



AWD WHITE PAPER

What is AWD?

One of the first BPM products ever created is still going strong, but you may not have heard of it: Automated Work Distributor, or AWD, from DST Systems. Founded in 1969 as a division of Kansas City Southern Industries, DST Systems, Inc. was established to develop an automated recordkeeping system for the mutual funds industry, and it remains the largest provider of third-party shareholder recordkeeping services in the United States. Headquartered in Kansas City, DST Systems is a publicly traded company on the New York Stock Exchange (Symbol: DST) that employs approximately 11,000 associates around the world.

Developed by DST Technologies, a wholly owned subsidiary, AWD remains central to DST Systems' BPO services and is employed by many of the largest financial services, insurance, and healthcare companies in the world. DST has over 450 customers in 20 countries and over 225,000 licensed users. Most of these companies depend on AWD for processing customer transactions every day. If you send a check to your mutual fund account or for your life insurance premium, chances are high that it is processed using AWD. Their largest implementation handles over 15 Million data requests a day for 24,000 users... with subsecond response time.

While many other high-volume document workflow offerings have faded from the BPM scene, AWD has kept pace with today's BPMS architecture. Today AWD¹⁰ offers features that rival the BPMS leaders, including business-friendly BPMN-based design, out-of-the-box business objects and data models, case management, and advanced work management dashboards. As a point of reference, imagine the business-oriented design experience of IBM Lombardi Edition together with the bulletproof imaging, data capture, work management and case management of IBM FileNet Edition... all in a single product.

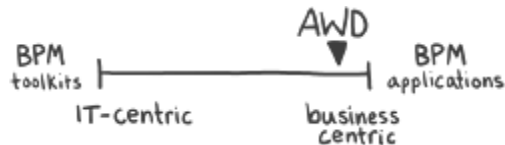


Figure 1. In the BPMS landscape, AWD falls at the business-centric application end of the spectrum.
Source: DST

Beyond mature, proven technology and expertise, AWD offers a number of features that should cause serious BPMS buyers to sit up and take notice:

- A focus on operational efficiency in labor-intensive customer service operations. The process uses business rules to continuously evaluate the most important work for each team and provides dashboards to optimize work management.
- A single offering that combines document capture, transaction processing, customer service, personalized communication, reporting, and case management. Unlike with most competitors, you don't need to integrate multiple products to do all that.
- True BPMN-based process design. With AWD, what you see is actually what you execute. And unlike most competitors, AWD supports BPMN events.
- Executable design by business analysts. Even Lombardi does not claim this. But it is possible with AWD because it is designed as a configurable app, not as middleware. A number of data elements typically needed in customer service operations – such as

Business Area and Work Type – are available out of the box. In addition, the user interfaces most commonly required, including screenflows, can be designed by business users.

With the release of AWD¹⁰, DST is ready to showcase the application. This white paper is intended to introduce AWD to the broader BPMS market.

AWD Applications

AWD is a single software package optimized for three types of BPM applications: transaction process management, case management, and call center management. The same software underlies all of them, the difference being mostly a matter of user interface.

Transaction Process Management

Transaction process management, AWD's bread-and-butter application, refers to processing of customer-initiated transactions. Examples include new account opening, account maintenance, financial transactions (purchases, withdrawals, transfers), insurance claims (life, annuity, property and casualty), and health insurance claim processing. Processing customer transactions is a high-volume, labor-intensive business in which operational excellence has become a strategic differentiator. Optimizing cost, mitigating risk, flexible and efficient deployment, and responsive and informed customer service are all critical factors. Moreover, AWD customers operate in highly regulated and competitive markets, and must provide excellent service in the midst of continually changing compliance requirements and ever-shrinking budgets.

With AWD, transactions initiated from any input source – paper or electronic – are delivered to the most qualified processor available and presented for rapid processing using tailored screenflows that guide the user step by step. AWD routes work for quality checking based on both transaction attributes and processor experience, and allows supervisors to monitor and manage their teams through interactive dashboards. AWD also supports production-scale outbound transaction-related communications delivered via email, fax, SMS, or print/mail. Throughout the process, AWD maintains a complete audit trail of each customer transaction, along with processor comments and notes and any outbound communication generated.

Benefits include improvements in data entry accuracy, processing turnaround time, overall productivity, service levels, rework costs, and hiring/training costs.

