1 Product Overview

Metastorm BPM is a highly scalable, enterprise software suite and accompanying set of methodologies designed to support rapid deployment and customization of an unlimited number of human and system-based processes within and across mid-to-large size organizations.

Metastorm BPM addresses the full process lifecycle – from modeling and automation to analysis, simulation, and continuous improvement – all via a single user interface designed to shield users from multiple disparate systems and applications. Metastorm BPM provides a flexible architecture that enables rapid and frequent process changes, supports multiple modeling and process execution standards, and makes it easy to incorporate diverse legacy applications into service-oriented business processes. (Note: Process Pods is a registered trademark of Metastorm, Inc.)

2 BPM Engine

Metastorm BPM features a fault-tolerant and scalable Process Engine that controls the execution of Metastorm BPM processes and associated transactions. This Engine provides the single point of contact for all people, applications, and databases involved in the process. It maintains the status of each process instance (or business event) and manages supporting tasks like user/role authentication, application integration, to do lists, Metastorm’s unique Watch List capability, auditing, and notifications. Administrators can manage Process Engine instances using the Microsoft Management Console (MMC).

Large implementations typically require complex integration with multiple types of applications, databases, and systems, including legacy applications. To support large-scale, SOA-based integration and maintain throughput, Metastorm BPM Engine can offload integration tasks to Metastorm Integration Manager (MIM). MIM is deployed alongside the Engine or to another platform, distributing the integration workload and maximizing the overall scalability of the Metastorm BPM implementation.

Server Environment

Figure 1 provides an overview of the Metastorm BPM architecture. All implementations use the Metastorm Designer, Metastorm Process Engine, and one or more of the supported Clients, at a minimum. Customers can also select additional components (of the solution architecture) to meet their needs.

Metastorm BPM’s four primary functional layers include visibility; design, simulation, and analysis; execution; and integration.

Visibility. This layer supports the user experience. Out-of-the box, Metastorm BPM features Web-based dashboards. BPM tasks can also be deployed to users in additional ways (described in the next section). Customers can additionally opt for Metastorm Insight, an integrated reporting and business activity monitoring (BAM) module.
Metastorm BPM – A Rich Product Suite

**Design, simulation, and analysis.** This layer supports business process definition, change management, and simulation. Business processes are designed and deployed using the Metastorm Process Designer. Business rules can be integrated with process definitions via the included Metastorm Rules Engine or using an external business rules engine (BRE). An optional simulation engine – Metastorm Envision – that enables simulations based on both business assumptions and current or historical process data is also available.

**Execution.** The execution layer provides business process execution. The Process Engine manages all activities required to complete each process instance. All human and system activities are automatically logged for audit, reporting, and simulation purposes.

**Integration.** This layer provides business logic and data from other applications for use in Metastorm BPM processes. Metastorm Orchestrators connect the Process Engine directly to external applications and data sources via Java classes, .NET assemblies, or Web services. If extensive system-to-system integration is required, customers can additionally opt for Metastorm Integration Manager (MIM). MIM manages resource-intensive integration on behalf of the Process Engine and provides access to a wide variety of legacy applications, including mainframe, UNIX, and AS/400 applications.

In addition to providing a comprehensive set of components to deliver everything required to manage the full round trip lifecycle, Metastorm offers a set of “Process Accelerators” designed to help organizations get up and running quickly and to measure results along the way. Accelerators range from horizontal and vertical Process Pods® that contain all the key elements needed to get a specific process up and running (including maps, forms, APIs, and reports) to methodologies and best practices training designed to build the expertise and measurements required to deliver and maintain a successful implementation (see Section 10).

**Client Elements**

Metastorm BPM deployment is browser-based. Options are available to deploy to a variety of clients, including:

- Internet Explorer 6 (or higher) using Metastorm BPM forms, ASP, ASP.NET, JSP, XHTML, Adobe PDF forms, and MS InfoPath forms
The Process Designer features a form designer that enables business users and developers to create Web-based forms. Metastorm BPM Web parts are also provided, enabling rapid delivery of Metastorm BPM functionality to MOSS and SharePoint Services implementations. Customers can mix and match Metastorm BPM Web parts with other Web parts. Figure 2 shows a customized portal view that mixes standard SharePoint Web parts and Metastorm BPM Web parts.

