Hype Cycle for Business Intelligence and Data Warehousing, 2005

Frank Buytendijk, Ted Friedman, Bill Hostmann, Howard J. Dresner, Bill Gassman, Kurt Schlegel, Andreas Bitterer, Donald Feinberg, Alexander Linden, Mark A. Beyer, Gareth Herschel, Lee Geishecker, Nigel Rayner

Compliance, the continuing data explosion and increasingly complex business environments keep driving business intelligence forward. From a technology perspective, BI is a healthy market with continued convergence and innovation.
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1.0 The Hype Cycle

For 2005, Gartner combines the business intelligence (BI) and data warehouse infrastructure Hype Cycles into one. Convergence is still an important driver for the BI market. Innovation sometimes progresses smoothly: standards such as The Object Linking and Embedding (OLE) database for online analytical processing (OLAP)/MDX and Extensible Markup Language (XML)/A have made it to the slope without a peak or a trough. For other trends, the market is searching for the right approach. XML-enablement and Web services are merging into an overall service-oriented architecture approach. In general, BI is a healthy market with stable core technologies that are complemented by continuous innovation.

Figure 1. Hype Cycle for Business Intelligence and Data Warehousing, 2005

Plateau will be reached in:
- less than 2 years
- 2 to 5 years
- 5 to 10 years
- more than 10 years
- obsolete
- before plateau

Acronym key:
- B2B  business-to-business
- BAM  business activity monitoring
- DBMS  database management system
- EBIS  enterprise business intelligence suite
- ETL  extraction, transformation and loading
- OLAP  online analytical processing

Source: Gartner (July2005)
2.0 On the Rise

2.1 Analytical Process Controlling

**Definition:** The intersection between applications, integration brokers and analytics will eventually enable organizations to obtain a deeper understanding of their business processes, from an operational execution perspective.

**Justification for Hype Cycle Position/Adoption Speed:** A new standards-based approach to process intelligence is required to fill the gaps in business activity monitoring and business process management.

**Business Impact Areas:** Decision makers understanding the impact of their business processes.

**Benefit Rating:** High.

**Market Penetration:** Less than 1 percent of target audience.

**Maturity:** Embryonic.

**Example Vendors:** IBM, Oracle and SAP.

*Analysis by Andreas Bitterer*

2.2 64-Bit Hardware

**Definition:** Use 64-bit hardware platforms to leverage the removed memory constraints. All data is loaded into memory for instant query and reporting, instead of using records and indexes on disk.

**Justification for Hype Cycle Position/Adoption Speed:** More vendors are entering the market with business intelligence (BI) software geared toward 64-bit analytics.

**Business Impact Areas:** All levels of the organization benefit from fast deployments of memory-based BI.

**Benefit Rating:** High.

**Market Penetration:** Less than 1 percent of target audience.

**Maturity:** Emerging.

**Example Vendors:** Hardware: Dell, Fujitsu-Siemens, and HP. Software: Panoratio and Qliktech.

*Analysis by Andreas Bitterer*

2.3 Cross-Enterprise Analytics

**Definition:** Cross-enterprise analytics (CEA) is the notion of approaching "analytics" as a cross-disciplinary topic that transcends subject areas and applications.

**Justification for Hype Cycle Position/Adoption Speed:** Vendors such as SAP and Siebel promote CEA as a part of their offerings.

**Business Impact Areas:** By nature, every area of the business is affected, particularly where work is handed over (in other words, the business interfaces).

**Benefit Rating:** Transformational.
Market Penetration: Less than 1 percent of target audience.

Maturity: Embryonic.

Analysis by Howard Dresner

2.4 Visual Business Intelligence Development Tools

Definition: Visual business intelligence (BI) tools are highly visual and usable development tools that do not have a language associated with them. Applications are constructed by selecting objects, placing them on a pallet and defining properties.

Justification for Hype Cycle Position/Adoption Speed: Increasingly, these visual development tools have emerged as a rapid way for users and competency centers to develop user-based applications.

Business Impact Areas: User prototyping and development of BI applications.

Benefit Rating: Moderate.

Market Penetration: One percent to 5 percent of target audience.

Maturity: Emerging.

