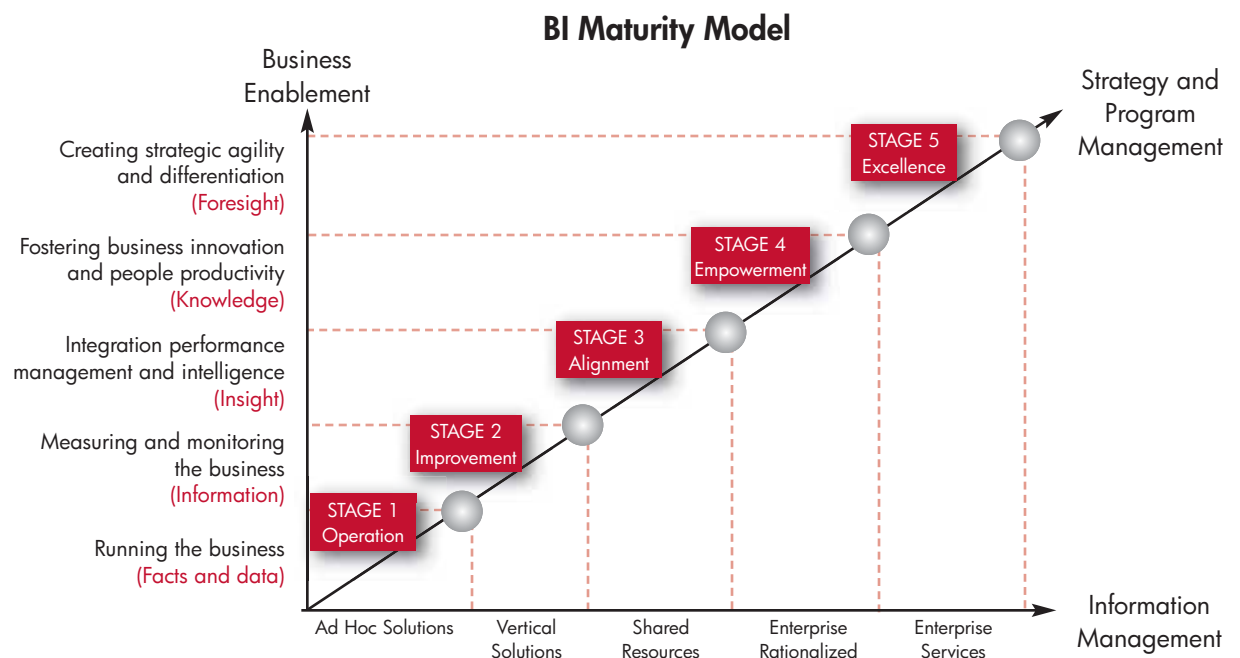# The HP Business Intelligence Maturity Model: describing the BI journey

A winning formula for BI success

For well over a decade, companies have invested in a variety of business and IT initiatives that strive to improve decision-making and intelligence capabilities. As a result, they have a rich set of building blocks to leverage as they work toward a more integrated, agile business intelligence environment. Understanding how to fully leverage their BI investments while evolving to the next level of maturity can be difficult, however. A BI maturity model can be invaluable in this process as it outlines a path forward and helps companies work toward closer alignment of their business and IT organizations.

HP's Information Management Practice has developed a BI Maturity Model as a context for describing the evolution of our clients' BI capabilities. The model is based on HP's experiences with clients across a wide range of industries. It represents a formula for success that is a function of three capabilities: business enablement, information management, and strategy and program management.