Customers can also include Metastorm BPM functionality and content inside their own custom Java and .NET applications. Metastorm BPM features Java, .NET, and Web services Process Orchestrators to enable standardized, point-and-click integration.

**Web Services**

Metastorm BPM supports web services and SOA by enabling process developers to use any SOA-enabled service as part of a business process. Customers can also expose Metastorm BPM functions as web services for use in other applications. A large number of standards are supported, including UDDI, WS-Security, WS-Policy, WS-SecurityPolicy, WS-Trust, WS-SecureConversation, WS-Addressing, and WS-Interoperability.
Metastorm BPM’s Process Orchestrator for web services includes the Web Services Process Activator, shown in Figure 3. The WS Process Activator enables UDDI-based point-and-click service discovery and integration, allowing Metastorm BPM process developers to select web services and specific data elements for inclusion in business processes. The WS Process Activator also allows any user action in a process to be exposed as a web service for consumption by another product. Stages can also be exposed as web services to indicate the status of a work item.

MIM provides a powerful capability to quickly and easily expose legacy and mainframe applications (including native CICS applications) as web services for use within an SOA framework. This allows organizations to leverage existing assets as part of new, automated business processes, without rework.

### 2.1 Platforms

Metastorm BPM is built on the .NET framework. The Metastorm Process Designer is deployed to Windows desktops. The Process Engine is deployed to Windows Servers, and requires either a Microsoft SQL Server or Oracle database to store process data. Envision is deployed to Windows desktops as an extension of the Metastorm Designer. MIM can be deployed on various platforms including Windows, UNIX, i5/OS (AS/400, iSeries, and System i), z/OS (mainframe, zSeries, and System z), and CICS.

### 2.2 User Interface

Metastorm BPM supports a wide variety of UIs and process access methods. Process participants can perform their tasks using any of the following:

- Metastorm BPM forms
- Web pages (ASP, ASP.NET, JSP, DHTML)
- InfoPath forms
- Portlets (JSR-168 standard, i.e., WebSphere)
- Web parts (MS Office SharePoint Services)
- MS Office 2003 and 2007
- Adobe Acrobat Forms
♦ MS Outlook Forms
♦ Blackberry and Windows Mobile devices
♦ Embedded in an existing J2EE or .NET application

Figure 4 shows the Metastorm BPM default Web page view of a user’s task list. The browser-based task list shows all tasks associated with a selected process or stage in a process. Processes and their stages are displayed in the tree structure on the left side of the task list. Buttons across the top allow the user to navigate and sort the task list, start new tasks (including administrative tasks), and view tasks on their Watch List, enabling them to monitor tasks even after they have completed their role in the task. The Watch List empowers users to understand the whole process and participate in process innovation and improvement. This feature can be turned on or off for each stage in a process by the process designer.

2.3 Scalability

Metastorm BPM is an enterprise-class, fully stateless system that meets the scalability requirements of large, distributed organizations. The platform architecture scales vertically through symmetric multiprocessing (SMP) and faster CPUs, and it scales horizontally with the number of servers. Multiple Metastorm Process Engines can run against a single database. All database access is done via standard ODBC ADO or JDBC, enabling the database and Process Engines to reside on different servers. Metastorm BPM ensures load balancing among multiple Process Engines by dispatching requests to each server using a dynamic load-balancing algorithm. Additionally, the cluster configuration supports load-balancing features provided by Microsoft, as well as other hardware- and software-based load balancing mechanisms. As the system load increases, Metastorm BPM’s architecture ensures that the overall system scales up optimally with the number of servers and the processing capacity of each server.

