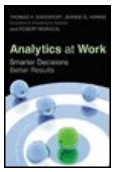

Analytics at Work: Smarter Decisions, Better Results

by Thomas H. Davenport, Jeanne G. Harris and Robert Morison
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Chapter 3: Enterprise – Integrating Across Organizational Silos

Overview

Yes, we know we just gave you an entire chapter on data, but stay with us for one more example. A major multinational ventured out to become an analytical company in 2006 by launching OneData—a global initiative to manage information as a critical, competitive asset. The initiative encouraged the company to draw on, as on executive put it, "one source of truth" to fuel better business insights and, ultimately, better business decisions. The OneData program grasped an important principle about analytics: the opposite of an enterprisewide perspective isn't a local or independent perspective, but a *fractured* one. To develop an enterprisewide view of analytics, a company must do more than integrate data, combine analysts, or build a corporate IT platform. It must eradicate all of the limited, piecemeal perspectives harbored by managers with their own agendas, needs, and fears—and replace them with a single, holistic view of the company. It may sound like we're proselytizing for a Far Eastern cult, but this is really just an effective management practice.

Without a broad business perspective, a company cannot address the strategic issues at the core of business performance and organizational competitiveness. Vital management questions may go unanswered if information is fragmented:

- Which performance factors have the greatest impact on our future growth and profitability?
- How can we anticipate and influence changing market conditions?
- If customer satisfaction improves, what is the impact on profitability? Is customer loyalty more important than, for instance, order volume?
- How should we optimize investments across our products, geographies, and marketing channels?
- Are managers' decisions well aligned with our company strategy, or are they merely promoting the managers' self-interest?

Analytics can illuminate these high-level questions only if decision makers can see across regions, business units, or processes and consider information from the entire enterprise. Furthermore, an enterprise perspective ensures that analytical data and models are treated with intellectual honesty. Without strict standards enforced from the top, the temptation to filter assumptions and risks through narrower, self-serving perspectives may be too great.

Strategic concerns like performance and risk aren't the only reasons to adopt an enterprise perspective; a coordinated approach also improves analytical activities in business processes and functions, including IT. Without an analytics strategy and road map, most IT organizations will struggle to anticipate and support business requirements. Lacking direction, project managers will be assigned to initiatives that produce little value, missing opportunities to work on useful projects. IT will default to supporting the easy analytics projects, or those for which they already have the data, or those with the squeakiest wheels. Even worse, they may admit defeat and supply whatever data they can get their hands on, hoping some of it will be useful. Merck executive Robin DeHaan summarizes the pitfalls of this fractured approach: "The repercussions are more ad hoc activity, more fire drills, and more spin-off databases . . . Expediency overrides strategy."[1]

Without central coordination, business unit or functional managers will attempt to build their own analytic fiefdoms, as was the case at one midwestern health care provider network. A vice president and a director there told us about analytics projects that are scattered among four groups and seven hospitals, networkwide projects that lack strong ownership, and top managers in the hospitals who do as they please with little oversight. As a result, they complained, it's hard to break analytics efforts out of institutional silos: "Nobody knows who knows what. Even as basic a task as creating a central data warehouse with all that scattered information is like recreating the federal government."

Duplicated efforts also lead to conflict and errors. Infighting breaks out between executives or groups of employees using different systems and data sources, because when their numbers and analysts inevitably disagree, each side claims its analyses are right. These analytical Montagues and Capulets operate at cross-purposes, undermining or competing with each other instead of cooperating.

A coordinated enterprise approach also reduces complexity. Absent knowledge of the company's analytical needs—or even which projects are under way or in the planning stage—business analysts may buy the same data or software that others in the organization have already bought. Thus, hundreds of data marts, reporting packages, forecasting tools, data management solutions, integration tools, and methodologies spring up like mushrooms. One firm we know of had 275 data marts and a thousand different information resources, but couldn't pull together a single view of the business in terms of key performance metrics and customer data. Often, it is harder to rein in all this activity than it would have been to coordinate it in the first place. Best Buy, for example, realized that by streamlining the 293 analytical systems and data feeds that had proliferated when the company began to adopt analytics, it could improve quality and cut costs.