BI Maturity Model

Business Enablement (vertical axis):
- Creating strategic agility and differentiation (Foresight)
- Fostering business innovation and people productivity (Knowledge)
- Integration performance management and intelligence (Insight)
- Measuring and monitoring the business (Information)
- Running the business (Facts and data)

Stages:
- STAGE 1 Operation
- STAGE 2 Improvement
- STAGE 3 Alignment
- STAGE 4 Empowerment
- STAGE 5 Excellence

Information Management (horizontal axis): Ad Hoc Solutions, Vertical Solutions, Shared Resources, Enterprise Rationalized, Enterprise Services

Strategy and Program Management

Success = fn (business enablement, information management, strategy and program management)

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The **business enablement** dimension describes the advancing nature of the types of business needs and problems that are solved with BI solutions.

The **information management** dimension describes the advancing nature of the information solutions a company adopts to serve a variety of business needs.

The **strategy and program management** dimension describes the advancing nature of management skill as a key enabler and catalyst for BI success.

In this white paper, we'll look at the characteristics of companies in each stage of the BI journey across these three dimensions. We'll also describe the steps companies must take to advance their capabilities from one level to the next.

Stage 1: Running the business

Many organizations are still in the early stages of making core BI investments. These might include new companies that are just beginning to think about BI, but might also encompass organizations that have already been through several false starts with BI and are revisiting their basic BI strategy. This is the beginning stage in which frameworks are being laid and concepts are being formed, often at the departmental or local level within an enterprise. In Stage 1, BI is necessary to pull in facts and data as needed to simply run the business.

Business enablement in Stage 1: Business needs are focused on the enhancement of basic reporting and analysis capabilities, with spreadsheets often used as the BI tool of choice. BI consumers are mostly concentrated among executives and managers, with a small group of analysts or operations users doing the manual work of pulling together data from various sources and creating basic reports and analyses to feed to management. Reports and analyses are mostly provided on a quarterly or monthly basis, there is little capacity to deliver lower levels of information latency. Projects in the areas of finance, marketing or sales reporting can often be successfully deployed at this Stage. An example of these types of projects would include departmental financial reporting, local or regional sales history and some level of sales forecasting.

Information management in Stage 1: Information management solutions in Stage 1 focus on gaining basic access to data. These are often local, ad hoc efforts focused on meeting local demand. Data is housed in department or business-function data marts, or even within specific applications. There is no cross-department or cross-function integration of data repositories. Stage 1 is characterized by early efforts in ETL (extract, transform, load), data warehousing, and OLAP (online analytical processing). Most solutions involve a high degree of manual effort to gather data, integrate it, and prepare it for presentation in a report.

Strategy and program management in Stage 1:   Project activity is localized in this stage, with limited focus on project management as a discipline. Projects are small in scale and mostly intra-departmental. C-level involvement in BI investment decisions is extremely limited or non-existent. BI expertise is concentrated within a small group of individuals in the organization.

Moving to Stage 2:   One key step in evolving to Stage 2 is improving access to data at a departmental or functional level. In Stage 1, data might be housed in disparate databases or applications, even within a single department or group. Companies should work on integrating these data repositories for one subject area or domain at a time. Another important step to tackle at this stage is understanding both current and future needs for BI skill sets. BI talent in Stage 1 companies is typically concentrated in a small pool of individuals, but moving to Stage 2 and beyond will require a broader base of BI talent. Companies who begin identifying their resource requirements early will have an easier time evolving their BI projects and programs. Finally, companies in Stage 1 should work on obtaining management buy-in for BI efforts. The visibility that management support brings will open the door for investments in both manpower and capital.

Stage 2: Measuring and monitoring the business

In Stage 2, BI efforts are focused on localized subject area or vertical solutions, such as implementing HR analytics or beginning to integrate customer data. At this Stage, manual, ad-hoc solutions give way to more planned strategies of how to not only measure what is happening with the business, but also how to monitor it and provide a level of visibility for management to use in a more timely manner.

Business enablement in Stage 2: Business needs are still focused on enhancing reporting and analysis capabilities, but are also moving into the implementation of basic dashboards and scorecards, and even some planning, budgeting and forecasting applications. BI consumers are still mostly concentrated at the executive and management level, but there is less manual effort involved in preparing and presenting the data. Users are able to take advantage of some self-service BI capabilities and might even be able to customize some reports or analyses on a limited basis. Information latency is decreasing, with reports and analysis delivered on a weekly or monthly basis.