Scalability and high-performance are inherent features of Metastorm BPM because of its stateless and transactional design. Client processes communicate with the Metastorm Process Engine using semantically rich but compact XML messaging. All interactions with the Process Engine are treated as transactions with no state being held between transactions. Resources are allocated for an individual transaction and freed upon completion. As a result, a higher number of requests can be processed with the absolute minimum of resource requirements. Pooling and resource management techniques are also utilized so that the overhead of resource instantiation does not counterweight the benefits of Metastorm
BPM’s stateless design. To further enhance scalability, the Metastorm Process Engine offers built-in asynchronous processing for tasks such as notifications and external events. Asynchronous processing allows the Process Engine to perform event-driven tasks without affecting transaction processing.

In addition, Metastorm BPM leverages the scalability features offered by .NET and Windows Enterprise Services. The Process Engine consists of a set of stateless .NET and Windows Enterprise Services components that benefit from Just-in-time (JIT) activation, a key Windows Enterprise Services scalability enhancement for multi-tier applications. JIT activation impacts the binding between a client and an engine server component. It offers Metastorm BPM clients the capability of holding a durable reference to a server component while optimizing system resources used on behalf of the server. Server component instances are deactivated as soon as transactions are completed, freeing memory resources for other connections and resulting in better scalability.

As JIT activation optimizes client connectivity to the Metastorm Process Engine, similarly, the built-in Windows Enterprise Services resource pooling benefits Process Engine connections to database servers. A configurable pool of database connections is maintained and reused for Metastorm transactions. All Metastorm database transactions are performed through this connection pool. Given that establishing connections to a database server is expensive in performance and resource terms, this greatly enhances Metastorm BPM’s performance and scalability. This extends to access to external databases, since all database access is performed using Microsoft’s Database Access Components (MSDAC).

### 3 Process Modeling

Process modeling is accomplished in the Metastorm BPM Process Designer. The Metastorm Designer is available in two versions: Business User's Edition and the full-featured Metastorm Process Designer. The Business User’s Edition is a version of the Metastorm Designer that excludes the integration and engine publishing capabilities while enabling business analysts and process owners to map out their processes using Metastorm’s Stage Action Role (STAR) notation or the popular BPMN standard (available in the next release). Business users can also design forms, indicate points of integration to dictate how the process takes place. These processes are fully compatible with the full-featured Metastorm Process Designer so they can be easily integrated with complementary systems, tested, and deployed on the Metastorm Process Engine. No translation is required between the Business User’s Edition and the Metastorm Designer. The Business User's Edition is available as a free download from Metastorm's Web site. Figure 5 shows the current Process Designer UI.

The Process Designer is designed with complex human-centric enterprise processes in mind. Process maps clearly distinguish between stages where work waits for a person to undertake it and stages where work will be processed by another application. It also distinguishes between stages and the actions that humans take and the actions that are automated to progress work to the next stage in the process. This makes Metastorm BPM process maps easier to understand than a traditional drawing tool/flow charting approach. The Metastorm BPM property editor provides a role-based view of the process by making it clear which roles are responsible for work at each stage; are authorized to take each action; and are able to view each form.

All Metastorm process components are stored and deployed as XML files. To support collaboration, developers can create and share process component libraries. Libraries may include forms, segments of forms, segments of process maps, definitions of roles, and integration or extension scripts and functions. These may be built once and made available to process designers for reuse, allowing greater control and consistency in processes, and enhancing the efficiency of process developers.
Business process agility is only possible if new or updated processes can be deployed quickly and easily. Metastorm facilitates this by giving users the ability to model and deploy process changes with no system downtime and no need for time-consuming code compilation. Metastorm BPM enables real-time deployment of updated processes. This takes advantage of Metastorm BPM’s intelligent version control to ensure that no work is lost in process and that older versions of the process can be re-deployed if required.

Metastorm BPM offers an internal BRE integrated into the Process Designer. An Advanced Business Rules option is also available that provides tight integration with Microsoft BizTalk Server BRE or Fair Isaac’s Blaze Advisor BRE. Rules can be built, deployed to the rules repository, and called by the Metastorm Process Engine when required by a process (See Section 4 for more on business rules).