Two-thirds of large U.S. companies believe they need to improve their enterprise's analytical capabilities. And even though more than half (57 percent) of the companies we surveyed said they lack a consistently updated, enterprisewide analytical capability, nearly three-quarters (72 percent) said they are working to increase their company's business analytics usage.[2]

Most CIOs recognize that only an enterprise IT strategy will derive real value from analytics. This same study found that 75 percent wanted to see an end to silos of information and 76 percent of CIOs planned to develop an enterprise business intelligence strategy over the next three years. But while their support was strong, more than half acknowledged that their company still lacked an enterprise approach to analytics.

If you're not a CIO, it may be natural to keep your head down and focus on what's in your own sphere of control. But that approach leads to bad decisions and self-serving projects, not judicious, enterprise-serving programs. Our advice: take an enterprise-minded approach right from the outset of your analytical journey. Even in a stage 1 company, it's best to look ahead, think about the future upsides and potential downsides to the enterprise, and treat even local, departmental projects as potential bases for broader initiatives.

[1]Interview with Robin deHaan and Venkat Parakala, February 7, 2009.

[2]Accenture Information Management Services survey of more than 250 executives is the basis of a report, "Competing Through Business Analytics," which studied companies' use of and investment in analytics to remain competitive. December, 2008.

How Much Integration and Coordination Are Needed for Enterprise Analytics?

Corporations can be diverse and far-flung. We spoke with one diversified financial services provider who grapples with this question: "To what extent should we integrate our data, analyses, and processes across our enterprise when we have so many different types of customers, operate in so many different markets, offer so many different kinds of products, and operate in a volatile economic environment where we are making regular acquisitions and divestures?" This is really the question of what is meant by "enterprise" in particular organizations.

Consider General Electric. It sells wind turbines, auto loans, jet engines, washing machines, fluorescent lightbulbs, and commercial air-time on *Saturday Night Live*. Does data about its wind turbine clients in Germany and its washing machine customers in Thailand need to be shared across the entire corporation? Do customer analytics apply across those organizational boundaries? Probably not. But in some areas—such as talent management and volume purchase agreements—GE should share data from several or even all of its businesses. And by initiating a common and central analytical capability across its GE Capital financial services business, GE is taking the first step toward an enterprise perspective at that level.

How you adopt an enterprise perspective for analytics depends on the answer to one question: who else in my company could be interested in the same data, technology, and analytics now or in the future? Any group in a corporation that shares or could share customers, markets, inventory, and suppliers, or any group that participates in the same analytical projects based on those business entities, should be considered part of a single enterprise. When in doubt, ask if any other groups need common data to answer any of the six analytical questions in figure 1-1. If they do, there is value in aligning common technical infrastructure, data, definitions, analytics, and decision processes.

Sometimes a business network shares information across multiple enterprises. Wal-Mart is famous for sharing data with its suppliers, with the expectation that suppliers will use the information to lower prices and increase sales in partnership with the retailer. According to a 2006 Accenture study, 24 percent of organizations had such direct linkages with customers and 15 percent had them with suppliers.[3] A company that is committed to helping its customers and suppliers make better decisions will have to share not only data, but also analytics and analytical expertise, to create its "extended enterprise."

Determining the best level of alignment or integration across business units is particularly tricky at a global conglomerate or after a merger, when it may be impractical to treat separate businesses and geographic units as a single entity. Executives at Air France/KLM describe themselves as one company, two airlines, and three businesses: passenger, cargo, and maintenance. So from an analytics perspective, are they one, two, or three different enterprises? Our six questions in figure 1-1 can provide some clarity. For example, the answer to "What's the best that can happen?" may suggest optimizing the airline crews or maintenance staff by looking across both airlines.

But sometimes data must be left in its silo for practical or legal reasons. We wouldn't expect a winery like Gallo to launch a national "frequent wine drinker" program, for example. The laws covering the sale and distribution of liquor vary too much from state to state, and even from county to county, to make such a promotion possible (and it would be tacky).[4] Also, companies that regularly acquire and sell off businesses probably would not treat their subsidiaries' data as part of one enterprise; it's simpler to spin them off if their data, systems, and decisions aren't intertwined.

