



COGNASYS

"Turning Information into Knowledge"

CASE STUDY



BlueCross BlueShield of Tennessee,

For more than 60 years, BlueCross BlueShield of Tennessee has been centered on the health and well being of Tennesseans.

- Pays 65 million claims and more than \$17 billion in benefits
- 4,300 employees, headquarters in Chattanooga
- Offices in Jackson, Johnson City, Knoxville, Memphis, Nashville
- State's largest health benefit plan company
- More than 15,000 customer companies

BlueCross BlueShield of Tennessee (BCBST), who pays an average of 65 million claims, was responsible for processing the Health Care Financing Administration (HCFA)¹ forms submitted by healthcare providers. As BCBST's membership and workload grew, BCBST struggled to efficiently pay all of their provider's claims while continuing to deliver the quality and value their members were accustomed to and expected.

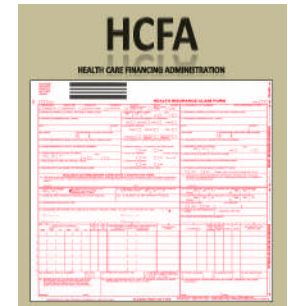
¹Now the Centers for Medicare and Medicaid Services

THE BACKGROUND

The processing of HCFA forms, one of the most used medical claims document, was labor intensive and prone to data entry errors which many times resulted in inaccurate payments.

When a healthcare provider submitted a HCFA form, the form was sent to a data entry operator who would verify the form's data by conducting database lookups and then by applying certain

HCFA validation rules. Once verified, the operators entered and posted the data to the claims host system for processing



As the volume of HCFA forms continued to grow, BCBST realized that they needed a reliable, automated solution so that they could expedite their claims processing as well as reduce their operational costs. BCBST hired IBM, who brought in Ascot Technologies as a subcontracted alliance, to assist with building and implementing a HCFA form processing solution.

THE CHALLENGE

The amount of time and labor required to manually enter the data from the HCFA forms was significant. To help streamline the data entry



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process, the team decided to focus on an OCR solution to automate the extraction of the data from the forms. Upon implementation of OCR, BCBST was able to realize a significant improvement over the speed of inputting the HCFA forms, but the operational costs had not decreased as expected and had actually increased. What the team discovered was that OCR had not really reduced the amount of the workload; instead, OCR had caused the work to shift from the front-end process to the back-end host process where resources were more expensive and required more training,

When the team studied what was causing the shift in the workload, they found that it was not "how" OCR was extracting data instead; it was "how" the healthcare providers were filling out the forms. BCBST's healthcare providers, who were not diligent about consistently filling out the forms, were submitting about 50% of their HCFA forms with at least one of the data fields incorrect. Since OCR was only designed to extract data, all information was being sent directly to the host which did not have any

provisions to correct errors. The result – errors which were previously corrected early in the process now had to be manually corrected on the host system. (If forms were filled out correctly, the data could be extracted and processed in just a few seconds.)

What the team learned was that the operators replaced by OCR were doing more than just "data entry tasks", they were also performing "knowledge tasks" including correcting any errors on the HCFA forms. They realized that if they wanted to successfully streamline their front-end process that they would need a more robust solution that could emulate all the operator's tasks, including the knowledge task for making decisions on the data derived from the HCFA forms.

THE SOLUTION

Combining OCR with an Expert System to Enhance Productivity

At BCBST, the data entry operators had been trained to understand and process the basic information on the HCFA forms. For instance, the operator would key the critical fields, such as physician's PIN, and then post the transaction to the host where it would either be processed or returned with an error message. When an error occurred, the operator would stop, access a physician host database, look up the correct PIN information, and then re-post the transaction to the host. Additionally there were other provisions and HCFA rules that operators were trained to use to "PEND" a form for further review and correction before host system processing.

The team continued to use the OCR technology to extract the data from the HCFA forms, and for the knowledge tasks, the team designed an Expert System which applied the same decision logic used by the operators for processing the HCFA forms. The Expert System, which was based on a *knowledge base* (a central, accumulated repository of all the operators' expertise), *HCFA validation rules*, and an

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inference engine, would be used to process the errors and exceptions caused by how the HCFA forms were being filled out, and would also ensure consistent enforcement of the rules and provisions for each form processed.

THE BENEFITS:

The new solution was able to process the HCFA forms much faster and more reliable than the data entry operators. Additionally with the Expert System, BCBST could easily keep up with business demand and bring on new members without having to add and/or train new operators.

The results provided by the new solution also included:

- The accuracy and completion rates (when a document is executed without any intervention by an operator) now averaged about 96% which helped prevent claim payment errors.
- The number of data entry operators was reduced from twenty-two to six, even with

BCBST's recent increases in HCFA processing volumes.

- BCBST now had the capacity to expand and add new business while maintaining the quality and performance levels their members had grown to expect.

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