Example Vendors: Arcplan, Dimensional Insight, Proclarity and QlikTech.

Analysis by Howard Dresner

2.5 Open-Source Database Management Systems

Definition: Use open-source software database management system (DBMS) engines, such as MySQL, for the data warehouse.

Justification for Hype Cycle Position/Adoption Speed: Most open-source DBMS engines have no extensions for data warehouse. Most will never have these extensions with the exception of MySQL, still immature as a DBMS.

Business Impact Areas: Potential to reduce cost of data warehouse implementations.

Benefit Rating: Moderate.

Market Penetration: Less than 1 percent of target audience.

Maturity: Emerging.

Example Vendors: Ingres and MySQL.

Analysis by Donald Feinberg

2.6 Text Mining

Definition: Text mining extracts insight from structured and unstructured text by others deriving patterns and classifications.

Justification for Hype Cycle Position/Adoption Speed: More vendors are appearing in this space with credible applications and a growing set of customers. Call center applications with text-based mining have begun to appear.
**Business Impact Areas:** Customer behavior analysis, campaign management, call center management, compliance and competitive intelligence.

**Benefit Rating:** High.

**Market Penetration:** One percent to 5 percent of target audience.

**Maturity:** Emerging.

**Example Vendors:** Attensity, Autonomy, ClearForest, SAS and SPSS.

*Analysis by Alexander Linden and Howard Dresner*

### 2.7 Embedded Analytics

**Definition:** Embedded analytics inserts operational or predictive analytics directly into another business application. Examples include real-time recommendations and operational performance indicators.

**Justification for Hype Cycle Position/Adoption Speed:** Most aspects of embedded analytics (for example, using predictive models to make a real-time recommendation) are being hyped by vendors, but are being put into production outside of a few particular use cases (for example, fraud detection). This technology needs to mature significantly before it reaches the plateau.

**Business Impact Areas:** Business process management.

**Benefit Rating:** High.

**Market Penetration:** One percent to 5 percent of target audience.

**Maturity:** Emerging.

**Example Vendors:** Fair Isaac, SAS, Siebel and SPSS.

*Analysis by Kurt Schlegel and Bill Gassman*

### 2.8 Open-Source Business Intelligence

**Definition:** Business intelligence (BI) technologies are available as part of open-source application development, application server or database platforms.

**Justification for Hype Cycle Position/Adoption Speed:** Some vendors have announced they will donate part of their BI functionality to open-source communities.

**Business Impact Areas:** IT operations and managing BI.

**Benefit Rating:** Low.

**Market Penetration:** Less than 1 percent of target audience.

**Maturity:** Emerging.

**Example Vendors:** Actuate.

*Analysis by Bill Hostmann*

### 2.9 Collaborative Business Intelligence

**Definition:** Collaborative business intelligence (BI) includes annotations, report sharing, workflows and synchronous analysis of data.
Justification for Hype Cycle Position/Adoption Speed: Since the days of the executive information systems there have been annotations. Vendors are beginning to include workflows in their BI tools.

Business Impact Areas: Target setting, budgeting and performance management.

Benefit Rating: Moderate.

Market Penetration: One percent to 5 percent of target audience.

Maturity: Emerging.

Example Vendors: Cognos, Hyperion and SAP.

Recommended Reading: "What BI Needs Next Is Collaboration"

Analysis by Frank Buytendijk

2.10 Data Warehouse Appliances

Definition: Data warehouse appliances are hardware and database management systems software integrated and packaged to provide support for business intelligence applications.

Justification for Hype Cycle Position/Adoption Speed: The concept is not really new, but new vendors are coming on the scene.

Business Impact Areas: Has potential to simplify and reduce the cost of data warehouse implementations by reducing the number of components and administrative overhead.

Benefit Rating: Moderate.

Market Penetration: One percent to 5 percent of target audience.

Maturity: Emerging.

Example Vendors: Datallegro and Netezza.

Analysis by Donald Feinberg and Mark Beyer

2.11 Advanced Analytics

Definition: Advanced analytics comprise all techniques that help build models and simulations to create scenarios, understand realities and predict future states. Advanced analytics include data mining, predictive analytics, applied analytics and statistics.