Information management in Stage 2: Information management solutions in Stage 2 are characterized by a focus on serving the needs of specific subject areas of information. Vertical data warehouses, data mart, and operational data stores are commonplace. These data repositories might be leveraged by multiple departments or business units, but they each remain focused on a single subject area with no integration between them. Organizations in stage 2 are moving into web-based reporting applications and are increasingly taking advantage of the BI capabilities offered through their ERP vendors. Data quality is becoming more important, but efforts in this area are largely ad hoc and manual, involving mostly basic ETL-based cleansing.

Strategy and program management in Stage 2: Organizations in Stage 2 have begun to recognize the criticality of project management as a discipline that manages scope, mitigates risks and manages costs. Project-based roles and skills for BI are formally identified, and BI project managers have inter-departmental responsibilities. Although companies at this stage are becoming more sophisticated at identifying the business benefits of their BI investments, C-level involvement in BI decisions remains limited. However, there may be pockets of support and heightened interest among savvy executives and managers.

Moving to Stage 3: In Stage 2, reports and analyses are usually delivered on a monthly or weekly basis, but evolving to Stage 3 requires a move to right-time information delivery. A company in Stage 2 would therefore be wise to begin documenting the information delivery needs of its BI consumers so that it will be able to define exactly what right time means for each of its user groups. Documenting user needs will also come in handy for evolving and optimizing the types of reporting and analytical tools provided to BI consumers. Stage 3 also marks the beginning of more sophisticated data quality and governance efforts. Companies in Stage 2 should begin to identify those business departments or groups that have a commitment to taking ownership of their data and that could serve as ideal proving grounds for more sophisticated data quality and governance programs. Finally, a key characteristic of a Stage 3 company is the presence of a BI vision and roadmap. Stage 2 enterprises should evaluate whether they have the in-house resources and know-how to develop these assets, or if they should seek assistance from an outside consulting partner.

Stage 3: Integrating performance management and intelligence

Companies in Stage 3 are beginning to achieve an integrated view of the subject- or vertical-oriented information solutions they implemented in Stage 2. This integration enables increased business value through more complex metrics and analyses. For example, organizations in Stage 3 can begin to calculate metrics like customer profitability, which requires data from both the customer and financial domains. At this Stage, the business value of BI begins to be realized. Metrics are defined, processes are in place and much of the thought processes that went into Stage 2 start to come together into a set of assets and capabilities that directly target business improvement through broad-based use of BI.

Business enablement in Stage 3: Once localized reporting needs have been satisfied in Stage 2, the business drivers turn to a higher degree of alignment and integration, usually described by a linkage with a broader business performance management agenda within the organization. At this point, there is a heightened focus on the value of analytics, often embedded within other systems or business workflows. Companies have implemented integrated reporting and are moving towards balanced scorecards and streamlined key performance indicators. BI consumers are expanding to include more frontline employees, not just executives and management. The availability of data is also more consistent and instead of being defined by potential system constraints, data is now delivered when needed (at the right time) and pulled, cleansed and used according to the business needs.

Information management in Stage 3: Information integration across subject areas and across business unit solutions is key in this stage. Standalone data warehouses and marts are consolidated and an enterprise or centralized data warehouse is likely in the works. In Stage 3, companies are beginning early master data management efforts to achieve a single view of one or two key reference data domains, including customers, suppliers, and employees. Data quality and data governance efforts also become more important and more sophisticated at this stage. Specific business areas have taken ownership of their data and have identified data stewards.