AWD at State Street

State Street is a leading financial services provider serving the needs of large institutional investors. It is the number one global mutual fund administrator and number one provider of US mutual fund custody and accounting services. Increased trade processing volumes led State Street to split its operations, so trade settlement and cash processing could resume immediately at an alternate location in the event of a major business disruption.

This required upgrading from their first-generation workflow system to technology that could:

- *Be distributed across geographies*
- *Eliminate desktop deployment*
- *Automatically divide large faxes into separately routable transactions*
- *Match work to available processor skill sets*
- *Eliminate redundant data entry*
- *Provide continuous visibility into processing queues and work status*

With AWD, State Street was able to distribute work across multiple locations in the US, Canada, and India. Operational risk management was aided by the introduction of dashboards to monitor Key Performance Indicators (KPIs). Work was directed to the right employee at the right time, based on skill sets and other factors determined by State Street. As a result, 28% more trades were processed with the same number of employees.

F. Scott Longo, Vice President, Global Transaction Processing at State Street summed it up: "The solution worked exactly as promised and helped us create a true Global Trade Processing Center of Excellence."

Case Management

Case management refers to more complex, event-driven scenarios in which people, content, data, and processes interact, often in an ad-hoc manner. Examples include claims, loan origination, customer onboarding, collections, and complaint management. Attention to regulatory compliance and customer satisfaction must be maintained throughout, as well as continuous visibility into the complete case lifecycle and associated collateral.

A case typically starts with the arrival of some customer communications. What happens next often depends on the circumstances of the case and may change throughout the case lifecycle. Processors make decisions and collaborate on different aspects of the case based on their specific expertise. AWD provides access to all case collateral under one convenient folder, with document viewing and annotation built in. Work can be reassigned easily, and process changes can be deployed in real time. Meanwhile, all case processing is tracked in the audit trail.

Call Center Management

Call center management refers to support for customer service representatives across multiple communications channels, including phone, web, chat, and mail or fax, and multiple backend systems. Implementations include inbound call centers, service appointment scheduling, and collections. DST engages their Design Consulting services with clients and focuses on creating a positive experience for customers when service representatives are used to spending more time managing multiple interfaces and systems than listening to the customer.

AWD offers a way to manage the entire spectrum of customer interaction in a single system. The simple integration layer leverages existing data and information systems, including legacy systems, while providing a uniform process across all channels of communication. Representatives can see the status of the customer service process and a history of interactions throughout the customer lifecycle. They can access the most relevant customer information in a consolidated format and communicate with each customer through their preferred channel.

Business-Centric Process Design

Perhaps the most significant difference between AWD and most other BPM Suites is that business analysts can design and maintain executable processes. The AWD design studio is fully browser-based, using three business-oriented graphical point-and-click palettes:

- The *Form design palette* defines the user interfaces through which processors search for and perform work. Data elements defined in the AWD *Data Dictionary* and process instance data can be mapped to fields on the form, and individual forms can be linked in graphical screenflows to perform complex tasks.
- The *Process design palette* defines the process flow graphically, based on the Business Process Modeling Notation (BPMN) standard. Unlike many BPM Suites that use BPMN just for descriptive modeling, AWD uses it for execution as well. In fact, AWD's BPMN implementation is more complete than most, as it includes things like boundary events, signal events, and multi-instance activities.
- The *Service design palette* defines the implementation details of steps in the process. The implementation of a single activity – a step performed by a single person or system – is called a *service*. For example, in a complex task, the sequence of screens, data lookups, web service calls, business rules, calculations and other interactions would be modeled graphically in the service editor.

Process Modeling with BPMN

The steps in the process are laid out graphically using the BPMN Process design palette (Figure 2). This palette just defines the process flow logic; the implementation details of each human or automated task in the model are then defined using the Service and Form palettes. In the Process editor, the Data Sources panel contains a list of data elements that can be assigned to task properties. The list includes elements from the AWD Data Dictionary plus outputs of services used in the process. Two important data elements in every AWD process are Business Area and Work Type. Business Area refers to a particular division or workgroup in the organization, such as USOperations or DivisionABC. Work Type refers to the type of customer request, such as NewAccount or Claim. Each AWD process is deployed to one or more specific Business Areas and Work Types. AWD supports four types of BPMN activities: User task (human task), Service task (automated task), Multi-instance task, and Reusable Subprocess.

