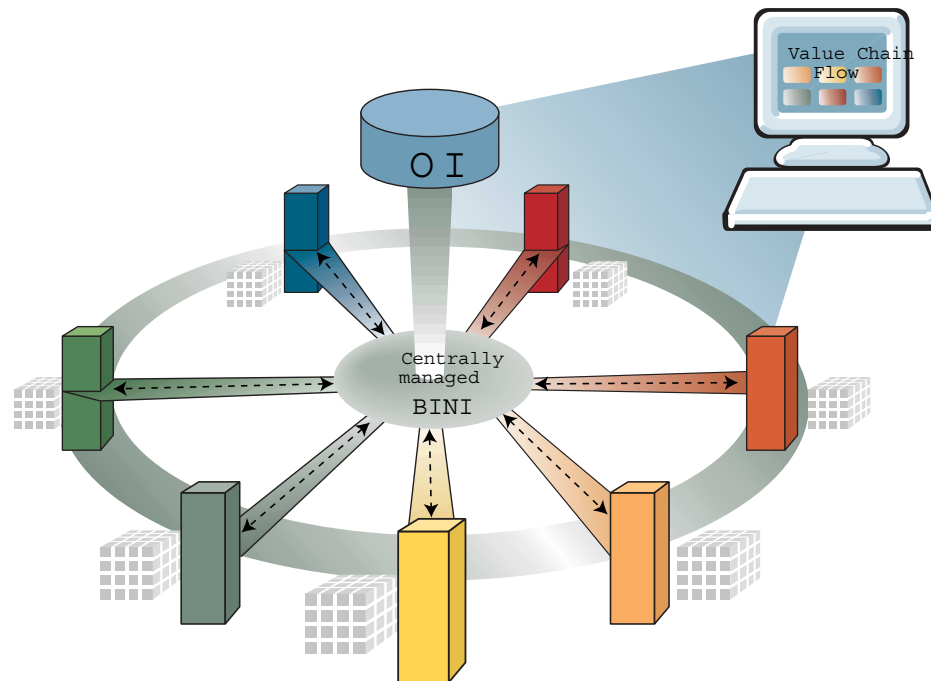
A BINI makes a company agile and dynamic, with a current and future focus. It's a system that enables enterprisewide, end-to-end monitoring of business activity up and down the value chain. The project life cycle is fast compared to other BI enterprise implementations because it's focused on outcomes, not on the generation of intelligence, which should be handled by each business unit. Instead, the core BINI functionality is movement, formatting, storage, and distribution of already generated intelligence. If the BINI can transform data into intelligence or if, by its very existence, the data is intelligence to another unit, then it's considered corporate intelligence and is fit for moving through the framework.

A BINI with a business activity monitoring (BAM) focus is a monitoring environment, not an interactive analysis environment. Most executives and management only want to see the bottom line. Analysis is the responsibility of each business unit. The BINI provides the integration architecture for the value chain; it's the glue that binds silo business-unit intelligence together, whether generated from operational functions, Excel, a data warehouse, OLAP, or data mining.

With a BINI in place, a company doesn't have to look to OLAP or the data warehouse to provide the enterprise infrastructure needed for optimizing the value chain. If the company wants to develop enterprise analysis, then OLAP and data mining tools used against a data warehouse can leverage the BINI. If those outcomes become valuable to running the value chain, they can be integrated into the BINI.

A BINI can provide future interfaces to the following technologies without requiring any upfront investment:

- Data warehouse, for historical and mined analysis
- OLAP, for dimensional reporting of operational and historical data



**FIGURE 2** BINI is designed to connect silos; integrate, standardize, and deliver intelligence; and provide mechanisms for alerts, workflow sequencing, activity monitoring, and metric life-cycle comparisons.

- ERP BI, in concert with ERP applications
- Collaboration tools, for more interactive involvement of users
- Workflow tools, for precisely defining value chain flows with highly engaged users
- EAI, which takes the BINI to real time.

### BINI COMPONENTS

The difficulty and complexity in developing a BINI comes in designing for a common intelligence integration scheme, from both a data and process point of view. As with any enterprise implementation, business units must agree on what's needed, what the sources and targets are, the basics of intelligence definitions, and the overall business activity flow and sequencing. The infrastructure itself includes four standard, recognizable components: integration architecture, business knowledge, an experienced team, and the technology.

