

# 5 Keys to McKesson's Rapid BI Transformation

It wasn't long ago that McKesson Pharmaceutical, a \$61 billion business unit of San Francisco-based McKesson Corporation, could not take the consistency of its data for granted. It had multiple data repositories and reporting systems for order processing, and inventory management and finance connectivity among those systems was limited. It was very difficult to collect and reconcile information across the systems. In short, McKesson Pharmaceutical suffered from data proliferation.

Today, the company's executive, finance, sales, and logistics arms are in the process of exercising their reporting and analytic activities through a common SAP BI infrastructure. The benefits of transforming a fragmented business intelligence infrastructure to one that is unified on the SAP BI platform are and will continue to be significant.

Consider McKesson Pharmaceutical's inventory processes. In its original fragmented form, the company's IT infrastructure lent itself only to conducting semiannual reconciliation of inventory, a process that hindered inventory projections and predictability. Logistics and finance personnel had to manually extract and merge data from different distributed systems to achieve a composite view of inventory. This time-consuming data-gathering process made discrepancies more difficult to resolve.

McKesson Pharmaceutical's new BI infrastructure operates on a single, integrated SAP BW platform, which serves as an enterprise

data warehouse (EDW) on which it has implemented a unified approach to resolve inventory issues. McKesson Pharmaceutical can now conduct more effective and timely research into inventory adjustment transactions. According to Brian Hickie, vice president of business intelligence for McKesson Pharmaceutical, "The operations and finance teams can spot inventory issues as they arise, not months later, and now can perform next-day root cause analysis. With high-value products selling at a low margin, small loss quantities — due to product dating, for example — can have a significant financial impact. We are realizing significant benefits from the inventory analytics solution and related process improvements alone."

With McKesson Pharmaceutical's current EDW architecture, data extraction and merge operations are automated. Logistics and financial managers receive aggregated views on a next-day basis. If they spot activities that fall outside the bounds of defined thresholds, they have the

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*photographs by* **Anne Knudsen**

# McKESSON

*Empowering Healthcare*

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drill-down tools to investigate. Get to the root cause of an inventory problem faster, and you stave off current and potential future profit leaks.

Look to McKesson’s drop-ship processes and you also see tremendous benefits being achieved. Now, sales and finance managers get automatic next-day updates regarding drop-ship activities instead of monthly ones, and they can quickly drill into the business process through a specialized data mart. This data mart has enabled in-depth visibility into this process, and as a result, managers can make better-informed and faster decisions about drop-ship transactions and other related matters. Customers are better served, and McKesson Pharmaceutical is more competitive.

While measuring intangible benefits such as productivity gains across the employee population is typically quite significant, it proves sometimes to be elusive. According to Hickie, “Across the board, we are seeing more productive employees. Time that used to be spent painstakingly gathering and merging data can now be devoted to analyzing and acting upon it.”

From start to finish, implementing SAP BW as an EDW, developing various process-based analytic solutions,

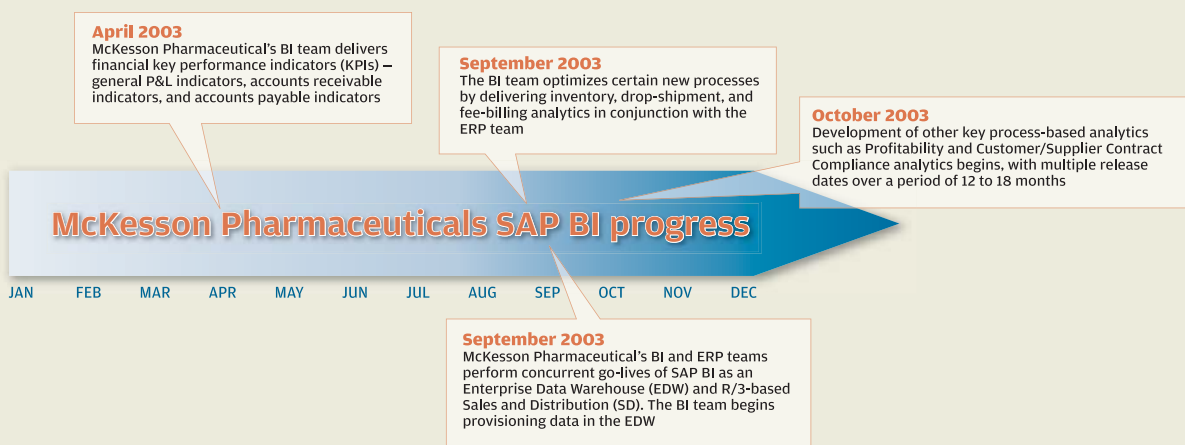
rolling them out, and having users comfortably and actively interacting with them will, in the end, take a little more than two years. The timeline below shows the progression of the project.