3.1 Subprocesses

Metastorm BPM supports both embedded subprocesses and linked subprocesses. An embedded subprocess can be defined in the procedure (collection of process artifacts) as well as stored independently using the aforementioned (Section 3) process component library feature. When stored in a library, a subprocess may be reused in other processes.

Linked subprocesses may exist independently of one another with the calling of a subprocess dependent on process rules. They may also exist within the overall procedure file. Integration between linked subprocesses is achieved via Metastorm BPM “Flag” events.

3.2 Shared Data Space

All process data is stored in the database repository in real-time. The platform’s architecture supports two complementary techniques for modeling data and defining the database structure. In addition to the conventional way of defining a database by having a database analyst define the schema (“inside-out”), Metastorm BPM allows solution developers or business analysts to perform data modeling via the Metastorm Designer (“outside in”). That is, Metastorm BPM supports schema definition by automatically translating the form definition into a database schema. Alternatively, it also allows forms to bind their fields with the fields in the existing database schema for customers who prefer to use conventional data modeling. The combination of support for both “outside-in” and “inside-out” data
modeling accelerates development while enabling Metastorm BPM solutions to use well-controlled data structures.

Metastorm BPM forms and process business logic can also use data from external sources such as web services, .NET classes, Java objects, and messages. Once data from an external data source is “activated,” the data appears as if it is a local data source and the process designer is shielded from the mechanics of where the data resides.

Process data, either the shared process performance data or the custom line of business data gathered for each process, can be made available in a read/write format via Java or .NET APIs, as well as publishing process-specific web services.

### 3.3 Forms

The Process Designer features an integrated forms designer. Forms can be tightly bound to process data and, because forms are process aware, they can be built once and reused at different stages and for different actions in the process. Standard forms such as audit trails or status forms can be stored in Metastorm BPM libraries.

Figure 6 shows an example of a Metastorm BPM Form. The drag and drop forms designer offers a variety of field types. Each field offers automatic validation to ensure that only the appropriate type of data is entered into the field. Additional validation such as range checks can be added via the property editor.

Features that are essential to human-centric BPM are also included in the forms designer. Examples include “Field Dependency,” where the options displayed in one drop-down field are dependent on the value selected in another, and “Active Drill-Down,” where a form can display a status condition which can drill down to a list of work items that cause that condition to trigger. The list itself can be active to provide access to the work items.

Key to the concept of Metastorm’s intelligent process-aware forms is that the UI can be built quickly. The Metastorm Integration Wizard supports rapid form development by providing capabilities such as a wizard interface for populating drop down options from database tables. Customers can also leverage third party forms like Microsoft Office Documents, Adobe Forms, HTML forms, Microsoft InfoPath forms, Visual Studio.NET forms, and others.

### 3.4 Time

Metastorm BPM supports the uniform time clock (UTC) standard, insuring accurate time representation for deployments that span multiple time zones. Alarms and escalations can be triggered by the passage of a specific amount of time. Timed actions provide flexibility; for example, they can cause a folder to move through the process, send emails, or trigger any other event. Alarms and escalations can be based on an interval,

- After the work item was created (useful for SLAs)
- After the item entered the current stage in the process
- After the item was last updated
- Before or after a deadline set on the item
- Before or after any other time value (taken from the system, line of business data, or calculated time value)
Metastorm Envision is an optional advanced optimization and simulation module for Metastorm BPM. With Envision, process owners, managers, and specialist business analysts can take a process model built in the Metastorm Designer and run multiple simulations across multiple process segments (subprocesses), if necessary, to establish

♦ The cycle time of completing a process
♦ The cost of processing by process, action, and stage
♦ How many processes can be handled with the available resources
♦ Resource utilization
♦ Where the bottlenecks are in a process

You can perform simulations using real process data in real-time, thus ensuring that the impact of process changes is predicted accurately. Process models are built in the Process Designer. When the Designer’s Simulate option is chosen, the Envision Wizard is run. The Wizard lets users select whether they wish to enter their own assumptions or have the Wizard analyze the Metastorm repository and provide simulation assumptions based on archived process data. If the latter option is selected, the Wizard will establish: the volume and pattern of new items entering the process; the paths that the items flow through the process; and the amount of time that items remain at any stage in the process.

