



## Next Challenge, Next Solution, NextAxiom

Savannah River Nuclear Solutions Case Study:  
Mission-Critical Field Mobility in Action  
Powered by NextAxiom's *hyperService* Platform



Senior engineering & instrument mechanics recording lockout information on their PWP mobile tablet application at Savannah River Site.

### **Customer Case Study: U.S. DOE & SRNS**

Savannah River Nuclear Solutions (SRNS) leveraged the NextAxiom hyperService Platform to power a new field mobility solution designed to support a force of 200 mission critical maintenance workers equipped with wireless tablets at the U.S. Department of Energy Savannah River Site. The high-performance solution – called the Paperless Work Package – automates paper-intensive work orders and work processes, while enabling cross-silo intelligent information flow between disparate systems from vendors, including Microsoft, Ventyx and IBM (Lotus Notes). The solution also utilizes NextAxiom's pay-for-use 'metered pricing' model. The case study is described in detail below.

### **Introduction: Savannah River Nuclear Solutions (SRNS) Paperless Mobility Initiative**

Savannah River Nuclear Solutions (SRNS) is the management and operating contractor for the U.S. Department of Energy Savannah River Site, the benchmark federal facility for environmental management, national security, and secure clean energy. SRNS is a joint venture of Fluor Corporation, Honeywell, and Newport News Nuclear.

As an operations and management leader in the mission-critical nuclear technology segment, SRNS is committed to providing a productive, safe work environment for its staff. This is reflected in SRNS reaching a major milestone of 10 million employee 'safe hours' in early 2012.

Consistent with the ongoing SRNS commitment to both the safety and ongoing agility of its Field Workforce, SRNS engaged NextAxiom, the technology leader in the emerging intelligent information flow software market, to assist its IT organization in creating and powering a new Paperless Work Package (PWP) field mobility application based on the NextAxiom hyperService Platform.



### **Customer Goals & Objectives: Paperless Work Package (PWP) Solution**

The PWP solution was designed from the ground up as a *hyperService*-based composite application to assist the mobile SRNS field maintenance work force and management in the following areas:

- **Streamlining the Work Process:** The PWP needed to streamline both the field work process and associated paperless 'work package'. A Work Package includes the comprehensive set of mission-critical work order documents and technical documentation (previously printed out and assembled by hand) required by the SRNS team to safely and effectively carry out its proactive field maintenance mission at the Savannah River Site. The goal was not only to eliminate the paper, but to simultaneously eliminate the high costs and work inefficiency associated with the legacy paper-based process. The new PWP solution is highly scalable and will manage in the range of 120,000 new work orders per year.
- **Enabling Tablet-based Field Mobility:** The PWP needed to enable the field workforce – 200 plus on-site mechanics and technical crew members – to leverage ruggedized, next generation mobile tablet devices and pen computing for dramatically improved work process automation in both 'connected' and offline modes.
- **Driving Cross-Application Integration:** The PWP needed to create new bi-directional intelligent information flows and reusable *hyperService* building blocks across disparate installed systems and software standards including Ventyx Enterprise Asset Management (EAM), Microsoft SQL Server, Microsoft .NET Framework, IBM Lotus Notes (for automated email notification of workflow status), and more. Additionally, these new cross-application intelligent information flows needed to be developed within an overall IT environment at SRNS in which no legacy SOA infrastructure or middleware (e.g. enterprise service bus or ESB) was in place.



