



Best Practices Guide

AgilePoint BPMS v5.0 SP2

Document Revision r5.2.3

November 2011

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Preface

Disclaimer of Warranty

AgilePoint, Inc. makes no representations or warranties, either express or implied, by or with respect to anything in this document, and shall not be liable for any implied warranties of merchantability or fitness for a particular purpose or for any indirect, special or consequential damages.

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Virus-free software policy

AgilePoint recognizes that viruses are a significant security consideration for our customers. To date, we have had no report of AgilePoint BPMS carries any virus. AgilePoint takes the following measures to ensure our software is free of viruses upon delivery:

- AgilePoint is built on top of Microsoft .NET framework. The pre-compiled executable is a .NET Common Language Runtime (CLR) application, not a native machine binary. As far as is known at this time, there are no viruses that infect .NET CLR executables.
- The virtual environment for the product packaging process is fully isolated and protected, and anti-virus software is installed and running during packaging.
- The deliverable package is scanned by anti-virus software before upload to our customer download site.

Document Revision Numbers

AgilePoint documentation uses the revision number format **rX.Y.Z**. The letters and numbers in this revision number can be interpreted as follows:

- **r** - Indicates "revision." This helps to differentiate the document *version* numbers, which start with **v**.
- **X** - The major version number for AgilePoint BPMS to which this document refers. For example, AgilePoint releases 5.0, 5.0 SP1, and 5.5 would all have an **X** value of **5**.
- **Y** - The major document revision number. This number typically changes only when either there is a new AgilePoint release, or there are major changes to the document.
- **Z** - The minor document revision number. This number is incremented each time the document is republished.

AgilePoint Documentation in PDF and HTML

AgilePoint documentation is provided in both print-friendly (PDF) and web-based (HTML) formats.

Advantages of HTML Documentation

- HTML is the **primary delivery format** for AgilePoint documentation.
- Unified, global **search** across all documentation. PDF documents allow you to search only within the context of a given PDF file.
- **All hyperlinks supported**. Links in PDFs are only supported in certain contexts.
- "One-stop shopping" for all information related to AgilePoint BPMS.
- The HTML documentation is updated more frequently than the PDF documentation. Web-based documentation is updated periodically between AgilePoint releases to address errors and omissions, but the PDF documentation is updated only at the time of a software release.

Advantages of PDF Documentation

PDFs can be more easily **printed**, **archived**, and **transferred** (such as by FTP or email) than HTML documentation.

For more information, see [Downloading Files and Sharing Links from the Documentation Library](#) on the [AgilePoint Support Portal](#).

Contacting AgilePoint Sales

AgilePoint is a leading Business Process Management System (BPMS) provider created by a team of driven people who strive to incorporate the principles of relentless innovation for the benefit of our customers. Our mission is to help companies of any size attain and sustain operational success through process excellence.

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Contacting Customer Support

To contact AgilePoint Support, please submit a ticket on the AgilePoint Support Portal: <http://support.agilepoint.com/SupportPortal/>

If you do not have a Support Portal account, you can send an email to request one: support@agilepoint.com

Best Practices

The purpose of this document is to define the best practices when implementing AgilePoint to lower the cost and shorten the time to successfully deploy AgilePoint business processes enterprise wide, ultimately lowering the total cost of ownership while achieving the desired business benefits.

Intended Audience

- Project Managers
- Business Process Analysts
- IT Application Developers
- System Administrators
- Change Control Coordinators
- Sponsors
- Subject Matter Experts

AgilePoint BPMS Governance

Governance in relation to BPM is the action of developing and administering policies, processes, and procedures for BPM initiatives. As a process, AgilePoint BPMS governance may be carried out for any size organization from a single human being to a large multi-department enterprise. The purpose of governance is to ensure that the organization produces a consistent pattern of good results by following standardized processes and procedures for implementing AgilePoint as an enterprise-wide BPM solution.