Organizations that are served by different IT functions can have so much difficulty sharing data and IT infrastructure that, as a practical matter, they can't be unified under the same enterprise. Geographically based IT departments in a diverse multinational company are a common obstacle to adopting an enterprise perspective. In other cases, the need for an enterprise approach may evolve with shifts in corporate strategy. One diversified European products company, for example, had a history of treating business units independently, but as the company sought synergies across its products, they developed a more unified information management vision.

[3]Jeanne G. Harris and Thomas Davenport, "New Growth from Enterprise Systems: Achieving High Performance Through Distinctive Capabilities," Research report, Accenture Institute for High Performance, 2006, 10.

[4]Interview with Jim Kolsky and Mike Van Houten, July 17, 2008.

How IT Enables an Enterprise Perspective

As we noted earlier, most CIOs have good intentions when it comes to developing an enterprise information strategy. That's good news for any manager hoping to nudge his or her company down the path to fact-based decision making. But as the cop directing traffic on the road to hell will tell you, good intentions can lead to unhappy endings. IT has to deliver on its aspirations.

CIOs and their IT organizations still have two big jobs to do. The first is to stay focused on supporting the analytics work that matters most; IT organizations have historically focused on transactional applications, leaving little time and money for the more crucial task of data analysis. The second job is to build an IT infrastructure capable of delivering the information and analytics that people across the enterprise need, now and into the future.[5] IT must resist the temptation to provide analytics as an add-on or bolt-on to whatever transaction system it just developed. Unless the IT organization builds a platform that can standardize and integrate data, provide users with the applications they need, and adapt as needs and strategies change, analytics won't be able to scale to the enterprise level.

In the early stages of analytics, IT organizations are apt to take a hands-off approach. They provide reports much the same way the proprietor of a self-service station sells gasoline: the selection is limited, and the customers pump their own. Self-service isn't a bad idea in the beginning

if it gives information workers ready access to standard reporting and frees up IT resources to focus on other tasks. But in the later stages of analytics—stages 4 and 5—IT needs to shift gears from self-service operator to proactive advocate and architect for change. IT should do what it takes to help decision makers get the data and technology they need and to generate the insights that help them decide effectively. Ultimately, IT should become part owner of the company's analytical capabilities, and business leaders should make this expectation clear.

IT managers must understand and be able to articulate the potential of analytics for the enterprise. If they don't have an enterprise perspective, they won't be able to build an enterprise reality. IT staff should interact with the analytical pros who build models and the analytical amateurs who use them and consume their information: the greater the interaction, the clearer the understanding of the business potential and risks on both sides. And speaking of understanding, IT managers make their own lives easier when they close the language gap that separates them from their business colleagues: instead of talking to executives about things like clouds, SOA, and OLAP, they should talk about decision making, insights, and business performance.

Building an enterprise IT platform for analytics can be a long, intimidating road. But like every journey, it starts with a single step. It begins with good, integrated data on transactions and business processes managed through enterprise applications like ERP and CRM systems. But it doesn't end there. An Accenture study on how companies use enterprise systems found that the companies that derived any real value from them had *anticipated* how to leverage the information to generate new insights to improve business performance.[6]

These initial steps increase the likelihood of success. Stage 5 organizations develop a robust information management environment that provides an enterprisewide set of systems, applications, and governance processes. They begin by eliminating legacy systems and old spaghetti code and then press forward to eliminate silos of information like data marts and spreadsheet marts. They hunt for pockets of standalone analytic applications and either migrate them to centralized analytic applications or shut them down.

Analytical companies also experiment with emerging analytical tools. For example, Procter & Gamble piloted a short-term demand forecasting tool for inventory optimization from Terra Technology, a recent start-up. P&G found that the new software could decrease short-term forecast error by more than 30 percent. The company estimates that the predictive tool will yield more than $100 million in increased cash flow globally.[7] Draftfcb, a global integrated marketing communications agency, experiments with a variety of tools to deliver analytical insights and results to clients and agency colleagues. Its analytical professionals use multiple tools for analytical data visualization and illustrating relationships among brand concepts, including Flash and open-source tools. They note that being successful with analytics is not just about the data or the advanced techniques they utilize, but about telling the story and making it visually appealing.[8] Without an enterprise-level group to explore such tools, it's unlikely that Draftfcb would be able to employ such capabilities.

