



OPRO enterprise **case study series**

Digital Signature Based Authenticity Options for Sales Documents

make IT simple

A Study based on the solution for
Verisign Japan K.K

Digital Signature Based Authenticity Options for Verisign Sales Documents

Preface

We live in an information age where business information is considered to be one of the most valuable assets. Most enterprises have adopted electronic information systems to transfer their business information to remote destinations. Today most entrepreneurs select electronic document transfer as the most convenient method.

Traditionally, documents were recorded on paper and manually signed and authorized by relevant personnel. However it is convenient if the document could be transferred via a network and e-signed with software tools.

Today internet security has reached high levels that any one can transmit important data whether it is credit card information or company financial data through cyberspace safely similar to traditional trusted networks. The ability to create legally binding transactions without paper or physical signatures is an important step for E-commerce and effectively saves heavy amount money in the form of paper and postage costs.

Worldwide legal recognition of E-documents as legally binding similar to printed material has attracted many different industries to address the challenge of securing important electronic documents online. A report or a document developed through efficient reporting software with digital signature support like OPRO X Server could create the same impact as a printed document anywhere in the world today.

Despite this breakthrough in E-business, some still believe it's too soon to move in to electronic documents. They say that it will take some time for a digital signature in an electronic document to replaces an ink signature on a dotted line in a piece of paper due to many challenges.

The cost in creating and implementing the necessary technology and infrastructure for the use of digital signatures and other technical and psychological demands are considered one of the major obstacles. This case study details a success story where OPRO X Server PDF Edition was successfully combined with Verisign's digital signature was used successfully by Verisign Japan K.K. in order to reengineer on of its business processes.

Verisign Japan K.K. - Company Profile

The Company's principal activity is to issue Internet based identity and authentication solutions for e-commerce operators. The e-identification method helps to exercise proper control on the access rights of parties involved in electronic transactions. The business operators with internet ID's can make use of electronic signatures and can also encrypt electronic mails.

Client situation

Back in 2001, Verisign Japan K.K. used a web based system to issue customer quotations through the World Wide Web. The quotations were displayed in HTML format and customers were advised to print them. However this system had no mechanism to enforce authenticity such as digital signing. On the other hand these documents were not legally binding. Hence many customers were reluctant to accept their quotes as valid business documents and were used only for reference.

Due to the limitations customer invoices had to be posted even though a web based invoice system was implemented. This process of mailing invoices proved to be a tedious and expensive business process in terms of employment, material and postal charges.

OPRO X Server based solution

In 2004, after evaluating all aspects of this problem, Verisign Japan K K opted for a digital certificate based document strategy. They felt the need to go beyond the normal internet interactions one gets with a web based system but didn't want to introduce major software or hardware changes on the client side.

By using Digital signatures created by Verisign, customer quotes were created in PDF format using OPRO X Server PDF Edition and digitally signed at Verisign K K Japan and sent securely via the Internet using E-mail to the

customers. Once stored, the digital document is protected from unauthorized change, although interested parties can still view or print it.

Digital signatures are a service provided by Verisign K. K. Japan to certify originality of a document with a digital signature. The digital signature could be applied to a PDF document. By using this feature on the internet, Verisign K K Japan was able to provide the customer a quotation with the company stamp.

The Verisign stamp proves that the document is original and it has not been modified by a third party.

Once the criteria for the new web quotation system were finalized, many software products were evaluated to check which product met the company needs best.

The required criteria were,

1. The possibility of integrating with Signed PDF Server of Mitsubishi information systems.
2. The possibility of integrating with the Web server
 - o The User would enter data in a form and would press submit button.
 - o The JSP /Servlet should be used to process the form input
 - o The servlet should be able to invoke the third party module
 - o The third party module should be able to generate PDF documents
 - o The third party module should pass the processed information to Signed PDF Server
 - o The Signed PDF Server would add a Digital Signature to the PDF document and would return the document to the third party module
 - o The third party module should send the PDF document as an attachment via E-mail.
3. The ability to send the generated customer quotation in PDF format via E-Mail.