Below are some basic principles for effective AgilePoint BPM governance:

1. The project needs an executive champion. It is not just an IT project. This is important for achieving buy-in from anyone affected by the implementation. Without buy-in the business process management initiative won't succeed.
2. Put someone in charge with authority to enforce BPM governance rules. Creating a BPM project team will help deal with these challenges. The team's key responsibilities include dealing with major business process management governance such as deployment considerations, setting project milestones, and measuring performance.
3. Establish standard procedures and channels to follow for implementing new BPM projects.
4. Clearly define the roles and responsibilities of everyone involved in a BPM project. Each BPM project needs managing with proper ownership of tasks, planning, and control.

These principles provide a basis for facilitating the effective collaboration needed to achieve success in deploying AgilePoint BPM related projects.

AgilePoint BPMS Roles and Responsibilities

Implementing AgilePoint BPMS within an organization will require certain job roles and responsibilities. Below are the job functions that play a key role in the deployment of enterprise-wide AgilePoint BPMS projects.

- Project Manager
- Business Process Analyst
- IT Application Developers
- System Administrator
- Change Control Coordinator
- Sponsor
- Subject Matter Experts

Project Manager

The Project Manager is the overall business process owner who facilitates the communication and collaboration between the Business Process Analyst, IT Application Developer, System Administrator,

and Change Control Coordinator. The Project Manager is also the gatekeeper for best practices and helps to get projects deployed by leading discovery sessions with process participants, and assisting with collaboration challenges across functional areas of the organization.

Business Process Analyst

The Business Process Analyst role in an AgilePoint project is to gather and document the business and system requirements and communicate to IT Application Developers what is needed. They are responsible for the analysis of any implications, constraints, and special handling conditions associated with the business process. They are also responsible for the creation, simulation, deployment, and improvement of process models using the AgilePoint Envision component of the AgilePoint BPMS suite.

Systems Administrator

The Systems Administrator is responsible for installation and maintenance of the AgilePoint BPMS suite and its integration components.

Change Control Coordinator

Responsible for creating the training courseware and workshops that will help the organization adapt to their new methodologies and best practices for AgilePoint BPMS projects.

Sponsor

The BPM Sponsor is a dedicated individual or group within an organization that is the major stakeholder in the success of a BPM initiative. They control the funds necessary for BPM deployment and strongly influence the decision making.

Subject Matter Experts

A Subject Matter Expert is a person within an organization who is an expert in a particular area of the business and can provide valuable technical project knowledge when developing and deploying a BPM solution.

Hardware and Software Considerations

For information about software and hardware considerations for AgilePoint BPMS, including those related to the database, see [System Optimization](#) on the [AgilePoint Support Portal](#).

Migration Recommendations

This section provides recommendations for migrating AgilePoint BPMS software and processes from one environment to another.

Migrating Custom Developed Components

To migrate custom developed AgilePoint components, use AgilePoint Deployment Services.

Process Template Migration

It is good practice to define a migration process for controlling how AgilePoint workflows and process changes to these workflows are promoted to production, since this can affect system performance and reliability. In AgilePoint, a user needs to be authenticated and have permission to 'publish' an AgilePoint process to an AgilePoint Server – e.g. development, testing, staging, production. Therefore, IT could be the only one enabled to 'publish' (or promote) the changed process to the production server after performing final validation, etc. It is recommended that the designer publish to the non-production environment using Envision and have IT promote the tested process definition to production using the deploying XML file via AgilePoint Enterprise Manager. This ensures that the process definition that was tested is exactly what IT promotes to production.

Testing Guidelines

AgilePoint is a background process for the main ASP.NET application so customers usually perform regression and performance testing on the main application rather than doing a standalone test for AgilePoint. There are a lot of performance testing tools available like TestPartner, TestComplete, QALoad etc. for ASP.NET applications. However if they feel that on a particular screen, some of the AgilePoint related components are not performing properly, there is a way to troubleshoot using the performance tracing utility on an AgilePoint Server. This helps to know if the problem is due to AgilePoint code.

For more information, see [Performance Tracing Utility](#) on the [AgilePoint Support Portal](#).

In general testing workflows can be done at two levels.