#### Four Challenges

A project of this magnitude presented Hickie and his team with four significant challenges:

- 1. Significant transactional and master data volume.**  
 This volume, estimated to be 15 million records per day (about 5 gigabytes), needed to be extracted from source systems and loaded into SAP BW on a daily basis. To achieve a high degree of scalability, all data loads would be partitioned based on a logical separation of the data targets. This logical partitioning (e.g., by time period, location, etc.) would allow the SAP BW system to handle data volume loads of as much as 26 million data rows per day. Hickie’s team designed the SAP BW system to handle up to 10 terabytes of productive online data. Setting key milestones allowed the team to conduct critical proofs of concept to ensure the EDW architecture would be scalable and have acceptable performance.

#### Inception to rollout and SAP BI user adoption in a little more than two years



The screenshot displays the McKesson Business Intelligence interface. At the top, there is a navigation bar with tabs for Sell, Finance, Operations, Contract Compliance, BW Query Definitions, ESS BI Support, and Links. Below this, there are several panels:

- General Message:** A message from the Business Intelligence Team regarding changes to User Roles in BW.
- Report Issues:** A list of report categories including Sell, Buy, Finance, Contract Compliance, and Profitability.
- General Info:** Information about submitting questions to the ESS Support Center, SAP/BW GUI Patch Instructions, browser window resizing instructions, and a download link for IE 6.0.
- Sell Load Status:** A table showing the status of various data loads for the Sell process. The table has columns for MultiProvider, description, and Status.
- Buy Load Status:** A table showing the status of various data loads for the Buy process. The table has columns for MultiProvider, description, and Status.

Red callout numbers 1 through 5 are placed on the interface to highlight key features: 1 (Navigation), 2 (General Message), 3 (Report Issues), 4 (General Info), and 5 (Load Status Tables).

## McKesson's BI Interface

1. Processes for which analytics exist (BEx Web and Excel), where users can see and access all reports by process; other general links also provided
2. General messages to users notifying them of any issues, upcoming changes that may affect them, etc.
3. Any specific report/analytic issues by process
4. General information for users such as how to log a problem/issue ticket, how to update the GUI front end, or other FAQs
5. Data load status of EDW layers (ODSs, InfoCubes, and MultiProviders) by process; where users will come to find out if data for their process analytics has finished loading from the night before

**2. A demanding user base.** The business users wanted process-based analytics as soon as possible. “The users knew that BI could help them make more informed and effective decisions and ultimately enable them to assess the results in a timelier manner,” says Hickie. His team chose to serve the financial area first because the SAP R/3 FI module had been up and running for a couple of years, and there was quite a bit of in-house expertise in this realm. Implementing the financial KPIs proved to be an immediate win for the BI team on two counts. For the finance organization, it satisfied demand for much-needed, enhanced analytical reporting. For Hickie’s team, it generated a much-needed groundswell of support for the rest of the implementation.