Finally, we mustn't overlook the analytical tools and applications themselves. Formerly small, independent analytics vendors like Business Objects, Cognos, and Hyperion are being consolidated and integrated into the major players (such as Oracle, Microsoft, SAP, SAS, and IBM). Standardizing around an enterprisewide software suite helps ensure a consistent approach to data management, and provides an integrated environment complete with the data repositories, analytical tools, presentation applications, and transformation tools ready to be incorporated into improved business processes.

As they shift from point solutions to enterprise software suites, software vendors continue to seek innovative ways to embed analytics into business processes and workflow. Data warehouse providers are augmenting basic SQL query capabilities with analytical functionality such as prediction, regression, decision trees, clustering, and Bayesian analysis. And business applications are becoming more analytically sophisticated as customers demand better insight into operational decisions.

If you are an analytics user or advocate, this long list of IT requirements may be overwhelming. But fortunately, building an enterprise platform is IT's job, not yours. Your job is to watch out for current and future users of the information and systems. Keep up with the IT people; ask direct questions and demand results to make sure that your company constructs the accessible, well-managed analytical resources it needs. But be patient: it may take several iterations to get it all right.

[5]For a discussion of the enterprise IT architecture needed for business intelligence and analytics, see Thomas H. Davenport and Jeanne G. Harris, *Competing on Analytics* (Boston: Harvard Business School Press, 2007), chapter 8, "The Architecture of Business Intelligence."

[6]David L. Hill and Jeanne G. Harris, "Using Enterprise Systems to Gain Uncommon Competitive Advantage," *Outlook* 1 (2007): 65–71.

[7]Andrew K. Reese, "Planning to Succeed at Procter & Gamble," *Supply & Demand Chain Executive* 8, no. 2 (February 1, 2007): 20.

[8]Interview with Pradeep Kumar, June 24, 2009.

An Enterprise Approach to Analysts

The enterprise orientation applies not only to data and IT, but also to the people who do analytical work. Pockets and silos of analytical people are just as problematic as the other types of pockets and silos we've discussed in this chapter. However, we're going to ask you to read "Organizing Analysts" in chapter 6, which is about analysts in general. If you can't wait, we suppose you could skip ahead now—but that would be a bit rash.

Enterprise Perspective Through the Stages

In a true stage 5 company, awareness of analytics is enterprisewide. Analytics are embedded in everyday business processes, so managers and employees in every business unit can make fact-based decisions. The enterprise is continually evolving, finding new ways to use analytics and inventing new tools as it reinvents its business processes. The entire business is served by a flexible, centralized IT infrastructure designed for analytical excellence. All this comes under the aegis of an enterprise strategy development and performance management

process, where strategy is made with analytics in mind. Executives and employees throughout understand why analytics are important, how they fit into the company strategy, and where the risks lie—and they are eager to exploit this knowledge.

Table 3-1 summarizes how an enterprise approach evolves over each stage.

Table 3-1: Moving to the next stage: Enterprise

From stage 1 *Analytically Impaired* to stage 2 *Localized Analytics*	From stage 2 *Localized Analytics* to stage 3 *Analytical Aspirations*	From stage 3 *Analytical Aspirations* to stage 4 *Analytical Companies*	From stage 4 *Analytical Companies* to stage 5 *Analytical Competitors*
Find allies for small-scale analytics projects that nonetheless suggest cross-functional or enterprise potential. Manage data risk at local level. Partner with IT on common tool selection and data standards.	Select applications with relevance to multiple business areas. Keep scope manageable, but with an eye to future expansion. Establish standards for data privacy and security. Begin building enterprise analytical infrastructure incrementally.	Develop analytics strategy and road map for major business unit, if not the enterprise. Conduct risk assessments of all analytical applications. Establish enterprise governance of technology and architecture for analytics.	Manage analytical priorities and assets at the enterprise level. Implement enterprise wide model review and management. Extend analytics tools and infrastructure broadly and deeply across the enterprise.