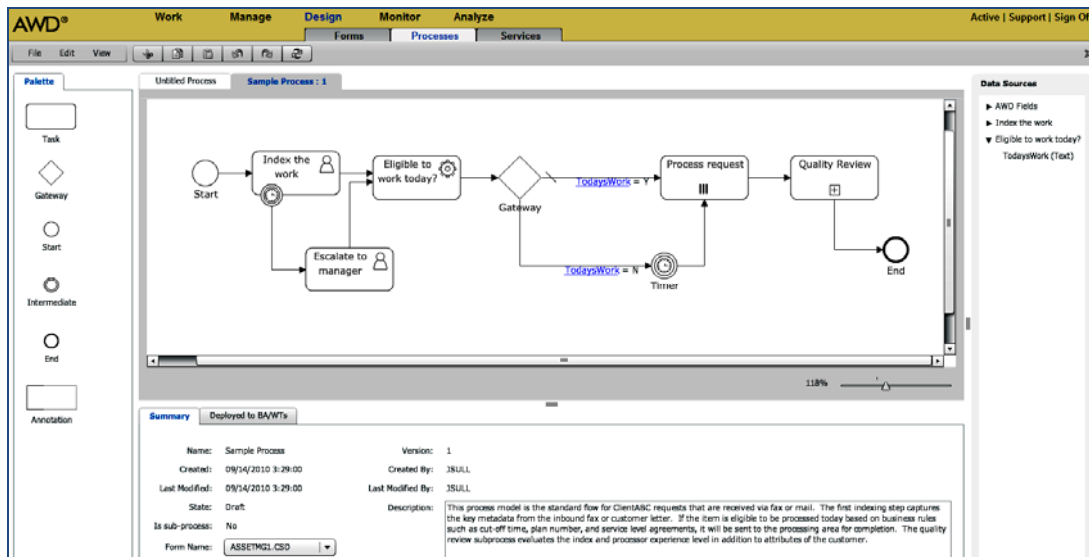


Figure 2. AWD Process design palette. Source: DST

User tasks may include forms, sampling, or reporting. The User task's Presentation is defined as either a single form defined in the Form Editor or, if the step involves multiple forms or complicated sampling methods, a screenflow or sampling service defined in the Service editor. A Timer boundary event may be attached to a User task, defining deadline-triggered behavior for time-sensitive work.

Quality control is always an important factor in AWD applications. For QC, a configurable sample of the work at a step is selected for review. The sampling percentage can be fixed, based on user experience levels, or based on a more complex algorithm, such as a combination of customer attributes, time of day, account type, and performer experience levels – defined using the service palette. A step designated as Quality is followed by a gateway with Quality Pass and Quality Fail paths on the output. Quality review results, impact of the error, and importance of the transaction are all factored into the quality performance reports that are available for review and feedback.

Service tasks are fully automated steps used for data lookups, application integration, calculations, and execution of business rules. In the Process model, each Service task is linked to a particular service defined using the Service palette. Service tasks can have attached Timer or Error boundary events, defining subsequent process behavior if the service times out or ends in an

error state. While BPMN Error boundary events are extremely useful in describing exception handling graphically (Figure 3), AWD is one of very few BPM Suites that implement them.

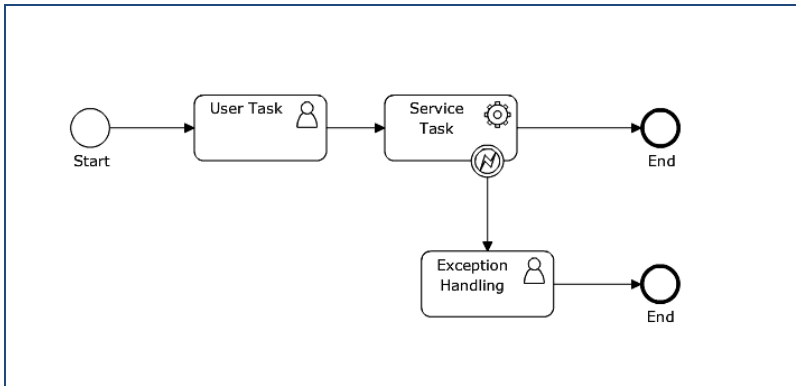


Figure 3. Exception handling through BPMN Error event. Source: DST

In AWD, a *Multi-Instance* task is a special type of case management synchronization activity that waits for one or more signal events published by other concurrent processes relating to the same case. It can have a Timer boundary event to continue the process if one or more of the signals does not arrive in time.