The user demands for information and the level of user sophistication determine the user interface for the analytics. So, another way the BI team worked to keep users happy was to provide reports and analytics in a manner appropriate to their roles. Toward this end, the team has developed and continues to implement a five-level reporting and analytics solution:

- Users can access the analytical tools from the **BI home page** on the company intranet. This single point of entry helps minimize the frustration from the earlier system where users had to search for reports in lower-level application pages.
- The **scorecard** presents high-level KPIs or executive-level measurements — delivered for only certain process-based analytic solutions to date. Scorecard and dashboard analytics (described below) are delivered through SAP BW, which uses precalculation and caching to improve performance on analytical queries that involve large data sets.
- The **dashboard** provides as many as six measures to support a single KPI (for example, viewing a regional analytic by distribution center or customer) — delivered for only certain process-based analytic solutions to date.
- **BEx Web reports** allow users to answer questions through additional research or drill down to specifics

(for instance, analyzing inventory discrepancies) — delivered for all process-based analytic solutions to date.

- **BEx Excel** allows users to create detailed analytical reports — delivered for all process-based analytic solutions to date. About 300 upper- and mid-level managers and financial analysts can now access analytical reports via SAP BEx (Web and Excel).

**3. A complex transactional systems environment, plus a brand new SAP R/3 implementation.** Data would need to be extracted not only from an existing SAP R/3 system, but also from several legacy systems, including a mainframe and a proprietary distribution center warehouse management solution. Adding to the challenge was a first-time implementation of SAP R/3 Sales and Distribution (SD) and Materials Management (MM) applications that would occur simultaneously with McKesson’s BI project. This implementation included moving order processing and inventory activities from a legacy system to SAP R/3 SD and MM.

The joint projects would require the BI and R/3 teams to synchronize and integrate their activities. The R/3 team focused on modeling and configuring the processes, while Hickie’s team designed the EDW and devised ways to capture the new SAP R/3 MM and SD data, as well as data from other systems, that factored into order and inventory activities.

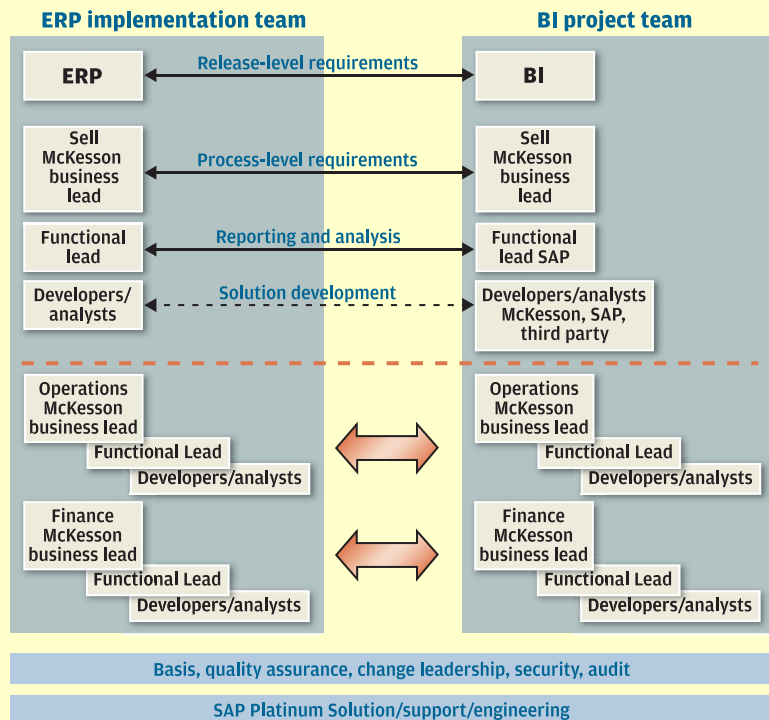
**4. Limited experience implementing SAP BI.** To compensate, Hickie included a balance of business, functional, and technical resources on the BI team. Hickie notes, “We clearly defined the team roles — skills and responsibilities required. With the roles defined, we could conduct a skills assessment for each project resource based on the definition.” He cautions that you “need to be prepared to transition resources — consultants and employees — if the skills are not appropriate.”