From Stage 1 to Stage 2. At stage 1, there's no enterprise view, interest, or capacity for analytics. But the need is there. A few scattered workers, maybe newcomers to the company, have problems to solve or decisions to make but can't get the information they need out of the existing corporate systems. They are itching to get their hands on some good, clean data. Out of necessity, these organizational Swiss Family Robinsons may even build their own little ad hoc analytical application on the sly, using whatever information they can scrape up. This is where the long, hard climb toward enterprise analytics begins. If you're a lonely proponent of analytics, your job is first to get managers to sponsor analytic projects and later to convince skeptics of their value. You will find allies for your nonviolent revolution in disgruntled managers with unmet information needs and supporters in IT managers who get excited about your plans. Once you have this backing, develop a business case for small-scale, easily attainable, "low-hanging fruit" analytics projects. Promise to share the information and the credit for success, to track ROI, and to keep the information secure. You've reached stage 2 when these demonstration projects start getting approved, and you should start to anticipate what an enterprise approach to analytics might look like.

From Stage 2 to Stage 3. Jump ahead a few months or years. By now, the first analytics projects have proven their worth, and the CEO and some other executives have noticed them. Your goal is to start planning a well-focused enterprise analytics capability. At this juncture, a few forward-thinking companies may start to standardize their IT platform for analytics, but most will plan first.

Here's what to do. First, define the concept of "enterprise," and work with your organization's executives to develop a vision of what you can do with analytics. Later, identify the best strategic targets and projects; finally, identify your desired benefits and the means to measure them. Expect to spend time scrutinizing performance data to identify the levers that drive business performance. Assess your enterprise's current capabilities: its skills, its business processes, its ability to manage analytics' risks, and its technology. What are they now, and what do they need to be?

As you plan, educate executives on the risks of analytics and be sure you don't overreach. Treat each project as a demonstration that has to win over the inevitable skeptics. And be ready for infighting and hard negotiating. Chances are, your plans will threaten some managers—particularly if your organization isn't generally geared toward making fact-based and analytical decisions. Be ready to provide skeptics with something they want in order to get what you want.

From Stage 3 to Stage 4. Now your company is moving from planning to implementing. Your company has singled out the most important strategic applications, and you are ready to start standardizing data and technology in earnest. At this stage, it's not uncommon for senior managers to advocate analytical decision making and to push back when they don't get it. Your organization is starting to act like an analytical enterprise rather than an analytical wannabe. Just be ready for several enterprisewide stress points. The first is putting in place the new IT infrastructure and standards. Create a road map for getting it done, and be sure it's implemented in a step-by-step manner; too much too fast means mistakes and resistance. The second stress point of enforcing your new data policies is also hard, since it means changing habits and calling out repeat offenders. At this stage you've started sharing common customer and process data among the stakeholders. They'll be anxious about losing control of the data to a central function, and confused as squabbles break out over how the data is defined and why the numbers differ. You may have to embark on a time-consuming "one version of the truth" project to reconcile a key information domain.

From Stage 4 to Stage 5. If your company has made it to stage 4, congratulations. You're already a Che Guevara of analytical uprisings. You're making analytical and fact-based decisions (but you're not as fanatical as Che). Now, if your executive team has become committed to turning your company into an analytical competitor, there's more work to be done. Chances are your organization still has stage 2 or 3 pockets in certain regions or business units; the time has come to bring them up to speed. You will need to revisit your IT architecture and infrastructure, see what further changes must be made to put analytics at its core, and implement them. All the skills and support functions for analytics—project management, analytical experts, IT support—are now enterprisewide groups. The most stressful changes affect rank and file business users and workers, who see their job descriptions and functions change as the company adopts a new way of doing business. The IT, HR, and operations groups need to bone up on their change management skills.

An enterprise analytics capacity requires more than integrating data or building a corporatewide IT platform to support analytics. It means replacing dozens of limited, fragmented perspectives of managers with their own agendas, needs, and fears with one far-seeing holistic view of how analytics can serve the company. Changing how people think about analytics and convincing them to overcome their limited views and their (sometimes limitless) fears can't be achieved by sending out a memo or installing a new system. It's a job that requires leadership—the next part of the DELTA model.

Keep in Mind . . .

- Seek out kindred spirits in IT and collaborate with other potential constituencies and stakeholders.
- Take responsibility for securing and ensuring the quality of enterprise data. That includes participating in data governance initiatives.
- Build your integrated analytical environment over time, not all at once.
- Inside the enterprise, manage toward an equilibrium of supply (data, technology, analysts) and demand for analytics.