Form Design

Users interact with AWD through *forms*, (Figure 4). AWD provides a drag-and-drop form editor that allows business users to create, validate, and deploy user forms. Most of the forms have a basic look and feel, although forms can be either be customized by advanced users with javascript and custom css or designed with any web form designer. A form must be defined for each AWD source (i.e., customer document), work, and folder type. Forms are composed of fields and buttons.

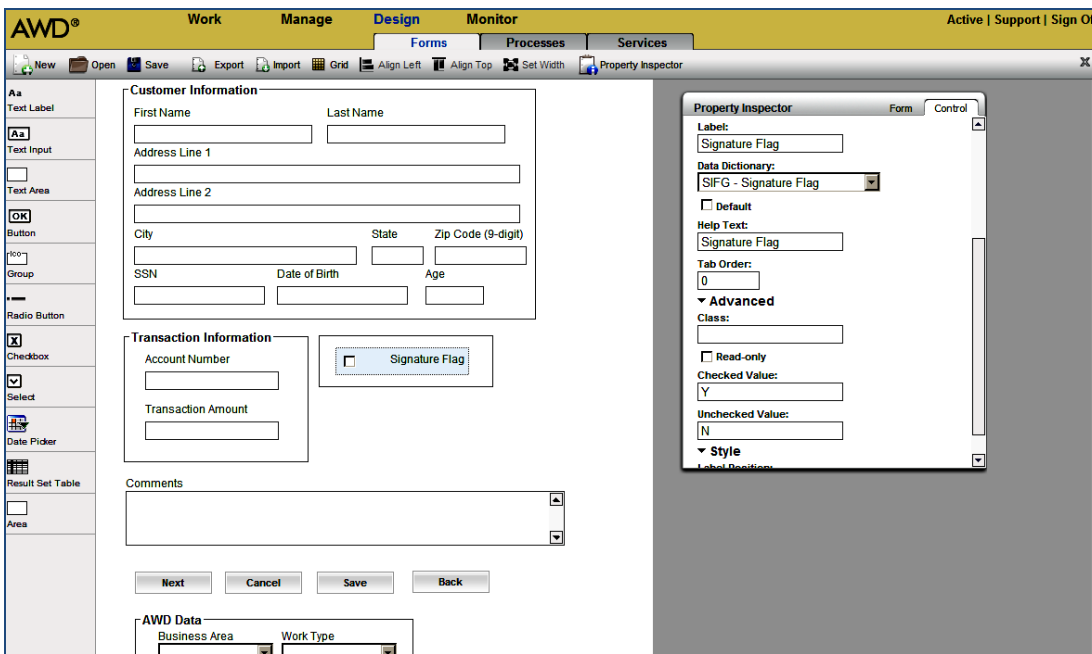


Figure 4. AWD Form design palette. Source: DST

Each field is a data element defined in the *AWD Data Dictionary* (Figure 5) or a process variable. Data validation rules are defined and enforced on forms. The Field Value Domain editor allows process designers to enumerate allowed values for a data element.