Justification for Hype Cycle Position/Adoption Speed: Advanced analytics have been around for quite a while and have been productive for equally as long (albeit for a small population of users/analysts). They require significant skills and competencies in data access and analysis. Advanced analytics experience renewed interest.

Business Impact Areas: Every area of the business to which advanced analytics are applied.

Benefit Rating: High.

Market Penetration: One percent to 5 percent of target audience.

Maturity: Adolescent.

Example Vendors: IBM, Fair Isaac SAS and SPSS.
2.12 Convergence of Enterprise Business Intelligence Suites/Business Intelligence Platforms

**Definition:** Vendors are adding credible enterprise business intelligence suite (EBIS) capabilities to their business intelligence (BI) platforms (and vice versa), and are competing in both markets. Convergence is achieved by their own development or acquisition.

**Justification for Hype Cycle Position/Adoption Speed:** Vendor consolidation (acquisitions among vendors in both markets) is continuing, and vendors are creating converged technology as part of their continued R&D.

**Business Impact Areas:** Fewer products and vendors required for BI implementations.

**Benefit Rating:** Moderate.

**Market Penetration:** One percent to 5 percent of target audience.

**Maturity:** Emerging.

**Example Vendors:** Business Objects, Hyperion, Information Builders and MicroStrategy.

**Recommended Reading:** "EBIS and BI Platforms: The Next Step in BI Convergence"

Analysis by Bill Hostmann

2.13 SOA-Enabled Business Intelligence

**Definition:** Web-services-based architectures provide more-flexible development environments for vendors; callable business intelligence (BI) components to perform a certain task; and networked capabilities of BI applications that are aware of each other.

**Justification for Hype Cycle Position/Adoption Speed:** Service-oriented architectures (SOAs) are one of the building blocks of a business process platform. BI must overlay business processes. Also, BI is increasingly providing operational analytics. These BI analytic components can be included as a peer application component within an SOA application. As a consequence, SOA has an impact on BI architectures and vice versa.

**Business Impact Areas:** Operational analytics, agility-driven businesses.

**Benefit Rating:** Transformational.

**Market Penetration:** Less than 1 percent of target audience.

**Maturity:** Embryonic.

**Example Vendors:** SAP.

Analysis by Frank Buytendijk, Bill Hostmann and Mark Beyer

3.0 At the Peak

3.1 Business Activity Monitoring/Real-Time Business Intelligence

**Definition:** Business activity monitoring (BAM) defines the concept of providing real-time access to and analysis of critical business performance indicators to improve the speed and effectiveness of business operations.
Justification for Hype Cycle Position/Adoption Speed: BAM functionality is beginning to appear in some vertically focused business applications. Large application software vendors are shipping BAM platforms or are in development.


Benefit Rating: High.

Market Penetration: One percent to 5 percent of target audience.

Maturity: Adolescent.

Example Vendors: Information Builders, Microsoft Teradata, Tibco and webMethods.

Recommended Reading: "Detect External Events With Business Activity Monitoring"

Analysis by Bill Gassman

3.2 Virtual Data Federation/Enterprise Information Integration

Definition: Virtual data federation technology enables the creation of virtual databases via real-time access and integration of operational source data. Labeled by some vendors as enterprise information integration.

Justification for Hype Cycle Position/Adoption Speed: Generating significant interest, debate, and hype, virtual data federation is just beginning to see use by early adopters. Expectations of buyers and claims by some vendors are inconsistent with the numbers and scale of deployments.

Business Impact Areas: Virtual data federation/enterprise information integration will generate value through augmentation of physical data structures for business intelligence, rather than replacing them. May assist organizations in more quickly deploying against changing business requirements.

Benefit Rating: Moderate.

Market Penetration: Five percent to 20 percent of target audience.

Maturity: Adolescent.

Example Vendors: Attunity, Avaki, Certive Composite Software, IBM and MetaMatrix.

Recommended Reading: "Virtual Federation Will Augment BI Data Architecture"

Analysis by Ted Friedman, Mark Beyer and Andreas Bitterer

3.3 Dashboards/Scorecards

Definition: Dashboards and scorecards are key performance indicators displayed on a screen to examine at a glance, before drilling down to detail in the business intelligence tool.

