Executive Brief

Using BI and BPM to Address the Information Challenges of Midsize Companies

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Introduction

Being an employee within a midsize organization can feel like being a teenager again. There are many growing pains. You fondly look back on the times when you were eager, small, and nimble but you also look forward to being a mature adult and all the opportunities and possibilities that affords. The transition from a small company, with few business processes, a high level of communication, and a high energy level, to a large enterprise, where more rigor and process is required, can be a trying time for many within the business.

A contributing factor in easing this transition is information management. In a small organization, information can mostly be held in employees' heads. Salespeople know all their customers well. Marketers are in regular contact with their agencies. Operations people know what needs to be done to fulfill customer orders. Finance people are able to keep track of revenues and costs relatively easily. Conversely, it is a challenge for any one person within a large organization to know the machinations within a single area, let alone across the entire company.

Business intelligence (BI) and business performance management (BPM) are two disciplines that become critical as organizations progress through the "midsize" stage. These disciplines help measure, track, and influence the business—and provide essential capabilities that every midsize organization should possess to address these fundamental questions:

- **How are we doing?**
  (measuring and monitoring performance with dashboards to track key metrics)
- **… and why?**
  (reporting and analysis to see data, gain context, understand trends, and spot anomalies)
- **What should we be doing?**
  (planning, budgets, and forecasts to set and share a reliable view of the future)

This paper discusses some specific challenges that midsize organizations face, how these affect an organization's operational effectiveness, and what requirements you should look for in a BI/BPM solution to help address these challenges.
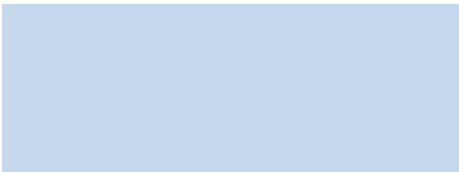
Challenges That Midsize Organizations Face and How BI/BPM Can Help

Most of the challenges outlined in this paper arise as an indirect result of company growth. Organizations start to experience these challenges as growth introduces complexity: the number of customers, employees, suppliers and partners increases; the diversity of employee roles increases; new markets are entered; new products are created; new pricing structures are defined; geographic expansion occurs; and so on and so on.

These changes create challenges in many areas, but from an information management perspective, the increase in the complexity of the organization's business models, financial models, business processes, technical environment, etc., requires a well-defined information strategy. The complexity in each of these areas increases as the company grows organically; include the results of corporate acquisitions, and the complexity across the organization increases significantly.

Growth also results in dilution of the communication and measurement of corporate strategy. In a midsize organization, it becomes more difficult to ensure that everyone within the organization is remaining focused on company goals and objectives, and working in concert to achieve those objectives.

The following sections focus on some of the more fundamental challenges that a midsize organization faces. Each section makes BI/BPM solution recommendations that will help to address the challenge.
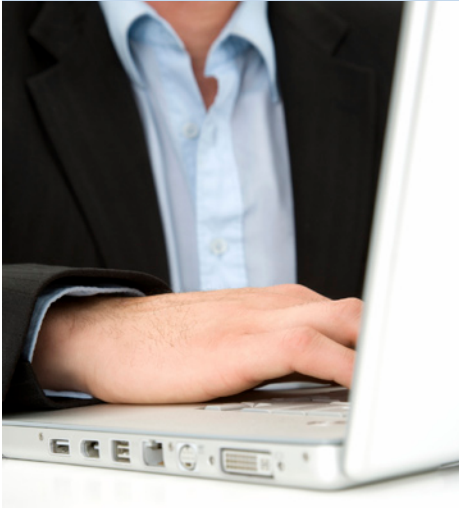
Lack of Time, Budget, Resources, and Experience

Lack of time, budget, resources, and BI/BPM experience is not unique to midsize organizations, but it compounds the already pressing issue of getting information into the hands of those that need it. Smaller organizations are also stretched in all these areas, but can manage with simple office productivity tools. Larger organizations usually have the resources and experience, if not the time or budget.

BI/BPM Requirements

Limited time, budget, resources, and experience means that any capital investment, particularly in software, needs to show a quick return with as little operational expenditure as possible.

To address this challenge, a BI/BPM solution should be easy to install, deploy, and maintain. It should be functionally and fiscally flexible.

Setting up the solution should be quick, with no requirement for in-depth BI experience, and no requirement to spend weeks configuring the system. Ideally, the solution would be self-contained and provide all the necessary underlying capabilities in a preconfigured package. These packages include the (usually hidden) costs of acquiring and operating the supporting infrastructure, including databases, security and access management, application servers, and more.