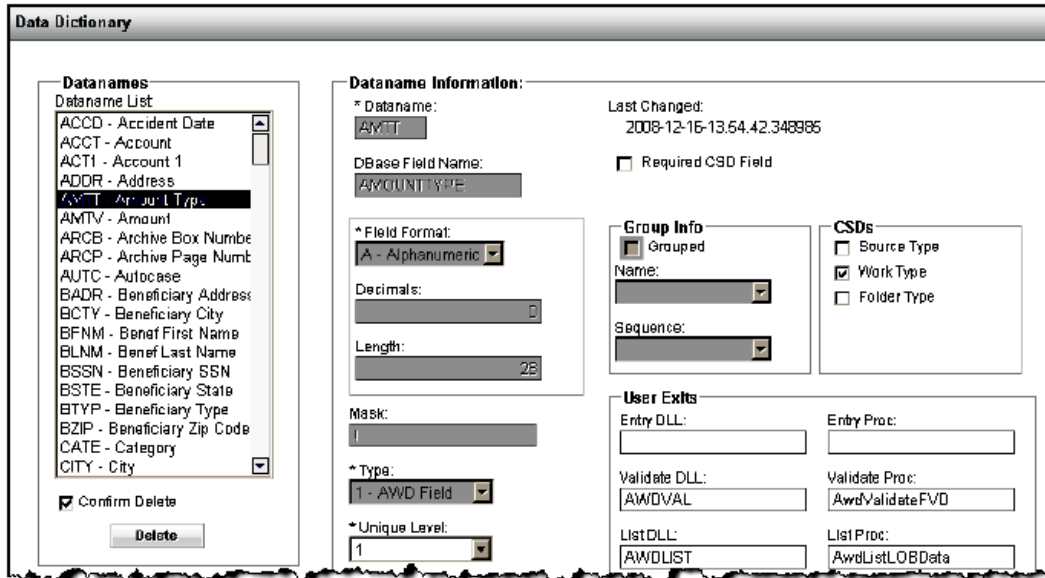


Figure 5. AWD Data Dictionary. Source: DST

An alternative to standard user forms, called *SmartForms* (Figure 6), can be used to optimize data capture from paper forms. A scanned image of the paper form provides the background of a SmartForm, and processors can tab through “zones” on the SmartForm to enter data efficiently.

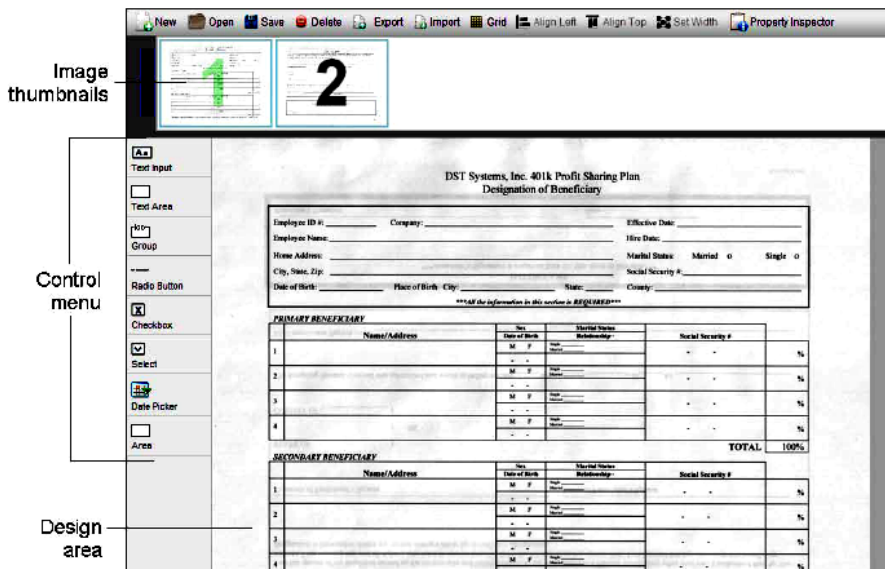


Figure 6. AWD SmartForms designer. Source: DST

Service Design

What makes AWD design more “business-oriented” than most BPM Suites is not BPMN process flows – many tools have that – but a BPMN-like graphical editor for composing task implementations, called *services*. The node types available in the AWD Service editor palette

(Figure 7) include form task (user interaction with a form), generic web service, “Create Work” service, set data value function, previously defined service, and decision task (i.e., gateway). That’s it. But that is all you need to create the three types of composite services used in AWD: automation services, presentation flows, and sampling services.