Justification for Hype Cycle Position/Adoption Speed: Dashboards/scorecards are a great shop window for business intelligence (BI) tools that appears to be very attractive for users. However, it is merely a shop window, and the real added value is in the BI technology.

Business Impact Areas: Balanced scorecard and executive information systems.

Benefit Rating: Low.
Market Penetration: Five percent to 20 percent of target audience.

Maturity: Adolescent.

Example Vendors: Business Objects, Cognos, Hyperion and SAS.

Recommended Reading: "Just Give Me A CPM Dashboard"

Analysis by Frank Buytendijk

3.4 Corporate Performance Management

Definition: Corporate performance management (CPM) includes all methodologies, metrics, processes and systems that are needed to manage the performance of an enterprise.

Justification for Hype Cycle Position/Adoption Speed: Many enterprises have seen their planning and control cycles spin out of control and need to fix them, as well as prepare for increased pressure on speed and accuracy of management reporting. Corporate governance is another major driver.

Business Impact Areas: Budgeting, planning, forecasting, scorecarding, investment analysis and financial consolidation.

Benefit Rating: High.

Market Penetration: Five percent to 20 percent of target audience.

Maturity: Adolescent.

Example Vendors: Cognos, Hyperion, OutlookSoft, SAP, SAS and SRC Software.

Recommended Reading: "Magic Quadrant for CPM Suites: No Dramatic Movement in 2004"

Analysis by Frank Buytendijk, Lee Geishecker and Nigel Rayner

4.0 Sliding Into the Trough

4.1 Business-to-Business Business Intelligence Extranets

Definition: Deployment of business intelligence (BI) beyond the borders of the enterprise connect enterprises on a management level, leading to BI networks.

Justification for Hype Cycle Position/Adoption Speed: Thin-client technology has made it possible to share information beyond the enterprise. Vendors are addressing current scalability issues.

Business Impact Areas: Management information to help customers manage business relationships or improve their own operations.

Benefit Rating: Transformational.

Market Penetration: One percent to 5 percent of target audience.

Maturity: Adolescent.

Recommended Reading: "Information Democracy: Are We There Yet?"

Analysis by Frank Buytendijk
4.2 Business Application Data Warehouses

**Definition:** Business application data warehouses are business intelligence (BI) and data warehousing capabilities integrated with a business application (enterprise resource planning, customer relationship management, supply chain management) package. These often contain standard reports. The data marts or data warehouse structure often acts as the basis for the corporate performance management (CPM) offerings of the business application vendor.

**Justification for Hype Cycle Position/Adoption Speed:** In 2001 and 2002, there had been a massive adoption of these packages, most often from SAP. Extensive customer feedback shows it is not as easy to implement and rollout as presumed.

**Business Impact Areas:** Management reporting, closed loop budgeting and information analysis.

**Benefit Rating:** Moderate.

**Market Penetration:** Twenty percent to 50 percent of target audience.

**Maturity:** Adolescent.

**Example Vendors:** Oracle, SAP and Siebel Systems.

*Analysis by Frank Buytendijk and Ted Friedman*

5.0 Climbing the Slope

5.1 ETL Embedded in Database Management Systems

**Definition:** Major database management system (DBMS) vendors are embedding extraction, transformation and loading (ETL) functionality into the DBMS engine and offering ETL tools bundled with the DBMS.

**Justification for Hype Cycle Position/Adoption Speed:** Major relational DBMS vendors all provide some degree of embedded ETL and are improving their capabilities. However, functionality lags significantly behind leading independent ETL tool vendors.

**Business Impact Areas:** As DBMS vendors strengthen their ETL offerings, low-cost, commodity ETL will become an attractive approach for many enterprises. This will enable more business intelligence projects in cost-constrained enterprises.

**Benefit Rating:** Moderate.

**Market Penetration:** Five percent to 20 percent of target audience.

**Maturity:** Early mainstream.

**Example Vendors:** IBM/Ascential, Microsoft and Oracle.

*Analysis by Ted Friedman, Mark Beyer and Andreas Bitterer*

5.2 Metadata Tools

**Definition:** Metadata tools provide the repository for defining the various components of the data warehouse architecture and the processes by which data is transformed, integrated and moved between them.
**Justification for Hype Cycle Position/Adoption Speed:** Metadata has been the long-time problem area for data warehousing. Vendors have paid limited attention to this issue, adding only minimal, tool-centric support. Focus on metadata across the data warehouse architecture is increasing.