- Apply 'validation' for the process model and unit test each reusable component such as your custom AgileParts.
- Test environments typically include instances of process servers, database servers, email servers, SharePoint servers, etc. Configurations that are different in test environments vs. production environments such as database connection strings, Web Service URL's, etc. can all be configured as a set of environment-specific attributes in AgilePoint Server rather than being hard-coded in process definitions. A test server can define one set of values for these shared attributes while a production server can define another. Process templates simply need to be created and configured to use these named shared attributes rather than hard-coded values. With this type of abstraction, processes can be deployed and tested in a test environment and then deployed to a production environment without changing the process definition. Only the values of the shared process attributes will change.

AgilePoint Upgrades and Hot Fixes

Typically you can apply hot fixes directly on your staging environment and QA the applied hot fix. Once every one has signed off on the fix, it can be deployed on to your production environments.

Applying upgrade patches is a little more tedious then upgrading because the rollback option is not applicable. You can apply an upgrade patch first either in QA or a development environment depending on whether you are working on a major or minor version upgrade.

We suggest you can apply minor versions in a QA environment and go through the QA process then propagate those changes to staging and production.

In case of major version upgrade you need to apply it on a development environment first. Typically we strive for 100% backward compatibility but in certain scenarios you may have to deal with minor configuration issues and also develop existing processes with enhanced features then propagate those changes to the QA, Staging, and Production environments.

Also when applying upgrades it is good practice to pull out the single staging or production box from the cluster or load balancer environment, that way you can minimize your risks.

Why Do I Need Forms for AgilePoint?

Forms provide the human interface for AgilePoint. People use forms to input information about your AgilePoint-based, process-driven applications.

How Does AgilePoint Support Forms?

AgilePoint-based, process-driven applications use a service-oriented (SOA), schema-driven, n-tier architecture. Forms represent the UI tier, but this is loosely coupled with the business logic tier using a schema. A form simply needs to bind to the schema to enable data exchange with the application.

AgilePoint provides built-in tools to support several form technologies out of the box, but you can use whatever form technology best suits your business requirements.

Can I Reuse Forms I Have Already Built?

Yes. To connect an existing form to an AgilePoint process, you need only to bind the fields in your existing forms to the XML schema for your AgilePoint process.

What Form Technologies Does AgilePoint Support Out Of The Box?

You can use any forms technology that can interface with a web service, but AgilePoint includes built-in support for the following form technologies out of the box:

- AgileForms
- InfoPath
- ASP.NET
- SharePoint ListForm

What is AgileForms?

AgileForms is AgilePoint's integrated, no-code web form solution. Business users can use AgileForms to create simple or sophisticated forms that run from any web location in a browser. Visual form design is integrated seamlessly with the AgilePoint Envision process modeling environment. AgileForms are rendered as ASP.NET pages at runtime.

What are the Advantages of AgileForms?

AgileForms offers the following advantages as a form technology for AgilePoint-based, process-driven applications:

- Created using a GUI. No code is required.
- Easy to use and business user friendly.
- Rapid form creation.
- Dynamic lookups from most any external data source, including SharePoint.
- Simple integration with SharePoint, web services, and databases.
- Repeating tables.
- Dynamic validation.
- Conditional formatting.
- Tabular sections
- Sub-forms.
- Wizard-driven forms typically used for large forms having 10-20 pages.
- Reusable forms.
- AJAX-enabled.
- Large variety of field types and controls.
- Custom branding.
- Custom style sheets.
- Multi-lingual form capabilities.
- Offers a compromise between InfoPath and ASP.NET.

What are the Disadvantages of AgileForms?

AgileForms includes the following disadvantages as a form technology for AgilePoint-based, process-driven applications:

- No support for custom code.
- No support for custom controls.
- Add-on component that requires a separate license.
- IT resources required to set up connections for complex forms that use multiple interactions with back end systems.
- Does not support Network Load Balancing. This is scheduled for future release.

What are InfoPath Forms?

InfoPath forms are XML-based data entry forms created using the Microsoft InfoPath application. InfoPath provides a Microsoft Office based graphical form designer with tight SharePoint integration. InfoPath is a business user-friendly form technology, but InfoPath client and Form Server licenses can be cost prohibitive for some organizations.