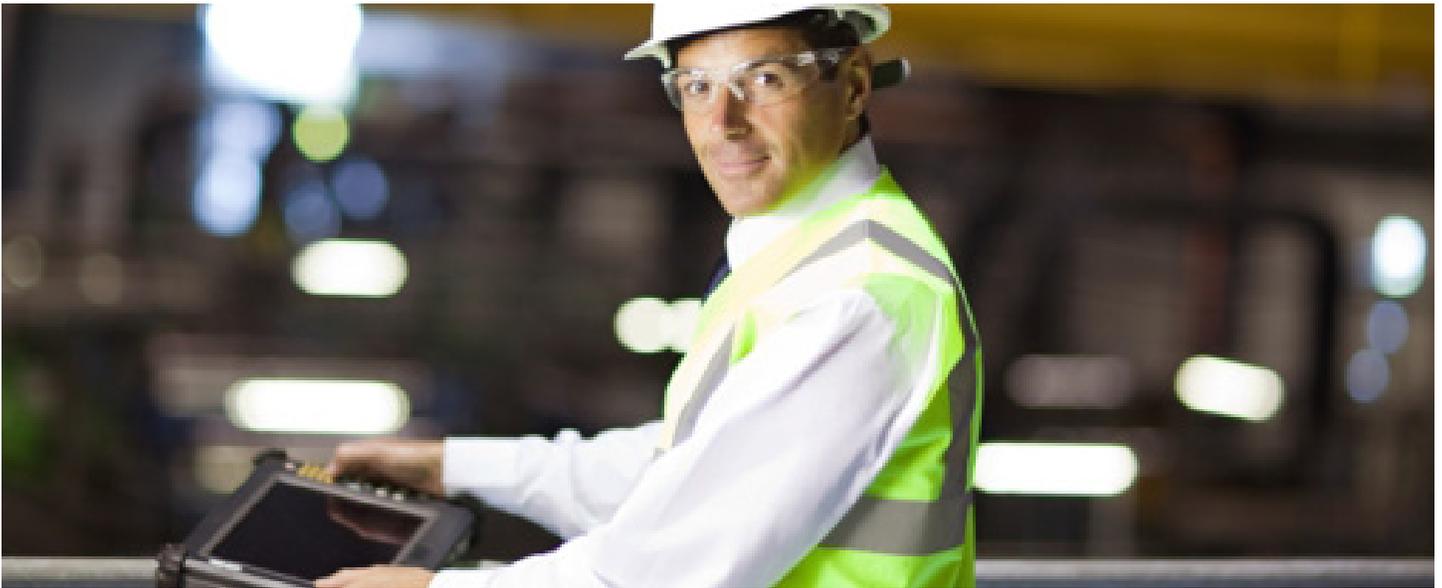
- **Managing User Access Roles:** The PWP must support all relevant management and workforce roles within the new PWP application, including Work Planners, First Line Managers, Mechanics and Field Work Reviewers, based on the secure user access policy managed by the Ventyx EAM system.
- **Tracking Work Packages:** The PWP needed to include a new Work Package Tracking System to manage the new Paperless Work Packages on an ongoing basis.

Based on these requirements, NextAxiom's architecture team assisted SRNS in building the PWP solution described below.

#### **HyperServices in Action: PWP Mobile Workforce Application Overview**

*The new NextAxiom hyperService-based PWP solution, developed in close collaboration with the SRNS team, includes 4 distinct user-facing modules, as well as a new records archive designed to automate the legacy people-centric PDF creation process. PWP solution modules, built using NextAxiom's agile, high-performance "Point-Click-Flow" hyperService Studio authoring environment include:*

- **Planner Module:** Leveraging the 'automatic SOA' capability of NextAxiom's Platform, this module of the PWP app repurposes and aggregates legacy work package forms, documents and associated mission-critical technical information originating within the Ventyx Enterprise Asset Management system, seamlessly creating agile, reusable building blocks of intelligent information flow called *hyperServices*. These building blocks of intelligent information flow within all PWP modules are comprised of both atomic and composite *hyperServices* that easily snap together to create flow-centric, cross-silo solutions. From the standpoint of the Planner Module, when an SRNS work planner is satisfied with the contents of a given Paperless Work Package he or she has assembled, it is automatically advanced within the Work Queue for review by the First Line Manager at the push of a button.
- **First Line Manager Module:** This module of the *hyperService*-based composite PWP app comprehensively manages the lifecycle of a specific field work assignment for SRNS mechanics and their work crews. It enables a First Line Manager to review paperless work packages on demand, and assign them to a given mechanic or crew, assign and manage field work reviewers, and review work that has been completed or rejected by the mechanic.



- **Mechanic Mobile Tablet Module:** Leveraging NextAxiom's distributed, location-transparent, high-performance *hyperService* Runtime Environment, the Mechanic module was designed for mobile wireless tablet-based interaction by 200 plus work crew members. This module was designed for both online and offline use – with automatic synchronization when a network connection is re-established. It enables Mechanics to check out, view, edit and annotate PDF-based documents within a given Paperless Work Package. Mechanics can also enter time, comments and other work related information. When the mechanic completes the tasks associated with a given work package, it is returned to the Ventyx Enterprise Asset Management system at the push of a button and tagged Field Work Complete within the Paperless Work Package Tracking system. This seamless orchestration between the NextAxiom Platform and the Ventyx EAM system is bi-directional intelligent information flow in action – executed in real time without the need for, or associated investment in, SOA infrastructure.
- **Find/View Work Package Module:** This module enables supervisory review and granular oversight into specific work order tasks and their associated Paperless Work Package documents. It enables Work Package Reviewers to oversee the field work completed by various mechanics and work crews based on an automated email triggered within the Mechanic Module. The reviewer can then approve the completed Work Package or return it to the Field Manager for appropriate action.
- **Records Automation Module:** This module replaces the manual scanning of work package documents. Once a Work Order has been completed for a specified amount of time, all work package documents are automatically grouped by task and compiled into a single PDF document. This module enables comprehensive paperless work package records creation, freeing SRNS staff to focus on work processes, not paperwork.