**Business Impact Areas:** Strong metadata support will smooth data warehouse implementations and increase agility to react to changing business requirements.

**Benefit Rating:** High.

**Market Penetration:** Five percent to 20 percent of target audience.

**Maturity:** Adolescent.

**Example Vendors:** Ascential, Computer Associates, Informatica and Revelues.

*Analysis by Ted Friedman*

### 5.3 Data Quality

**Definition:** Without complete and accurate data, critical decisions being made based on the data warehouse and business intelligence (BI) applications will be flawed. Data quality is the process and technology for identifying and correcting flaws in the data supporting BI.

**Justification for Hype Cycle Position/Adoption Speed:** Data quality has long been overlooked as a critical factor in BI success. Many organizations are making the connection and beginning to place a strong focus on data quality within their BI initiatives.

**Business Impact Areas:** Without a solid focus on data quality, a BI and data warehousing project is at risk of failure. Without trust and confidence in the data, business user acceptance will be limited and benefits will not be achieved.

**Benefit Rating:** Moderate.

**Market Penetration:** Five percent to 20 percent of target audience.

**Maturity:** Early mainstream.

**Example Vendors:** DataFlux, Firstlogic, Group 1 Software, Similarity Systems and Trillium Software.

*Analysis by Ted Friedman and Andreas Bitterer*

### 5.4 OLE DB for OLAP/MDX and XML/A

**Definition:** The Object Linking and Embedding (OLE) database for online analytical processing (OLAP) is a standard created by Microsoft for querying and manipulating multidimensional expressions (MDX) data that has found significant adoption. The other main standard is Extensible Markup Language for Analysis (XML/A). Both are used as a communication protocol between various business intelligence (BI) layers, such as a front end, an analytical middle tier and the database server.

**Justification for Hype Cycle Position/Adoption Speed:** Microsoft has effectively introduced the OLE for OLAP/MDX standard; however, it is restricted to the Windows world and does not support Unix. Most vendors support this standard. Many BI vendors, such as Hyperion, Microsoft, SAP and SAS, support XML/A as an emerging standard, and it is becoming more accepted.

**Business Impact Areas:** Service-oriented-architecture-driven BI tools and applications.
Benefit Rating: Moderate.

Market Penetration: Twenty percent to 50 percent of target audience.

Maturity: Mature mainstream.

Example Vendors: Business Objects, Cognos, Hyperion, MicroStrategy and SAP.

Analysis by Bill Hostmann

5.5 Data Mining Workbenches

Definition: Data-mining workbenches address a diverse range of data-mining needs, rather than a specific application requirement, and provide a selection of analytic functions and mining process models from which a data analyst can choose and manage the metadata associated with use or deployment. It also provides functions/user interfaces (UIs) for retrieving and publishing pre-built processing routines, and coordinating the development/management of those routines.

Justification for Hype Cycle Position/Adoption Speed: Data mining workbenches are a very mature technology with a long history and best practices that are widespread. They address only a very small number of users. It is unlikely that these workbenches will start to appeal to broader audiences.

Business Impact Areas: Can have significant impact when used effectively. Often incorrectly assumed to obviate the need to understand the complexity of data-mining algorithms because they facilitate their easy deployment and reuse.

Benefit Rating: High.

Market Penetration: More than 50 percent of target audience.

Maturity: Mature mainstream.

Example Vendors: IBM, SAS and SPSS.

Analysis by Bill Hostmann

5.6 Business Intelligence Platforms

Definition: Business intelligence (BI) platforms provide a BI application development environment for complex, custom applications.

Justification for Hype Cycle Position/Adoption Speed: BI platforms have been around for many years in the form of decision support systems, online analytical processing engines or packaged data warehouses. Adoption beyond the departmental level is just beginning.

Business Impact Areas: Complex analysis and corporate-level BI applications.

Benefit Rating: Moderate.