What are the Advantages of InfoPath Forms?

InfoPath offers the following advantages as a form technology for AgilePoint-based, process-driven applications:

- Created using a GUI. No code is required.
- Easy to use and business user friendly.
- Rapid form creation.
- Close integration with SharePoint.
- Dynamic lookups from most any external data source, including SharePoint.
- Simple integration with SharePoint, web services, and databases.
- Multiple views for single form.
- Repeating tables.
- Dynamic validation.
- Conditional formatting.
- Multiple attachments.
- Multi-lingual form capabilities.
- Custom branding.
- Web-based or client-based data entry mode.

What are the Disadvantages of InfoPath Forms?

InfoPath includes the following disadvantages as a form technology for AgilePoint-based, process-driven applications:

- Difficult to integrate with process-driven applications outside of SharePoint
- Difficult to secure sensitive data.
- Both web-based and client-based forms require the InfoPath client license.
- InfoPath Forms Server license is required for web-based forms.
- Limited standard controls.
- No support for custom controls.
- No support for AJAX.
- No multilingual support.
- Performance reduction on large or complex forms. Post back to form is slow, and performance is not good.
- Custom, managed code is difficult to maintain.

What are ASP.NET Forms?

ASP.NET is Microsoft's web application framework, which allows programmers to build dynamic web sites, web applications and web services. ASP.NET forms offer the greatest flexibility for creating forms in AgilePoint, but they require technical IT resources to create and maintain.

What are the Advantages of ASP.NET Forms?

ASP.NET offers the following advantages as a form technology for AgilePoint-based, process-driven applications:

- Anything that is possible with an ASP.NET form, you can do with AgilePoint BPMS.
- AgilePoint provides the basic web pages as starting points within a process.

What are the Disadvantages of ASP.NET Forms?

ASP.NET includes the following disadvantages as a form technology for AgilePoint-based, process-driven applications:

- Coding required, even though the basic web pages are provided as starting points.
- IT resources required to create and maintain the forms.
- Visual Studio .NET required.

What are SharePoint ListForms?

SharePoint ListForm is a form technology included within SharePoint that automatically creates a form based on a SharePoint list. SharePoint ListForms are easy to create, and SharePoint users do not require additional software. However, functionality and customizability are limited.

What are the Advantages of SharePoint ListForms?

SharePoint ListForm offers the following advantages as a form technology for AgilePoint-based, process-driven applications:

- Created using a GUI. No code is required.
- Easy to use and business user friendly.
- Rapid form creation.
- Close integration with SharePoint.

What are the Disadvantages of SharePoint ListForms?

SharePoint ListForms includes the following disadvantages as a form technology for AgilePoint-based, process-driven applications:

- No multilingual support.

- No support for custom code.
- Branding requires IT resources.
- It is only possible to look up data from SharePoint. No lookups from external data sources, such as databases or web services.
- No UI customization, such as AJAX, dynamic or repeating tables, tabs, custom controls, etc.

What Additional Form Technologies Does AgilePoint Support?

AgilePoint supports any form technology that can interface with a web service. Examples include: Windows Forms and JSP.

AgilePoint Custom Development

This section provides guidelines for custom software development using AgilePoint BPMS.

Communicating with the AgilePoint Server Engine

AgilePoint supports multiple communication modes. We recommend the following guidelines for client applications interacting with AgilePoint Server.

Web Service

We recommend this as the default option for client applications communicating with AgilePoint as it is the de facto standard of the SOA Paradigm.

MSMQ and JMS

We recommend this approach in scenarios where client applications want to interact in loosely coupled mode via messages. Also they want messages to be delivered in persistence mode.

.NET Remoting

We recommend this approach in scenarios where client applications want to embed business processes as part of their application.

Human Activity Interface

AgilePoint BPMS is independent of forms based technology. We support your preferred way of interaction. In general, the following guidelines should be considered for your preferred human interaction methods.

SharePoint ListForm

We recommend this approach for business users to quickly and easily create simple forms based on a SharePoint list.