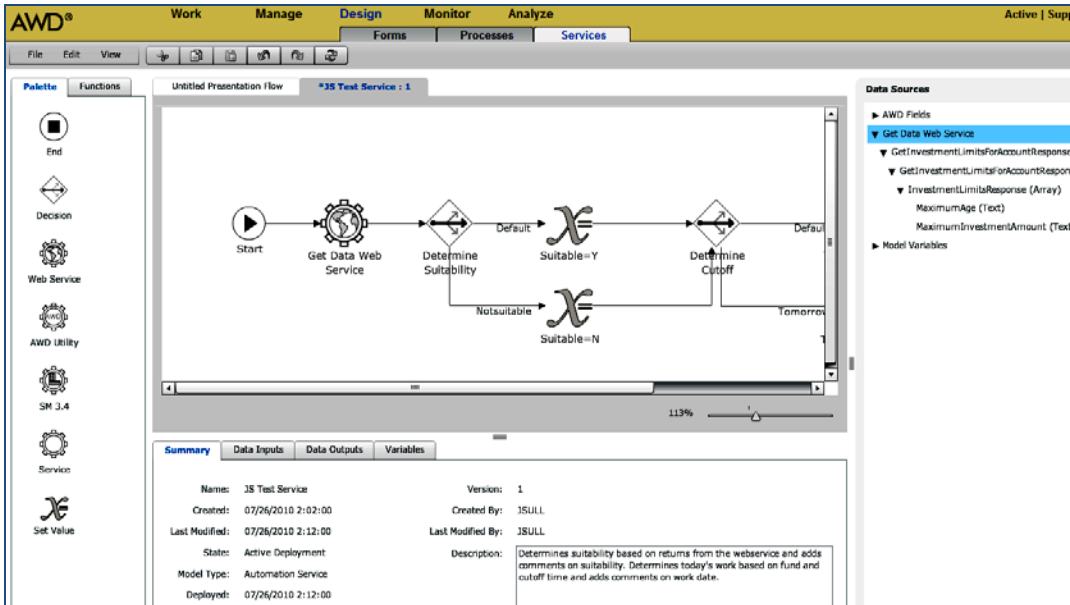


Figure 7. AWD Service editor. Source: DST

For example, Figure 7 illustrates an automation service that determines whether a work item from a mutual fund customer meets suitability requirements and if it’s eligible to be processed today based on the fund rules and cutoff time. First, a web service accesses pertinent account and fund information, such as minimum investment amount and fund cut-off time. Next, a decision task evaluates the work item against those rules. A second decision task evaluates whether the cutoff time for today’s processing is met, and in the end, the work item is designated either today’s work or tomorrow’s work.

Similarly, complex screenflows can be composed using a combination of form tasks, decision tasks, and other services (Figure 8). These form elements can be configured to display forms created using the Form editor or any browser-based form created in an external tool.

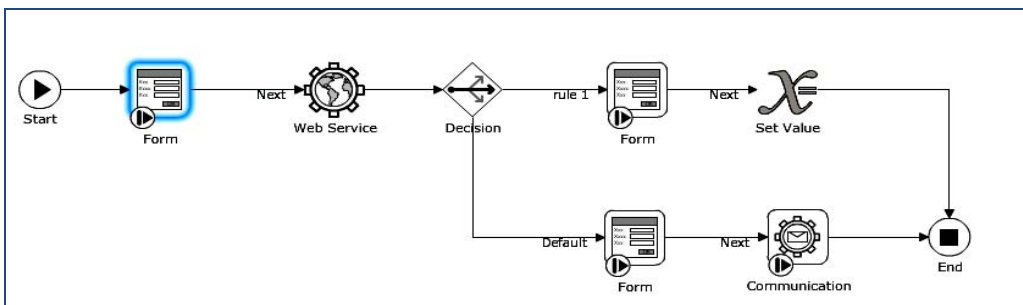


Figure 8. Presentation flow design using the service palette. Source: DST

Custom quality sampling logic can be defined via a sampling service. By default, a sampling service has an output named Selected with value either Y or N. The indicated value is assigned to each process instance going through the sampling service. For example, Figure 9 illustrates a sampling service in which the account value, customer state of residence, and processor experience level determine whether the transaction should be reviewed.