Strategy and program management in Stage 3: As business needs advance and information solutions reach higher levels of integration, management skills become critical to success. Stakeholder management (i.e., governance), resource management (i.e., outsourcing), and change management (i.e., competency centers) become key skills to facilitate heightened levels of integration. In Stage 3, organizations have evolved from BI project management to BI program management and have a BI vision and roadmap in place, business case discipline, a governance model, and a risk management methodology. BI competency centers (BICCs) begin to evolve at this stage, along with early leverage of a three-tier delivery model to optimize costs and resources. At this point, C-level management is normally enthusiastically engaged in BI, as they realize the quantitative impact on the business, often resulting in cost savings.

Moving to Stage 4: Empowering frontline users is a key focus of Stage 4. In Stage 3, executives, management and a select group of power users likely comprise the vast majority of the organization's BI user base. Expanding BI to "the masses" is a big requirement for moving to Stage 4. Companies in Stage 3 will need to understand the requirements of a whole new group of users and the types of technologies (such as activity monitoring) that can meet their needs for operational information. Unstructured content also enters the picture in Stage 4. Companies in Stage 3 should start to map out their unstructured information assets and understand how those assets can combine with structured data to enable more powerful analysis and guidance for both management and frontline users.

Stage 4: Fostering business innovation and people productivity

Companies at Stage 4 in BI are turning information into a very powerful asset. They are meeting the challenges surrounding master data management, data governance, and bringing BI to the masses. Business-specific analytics are now a key component of business strategy and are embedded into business processes. Information is available when it's needed, where it's needed. Information is centralized and the environment is flexible and can easily adapt to changes in business questions.

Business enablement in Stage 4: Stage 4 is characterized by the leveraging of intelligence to transform the way business processes are designed and the way people work. Analytics are automated and embedded into business processes to enable frontline decision-making. Frontline users have new expectations around

information delivery and capabilities that allow them to be more responsive to their business environments, predict outcomes, and dig deeper with analytics. Activity monitoring and other forms of operational BI that are typically adopted in Stage 4 also become a catalyst for generating even more demand for BI among "the masses." Although frontline workers receive increased focus as BI users in Stage 4, executives and managers also embrace BI and continue to use it to set and manage corporate strategy.

Information management in Stage 4: In Stage 4, the enterprise reconciles to create a single version of the truth across the organization. Companies in Stage 4 are tackling more advanced master data management that addresses multiple business domains and/or geographies. The data governance program has the support of senior IT and business stakeholders and is able to enforce standards and policies across the organization. A robust data quality program is in place, and business and IT stakeholders have a commitment to addressing data quality problems at the source rather than using downstream cleansing to "mask" data quality issues. Efforts are underway to integrate unstructured content with structured data to better enable worker productivity. BI is fully integrated within the enterprise portal environment, and the organization is beginning to implement advanced analytic technologies like data visualization to meet the needs of users.

Strategy and program management in Stage 4: In Stage 4, portfolio management becomes of higher importance as BI becomes a natural component to all strategic initiatives. The BI program management office (PMO) is integrated within the organization's broader strategic PMO. BI portfolio managers are in place, and the organization is taking advantage of a robust, flexible resource delivery model. The company has an advanced governance model for BI and a sophisticated approach for identifying and realizing the business benefits of BI programs. There is C-level sponsorship of the BI portfolio, ensuring that BI is interwoven into all of the company's most critical activities and programs.

Moving to Stage 5: Movement to Stage 5 requires work on streamlining BI processes and procedures by establishing a service-oriented framework for the delivery of all BI. Companies in Stage 4 should begin exploring how service-oriented architecture (SOA) can enable seamless integration and delivery of data across the enterprise. Organizations that want to move to Stage 5 must also work on the speed with which they are able to deliver new analytics to users as well as on understanding how emerging technologies affect the way users receive and process information. Finally, the move from Stage 4 to Stage 5 requires not just C-level sponsorship of the BI portfolio, but C-level commitment to embracing BI as a strategic lever for the business. Companies in Stage 4 should assess the readiness of their C-suite executives for this evolution and determine the change management and education initiatives required to make it happen.

