Electronic Forms Automation
White Paper
February 12, 2002

Description of the Issue

The business of government is built around forms. When individual citizens or companies transact business with a government agency, there is a form that must be completed in nearly every instance. For example, obtaining a hunting or fishing license requires completion of a form. Income tax filing requires completion of a form. Securing the right to do business in Nebraska requires completion of a form. The list goes on . . .

As the number of citizens and businesses using the Internet grows, so does the expectation that government will offer information and services online. At the most basic level, this means providing the ability to download and print a form. More sophisticated services allow the form to be completed online, data to be transmitted electronically, and perhaps integrated into the agency back-end system.

The Governor's Business Portal initiative identified more than 1,200 forms used by state agencies for interaction with businesses. Of these, about one-third are available online in any format, mostly download-and-print. Less than 10% are available in any type of interactive format.

The Electronic Forms Automation group, chartered by the NITC State Government Council, identified three levels of electronic forms automation:

- **Level I** – electronic access to forms, which can be printed and delivered.
- **Level II** – electronic access to forms, which can be electronically completed, printed and delivered.
- **Level III** – electronic exchange (computer-to-computer) of information/data, without the elements of human intervention. The objective is to directly transfer data through electronic means, efficiently and effectively.

A Request for Information was issued by the EFA group, with a wide range of responses and software packages identified. Nebrask@ Online has also been conducting research and development into methods for rapid, large volume forms automation.

Among the lessons learned is that automation through Level I and Level II, and some aspects of Level III, can be accomplished rapidly using standard or open source software, or a combination of the two. More sophisticated Level III automation, in which data collected and transmitted electronically is integrated into back-end databases or work flow systems, will generally require customized development work that is outside the scope of rapid automation.

<u>Suggested Standard Approach to Level I, Level II and Basic Level III Forms Automation</u>

The most feasible and cost-effective approach to rapid forms automation involves a combination of Adobe tools, Hypertext Markup Language (HTML), and open-source tools such as the Forms Data Format (FDF) module for PHP Hypertext Preprocessor (commonly known simply as PHP). FDF is an electronic data format used by Adobe in conjunction with editable PDF (Portable Data Format) and allows data to be captured and transmitted electronically. The suggested approach provides for data capture in a format (FDF, text file or Extensible Markup Language, commonly known as XML) that lends itself for customized back-end integration to achieve full Level III automation.

This approach presumes that forms developed by agencies for print purposes have been developed in an electronic format such as Microsoft Word, WordPerfect, Pagemaker or Quark. Automating the forms for web presentation in either PDF or HTML format can be accomplished quickly using Adobe Acrobat or commonly-available HTML editors. This approach provides flexibility for an agency to either do the work themselves or have the work done by IMServices or Nebrask@ Online. Another option is to scan the paper form into PDF format for posting online, although this method will require more complex custom development for Level III automation than if the PDF were generated electronically.

Converting a form to basic PDF and posting to the web accomplishes Level I forms automation. Converting a form to editable PDF or HTML (which will require some degree of formatting and coding) accomplishes Level II forms automation. Data captured through either of these formats can also be transmitted electronically and viewed by agency staff, accomplishing the basic element of Level III forms automation. However, data captured through an editable PDF will require the user to invest in an Adobe product (currently Acrobat Approval). Data captured through an HTML screen requires only a web browser on the user end and some custom coding for data transfer, depending on the needs and desires of the agency. Integration into a back-end or work flow system will require customized work that is outside the scope of this effort. The following table summarizes the suggested approach:

LEVEL	TOOLS	PURPOSE
Level I	Adobe PDF (electronic or scanned)	Download & Print
Level II	1. Adobe Tools 2. HTML 3. Open-source FDF modules (e.g. PHP)	Complete online & print for snail mail delivery
Basic Level III	1. Adobe Tools 2. HTML 3. Open-Source FDF Modules (e.g. PHP)	Complete online & transmit electronically

For more information or assistance, contact:

Kevin Keller, IMServices	471.0655	kkeller@notes.state.ne.us
Rod Armstrong, Nebrask@ Online	471.6582	rod@nol.org