Envision takes advantage of the Process Engine’s ability to collect process performance and audit trail data to provide assumptions on which to base simulations. Using this facility, analysts can save time and deliver simulations of processes more quickly. Analysts can run multiple simulations on any model and compare the results. Envision lets you change the data and run and store a new simulation as a named scenario. Reports compare the results of different scenarios. Standard reports are provided for cycle times, costs of processing work, resource utilization, and queue lengths and times. Reports are displayed.
in a tabular or graphical format. You can also export data to Excel for further analysis. Figure 7 shows the Metastorm Envision module performing a simulation exercise.

Figure 7. Metastorm Envision for simulation and optimization.

4 Business Rules

Metastorm BPM offers a process rules engine integrated into the Process Designer that allows the majority of rules in a process to be defined. These rules can be built via the Integration Wizard. More complex rules or rules that require sharing with other applications can be built in a third-party BRE. The Advanced Business Rules option provides tight integration with the Microsoft BizTalk Server BRE and Fair Isaac’s Blaze Advisor. Rules can be built, deployed to the rules repository, and called by the Metastorm Process Engine when required by a process.

5 Integration and Integration Engines

Metastorm BPM offers comprehensive capabilities to support integration with applications on a variety of platforms. Processes are usually best defined by business analysts, but integration tends to require more technical skills. Metastorm BPM’s integration capabilities allow developers to create integration points that business analysts can then use like native Metastorm BPM resources. Thus, business analysts are shielded from the integration tasks and provided with the data they need in a format that fits their expectations.

*Integration Wizard*

At the highest level, the Metastorm Designer's Integration Wizard provides a “fill-in-the-form” interface to many popular applications, including databases, email, and Word documents and files. This tool is designed for use by the process owner or business analyst and requires no programming or scripting.
Process Orchestrators

Process Orchestrators deliver a single API for organizations to integrate, manage, and control multiple processes across disparate Java, .NET, and web service environments. Each Process Orchestrator includes:

♦ Metastorm BPM Enterprise Class Libraries (ECL) – a set of APIs to the Metastorm Process Engine for Java, .NET, and web services. The ECL allows third-party applications to take advantage of the facilities of the Process Engine.

♦ Metastorm Activator – allows application components for Java, .NET, and web services to be orchestrated using a Metastorm BPM process.

♦ Platform-specific features – such as JAAS support and .NET Visual Components, and ASP.NET server controls.

Additionally, developers can extend the capabilities of the Integration Wizard using the Activator. The Activator “activates” an external application or data source for Metastorm BPM integration. Integration with Java beans, .NET assemblies, or web services can also be made available to process developers as Integration Wizard functions using the Activator.

In the .NET environment, the business analyst defining the process can make process events available to Visual Studio .NET. The Visual Studio .NET developer can then browse those events and directly program integration, to be called by the Process Engine when the event is fired.

Metastorm Integration Manager (MIM)

MIM is an advanced integration tool for managing and controlling system-based processes. MIM allows Metastorm BPM to manage the system integration-based tasks required by most processes on a separate SOA tier. MIM also supports high-volume managed file transfer. Together, Metastorm BPM and MIM provide comprehensive support for both human- and system-centric activities. MIM provides SOA-based integration and system-based process management for a range of hosts, UNIX, and Windows platforms, providing access to databases, flat files, VSAM and other host file types, message queues, CICS, and other business data and business services.

Microsoft Workflow Foundation

The Metastorm BPM ECL is also provided as a library of MS Workflow Foundation Activities (WFA). This allows any third-party application that supports Workflow Foundation (including MS Office SharePoint Server and Office 2007) to take advantage of the Process Engine’s facilities.