Maintenance of the system should also be lightweight. Standard ongoing administrative and maintenance tasks should not require even a single full-time employee. The system should also be flexible, allowing changes to dashboards, semantic layers, reports and cubes to be made quickly and easily.

Many of these requirements can best be met through the use of a single underlying architecture. This requires a single skill set for solution administration, as opposed to several skill sets required to administer multiple architectures.

The solution must also offer flexible packaging and pricing in order to address the immediate needs of the midsize organization, while allowing for future growth. The various modules of the solution must be priced independently, allowing the organization to purchase just those modules required, keeping the option open to incrementally extend the functionality as the company grows.

Decreased Agility

As new employees join an organization, communication becomes an increasing challenge. Different people enter the company with different experiences. These past experiences influence their thinking and assumptions. The agility of the company is directly related to how close its employees are in terms of their understanding of the state of the business, the objectives of the business, and the steps required to achieve those objectives.

In a midsize organization, no longer can two people quickly agree on a course of action to respond to change and execute. Many more (and diverse) people are involved in responding to change, and all need to come to a common understanding before a course of action can be agreed. Lack of visibility into the company's finances, operations, and other areas results in time wasted identifying and agreeing on the current position, and discussing the consequences of any decision that's up for discussion.

BI/BPM Requirements

A BI solution can help by providing a single, central reference for all information and business rules across the entire organization. In this way, all employees have a persistent, common view of the state of the business and how decisions will impact the business. A single reference for business information drastically reduces the overhead of figuring out which numbers are correct and how they will be affected as a result of a decision. This, in turn, enables the midsize organization to respond more quickly to changes in the business environment and hence increase its agility.

Successful performance management requires high levels of collaboration and participation; the greater the level of cross-company input, the greater the resulting accuracy and insight. But due to deployment difficulty (and error frequency), spreadsheet-only performance management demands a constrained, manual process that can represent only a small subset of company stakeholders.

Data from all across your company is transformed into valuable business information when it can be rapidly updated by process contributors and management decision makers. Working documents need to be visible to stakeholders, and all users must have read-and-write capability as required for contribution, ad hoc analyses, and what-if scenarios. Providing both an Excel and Web interface is perfect for a distributed environment where many of your team members work remotely across business units and geographies.

Increasing Number of "Information Consumer" Types

As an organization grows, so the range of information needs within the organization broadens. The vast majority of employees within a small organization are able to perform their jobs using office productivity tools such as spreadsheets. However, spreadsheets soon become inadequate for the various ways in which information needs to be delivered to users within a midsize organization. Customers, partners, executives, customer support representatives, sales managers, suppliers, and data analysts all have differing information access requirements.

BI/BPM Requirements

A BI solution must be able to satisfy the needs of all user types, even if this is not an immediate requirement. Graphical reports, dashboards, ad hoc reports, complex models for planning, scorecards, analytics, and interactive reports are just some of the information presentation types to mandate when selecting a BI solution.

The information presented to users should be based on their respective roles. This means presenting only what's relevant to them rather than forcing them to sort through an inordinate amount of data. An executive manager may have a need for a company-wide dashboard, a middle manager may need a similar dashboard showing just her department's data, and a financial analyst may want to perform multidimensional analysis using a spreadsheet paradigm against that same information. Having the same underlying, shared infrastructure for all information consumer types ensures consistency across the information they are consuming, no matter how they consume it.

## Increasing Volume of People Accessing Information

The value of the information within an organization should be accessible to anyone that needs it. As an organization grows, so the sheer number of people accessing the information will grow.

BI/BPM Requirements

The BI solution selected should be functionally and architecturally scalable.

As well as providing a broad range of information presentation capabilities, as described above, it should allow you to easily manage the users you have today. It should also
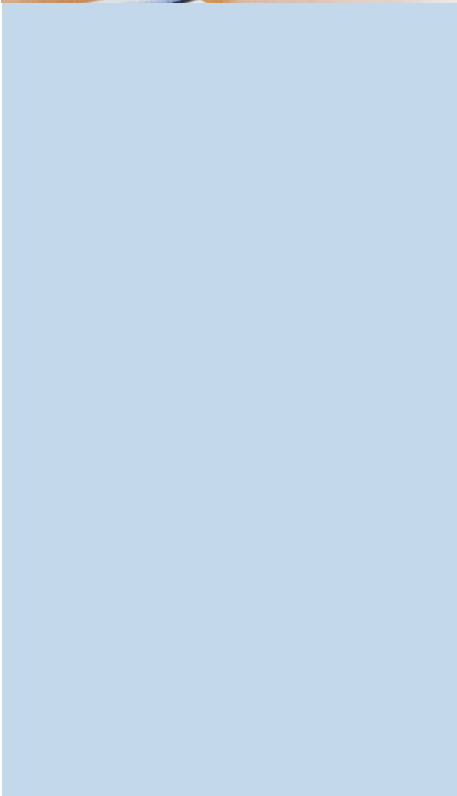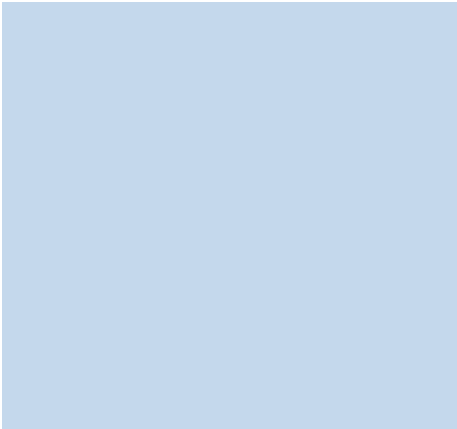
allow you to easily manage the volume of users you'll have in five years' time. Questions to ask when looking at a solution's ability to scale functionally: Does the solution integrate with our existing authentication and authorization systems or include its own robust solution? What efficiencies does it employ when serving information to users? Does it include a comprehensive function- and permission-based security model?