Market Penetration: Five percent to 20 percent of target audience.

Maturity: Early mainstream.

Example Vendors: SAS, Hyperion, Microsoft, SAS and SAP.

Recommended Reading: “Magic Quadrants for Enterprise BI Suites and Platforms, 2H04”

Analysis by Howard Dresner
5.7 Web Analytics

**Definition:** Web analytics are specialized reporting and analytical tools used to understand and optimize Web site visitor acquisition and actions.

**Justification for Hype Cycle Position/Adoption Speed:** Companies need next-generation Web analytics as Web site strategies mature. Four providers dominate a field of more than 60 offerings. Consolidation is just beginning.

**Business Impact Areas:** Web site design and operations, online advertising and merchandising.

**Benefit Rating:** Moderate.

**Market Penetration:** More than 50 percent of target audience.

**Maturity:** Early mainstream.

**Example Vendors:** Coremetrics, Omniture, WebSideStory and WebTrends.

**Recommended Reading:** "How to Choose an Advanced Solution for Web Site Analytics"

_Analysis by Bill Gassman_

6.0 Entering the Plateau

6.1 ETL Tools

**Definition:** ETL tools are packaged for extracting data from operational source systems, transforming and integrating the data, and loading to a data warehouse.

**Justification for Hype Cycle Position/Adoption Speed:** Extraction, transformation and loading (ETL) tools have seen significant adoption, which continues to increase. More than 50 percent of data warehouse implementations use ETL tools.

**Business Impact Areas:** Significant potential benefits in productivity and cost reductions for initial implementation of a data warehouse, as well as ongoing support.

**Benefit Rating:** Moderate.

**Market Penetration:** More than 50 percent of target audience.

**Maturity:** Mature mainstream.

**Example Vendors:** Ascential Software, Business Objects, Informatica and Oracle.

**Recommended Reading:** "Magic Quadrant for Extraction, Transformation and Loading, 1H05"

_Analysis by Ted Friedman, Mark Beyer and Andreas Bitterer_

6.2 Online Analytical Processing

**Definition:** Online analytical processing technology enables interactive analysis of data in a multidimensional way.

**Justification for Hype Cycle Position/Adoption Speed:** Online analytical processing is older than the relational database. Now, it has found its way into accepted database technology and has overcome its niche position.

**Business Impact Areas:** Sales, marketing, financial, HR, manufacturing and data analysis.
6.3 Enterprise Business Intelligence Suites

**Definition:** Enterprise business intelligence (BI) suites are BI packages that offer standard functionality for integrated reporting, querying and moderate analysis.

**Justification for Hype Cycle Position/Adoption Speed:** Since the early 1990s, enterprise business intelligence suites have been developed in a step-by-step manner. Managed querying is merging with standard reporting.

**Business Impact Areas:** Management reporting, ad hoc query and moderate data analysis.

**Benefit Rating:** Moderate.

**Market Penetration:** Twenty percent to 50 percent of target audience.

**Maturity:** Mature mainstream.

**Example Vendors:** Cognos, Hyperion, Microsoft and Oracle.

Analysis by Frank Buytendijk

6.4 Production/Formatted/Web Reporting

**Definition:** Static reports are formatted in a pixel-perfect manner that can be viewed offline, although presentation quality is less perfect in a Web environment.

**Justification for Hype Cycle Position/Adoption Speed:** Reporting technologies have been around since the mainframe days. Today, they provide the scalability for enterprisewide deployment and beyond.

**Business Impact Areas:** Broad and repetitive distribution of management reports.

**Benefit Rating:** High.

**Market Penetration:** Five percent to 20 percent of target audience.

**Maturity:** Mature mainstream.

**Example Vendors:** Actuate, Business Objects (Crystal Decisions) and Information Builders.

Analysis by Howard Dresner

7.0 Off the Hype Cycle

7.1 Lightweight Reporting

**Definition:** The need for lightweight reporting tools arose when reporting vendors moved on to enterprise reporting, leaving the low end of the reporting market open to various small vendors.
Justification for Omission: Lightweight reporting was an early trend that didn't take off.