OPRO X Server was able to fulfill all the criterions set by Verisign. Due to the internet based architecture of OPRO X Server it could be easily deployed on an internet based environment. The Servlet could call the OPRO X Server via the OXS API. OPRO X Server can generate PDF documents and OXS had the ability to interact with Signed PDF server. OPRO X Server could also send the document using email.

OPRO X server fulfilled all required project criteria and its price was also found to be reasonable compared to other products evaluated. The support services rendered by OPRO X server were also found to be excellent. Taking all these conditions into consideration, Verisign K K Japan chose OPRO X Server as the ideal third party module for its new web quotation system.

Integrating OPRO X Server into the web quotation system

Besides the above mentioned advantages the ease of integration with existing systems was another major plus point in this project and it required no additional programming on part of Verisign K K Japan.

Integration of OXS in to the information system of Verisign was easy and just involved two steps.

- Created a template for the quotation document using OPRO X Designer
- OXS was configured with necessary parameters

During the course of this project a few inquiries made to OPRO Support Service, received prompt replies and this made the OXS Integration process a whole lot easier.

Advantages

New System brought many advantages to the company. It allowed responding to customer needs quickly, efficiently and effectively.

The time involved in delivering customer invoices was reduced greatly and the time taken to generate a customer quote was also greatly reduced because of the functionality of the OXS module and it helped to improve the quality, efficiency, and cost-effectiveness of their business operations.

Usage of Emails ensured the prompt dispatch of the documents. Customers on the other hand were able to receive their invoices real time and no longer had to wait for snail mail to receive customer Invoices. The new system also helped reduce the threat of identity theft.

The need for posting of customer invoices also became redundant after the new system came into operation. According to a company estimate before this system was in operation, posting a single invoice costs the company about 100 – 300 Yen.

On average, if Verisign Japan used to post nearly 10,000 customer invoices annually, they would save several million Yen annually with the new system.

When other business documents are also converted to digitally signed formats and bought under the aegis of the existing systems, Verisign K. K. Japan will be able to further reduce document processing cost.

The new system also replaced the tedious process of handling and keeping track of paper based documents and employees may never have hunt frantically for a lost piece of paper.

Conclusion

In the last few years we have observed tremendous growth in digital communications and e-commerce. Every single day, organizations, both large and small, move their business processes online. The benefits of collaborative efficiencies, significant cost-reduction opportunities, higher levels of service to customers, and compliance with regulatory mandates more than justify any time and effort involved. Best of all, organizations can now leverage their valuable technology assets much more fully and productively. Increasingly, they will have the opportunity to maintain entirely digital workflow's, without the "drag" of paper. That reduces the cost of handling documents, increases workflow velocity, reduces error rate, and allows for deployment of information that is far more tailored to meet specific opportunities and needs.

However, it was been hard for some organizations to moving away from the physical world to uncharted waters E-documents, where paper provided a perception of security.

Many organizations find themselves at the base of a learning curve, incorrectly viewing the need to secure e-documents as a major barrier to adoption, rather than as a business opportunity.

Providing a simple yet effective method of document integrity checking, together with an intuitive indication of the author and organization behind the document such as Verisign, offers a clear opportunity to strengthen brand awareness and increase brand loyalty. The method must also be one that organizations and users will accept.

For users, it must be effortless and intuitively simple. For organizations, it must be affordable, scalable, and easy to integrate within the existing infrastructure and that is exactly what Verisign K. K. Japan gained when they integrated OPRO X Server to their Web based quotation system.

Perhaps, most importantly, trusted documents send a powerful message about the type of organizations behind them: That these organizations are up to date, and that they can be trusted.

Digital Signatures

Digital Signatures are a replacement for physical signatures. In recent time many countries, laws were passed that allow legal documents to be signed via digital signatures.

In the physical world, a written signature indicates an individual's agreement to a document; a notary public may verify that the signature is unique and authentic. A digital signature is the online equivalent; a certificate authority verifies the identity of the signer.

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