From an architectural scalability perspective, the solution must have the raw power to serve information to a large number of users. How much hardware does each solution require to service your current peak load? How much hardware does each solution require to service 10 times this volume of traffic? Bear in mind that an architecturally scalable solution can save you money not just on hardware but on software licenses too. Each machine required by the solution needs an operating system and possibly an application server and database server.

Emergence of Multiple, Disparate Data Sources

Today, multiple data sources are a fact of life for virtually every organization, large or small. Each business support application includes its own data store. The challenge is compounded when acquisitions are made. Even if the same area of the company uses the same software vendor in both the acquiring company and the acquired company, the applications are usually configured differently, resulting in "incompatible" data sources.

Clearly, the main disadvantage of disparate data sources is the inability to quickly get a complete, company-wide view of a business entity, be it a customer, profit, a product, or a supplier. Different departments and lines of business have different views of how well their areas are performing, whether a customer is satisfied or not, and whether a supplier is good or bad. This results in a loss of business agility while employees across the business try to work out which version of the data is the most correct.
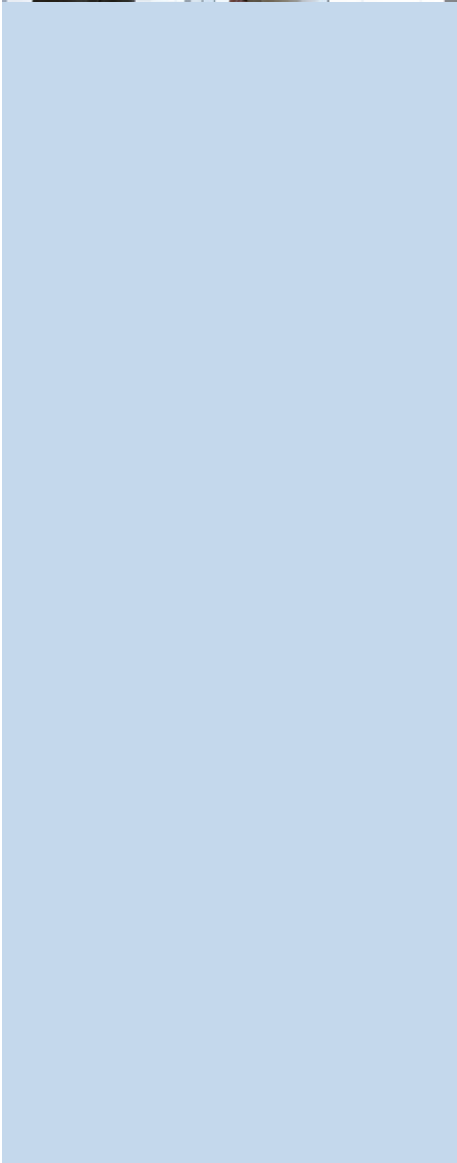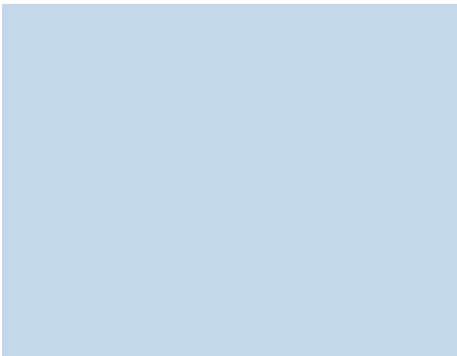
BI/BPM Requirements

To address this issue, the BI solution chosen must support the access and merging of multiple, heterogeneous data sources. Native access should be available for your current and future data sources and should include query optimization.