**Integration architecture.** The integration architecture is the framework for bidirectional pathways that deliver shared intelligence to core business applications and BAM dashboards. It includes:

- An integration platform, the tool (we used ETL) with which the design and management of all formatting processes take place and which transforms data to information or intelligence while accounting for the differing views and formats needed by each business unit
- The business architecture, which evolves into the business activity flow and becomes the framework for a fully event-driven BINI
- An intelligence architecture, which comprises shared intelligence from and to the dashboard and each application; it also forms the foundation for the OIS. The OIS houses intelligence shared by two or more applications and information needed for enterprise analytic reporting and enterprise-level compliance reporting. The OIS also is the

foundation for the star schema that provides dimensional views of activity metrics to the dashboard. (If interaction is needed, OLAP should be leveraged.)

**Business knowledge.** A sound, relevant BINI requires business participation. The necessary business ingredients include:

- Knowledge of core intelligence per business unit
- The ability to generate intelligence within each business group
- The ability to receive, decipher, and use intelligence from other business groups.

You'll need to create a new position for a person who has overarching knowledge of the value chain, including business processes, workflow, and technology underpinnings.

As in all enterprise endeavors, executive support is key to ensure full cooperation from each business unit. Each unit should contribute:

- A domain expert to translate the business activity as it relates to the unit's goals, objectives, strategies, and execution plans, as well as the unit's role in the overall value chain. This person will identify the information and intelligence the unit requires from other units, as well as the business timing, events, and triggers within the business workflow.
- An application expert to provide knowledge of the data, including where it resides, formats, system issues, and so on. This person takes part in defining the attributes necessary for the interfaces, integration, and system events within the application workflow.

**Experienced BINI team.** Developing a system to integrate information and intelligence from any source takes a high degree of technical expertise combined with the ability to rapidly synthesize business knowledge. Pairing data sources with developers is a good way to manage this multidimensional affair. Doing so helps ensure that everything will be in sync at the end of the project. A solid team would consist of:

- Project manager (who can double as solution architect)



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- Technical architect (who can double as ETL guru)
- Information architect (who can double as SQL guru)
- Integrator developer (matched to application streams)
- Dashboard developer (responsible for integrated reporting).

**Technology.** You can achieve a basic but extremely effective BINI implementation with the following foundational tools:

- ETL, which is used to develop pipelines, movement and transformation processes, delivery mechanisms, alerts and notifications, and business activity flow
- A relational database management system, for use in the OIS
- A data modeling tool, used to develop logical OIS and star schemas
- Management dashboards, which are easy to use and to interpret for enterprise business activity monitoring. Dashboards provide sets of views and replacement/overlay/comparison schemes that enable viewing of the metrics life cycle (comparing forecasts to actuals to final outcomes).

**HOW IT WORKS**

A BINI design achieves integration so that the value chain has the motorized communication mechanisms that are urgent to business flow. (See Figure 2.) In a retail business, for example, the warehouse, logistics, and product applications are informed whenever there is demand at the store. Processes are triggered to ensure that the stores have product when customers come in to purchase. The analysis output from all major operational systems is moved through the BINI and delivered to multiple applications and business groups on an as-needed basis, just in time.

Once constructed, the BINI isn't readily apparent to business constituents. For example, when you order goods from a catalog, you don't think of the infrastructure that gets the shipment to you, you just happily open the package when it arrives. With BINI, the roadways, processes, triggers, and thresholds are all defined and constructed to seamlessly ship the goods (in this case intelligence) directly to a business user, an application, your application's database, or to a dashboard.

BINI satisfies situations in which companies need enterprise data integration but don't have the time or money to redesign and reimplement new systems. It's appropriate when there are autonomous business units that are in charge of selecting their own applications. It's also a good solution

when there are external parties to deal with, such as suppliers, distributors, or warehouses.

**INTELLIGENT FOUNDATION**

Corporate management wants to know what's going on in the business today and how to recalibrate core business functions as they relate to the value chain for the most profitable future. Yet integrating the necessary data from disparate sources is a constant struggle. A BINI provides the infrastructure for moving enterprise intelligence for insight into the value chain. It also provides an infrastructure for BAM and a no-impact architectural glue that binds operational and decision-support applications together. A BINI makes it possible to integrate and distribute shared reporting and analysis generated by operational applications, online analytic processes, and data mining.

Enterprises can use the BINI as the foundation for comparing, calibrating, and recasting predictive models as they degenerate over time. A BINI can also help a company move into the future through feedback loops for optimizing business forecasts and comparing forecasts to actual results.

When executives want to monitor the value chain end to end, understand today's operations, and gain insight into planning the future, a BINI implementation with a BAM focus might be the best bet. **ie**



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