



Case Study

SoluSoft Forms Processing

General Assessment Test for Students in the US



SoluSoft
Business Process Solutions

Introduction

In response to state and federal (in the US) education reform acts and accountability requirements, most recently, the No Child Left Behind Act of 2001 (NCLB), national agencies, states, and large districts across the country have implemented far-reaching systems that reform educational standards and include large-scale assessments to monitor student achievement of those standards. Basic reform strategies emphasize the need for high academic standards describing what all students should know and be able to do and high-quality assessments aligned with those standards. States have developed and implemented assessment programs that correspond to curriculum standards and assess students in designated grade levels and subjects. Under NCLB, students in grades 3 through 8 plus 1 high-school grade must be assessed annually in reading and math, beginning in 2005-2006. Mandated science assessments at 3 grade levels and higher will begin in 2007-2008.

One of SoluSoft's customer combines both traditional and innovative measures in the design of large-scale assessment programs, most of which include multiple-choice, short-answer, open-response questions and writing tasks for primary, middle, and high school students. The customer and local educators are usually involved in the processes of test development, standard setting, and interpretation of results.

Once the test development is completed, the end result is student test booklet containing various content areas like Reading, Math, Science, etc. Each content area contains multiple test questions. The question could be in form of multiple-choice, short-answer, open-response or writing. The first page of the booklet and the multiple choice questions has "bubble" areas to fill in the answers. The "bubble" area is a set of blank ovals or boxes that correspond to each question, usually on separate answer sheets of paper or underneath the question. Students use #2 (HB in Europe) pencils to mark their answers, or other information (student demographics), by darkening ovals areas. The student booklet also contains a bar code describing the serial number of the booklet. The serial number binds the student to the booklet. Each sheet of the booklet contains page number and it is related to the configuration of bubble areas on each page. Afterwards the booklets are cut in to sheets and scanned to create JPEG image files. These image files are processed by SoluSoft Form Recognition Processor sheet to match filled in bubble areas to answer key.

Summary Table

SoluSoft Technologies Pvt. Ltd.		
ROI Analysis for Forms Processing Application - SoluSoft v/s Others		

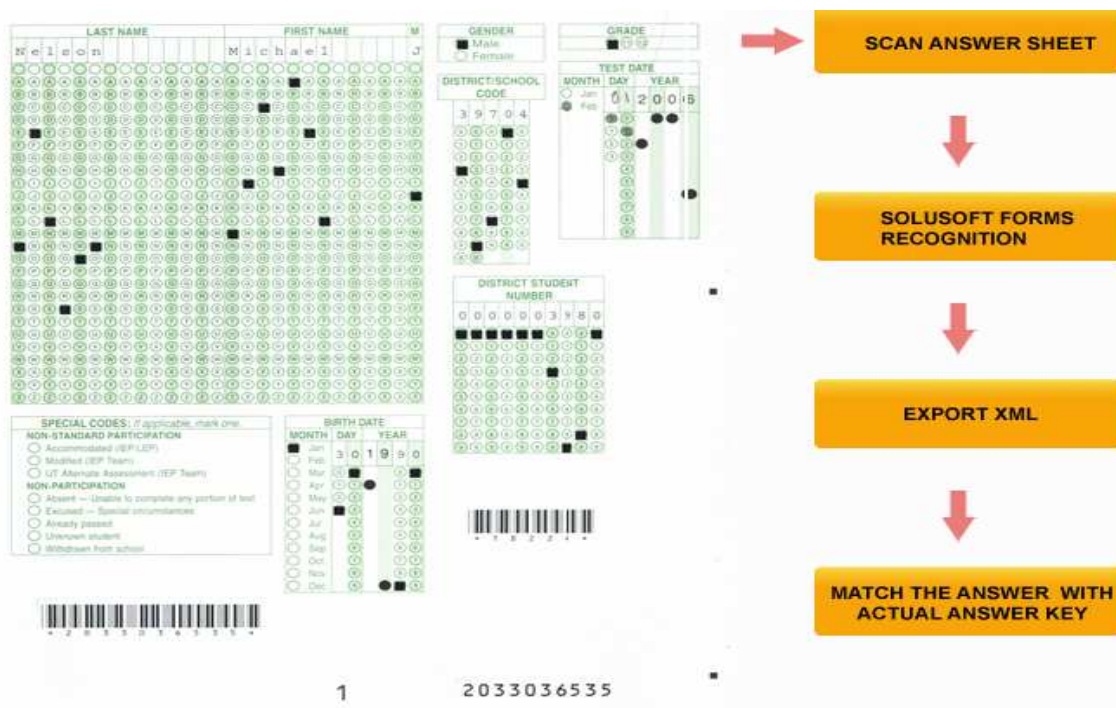
Particulars	SoluSoft	Others
No. of Sheets scanned (approx)	1,000,000	1,000,000
Initial Investment	USD 5,000.00	USD 8,000.00
Cost of Processing (per sheet)	USD 0.10	USD 0.16
	USD	USD
Net processing cost incurred	100,000.00	160,000.00
Benefit to Client	USD 60,000.00	
ROI (in times)	12	

Advantage SoluSoft:

- Low Investment
- Processing cost is economical
- Break-Even can be achieved more easily
- Investments can be recovered in a shorter span of time

Solution

Students’ booklets are cut in to sheets and scanned by high speed scanning system that uses Kodak 840 scanners to create JPEG image files. These image files are processed by SoluSoft Forms Recognition Processor that is calibrated to recognize various booklets types and the contents of each booklet type including bubble, bar-coded and machine printed areas. The following diagram depicts the process.



Forms Processor Benefits

- Single recognition application for Barcode, OCR, OMR, MICR and ICR
- Form drop out improves recognition by eliminating unnecessary lines, combs, distractions, colors
- Automatically applies a scaling factor to rationalize scanned forms to the template images
- Supports single and multi-mark recognition with a 99.9% accuracy
- Industry leader in recognition and accurate translation of images into character or OMR representations
- Ease of use substantially reduces man-hours to configure and operate
- Highest functionality at the lowest ongoing cost of ownership