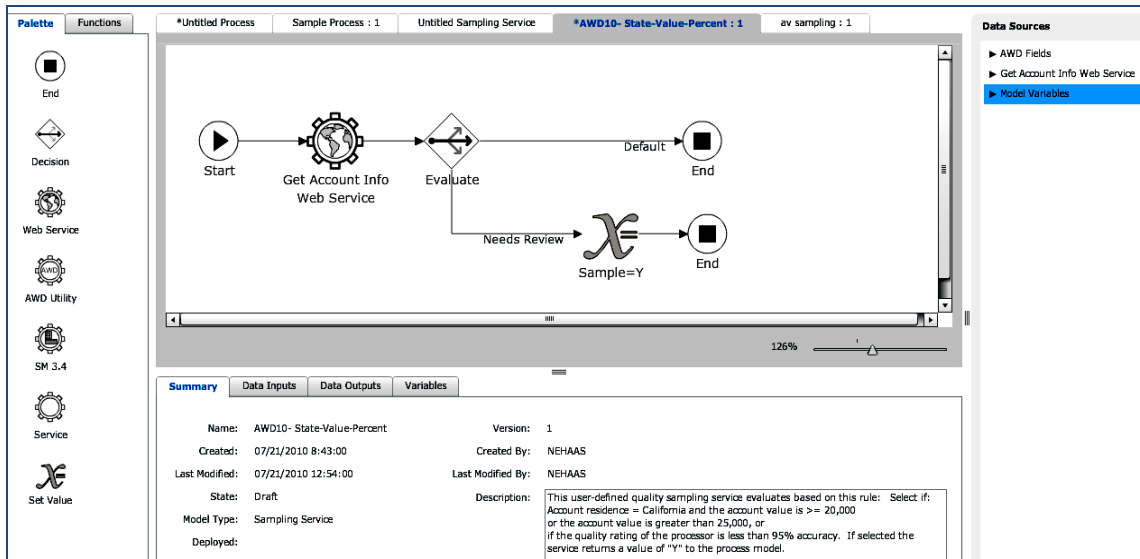


Figure 9. Sampling service designed using the service palette Source: DST

Work Management

A key focus of AWD is managing the inventory and completion of daily work. As companies increasingly seek to coordinate customer-facing operations distributed around the globe, maintaining consistency, regulatory compliance, and excellent customer service has become an increasingly sophisticated challenge. Often the processes themselves are not complex. They typically involve executing a basic customer service request: change my address, initiate a claim, or deposit this check in my investment account. But given the scale of these operations, the requirement for timeliness in combination with near-perfect accuracy and the variety of rules and procedures attached to each type of work makes work management a critical factor. Every piece of work must be assigned to the right processor or team in a way that allows timely completion of work according to the deadline and any service level agreements (SLAs).

In addition to providing the screens to capture customer transaction data and execute the transactions, AWD process design pays a lot of attention to work management: Which team gets this type of work? Is it considered “today’s work” or not? Does it need to go through QC review? While such issues can be addressed by any BPMS, AWD makes them a central point of emphasis, supported by specific features out of the box. This gives AWD a “personality” optimized for high-volume customer transaction and case processing, while retaining the openness and flexibility of a general purpose BPMS.

In addition to work management configuration in the design tool, AWD provides process monitoring at runtime through management dashboards (Figure 10). Process owners and team leads can see current operational conditions at a glance, including the number of active users, the volume of new work, suspended work, and work rolled over from yesterday. They can also track daily work volume, active work by age, and volume by priority level.

Work inventory, completion rates, and quality performance can be tracked at the team and individual user level as well (Figure 11). Dashboards can report on any AWD event, with drilldown to take immediate action. The central focus is on answering pertinent operational questions regarding what work needs to be done today, what does tomorrow’s work look like, and how to optimize resource efficiency.

