

End user: Badan Pusat Statistik (Indonesian Bureau of Statistics)
Industry: Government
Products & Solutions: Kofax Capture (KC)
VirtualReScan (VRS)
Adrenaline

Indonesian Bureau of Statistics

Statistically Satisfying - Automation Pays Off for Indonesian Census

Automation is challenging in any business context. While the hardware and software are the obvious stars, the real power of successful electronic document and information capture systems lies in the design of dynamic solutions that address specific business needs and challenges. And when automation is undertaken in a complex and vast context like Indonesia, dynamic solutions and professional trust become critical.

The world's largest archipelago, Indonesia comprises 17,000 islands lying like gems between the Indian and Pacific Oceans, and is populated by 230,000,000 people. In such a context, innovation in the field of electronic document and information management is challenging, to say the least. When the automation challenge involves the entire population in a national census, it takes on gargantuan proportions.

Kofax took on just such a challenge in its project with BPS (Badan Pusat Statistik), the Indonesian's Bureau of Statistics, and demonstrated the power of automation in addressing truly challenging information needs.

The Challenge

Daunting Challenges

BPS is a government agency that gathers data to support statistical work in various government departments. With the 2004 national elections looming, they needed to gather voter information. Conducting a national census in a country like Indonesia is a problem in itself. Adding to that were the very stringent conditions of collating the information into useful and comprehensive data under extremely tight conditions.

The primary condition naturally was that there could be no compromise on the quality and extent of the data capture. But BPS wanted to move beyond capturing numeric data. This time, they wanted to capture alpha-numeric information as well. And of course, given the critical nature of the information captured, accuracy had to be stringently maintained; at 95% or better.

A further challenge given the intimidating scope of the project was the time frame of 5 months. Scanning documents from 230,000,000 people, or 80,000,000 documents in duplex, worked out to approximately 540,000 documents daily, to be processed in 39 centres. If that was not daunting enough, the data then had to be transformed and delivered into an electronic database. With one month for setting up, transformation, and delivery of voter information for this vast nation had to be completed in 5 months!

Winning Confidence

Confidence and professional respect were key factors in getting this project off the ground. In spite of the risks involved that could potentially put any solution on the line, the strong professional relationship Kofax had with BPS made them confident of success. In addition to their previous collaborations with Kofax, BPS was impressed with Kofax's dedication to preparedness and active communication in presenting solutions. Kofax's Professional Services team was prompt in setting up hands-on testing with Kofax Capture's Advanced Forms Processing under strict time conditions, with excellent results. BPS was convinced, not just that the proposed system would work, but more importantly, that Kofax could troubleshoot in tight situations, and go the extra mile to solve problems within short deadlines.

Finding Speed

Collection was a daunting prospect; there were 80 million census documents to be scanned in duplex, yielding information about 230 million people. For this, the Kofax team ensured they had strong, high-end scanners with no compromise on quality and ease of use. Not only did they have to train a large number of casual operators in a very short time period, these scanners had to be fast and extremely durable to get through this phenomenal amount of paper! High-end scanners were necessary not just for speed, but also to handle continuous feeding as well as document batches of mixed sizes and weights, to eliminate labour intensive, time-wasting interruptions and document pre-sorting. This was a clear demonstration of quality of investment giving brilliant returns in terms of work quality and meeting time deadlines.

Ensuring Accuracy

While the scanner itself was fast, the speed of the scanning process looked to be compromised because of the state of the documents to be scanned. First, they arrived in varying conditions from all the far flung locations in this extensive nation; rumped, crumpled, and some filled with barely legible writing. Also, because the documents were printed locally in different parts of the country, the ink and print quality varied as well. Potentially, this threatened to affect the accuracy of the data capture.

This was where Kofax's uncompromising use of high-end scanners allowed Kofax Capture to really come into its own as a star performer doing black border removal, de-skewing, and eliminating coloured boxes in the forms to give clear and legible images. And because this is hardware rather than software dropout, scanning speed was unaffected. Speed was also enhanced by grouping data in fields, like addresses and names. This reduced the number of keystrokes needed to make each correction, which in turn reduced the amount of time the operators spent on each part of their task. Furthermore, enabling each operator to focus on specific fields helped them concentrate; they could therefore work more efficiently and accurately.

As an added measure, the work process was tracked using a Scripted Export which generated an audit trail linked to salaries to help motivate accuracy and speed.

Intelligent Validation

How accurate can automation be? This is a critical aspect of the process and a lot depends on the way transformation of data into electronic form is handled. Kofax's custom module for Auto Validation, was implemented in a 2 step process. As the project manager explained, 'Auto Validation is the data's watch-dog.'

In the first Auto Validation stage, pre-set business rules are applied to check information on each form, for example, that age tallies with year of birth. Forms with errors are sent for manual validation, after which they are sent for Auto Validation a second time. Separating forms in this way speeds the process up as only forms with errors need to be manually processed.

Obviously, the effectiveness of auto validation depends critically on writing a comprehensive set of business rules to cross-check and test the captured data. And here, there is no substitute for an absolutely clear understanding of the client's data capture needs, a clear case where technology is only as good as the human communication behind it.

Effective Delivery

Once information was transformed into electronic form, release occurred in two parts. Collated information was exported to a database for use by BPS and the General Elections Commission. But in order to enable future checking and verification of information, the information was also released into a special folder which was structured according to voter's election codes. These are based on the district they come from which means that any

individual could be easily and swiftly located simply by looking up the code for his or her residential district. Instead of having to search through thousands of names, the search is immediately narrowed down to the file for a district or region. Even greater transparency and accuracy is facilitated by the fact that this back-up folder stores images rather than just data. Should the need arise, voter information could be effectively verified against captured electronic images; it was possible in effect, to go back to the 'paper source' in electronic form.

Success!

The BPS experience is a strong demonstration of the fact that automation doesn't simply replicate or substitute human functions, but truly serves a need by extending human capability.

The scale of the information that needed to be entered into the database was staggering. Doing this manually given the time pressure would have been unthinkable. It would have taken an army of workers putting in grueling hours, and thousands of computers. When normal human error is factored in on that scale, the resulting inaccuracies are simply unacceptable.

On the other hand, Kofax's automation with Kofax Capture's Advanced Forms Processing created a smooth system which once customized and tested, was easily deployed across different regional centers meeting every target for speed, accuracy and cost efficiency. The success of this scale of automation, in a highly complex situation was possible because of technical and product knowledge and mastery that enabled flexibility and allowed modifications to be made as the situation demanded. But is depended as much on professional trust and respect in sharing expectations and challenges clearly and precisely.

Automation on a grand scale is clearly possible – as long as great products are shaped into effective solutions by dynamic teams. For BPS, Kofax delivered what they promised, on time and up to the mark.