



CASE STUDY

NOAA: *NauticalCharts.gov*

Situation

The National Oceanic and Atmospheric Administration’s (NOAA) Office of Coast Survey (OCS) provides mariners with nautical charts containing hydrographic data essential to safely navigate our nation’s waterways. In the past, charts were printed in large quantities, warehoused, and sold through a variety of retail outlets. Dredging operations, cable laying, pier and buoy construction, and the like quickly made the charts inaccurate. Mariners were forced to manually update charts from OCS Local Notices to Mariners – a time consuming and tedious process. Furthermore, it was not possible for mariners to have data specific to their needs printed on the charts.

SPS – Problem Solved.

NOAA selected SPS to design, develop, implement, and support a “Print on Demand” (POD) system that enables just-in-time printing of nautical charts overlaid with current hydrographic data and information specific to a mariner’s needs. This system became the award-winning www.NauticalCharts.gov e-government system, subsequently built and deployed in less than a year.

Methodology

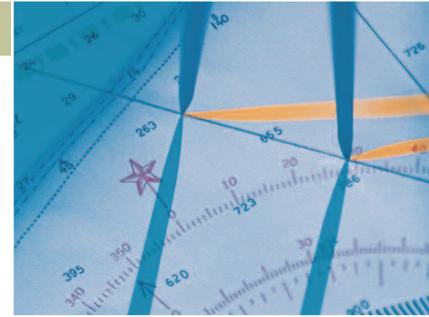
Print-on-Demand was one of the first Government projects developed with the Rational

Unified Process. SPS conducted interviews, facilitated sessions, and documented the results as Use Cases (using the Magic Draw tool). The Use Cases, dynamically maintained throughout the project, drove design elements, test criteria, and test cases. Excellent client interaction and guidance was greatly facilitated by the iterative approach and multiple production releases inherent in the Unified Process.

Since retail sales are frequently via marina shops or marine sales outlets, it was imperative to remove all barriers for inexperienced sales personnel. SPS closely collaborated with these retailers to ensure the government-to-business (G2B) e-commerce aspects of the system were easy to use. Screens are sequenced by frequency of use, and functionality is limited to minimize complexity. Simple catalogs and pick lists provide a convenient way to select products. Alternative product entry methods are provided to match the retailers’ existing business practices. An XML “hook” is available to permit G2B Internet retail sites to directly connect, thus broadening the availability of print-on-demand charts.

Using XML messages and FTP, NOAA transmits chart components and orders directly into the printer’s ERP and chart production systems. Other product suppliers can elect XML, e-mail, or fax as the means to receive orders.

Privacy on the e-commerce site is achieved using password protection to limit access to an agent’s records. Persistent cookies are not used. Security is provided by password protection, and by an automatic session time out to prevent the use of an unattended logged-on computer. Automatic daily backups are made, and mirroring is available to limit the impact



CASE FACTS

Sector

Federal Government

Organization

NOAA - Office of Coast Survey (OCS)

Customer Profile

OCS, the oldest scientific organization in the United States, collects and evaluates marine hydrographic data; conducts a national program of nautical charting; and constructs and maintains nautical charts for the nation.

Business Challenge

Pre-printed nautical charts quickly become outdated due to continuous changes in navigable waters.

Solution

Order charts via a web browser, compile charts to the customer’s specification, and immediately print and deliver the compiled charts.

of a security breach. Security is further enhanced by hosting at a secure Internet service provider and by regularly applying security bulletins and software security updates.

Lessons Learned

Originally, SPS was tasked with just developing an ordering site for POD charts. As with many projects, “Scope Creep” quickly set in. We found ourselves increasingly involved with the process of locating and assembling the relevant digital files, and actually constructing the batch instructions for the print process. As with many projects, understanding the customer’s business needs was key to success.



Results

SPS produced a system for our customer that was innovative and well received in several areas. Due to the then-unusual practice of tapping open source resources, we were able to construct a sophisticated, secure site for significant cost savings. Our customer estimated that they saved over 40% on the initial delivery cost by using the SPS approach. Similarly, the end users of the system (chart agents and commercial mariners) continue to switch to POD charts: over 1,000,000 charts have been ordered on the system since it was first put into production.

Awards

Awards Won by Nautical Charts.Gov

- One of only five grand prize winners of the 2001 Excellence.gov award from the Federal CIO Council
- NOAA CIO, Mr. Tom Pyke, was a co-nominator for the CIO Council award
- Chosen by the government Solutions Center Selection committee as an E-Gov 2001 “Pioneer”
- Awarded one of eleven 2001 Grace Hopper Federal Technology Leadership Awards, sponsored by Government Executive Magazine, from over 300 nominations.

ABOUT SPS

Software Performance Systems, Inc. (SPS), a small business based in Northern Virginia, is a privately held information technology services provider. Established in 1995, SPS specializes in the design and integration of large web-based solutions for Federal, State, and Local Governments and commercial clients worldwide. SPS has been honored with many national awards, including: #10 ranking in the Computerworld Top 100 Best Places to Work in IT, Deloitte’s Virginia Technology Fast 50 and North America Technology Fast 500, and as a SBA Exporter of the Year. More importantly, SPS solutions helped our clients win prestigious awards, including the Grace Hopper Federal Government Technology Leadership Award, the E-Gov Pioneer Award, the Excellence.gov Grand Prize Award, and the Government IT Agency Award for Excellence in Government. **SPS...proven over time.**