All Integration Wizard functions are also made available as a library of WFA. This allows integration to third-party applications that provide support for MS Workflow Foundation to be built within the Workflow Foundation Designer and made available in the Integration Wizard.

Scripting

Developers more comfortable with scripting languages can take advantage of the Designer’s syntax-sensitive editors for JavaScript, VBScript, and JScript.NET. Scripts can be used to drive any .NET or COM-enabled server or client solution. In particular, there are many solution integration products (interface engines or message brokers) that handle protocol conversion as well as message format conversion. The Metastorm BPM Integrator may be used in conjunction with any of these integration products to seamlessly interface with existing systems.

Messaging

Metastorm Messaging Integration enables Metastorm BPM processes to be integrated easily with other applications, either internal or at a trading partner, via a message queuing system. Messaging Integration
can both send to and listen for messages from Java Messaging System (JMS), IBM’s WebSphere MQ Messaging, and Microsoft’s MQ (MSMQ).

When using a messaging system to exchange information with Metastorm BPM, an organization can take advantage of assured delivery of the information using industry standard protocols. The Metastorm BPM Message Queue Monitor listens for arriving messages in a queue and, on the arrival of a message, invokes the appropriate Metastorm BPM action in the designated process. This action can either create a new item in a process or progress an item to the next stage of a process. A Metastorm BPM process is able to send a message to a queue in a messaging system, making it available for another application.

**Enterprise Directories**

Metastorm Enterprise Directory Integration is split into two modules. The Directory Extraction Service provides data caching services for popular directory services together with an administrative capability to control the information cached from directories. Users and Roles Administration Services allow the schema of a directory to be extended to include additional role information required by Metastorm BPM processes.

**Microsoft BizTalk**

Metastorm BPM Advanced Integration for BizTalk Server enables Metastorm BPM processes to be integrated easily with other applications, either internal or at a trading partner, via the BizTalk Server. It provides an automatic application schema generator that enables Metastorm BPM forms to act as BizTalk documents out of the box. Processes built in Metastorm BPM are readily available for integration with the BizTalk mapping tool and BizTalk Orchestration.

Metastorm BPM can monitor and act upon incoming BizTalk document flows and use the information from incoming BizTalk documents to update an existing item in a Metastorm BPM process or create a new one. A Metastorm BPM process can also create BizTalk business documents and send them to the BizTalk server for onward transmission to another application using the Metastorm BPM Integration Wizard’s Send a Document function.

**SAP**

SAP integration is provided via EPO’s Metastorm BPM Connector for SAP (SAP certified).

**Third-Party Integration Products**

Metastorm BPM supports integration with legacy system integration tools such as WebLogic’s Integrator, Software AG’s EntireX, and the entire suite of iWay adapters. As discussed in Section 4, complex shared business rules maintained in third-party rules platforms can also be tightly integrated into Metastorm BPM business processes.

**6 Organizational Structure**

Metastorm BPM includes a user management facility that enables the assignment of unique user IDs, organizational roles, and responsibilities. It can also take advantage of LDAP directories or relational databases to access organizational hierarchies.

Roles in Metastorm BPM can be defined as groups or dynamically. Dynamic roles (essential for large enterprises building complex processes) are defined with formulae. These formulae can determine roles by accessing data from web services, LDAP directories, databases, BREs, line of business data, and the process itself. Users can also assign roles at runtime if the process is designed that way.

Work items are routed to the To Do list of any stage in a process. Each To Do list can comprise one or more roles. Work is placed on the To Do List of the users who own the role for that folder at that stage.
Metastorm BPM’s Directory Extraction Service enables user information to be extracted from any LDAP directory or ODBC-compliant database. Extracted user data is mapped to the Metastorm BPM user management facility. This feature allows customers to take advantage of existing user directories while maintaining a separate level of security specific to Metastorm BPM processes. User data can be updated via extraction on a regularly scheduled basis or on demand.