Stage 5: Creating strategic agility and differentiation

Very few, if any, enterprises are truly at Stage 5 in all segments of their business model. This is the final stage where BI is built into the very fabric of every level of an organization, and predictive analytics are used across the board for most business decisions. Talk of service level agreements (SLAs), batch windows and user buy-in is long-past, and a fully-functional approach based on a service-oriented architecture allows for business model flexibility through true information agility. Systems, users and tools are integrated, and are providing guidance, support and leverage for the BI portfolio.

Business enablement in Stage 5: In Stage 5, the organization benefits from an agile information environment, in which information no longer prohibits strategic agility but promotes and enables it. Systemic, dynamic business modeling for competitive advantage becomes a reality. Analytics are seen as a key differentiator for the organization, not just as a value-adding activity. BI innovation becomes a core theme in the organization's R&D investment portfolio.   The benefits from highly integrated, synthesized information and intelligence are widespread, and users at all levels of the organization have access to insights that help them to work more effectively and optimize business outcomes.

Information management in Stage 5: In Stage 5, information management capabilities reach their highest level, wherein information is delivered via a service model. Integrated information is available seamlessly without regard to data source or integration technology used. Data governance and quality programs continue in full force, supported by C-level sponsorship and a pervasive belief in business ownership of the data and the importance of correcting data quality problems at their source. Unstructured and structured data are fully integrated. Advanced BI is fully embedded within processes, systems and workflow. Information delivery efforts are characterized by agility, and new analytics are easily developed for new roles. Users are able to access the information they need, when they need it, delivered in a way that seamlessly supports their role in the organization.

Strategy and program management in Stage 5: Stage 5 is characterized by the realization of the full business value of BI. The C-level embraces BI as a lever for strategic change. A new role of Chief Analytics Officer might even emerge at this stage to guide the organization in using its information assets to outmaneuver the competition. Advanced BI portfolio management helps the organization achieve the full strategic value of its BI investments, and the company has a commitment to include BI on the agenda of its R&D organization.

What's next for companies in Stage 5: Once an organization reaches Stage 5 it must continue to evolve its BI capabilities by understanding and leveraging new technologies. This encompasses not only the next wave of innovation in information delivery that will come from BI vendors, but also the new devices and technologies that have become a part of the way users work every day. Organizations in Stage 5 will also face challenges related to globalization. Their BI portfolios must be able to adapt to geographical differences, whether in terms of data formats, sources, collection methods, privacy regulations or preferred methods for receiving and using intelligence. Reaching Stage 5 is an achievement in itself, but the exceptional organization that does so cannot afford to rest on its laurels. It must embrace an ongoing commitment to BI innovation and to ensuring that the information needs of users at all levels of the organization are met.

Conclusion

HP's BI Maturity Model describes the path forward as companies work toward closer alignment of business and IT organizations. It is evident that the industry is maturing steadily, as Stage 3 topics like governance and master data management are common hot topics at leading conferences and in company boardrooms. The model also highlights a critical emerging need for a new breed of talent and leadership, namely program managers, business architects, and information architects, that will guide the next generation of integrated, high-value BI solutions.

HP Services

HP's Information Management practice (formerly Knightsbridge) offers Business Intelligence services aimed at making smarter business decisions and delivering better business outcomes.

The BI experts within HP help organizations with their most pressing information management challenges to drive growth, reduce costs and mitigate risks. With vast knowledge and deep skills in a wide array of BI and data warehousing technologies and tools, HP offers fully customized solutions. HP's BI services include:

• Strategy and Planning

• Information Integration

• Information Quality

• Information Delivery

Across multiple industries, these services drive risk mitigation and compliance efforts, business performance management and solutions for finance, marketing, sales, supply chain operations and information technology. Contact us to learn how you can achieve optimal cost-efficiency and quality with HP's offshore, nearshore and onsite resources.

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