AgileForms

We recommend this approach for the business user for an entirely Web based forms solution, rapid deployment, and extensibility.

InfoPath Forms

We recommend this approach for the business user or IT developer to create and maintain forms from simple to moderate complexity. InfoPath is a good choice when there exists constant change in interface requirements and also when you want your business users able to lead human interaction design.

Custom ASP.NET or JSP

We recommend this approach in scenarios where there is already an existing infrastructure based on ASP.NET or JSP applications or scenarios related to where interaction with applications takes place over the Internet. These forms technologies are also good for increased flexibility, high performance, dynamic adaptable UI for user context (mobile), and sophisticated development lifecycle support.

Windows Forms Smart Client

We recommend this approach in scenarios where there is already an existing infrastructure, complex UI functionality such as drag and drop, master-detail etc.

Manual Tasks

We recommend the following guidelines with regards to manual tasks while developing your business processes.

Process Initiator

We recommend assigning the first manual task to the Process Initiator (\$ProcessInitiator) in scenarios when you want the flexibility for any user to be able to initiate the process.

Group or Role

We recommend assigning to a group or role in scenarios where you want to implement the pooling concept such that any one from the pool can complete the task.

Work Load

We recommend using the Work Load Balance AgileWork in scenarios where you want to assign tasks to groups of individuals based on their current work load.

Sequential Approval

We recommend using the Sequential AgileWork in scenarios where approval has to go through a specific channel.

Parallel Approval

We recommend using the Parallel Approval AgileWork in scenarios where you want independent parallel tasks to be approved

Voting

We recommend using the Voting AgileWork in scenarios where approval is based on multiple decisions and majority determines the final status.

Custom AgileShapes

AgilePoint provides a powerful IT asset framework to create and expose your reusable, service-oriented components for common business functions. We recommend following guidelines while developing custom Agile Shapes (AgileParts or AgileWork).

Multi-Thread Safety

You need to make sure that all your AgileShapes are written thread safe as they are going to be executed inside the AgilePoint engine which is highly multi-threaded.

Synchronous vs. Asynchronous

Rule of thumb for determining synchronous vs. asynchronous collaboration is based on transaction lengths. We suggest if your transactions are short burst you can collaborate synchronous mode, if they are long running you should collaborate asynchronous mode.

Scalability

You need to evaluate your reusable components in terms of performance and scalability in an isolated mode before exposing them as AgileParts. We suggest designing your AgileParts using the SOA paradigm that enables you to scale better as it permits you to execute core functionality on the native environment and AgilePart interface layer enables you to collaborate with the AgilePoint Engine.

Polling

In scenarios where you build custom AgileParts for monitoring external LOB applications, we recommend you to avoid custom polling techniques as it consumes a lot of resources from AgilePoint Server. AgilePoint Server's hydrates and dehydrates based on the age of the process under these circumstances you may not get the desired result. We recommend implementing polling such that your custom AgileParts raise events to using an AgileConnector and the AgileConnector does the actual polling.

AgilePoint System Management

This section describes how to manage the various components of the AgilePoint BPMS system.

User Management

AgilePoint provides built in synchronizing capabilities for synchronizing your corporate users. In general we suggest our clients to use the following rules in synchronizing their users' master data.

1. Sync only user accounts that are part of your business processes.
2. Synchronization frequency typically determined based on your corporate standards but we typically suggest to sync daily at a minimum.
3. Synchronize all the relevant user metadata such as title, reporting hierarchy, location, etc.
4. In the case of a large number of users, we typically suggest you synchronize at the group level

AgilePoint also allows users to be synchronized from custom application databases such as your ERP or CRM databases. In such scenarios, you can write your custom AgileConnector to maintain synchronization between the master data source and AgilePoint.

Role and Group Management

We suggest our clients to have their role or group match with their corporate hierarchy, in most cases this is already defined as part of their Active Directory. This way it is easier to synchronize your corporate re-organizations.

In general you can use your corporate hierarchy as a rule of thumb while mapping groups on to built in AgilePoint Roles. AgilePoint also allows you to define custom roles based on your requirements. In general we encourage groups and roles to be employed while authoring your business processes as it offers more flexibility.