User and Roles Administration Service enables Metastorm BPM user, role, and routing information to be maintained as part of each user’s properties in Microsoft Active Directory. User and Roles Administration Service extends the user schema in the directory by adding the following attributes:

♦ A Metastorm BPM User attribute that should be set to true if the user is to have a Metastorm BPM sign-on.
♦ A DeliverAlertsByEmail attribute that indicates if a user is to receive an email whenever a new alert is posted to their To Do or Watch List.
♦ A ReportsTo attribute that contains a reference to another directory user that this user reports to.
♦ Multiple Metastorm BPM attributes, specifically a collection of name/value pairs that provide additional generic attributes for a user.

Metastorm Direct Directory Access provides an alternative to Directory Extraction. Roles can be evaluated based on directory attributes, and the owner evaluated as and when required.

7 Process Adaptability

Processes can be adapted at runtime using the following mechanisms:

♦ Business Rules – Using either the built-in rules editor or the BizTalk Rules Designer, a process can dynamically adapt to external events and conditions.
♦ Administration forms – These can be established and made available to authorized users through the client, where they can change the values of rule parameters.
♦ Enterprise Dynamic Roles allow a process to adapt the assignment of work and visibility of information based on changes in workload or business events.
♦ Dynamic Sub-processes – With Metastorm BPM’s event flags, a process can invoke any number of concurrent or parallel subprocesses based on runtime events.

8 Process Lifecycle

Metastorm BPM addresses the full process lifecycle – from modeling and automation to analysis, reporting, simulation, and continuous improvement. Any process can be published from the Process Designer to the Process Engine with a single click.

Metastorm BPM manages process versions as follows:

♦ Metastorm BPM tracks all versions of a process and any process components and stores a copy of every version in the process repository.
♦ Previous versions of a process or process component can be retrieved and re-deployed.
♦ Multiple versions of a process may be active at one time.
♦ Intelligent versioning – A process instance (called a “Folder” in Metastorm BPM) will follow the most recently published process. However, if the latest published version of a process contains a
change that would result in a Folder in an “orphaned” state, then the folder will follow the previous version of the process until it reaches a point in common with the currently active process. For example, if a Folder is at a stage and an updated process is published that deletes that stage, the Process Engine will continue to follow the previous process definition until it meets up with a stage common to both the new and the old versions of the processes.

♦ Versioning is handled at the process and process component level. For example, forms, form segments, map segments, and other process components can all be version controlled via libraries.

9 Monitoring, Measurement, and Management Information

Metastorm Insight is an optional BI module that allows users to monitor, analyze, and take action on key business process information through an intuitive executive dashboard interface (Figure 8). It operates against both historical and real-time data and provides comprehensive business performance management capabilities, including

♦ The ability to monitor process data from a central, customizable dashboard.

♦ The ability to drill down, analyze, and take immediate action on real-time data.

♦ Automatic capture of process performance data at desired intervals.

♦ A suite of pre-configured reports that include both “snapshot” and time-phased trend analysis.

♦ A sophisticated, yet easy-to-use query and report definition tool that allows users to define customized reports and perform ad hoc queries.

♦ Built-in system administration functions to allow for easy deployment of reports for distributed users.

♦ Metastorm Insight provides an administrator with the ability to define automated tasks that capture additional process performance data and facilitate the provision of time-phased trend reports. You can schedule tasks on a daily, weekly, monthly or quarterly basis and they may be defined independently against specific Metastorm BPM processes. Tasks can be configured to execute at a particular time during the day in order to balance system performance. Additionally, notification of the outcome of each task can be provided by email. Administrators also have the option to store this additional data in a separate database from the Metastorm BPM repository database so that it can be shared and used by other applications. Reports are displayed through the Metastorm browser client and can be exported to a PDF or Excel file. Access to reports is controlled by Metastorm BPM’s Enterprise role security function.
10 Templates and Frameworks

Metastorm offers vertical (industry) and horizontal (technology) BPM frameworks called Process Pods. These consist of the following project components:

- Process maps pre-built in the Metastorm Designer
- Electronic forms pre-built in the Metastorm forms designer
- Pre-built management and analytical reports
- Pre-built integration with mail, collaboration, messaging, and business applications
- Administrative tools
- Electronic process documentation
- .NET and Java APIs
- Basic scripts or web services, where appropriate
- Sample data

Many Process Pods also come with a multimedia presentation that describes the solution, the business value provided, and instructions for use. Process Pods address many commonly requested business processes, such as New Customer Acquisition, New Store Opening, Case Management, CMMI Certification, and Purchase Order Management. They have been used by Metastorm customers and partners to deliver successful BPM implementations.