While McKesson Pharmaceutical’s BI team had internal resources available, it also relied on SAP and third-party consultants. The implementation teams were broken out by processes such as sell, finance, buy,

## Critical BI Team Roles/Responsibilities

Assembling a team to carry out such a large and difficult SAP BI implementation project as McKesson Pharmaceutical faced was a challenge in itself. The SAP BI implementation team focused on KPI analysis and development initially. However, the SAP R/3 implementation of SD and MM was happening at the same time. This concurrent

The ERP and the BI teams aligned on each level of the project organization. At the highest level, project leadership defines the project release level requirements — what solutions are going to be delivered and when based on business requirements. On the next level, the business lead, in conjunction with the primary business owners, is responsible for defining the process/transaction-level requirements. The functional lead, in conjunction with the primary business owners, is responsible for determining the information requirements — the analytic/reporting requirements. Developers/analysts are ultimately responsible for designing, developing, and deploying the R/3 and BI solutions. The same project structure existed for each process team within the project. Supporting teams, such as Basis, internal audit, and quality assurance, spanned across the process teams.



profitability, compliance, and operations. Internal business resources at McKesson were responsible for leading each implementation team. They managed the teams, gathered business requirements, and translated those requirements into technical designs. Each implementation team also had architects and developers. Internal technical resources made up the architectural teams; developers were typically consultants who were brought on board for specific technical knowledge and who were responsible for the transfer of knowledge to internal team members. The sidebar below, “Critical BI Team Roles/Responsibilities,” provides detail on how the teams were structured.

Knowledge gained from the implementation was not lost. The BI team established the EDW principles and guidelines to ensure future releases would follow the same implementation standards.

## 5 Keys to McKesson’s Success

Ask Hickie how McKesson Pharmaceutical was able to successfully implement BI and execute such a transformation in a short amount of time, and he cites five keys to success:

**1. Establish SAP BI scope ownership.** The business owners must sign off on the project charter and scope. The SAP R/3 team is responsible for the process/transaction scope while the BI team handles reports/analytics. Together, the teams present a holistic/single face to the business. “It is critical to ensure that your business owners sign off on what you are to develop to hold them accountable for the implementation and ensure the implementation team remains focused,” says Hickie. “The business also needs to consider not only the transactional requirements but also the reporting or information requirements together. Without considering the two requirements together, the business owners could potentially end up with an incomplete solution that will require rework.”

**2. Integrate SAP BI and SAP R/3 teams on various levels (if implementing systems concurrently).** Functional team ownership of the BI scope forces a close integration of the R/3 and BI teams. This integration should be based on a release/project plan milestone perspective. Individual R/3 functional teams, for

implementation changed the business processes, functionality, and data significantly. For both teams to be successful, each needed to integrate and collaborate to deliver a complete solution – processes, transactions, and information.

The teams, in conjunction with the business, needed to be jointly responsible for scope, plan, delivery, and business benefits. Defining the right roles to manage not only the hands-on implementation but also the coordination of the two teams was critical.

McKesson broke down the roles of the SAP BI team as follows:

**Business/technical leadership:** The business lead and technical lead both had a clear understanding of the BI vision from a business and technical perspective; they also had in-depth knowledge of BI and the underlying R/3 tools. Project management expertise was also a requirement.

**BI implementation architects:** This team understood the McKesson Pharmaceutical data as well as the SAP BI and SAP R/3 tools. The architects were responsible for defining the proof of concepts; developing standards, guidelines, and best practices; and enforcing standards and architectural project reviews.