*"We were impressed with how quickly NextAxiom's platform was able to create new flow-centric application building blocks from our existing information sources and systems of record. In fact, we had a working system up and running months before an alternative provider told us they would even commit to getting us a high level functional specification. And our new system was not lightweight, but robust and full-featured."*

### **Development Agility on Steroids**

The *hyperService® Studio* is NextAxiom's visual, semantic authoring environment used for the creation of high-performance, reusable intelligent information flows that have been dynamically and automatically repurposed from an organization's existing application functionality, system assets and data sources. NextAxiom *hyperService Studio* was used to develop the SRNS PWP solution.

NextAxiom's *hyperService Studio* supports many patented, breakthrough capabilities for creating new mission-critical apps and cross-silo integrations without coding, scripting or code generation. Any user experience development framework can then call NextAxiom's atomic or composite *hyperServices®* out-of-the-box as standards-based Web Services. In the case of the PWP application, the user experience framework was based on Microsoft .NET and Windows.

NextAxiom's simplified Point-Click-Flow approach to the challenge of cross-application composite development dramatically reduced design complexity and design time, and enabled an entirely new level of information agility for the SRNS PWP project.

In the words of Bill Kilgore, IT Program Manager for the PWP project, "We were impressed with how quickly NextAxiom's platform was able to create new flow-centric application building blocks from our existing information sources and systems of record. In fact, we had a working system up and running months before an alternative provider told us they would even commit to getting us a high level functional specification. And our new system was not lightweight, but robust and full-featured."

By seamlessly combining a rich, easy to learn service creation environment, i.e. *hyperService Studio*, with the high-performance *hyperService Runtime Environment and Management Suite*, NextAxiom enables IT innovators like SRNS to rapidly and cost-effectively introduce new capabilities at a fraction of the cost of conventional approaches to cross-silo solutions.



*"NextAxiom's business model is flexible and easy to deal with. Just download the platform and with their metered platform subscription plan, you only pay for what you use."*

### **Pay-For-Use Innovation: PWP Leverages the NextAxiom Metered Pricing Model**

NextAxiom's *hyperService* Platform enables a breakthrough metered charge model that is based on pay-for-use subscription accounts. This model can be used both on-premise and in the cloud, and is designed to deliver a powerful and immediate ROI for innovators like SRNS as they incrementally create and deploy new applications, business services and cross-silo solutions like the PWP. By experiencing tangible, incremental ROI on each new *hyperService* solution, the benefits to be derived from adoption of the NextAxiom Platform become self-evident.

NextAxiom's pay-for-use metering model is based on the number of *hyperServices* within a given solution (e.g. the PWP) that are executed by the *hyperService* Platform. The model is easy to understand and highly predictable. Each time a given *hyperService* building block executes, the *hyperService* meter registers a click. To put this in the context of well-known industry standards, a Web Service Operation (WSDL/SOAP) once imported into the *hyperService* Platform becomes one atomic *hyperService*, and when that *hyperService* runs, a "click" is registered on the meter.

According to Bill Kilgore, IT Program Manager for the PWP project, "NextAxiom's business model is flexible and easy to deal with. Just download the platform and with their metered platform subscription plan, you only pay for what you use."



*"Based on our experience with our new NextAxiom-powered PWP solution we are now looking at other systems of record we can hyperService-enable. NextAxiom's platform enables us to get new intelligent information flow solutions up and running quickly and cost-effectively."*

### **Conclusion: Next Challenge, Next Solution, NextAxiom!**

Twenty-first century IT innovators like Savannah River Nuclear Solutions are faced with a host of ongoing challenges and IT pain points – information silos that don't play well together; Enterprise application suites with critical functionality gaps; Cloud and SaaS integration initiatives stalled across disparate data centers; Mobility projects that can't access their organization's unique information assets; SOA projects that haven't delivered on their performance or ROI promise; and more.

For each and every information agility pain point, the NextAxiom *hyperService* Platform empowers developers and business managers within organizations like SRNS to build new flow-centric solutions that unify IT silos and information sources across the organization.

In the words of Kirk Morrell, the business manager that owns the PWP solution, "Based on our experience with our new NextAxiom-powered PWP solution we are now looking at other systems of record we can *hyperService*-enable. NextAxiom's platform enables us to get new intelligent information flow solutions up and running quickly and cost-effectively."

To find out more about NextAxiom's *hyperService* Platform, or to arrange for a trial use account, based on our revolutionary metered pricing model, please go to [www.nextaxiom.com](http://www.nextaxiom.com).

NextAxiom – Intelligent Information Flow starts here.



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