A number of methods exist for merging the data from many different data sources, each being suitable for different requirements. The most common method is to build a data warehouse (a central data repository) and load it with data from the many different data sources using an extract, transform, and load (ETL) process. Another method includes enterprise information integration (EII), where the data remains in the source systems and is fetched in real time, as and when needed, via a "virtual data warehouse." A third method is to load data into an online analytical processing (OLAP) server to build multidimensional cubes for analysis. Variations on these methods and alternative methods are also available. Look for the maximum number of methods to merge data sources in order to remain flexible.

Maximize Existing and Future IT Investments

Your company has made huge investments in IT infrastructure and applications. Multiple data sources are just one piece of the puzzle. A BI/BPM solution must integrate seamlessly within your overall IT environment.

Companies often find themselves in the situation where their "home grown" reporting solution, which started out as the response to a simple one-off request, requires an increasing amount of effort in order to maintain and enhance the role of the solution within an increasingly complex IT environment. A good "off the shelf" BI/BPM solution is designed to integrate seamlessly within a complex IT environment, effectively "future proofing" your investment against any changes within the IT environment or developments in technology.

BI/BPM Requirements

The burden of external IT systems support should be borne by the BI/BPM vendor. A BI/BPM solution must support open, standards-based application programming interfaces (APIs). It must include or, at a minimum, provide support for a wide range of data sources, security systems, portal systems, operating systems, application servers, middleware, various document output formats, Simple Object Access Protocol (SOAP), and extensible markup language (XML) as a data source, communication protocol, and output format. A BI/BPM vendor must demonstrate a track record of being at the forefront of technological developments to provide the peace of mind that its solution will always be relevant within the overall IT ecosystem.

Ad Hoc IT Infrastructure

When a company is small, lines of business are required to implement their own "systems" as and when needed. But it takes time for an IT organization to establish IT policies within an organization. Lines of business continue with "business as usual" for quite some time. Departmental solutions are created using departmental software to solve departmental problems. The most common technology used to solve these problems is spreadsheets. Others include lightweight databases, lightweight reporting solutions, and e-mail.

There are two primary reasons for the popularity of these ad hoc IT systems. The first is that they can be built quickly and easily by the lines of business themselves. They remain within the control of the line of business, so changes can be made quickly. The second reason is the inherent ease of use of these systems. Because they are built using technologies that people within the business use on a daily basis and are familiar with, they are easy to use and therefore have a high adoption rate.

There are a number of challenges with these departmental solutions, however. They often don't have a single data source that can be consolidated with data in the rest of the organization. Data is dispersed across multiple spreadsheets and emails. Business process logic is embedded within the departmental applications which are therefore disconnected from the overall organization. Data errors are introduced easily without any control. There are limitations in the capabilities of the technologies used. There is no audit trail. And so on.

BI/BPM Requirements

There are several BI/BPM solution requirements that can help entice business users over from their departmental solutions to a centralized, cross-organization system. The first is the ability for the department members to retain control of the system, allowing them to update the system themselves without having to rely on IT. The second is to provide a self-service solution that has a greater ease of use than existing systems. The third is to remove the limitations of existing departmental solutions—for example, by offering more than three dimensions (spreadsheet rows, columns, and sheets) in which to present data, and an easier and more reliable way of sharing information than e-mail.

Conclusion

The data we have at Technology Evaluation Centers (TEC) shows that midsize organizations have very similar functional requirements to enterprise organizations when choosing a BI/BPM solution. What differentiates them is the pressure they are under to organize themselves internally before the inefficiencies of conducting business start to have a detrimental impact on overall performance. A BI/BPM solution can increase an organization's agility and performance by creating a common understanding of how the business is doing, why, and what it should be doing.

However, it must be flexible, easy to deploy and maintain, and familiar enough for users to adopt it. It should also maximize existing investments and be able to grow with the organization. With a robust information strategy and a solid technical foundation, BI and BPM can help ease the transition of midsize organizations through the teenage years and on to adulthood.

About the Author

Russell Cooper is TEC's BI analyst. He has over 15 years of experience in the enterprise software industry, and has a keen interest in how organizations maximize the value of their existing data. During his career, Cooper has worked exclusively for companies that have built their businesses around the storage, movement, and retrieval of data—from electronic data interchange (EDI) to BI, from fourth generation language (4GL) application development to geographic information systems (GISs). This experience has afforded Cooper a broad perspective on data and data management.

Now based in Ireland, Cooper has a global perspective on business, having worked in many countries including the UK, Australia, Denmark, and the US. His consulting business focuses on helping organizations to understand their technical strengths and differentiators, and to articulate these to prospective customers.

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