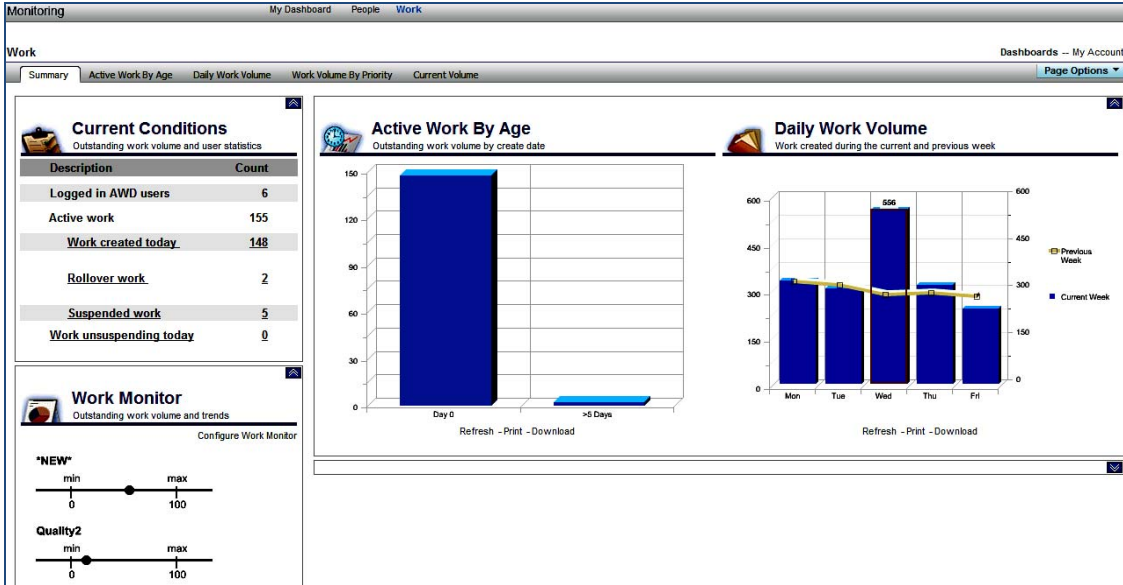


Figure 10. AWD work dashboard. Source: DST

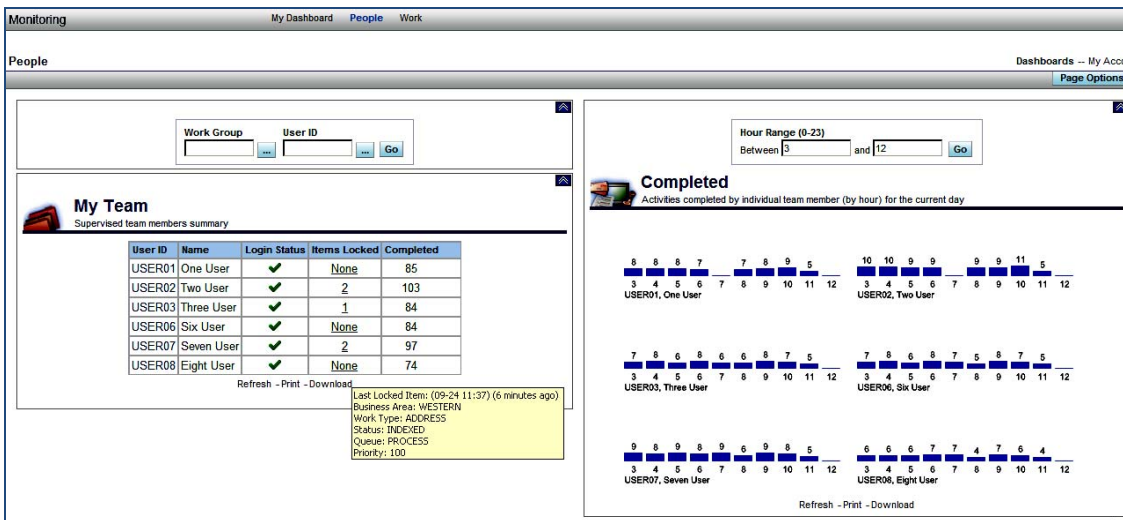


Figure 11. AWD team performance dashboard. Source: DST

The Bottom Line

AWD combines the advantages of a dedicated customer transaction processing application and a standards-based BPMS. As a dedicated app, it provides – out of the box – the features needed to perform and manage routine daily work in high-volume customer-facing operations, including prebuilt data elements, configurable quality control, and dashboards for monitoring team and individual workloads. The focus is always squarely on managing your customer’s interactions and transactions according to your SLAs and goals. That’s a narrow slice of the BPM landscape, but one that AWD handles extremely well.

AWD has the luxury of drawing on many years of experience handling customer transactions for some of the world’s largest investment, insurance, and healthcare companies, including DST’s own extensive BPO operations. Through that experience, AWD is able to make process design and maintenance accessible to operations personnel and business analysts with limited IT support.

Unlike a typical dedicated business application with embedded process functionality, AWD is a real BPMS application. Process design, for example, is graphical and follows the BPMN standard. It even provides timeout and error handling graphically through BPMN boundary events, something many better-recognized BPMS leaders still cannot do. Composition of automated services and screenflows is graphical as well, another capability of just a few BPMS vendors.

Moreover, AWD makes process design and maintenance business-friendly, accessible to process analysts and operations people. The tools are zero-footprint browser-based, simplifying deployment. No code is required in most designs. You don't even need to know javascript or XPATH. Data is organized in a system-wide data dictionary. AWD may lack some of the UI customization and application integration features of other BPM Suites, but those are precisely the things that create a dependency on programmers.

It's what I call meat-and-potatoes BPM, not bells-and-whistles BPM. If you are in the market for a BPMS-enabled application to handle your customer interactions and transactions, you probably ought to put AWD on your list.

Bruce Silver

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