Analysis by Bill Hostmann

7.2 Business-to-Consumer Business Intelligence Extranets

Definition: Business-to-consumer deployment of business intelligence beyond the borders of the enterprise supply relevant management information to multiple constituents, such as customers.

Justification for Omission: After some promising initial projects, it has not taken off as a trend.

Analysis by Frank Buytendijk

7.3 Reporting as Part of Enterprise Business Intelligence Suites

Definition: Reporting and enterprise business intelligence suites (EBIS) were once distinct market categories and technologies: push vs. pull information. Most BI vendors are in the process of integrating both.

Justification for Omission: Lost relevance. Reporting is now fully part of EBIS.

Analysis by Howard Dresner

7.4 Guided Analytics

Definition: Guided analytics is a system that guides a less-sophisticated user through a more-complex analytical process that is based on predetermined workflows and wizards.

Justification for Omission: Combined with advanced analytics.

Analysis by Howard Dresner, Gareth Herschel, Kurt Schlegel and Bill Hostmann

7.5 Advanced Visualization

Definition: Using graphical techniques to plot large amounts of often high-dimensional data, advanced visualization provides quick oversight to trained users.

Justification for Omission: Combined with advanced analytics.

Analysis by Howard Dresner, Gareth Herschel, Kurt Schlegel and Bill Hostmann

7.6 Extensible Markup Language for Analysis (XML/A) Standard

Definition: Extensible Markup Language for Analysis (XML/A) is used primarily as a communication protocol between various business intelligence (BI) layers, such as a front end, an analytical middle tier and the database server. XML/A could become the communication language between different BI environments, crossing multiple domains, vendors and technologies, thus enabling BI networks.

Justification for Omission: Combined with OLE DB for OLAP/MDX.

Analysis by Bill Hostmann

7.7 XML Enablement/Business Intelligence Web Services

Definition: Importing, storing or exporting of data by a business intelligence tool making use of Extensible Markup Language data formats and Web-services-based architectures providing more-flexible development environments for vendors.
**Justification for Omission:** Renamed into service-oriented-architecture-driven business intelligence.

*Analysis by Bill Hostmann*

**7.8 OLE DB for OLAP/MDX**

*Definition:* Object Linking and Embedding (OLE) database for online analytical processing (OLAP) is a standard created by Microsoft for querying and manipulating multidimensional expressions (MDX) data, which has found significant adoption.

*Justification for Omission:* Combined with Extensible Markup Language for Assessment.

*Analysis by Bill Hostmann*

**7.9 Analytical CRM as Part of Business Intelligence**

*Definition:* Analytical customer relationship management includes all techniques, metrics, processes and systems that are needed to perform customer relationship management optimization.

*Justification for Omission:* Part of business applications data warehouse.

*Analysis by Gareth Herschel*

**7.10 Data Mining as Part of Business Intelligence**

*Definition:* Data mining makes use of advanced statistical techniques or other types of algorithms that reveal hidden relationships in data sets.

*Justification for Omission:* Disconnected from business intelligence (BI) platforms and enterprise BI suites and renamed into data-mining workbenches.

*Analysis by Bill Hostmann*

**8.0 Conclusions**

The lines between applications such as corporate performance management, business intelligence (BI) technologies and data warehouse infrastructure are blurring. BI and data warehousing should not be seen as separate products, but as an integral part of an organization's IT infrastructure.
9.0 Appendix A: Previous Iteration of the Hype Cycle

Figure 2. Hype Cycle for Business Intelligence, 2004

Key: Time to Plateau
- Less than two years
- Two to five years
- Five to 10 years
- More than 10 years

Source: Gartner (June 2004)

10.0 Appendix B: Hype Cycle Phases, Benefit Ratings and Maturity Levels

Table 1. Hype Cycle Phases

<table>
<thead>
<tr>
<th>Phase</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Trigger</td>
<td>A breakthrough, public demonstration, product launch or other event generates significant press and industry interest.</td>
</tr>
<tr>
<td>Peak of Inflated Expectations</td>
<td>During this phase of overenthusiasm and unrealistic projections, a flurry of well-publicized activity by technology leaders results in some successes, but more failures, as the technology is pushed to its limits. The only enterprises making money are conference organizers and magazine publishers.</td>
</tr>
<tr>
<td>Trough of Disillusionment</td>
<td>Because the technology does not live up to its overinflated expectations, it rapidly becomes unfashionable. Media interest wanes, except for a few cautionary tales.</td>
</tr>
</tbody>
</table>
Phase Definition

**Slope of Enlightenment**
Focused experimentation and solid hard work by an increasingly diverse range of organizations leads to a true understanding of the technology’s applicability, risks and benefits. Commercial, off-the-shelf methodologies and tools ease the development process.

