When Your Chad Is Pregnant

by William J. "Bill" McCalpin, EDP

As the editors were preparing the *Xploration* runlist—the list of articles scheduled to appear in this issue—the subject of the recent election of the president of the United States came up. Our non-American associate editors were bemused that the world's most advanced democratic republic (and only one, for all I know) had such a befuddled election.

Barry Lietuvnikas, EDP, the former vice-chair of Xplor International, once told me a story which relates to this. He said the City of Baltimore issued police officers hand-held devices to complete their parking tickets. They would write the parking tickets and scan them into these electronic devices. Later, when the tickets were processed by the court system, the clerks would pull up a copy of the ticket and try to figure out what it said. The process was eventually abandoned because the city discovered that 37 percent of all tickets had to be thrown out; the clerks couldn't read them once they'd been scanned in. And of course, they didn't have the original paper nor could the officer remember the incident anymore; therefore, the scanned image was of no value to the court. That's the problem when you have a scanned image—you don't really have any information, you have only a picture of it, and if the picture isn't very good, then you don't have any information at all. It's the same problem with those famous ballots with "pregnant" chad. You have the ballot in your hand, but you have no idea what the voter was trying to say.

Affirming the Information

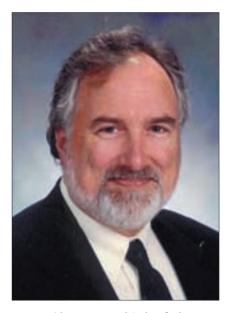Consider the principal of the affirmation of information: When you create something which contains information or when you transform information from one format to another, you must affirm that the information in the output matches the information in the input—before you destroy the input.

I once worked for a company that learned this principal the hard way. This company—which computerized tax returns—accepted input data in those days by keypunching data from input sheets filled out by the customers. To help repeat customers, the input sheets for next year would be pre-printed with much of the data from last year.

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This step helped reduce redundant information that the customer would have to enter.

Every year, there was a software program which converted last year's output data into next year's input data. One year, this program had an error. About one-third of the way through the conversion, horrified programmers discovered that the output file was full of binary zeroes. Unfortunately, the program was erasing input data as it went along, which meant that both last year's and next year's data were wiped out for one-third of the customers.

The programmer in charge was not punished; in fact, this programmer was "promoted" to head a new department: the IDM (input data missing) department. This department spent the rest of the summer calling clients, begging them for old input sheets that could be sent to the company to be re-keypunched.

Programming errors are inevitable. Knowing that, good business practice dictates following the principal of affirmation of information using an independent second process to validate the output before the input is erased.

You will note that the principal says nothing about the medium on which the information rests. It does not matter whether the information is on paper, film, CD-ROM, web page, in an e-mail, or whatever; it only matters that when the information is carried from one medium to another, the information be affirmed. Thus, in the case of the election in Florida, when the infor-

mation (the candidate being voted for) was being transferred from the input (the voter's mind) to the output (the punch card), the principal was not applied; the voting equipment did not give the voter any feedback on whom the equip–ment thought the voter had chosen. And once the voter had left the polling place, there was no way to resolve the problem (or even determine if there was a problem) because the secrecy of the ballot box prevents the voter from retrieving the ballot in order to update the document.

Good Business Practices

This column could easily have been entitled "Constants in a Changing World." The rapid change in technology does not change the underlying business processes by which we should handle information. If your information is intended to be read by a human being, then it must follow certain legibility rules such as correct spelling, proper use of fonts, good use of color, and so on—no matter if the information is on paper or a web page or a butterfly ballot! If your information is intended to represent an agreement between two parties in business, then it must be handled so that it can be reproduced accurately years later for court—whether the information is on paper or in an imaging system! And if your information is intended to be read by a machine, then it must follow the principal of the affirmation of information whenever transformed—no matter if the information is on a paper punch card or an electronic XML document in an e-business exchange!

Stimulating Vigorous Debate

On a different note, in this issue of *Xploration* we are returning to one of the principals enumerated by former Xplor President (now Chairman)Bob Stocks in our inaugural issue. In the fall of 1990, Mr. Stocks wrote, "One mark of a professional association is its ability to stimulate and sustain vigorous debate about issues of critical importance to its membership." Therefore, in this issue we are presenting three debates:

- Will Post Offices be in the business of delivering electronic information via the Internet in five years?
- Will there be black-and-white only-printers in five years?
- Should there be proprietary architectures in five years?

We hope these debates—written by industry leaders—will help you appreciate the complexity of the issues while at the same time help you plan for your future.

In addition, in keeping with changes in technology, we have a number of features and columns addressing today's technological and business issues ranging from wireless communication to document strategy, from ASPs to documents in the home.

As Toby Cobrin, EDP, *Xploration's* first editor-in-chief, put it, "...we want our contributors to define, describe, explain, elaborate, and illustrate their subjects without self-serving hype." It is our goal to help members of Xplor agree on and use "best practices" in the handling of information in a variety of formats. We hope we are achieving that goal.

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carefully tailored to the recipient. In this new environment, statements are not just an unavoidable cost. Instead, they can be a key element in a broad, positive strategy to keep and market new services to existing customers.

The theory is fine, but until recently the necessary print technology has been difficult to manage. High-volume customer statementing is a complex, mission-critical process for utility businesses. A serious production hiccup can delay the collection of significant amounts of cash. As a result, few IT departments have been willing to take the risk of significant changes to every bill cycle to include targeted messages from the marketing department.

New developments in the print formatting world led by Group 1 address this problem directly. By allowing the marketing department to take full ownership of customer messaging while ensuring that the addition of this information will not break the billing production runs, both parties are satisfied. Marketing can address customers directly as IT personnel sleep easy in their beds while the overnight production is running!

Marketing for these new utilities must be subtle and well-focused. After all, the basic commodities are the same—the differentiation is in price, terms, service, and customer perception. The challenge is to find effective ways to communicate all these differentiators to customers who have never had so much choice. This is where modern statement technology can play a key role. ◼

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