Technology Process Pods provide rapid, out-of-the-box connectors to other applications integral to process deployment. Currently available technologies Process Pods include SAP, Documentum, Interwoven, Meridio, and OpenText (Hummingbird). A Process Pod for connecting Metastorm to IDS Scheer’s ARIS is currently in development.
11 Vendor

Metastorm is a privately held company based in Baltimore, MD, and was founded in 1996. The company focuses exclusively on business process management software. Metastorm BPM solutions are used in over 1,300 organizations worldwide.

Metastorm is profitable, with approximately 200 employees. The company has a large partner/reseller network, including over 135 resellers and numerous strategic partnerships with companies like Microsoft and IBM.

12 Cost

Metastorm BPM is priced based on a combination of server, user, and process application licensing. Enterprise licensing is available. Some Metastorm partners also offer the solution in a SaaS model.
## Metastorm, Inc. : Metastorm BPM, Version 7.5

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<td>Subprocesses</td>
<td>Fully supported and available for reuse.</td>
</tr>
<tr>
<td>Shared Data Space</td>
<td>Supports schema definition by automatically translating the form definition into a DB schema; alternatively, allows binding with fields in an existing DB schema. Data from any external data source can be “activated” and then appears as if it is a local data source. Process and performance data can be made available in a read/write format via Java or .NET APIs as well as publishing process-specific web services.</td>
</tr>
<tr>
<td>Forms</td>
<td>Process Designer includes a full-featured forms designer. Additionally, users can incorporate Office documents, Outlook forms, Adobe Acrobat forms, J2EE portlets, SharePoint Web Parts, Blackberry/Mobile devices, or custom .NET and J2EE applications.</td>
</tr>
<tr>
<td>Time</td>
<td>UTC time support (full internationalization); full support for events, alerts, and escalations.</td>
</tr>
<tr>
<td>Optimization &amp; Simulation</td>
<td>Supported via Metastorm Envision; simulation based on business assumptions or archived process data; optimization based on simulation comparisons/reports.</td>
</tr>
<tr>
<td>Business Rules</td>
<td>Native, plus support for MS BizTalk BRE and Fair Isaac’s Blaze Advisor.</td>
</tr>
<tr>
<td>Integration</td>
<td>SOA-based; Native .NET, J2EE, and web services integration capabilities; legacy and mainframe integration, managed file transfer and workload management available with MIM.</td>
</tr>
<tr>
<td>Organizational Structure</td>
<td>Native user/role management capabilities; LDAP support and integration with Microsoft Active Directory.</td>
</tr>
<tr>
<td>Process Adaptability</td>
<td>Processes can be adapted at runtime using business rules, dynamic roles, and dynamic subprocesses that are triggered by specific events.</td>
</tr>
<tr>
<td>Process Lifecycle</td>
<td>Process version management handled natively by Metastorm BPM; designed to support constant process innovation.</td>
</tr>
<tr>
<td>Monitoring &amp; Measurement</td>
<td>Fully supported via Metastorm Insight; BAM, KPI and SLA monitoring via pre-built executive dashboard solution.</td>
</tr>
<tr>
<td>Templates &amp; Frameworks</td>
<td>Process Pods - Vertical industry and horizontal technology solutions built by Metastorm and solution partners.</td>
</tr>
<tr>
<td>Cost</td>
<td>User, Server, Process and Enterprise Licensing available; implementation starts at around $125K.</td>
</tr>
</tbody>
</table>