Process Template Management

We typically encourage our customers to follow the below guidelines:

1. Latest Business Process Template definitions are always maintained in source control even though AgilePoint supports built in version control.
2. Define your own business processes for change management of business process. This is an ideal example of how you can use AgilePoint to maintain your AgilePoint infrastructure.
3. Typically organize your business process based on horizontal functionality, you can further organize your templates based on business units, location, or department level.

Custom AgilePart, AgileWork, and AgileConnector Components Management

We typically suggest as any other software code you need to maintain your custom AgilePoint code as part under your favorite source control. AgilePoint provides a built-in tool to analyze all the business processes affected by a particular Agile Shape.

Human Exception Handling

AgilePoint BPMS suite offers several ways to handle exception cases while dealing with human tasks as described below.

Escalation

We suggest authoring your critical manual activity steps of business processes to use built-in escalation options. This way you can have time based escalation procedures built-in as part of your business process.

Delegation

AgilePoint also supports delegation via Enterprise Manager. It's usually a good practice to define delegation rules when someone takes a vacation. This can be done manually by an administrator via Enterprise Manager or you can have your internal delegation process defined within AgilePoint.

Overdue Tasks

AgilePoint mark's all the manual tasks which are not completed by the due time as **Overdue**. At this point, managers can reassign task's via Enterprise Manager manually or we suggest you define your corporate overdue processes in AgilePoint.

AgilePoint SharePoint Integration

Best Practices for SharePoint Integration

This section discusses best practices for AgilePoint SharePoint Integration.

Account Setup Recommendations

Below is the basic combination you can use for AgilePoint BPMS and SharePoint. You can use as many different user accounts as you like for each of the different components, but we recommend using a separate user account for the SharePoint Application Pool only, and do not use this user account anywhere else (not even for SharePoint Site Collection Administrator/Owner). This is because SharePoint sees the Application Pool user account as the SharePoint System Account, and grants very low privileges to this SharePoint System Account when accessing SharePoint (e.g., accessing the SharePoint Object Model), even though SharePoint may let this SharePoint System Account login into the SharePoint page explicitly.

For a domain environment, the user accounts need to have enough privilege to access resources across the domain (via setSPN).

We recommend you to add AgilePoint System User to local machine Administrator Group and IIS_WPG if you want to use Window Authentication for the AgilePoint database.

Basic Combination:

- One user account for SharePoint Application Pool only (do not use this user account anywhere else).
- One single user account for AgilePoint Application Pool, AgilePoint System User, SharePoint Impersonator (configured via AgilePoint Configuration Manager and SharePoint Integration Installer), and SharePoint Site Collection Administrator/Owner (when creating site collection).

Writing Custom Code using SharePoint Object Model

For detailed information on best practices related to writing custom code using the SharePoint Object model refer to the following article.

<http://msdn2.microsoft.com/en-us/library/ms778813.aspx>

Adding the AgilePoint Task List Web Part

The AgilePoint Task List Web Part for SharePoint can be placed in various locations in SharePoint. The AgilePoint Task List Web Part interacts with one or more servers (e.g. AgilePoint, SharePoint, and/or database servers) whenever they are viewed or refreshed. This interaction is necessary and unavoidable in most cases, and is part of the AgilePoint system's expected usage patterns.

In some environments, the location for which the AgilePoint Task List Web Part is placed could have unintended effects on the system's performance. For example, in an environment where there are many thousands of SharePoint users, but only a fraction of those users interact with AgilePoint,

placing the AgilePoint Task List control on an entry or Top Level site page that is frequently accessed by the entire group of SharePoint users may place additional unnecessary load on the AgilePoint system when the page is accessed by users that don't need access to the Web Part. In such a scenario, it may be better to place the Web Part on a sub site location that is only accessed by a more appropriate group of AgilePoint users and/or that is only accessed when necessary. You will notice errors being written to the AgilePoint Event Logs in the Event Viewer when a SharePoint site is being accessed (that includes the AgilePoint Task List Web Part) by a non-registered AgilePoint user.