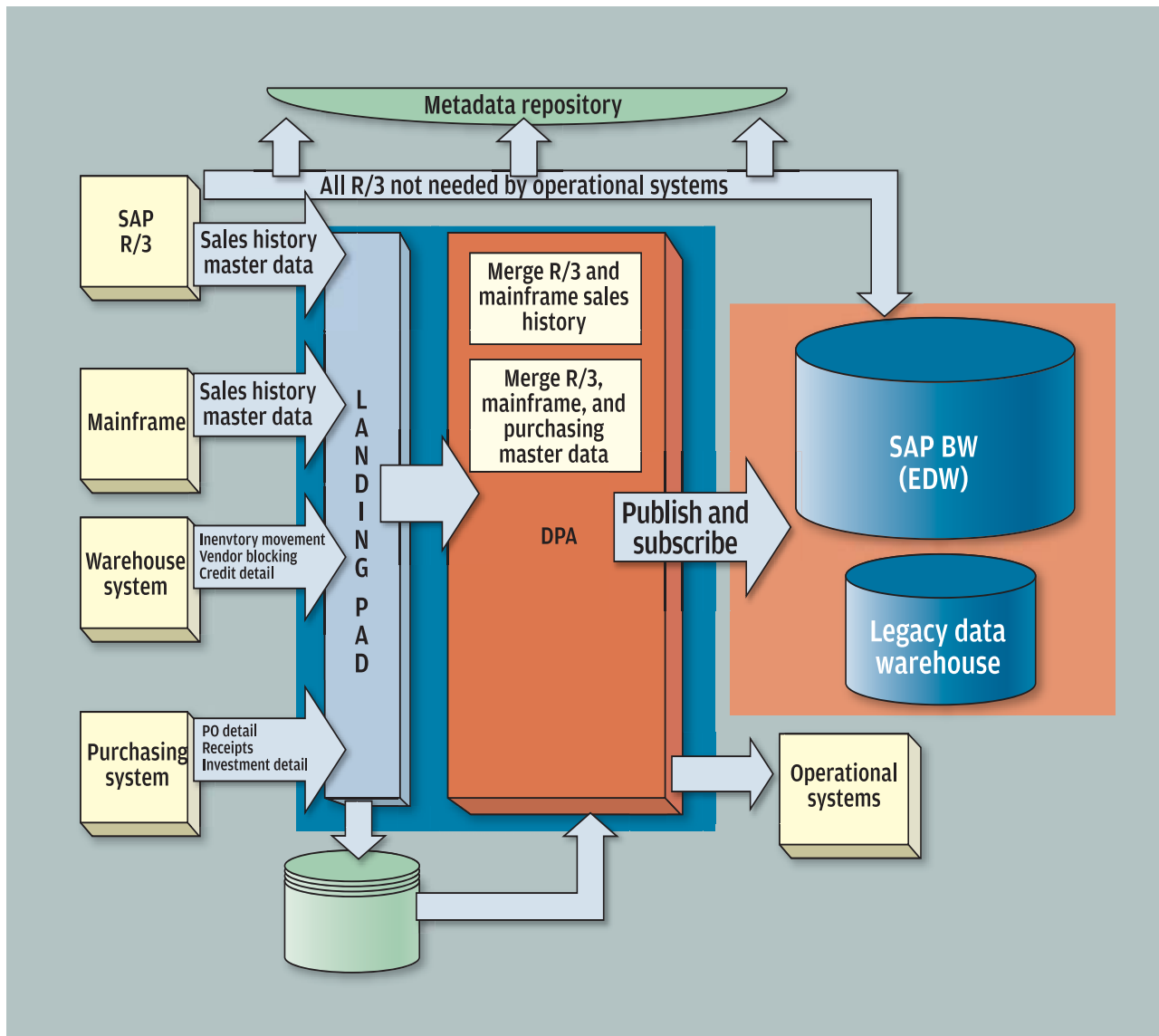
**Business lead:** This person had a deep understanding of McKesson business processes, as well as data, and was qualified as a team lead and project manager.

**SAP BW functional lead:** This person had at least three years of SAP R/3 and BW configuration experience and understood how to implement business processes in R/3. The functional lead served as the liaison to the R/3 configuration team, developed the SAP BW solution framework, and led the SAP BW developers.

**Developer/analyst:** This role required McKesson Pharmaceutical data and tool experience and experience with SAP BW/BI tools.

**Quality assurance:** This role required development experience with SAP BW applications and working with SAP BW/BI tools.