**Plateau of Productivity**
The real-world benefits of the technology are demonstrated and accepted. Tools and methodologies are increasingly stable as they enter their second and third generations. The final height of the plateau varies according to whether the technology is broadly applicable or benefits only a niche market. Approximately 30 percent of the technology's target audience has adopted or is adopting the technology as it enters the Plateau.

**Time to Plateau (Adoption Speed)**
The time required for the technology to reach the Plateau of Productivity.

Source: Gartner (June 2005)

### Table 2. Benefit Ratings

<table>
<thead>
<tr>
<th>Benefit Rating</th>
<th>Definition</th>
</tr>
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<tbody>
<tr>
<td>Transformational</td>
<td>Enables new ways of doing business across industries that will result in major shifts in industry dynamics.</td>
</tr>
<tr>
<td>High</td>
<td>Enables new ways of performing horizontal or vertical applications that will result in significantly increased revenue or cost savings for an enterprise.</td>
</tr>
<tr>
<td>Moderate</td>
<td>Provides incremental, but significant, improvements to established processes that will result in increased revenue or cost savings for an enterprise.</td>
</tr>
<tr>
<td>Low</td>
<td>Slightly improves processes (for example, improved user experience) that will be difficult to translate into increased revenue or cost savings.</td>
</tr>
</tbody>
</table>

Source: Gartner (June 2005)

### Table 3. Maturity Levels

<table>
<thead>
<tr>
<th>Maturity Level</th>
<th>Status</th>
<th>Products/Vendors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embryonic</td>
<td>In labs</td>
<td>None</td>
</tr>
<tr>
<td>Emerging</td>
<td>Commercialization by vendors</td>
<td>First generation</td>
</tr>
<tr>
<td></td>
<td>Pilots and deployments by industry leaders</td>
<td>High price</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Much customization</td>
</tr>
<tr>
<td>Adolescent</td>
<td>Maturing technology capabilities and process understanding</td>
<td>Second generation</td>
</tr>
<tr>
<td></td>
<td>Uptake beyond early adopters</td>
<td>Less customization</td>
</tr>
<tr>
<td>Early mainstream</td>
<td>Proven technology</td>
<td>Third generation</td>
</tr>
<tr>
<td></td>
<td>Vendors, technology and adoption rapidly evolving</td>
<td>More out of box</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Methodologies</td>
</tr>
<tr>
<td>Mature mainstream</td>
<td>Robust technology</td>
<td>Several dominant vendors</td>
</tr>
<tr>
<td></td>
<td>Not much evolution in vendors or technology</td>
<td></td>
</tr>
<tr>
<td>Legacy</td>
<td>Not appropriate for new developments</td>
<td>Maintenance revenue focus</td>
</tr>
<tr>
<td></td>
<td>Cost of migration constrains replacement</td>
<td></td>
</tr>
<tr>
<td>Obsolete</td>
<td>Rarely used</td>
<td>Used/resale market only</td>
</tr>
</tbody>
</table>

Source: Gartner (June 2005)
RECOMMENDED READING

"Understanding Gartner's Hype Cycles, 2005"

Acronym Key and Glossary Terms

BAM  business activity monitoring
BI  business intelligence
CEA  cross-enterprise analytics
CPM  corporate performance management
CRM  customer relationship management
DBMS  database management system
EBIS  enterprise business intelligence suite
ETL  extraction, transformation and loading
MDX  multidimensional expression
OLAP  online analytical processing
OLE  Object Linking and Embedding
SOA  service-oriented architecture
UI  user interface
XML  Extensible Markup Language
XML/A  Extensible Markup Language for Analysis

This research is part of a set of related research pieces. See "Gartner's Hype Cycle Special Report for 2005" for an overview.

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