McKesson established a BI production support team (business support team), as noted above, during the phased rollout. Its role was to support live functionality after a cutover period when the project teams would provide support. This dedicated support allowed the project team to focus on the next set of analytic deliverables. It also built the foundation of a support organization, as both the project production support and the project teams moved to the support organization at the end of the implementation. **NWM**



McKesson Pharmaceutical's original, fragmented business intelligence landscape was complicated and limited. For example, sales order information was proliferated across a number of transactional and business intelligence environments. As a result, findings that were presented from one system to the next often seemed inconsistent or confusing to managers. The current McKesson EDW architecture shown here supports the needs of an end-to-end BI application. The bulk of data for process-based analytics, whether residing in a legacy source system or in SAP R/3, is now accessible via SAP BW. Standard SAP extractors are used to extract data from

the source systems on the left either straight to SAP BW (financial data) or to Ascential DataStage's data provisioning area (DPA) in the middle. Data flowing to the DPA is required for downstream operational systems. Within the DPA, the data is transformed and loaded into the SAP BW or legacy data warehouse (until SAP BW has enough history loaded), or it is sent downstream to operational systems. SAP BW is at the core of the SAP BI system. Ascential's MetaStage is used to capture all data definitions as they are extracted and loaded to the various BI and operational systems.

example, should have the respective SAP BI team project plan incorporated into their plans. During development, it is also important to have a vertical process orientation. For example, SAP BW development is highly integrated with SAP R/3 configuration for modules such as Controlling and Profitability Analysis (CO-PA). "The configuration of the SAP BW profitability solution is critically dependent upon the configuration of the SAP R/3 CO-PA module," says

Hickie. "Without the vertical R/3 and BI team integration, we may never have been able to build a truly functional solution." Finally, all R/3 and BI teams should report to a single program management office (PMO) that consists of R/3, BI, and change leadership. Integration at the PMO level is critical to ensure that the implementation addresses the end-to-end requirements (i.e., processes, transactions, and information) and all the impacts to those involved.

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**3. Have SAP BI program management in place to address all business unit requirements.** Your project might involve supporting multiple business units' needs in a single instance of an SAP R/3 or SAP BW environment. Consider the impact that business unit competition for system and human resources will have on development cycles. One way to do this is to establish business request processes to estimate effort, impact, and timelines. You should also institute request prioritization measures. Setting up an architecture/project control board will help to coordinate cross-business unit development cycles, enforce standards, and broaden one business unit's solution design to address cross-unit requirements.

**4. Integrate auxiliary teams early.** An SAP BI implementation is critically dependent on quality assurance, Basis (system and architecture), security (role-based

concepts), and internal audit processes. The teams responsible for these areas should participate in each project lifecycle's review activities (ASAP Methodology — project prep, blueprint, realization, final prep, and go-live). The Basis team plays an integral role in sizing the system during project preparation and blueprint phases. Security is critical during the blueprint and realization phases to ensure proper configuration of user roles and assignment. Internal audit should be involved at the end of each ASAP phase (gate reviews) to ensure completion of all project phase documentation and institution of an appropriate level of controls.

**5. Involve business in developing analytical solutions.** Successful adoption of SAP BI analytics requires that the BI project development, business unit BI development, and change leadership work in an integrated

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### **McKesson Corporation at a Glance**

**Industry:** Health care

**McKesson Corporation fiscal 2004 revenue:** \$70 billion (Fortune 16)

**McKesson Pharmaceutical fiscal 2004 revenue:** \$61 billion

**Structure:** More than 30 business units organized in the following manner:

- Information solutions – hospital/clinic software solutions
- Supply solutions – pharmaceutical distribution, general medical supply distribution, automated/robot solutions
- Health solutions – disease and patient care management software

manner. Change leadership drives adoption with management, trains BI user communities, and conducts in-depth BI workshops with analysts. A BI production support team (business support team) drives adoption with critical user groups, helps analysts with deployment of reports, and develops analytics based on analysts' business requirements.

By the end of fiscal year 2005, ending March 31, 2005, McKesson Pharmaceutical expected to have approximately 500 upper- and mid-level managers and financial analysts trained on the reporting and analytics system. Furthermore, during fiscal year 2006, McKesson Pharmaceutical will look to roll out the SAP BI reporting and analytics solution to the overall end-user community. As a result of McKesson Pharmaceutical's success, other business units within the company are now planning to implement BI as well. [NWM](#)