

# Trigon Blue Cross Blue Shield Richmond, Virginia

## North America Excellence Award: Imaging, Silver

### ***1.) Describe the system application. What the system is used for, who are the users and what does the job entail?***

#### The Users:

Trigon utilizes OPEN/image and OPEN/workflow technology for the automation of its Health Claims processing that supports its seven Strategic Business Units (SBU) and their approximate 65 associated Dedicated Service Units (DSU). The system supports more than 600 users (primarily Trigon's Health Claims Representatives (HCR) and Medical Advisors), with plans to extend to 1,000.

#### The Application: Health Claims Processing:

A typical health insurance claims is one to two pages in length and the system today provides access to more than 12 million documents electronically. The typical daily volume is 30,000 claims, or approximately 60,000 documents processed.

#### The Mail Room:

The process begins in the mail room for the input of claims where they are scanned and OCR'd into the workflow and imaging system. Trigon researched the scanning requirements extensively during their feasibility study, and determined that like organizations were experiencing as high a rescan rate as 5 percent due to poor quality image display from the scanning process. Trigon researched and invested in "IPT" boards that provide a higher quality image during the scanning process, the result of which is a 99.7 percent image quality acceptance due to the additional investment. With additional mailroom training they've increased the throughput of the OCR from 90,000 per month to more than 250,000.

#### Claims Processing:

Trigon, like other insurers, is required by law and regulatory requirements to pay interest on outstanding claims of more than 15 days, and are penalized for Medicare claims later than 31 days. The workflow push factor is a critical component for processing to meet their business goals. The rules-based workflows have facilitated new, more disciplined claims processing with embedded electronic control and tracking of work items in support of Trigon's business process.

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Today, in the Proposition Three phase (detail provided in section six) of the system, once scanned and indexed, pending claims are triggered to workflow by the IBM mainframe and automatically distributed to the HCRs for processing. The claims are prioritized and forwarded to the correct DSU for processing and queued in the in-box by Julian date prompting the flow of claims to the HCR on First-In-First-Out (FIFO) basis, or by member priority.

### Improved Productivity Through PowerBuilder:

The claim is reviewed by the HCR and then forwarded to a Medical Advisor for approval of treatment protocols and payment. Trigon has increased the productivity of the HCR in processing the claim with a unique graphical user interface developed with PowerBuilder. This user interface, coined "CINQ" for Customer Inquiry, automatically inputs data for the HCR via "screen scrapping" from as few as two, to as many as nine IBM mainframe based applications. CINQ has delivered dramatic keystroke reductions via automated system navigation and integration of code deciphering for routine transaction sequences. CINQ has reduced the number of keystrokes per claim for the HCR from a range of 50 to 300, to 25 or less in many circumstances. The automation of keystrokes, combined with the screen scrapping for the IBM based applications has also delivered an additional level of quality assurance in the claim process.

### Multi-Window Claims Processing:

Prior to implementation of CINQ and the 21" monitors, the HCR would toggle back and forth on a 3270 screen to each of the two to nine applications as they processed the paper claim. The HCR would then make note of information and write it down many times on paper for input to the appropriate screen for processing. The CINQ application, and its screen scrapping functionality, has eliminated the need to toggle between applications and manually input data, CINQ now does this for the HCR automatically. The 21" monitors and multi-window capability allows them to view an entire claim on the screen for processing.

### Enhanced Quality Assurance and 24-hour, Single Call Turn Around:

The system integration with the IBM mainframe application(s) also allows for the alert of any potential duplicate claim submissions—highlighted in red—based on coded data tracked by the mainframe(s). Prior to the workflow and imaging system the HCR would toggle back and forth in the screens to determine if the claim was suspect for redundancy, and then they would request a copy of the record(s) from microfilm and receive the information needed in 2-6 days. Today the system automatically routes and displays the images from each of the claims on the screen. The HCR is then able to assess if indeed the claim is a duplicate and previously paid.

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Once the HCR has completed their analysis, workflow automatically routes to the appropriate Medical Advisor for approval or denial of payment, and explanation of benefits (EOB). Once reviewed by the Medical Advisor, workflow electronically routes the response back to the HCR, elevating its status in the in-box as priority work-in-process, for resolution with the customer. The system has eliminated the need to forward the information via interoffice mail systems with paper tracking cover sheets. The system has also eliminated the necessity for redundant filing systems by each of the HCR's as assurance against the loss of claim documentation as the paper copy was once routed throughout the organization.

As a result of the imaging and workflow system, most claims are now completed within 24 hours, and customer inquiries are addressed on the initial call eliminating the need for a call back. These processes could take 2-6 days depending on what additional information was needed, which would have been requested from the microfilm library via the IBM mainframe application.

Additionally, Trigon has implemented a database of the most-asked customer inquiries which has provided a higher quality in the consistency of how claims are managed, approved or denied, and how customer inquiries are answered. The database also provides Trigon the ability for workload balancing and to assist in expanding the role of the HCR to a multi-functional job design that allows them to support the processing of claims for other DSU's during peak periods. The HCR now has information available on screen for the processing of claims for a different DSU that assists Trigon in better managing its backlog when necessary.

### Enhanced Job Structure & Employee Morale:

Of note is the value the system has brought to the HCR's and mailroom clerk's job functions. The HCR are now productive beginning at 7:00 a.m. in the morning. Prior to automation the Team Leaders would spend 2-2.5 hours in manually assembling and physically distributing the daily claims inventory for processing. The HCR's in the meantime would catch up on customer correspondence by handwriting letters and forwarding to the secretarial pool, and mailing those letters typed from the prior day's correspondence. Today their claims are automatically sorted, prioritized, and prompted based on Trigon's business rules through their in-box when they arrive. Their correspondence is automatically generated parallel with the claims processing through integration with word processing on their desktop. Additionally, bilingual HCRs can automatically translate the correspondence into Spanish providing additional competitive advantage in support of new business.

For the mailroom clerk, the system has provided the opportunity to develop expertise in computer scanning and indexing technology and a set

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of skills that provide for future job growth. The system has also allowed Trigon to shift the cost associated with Team Leaders assembling the daily claims inventory to the mail room clerk function. Also providing Trigon the opportunity to reclaim an additional two hours of their Team Leader's knowledge capability in processing claims and managing their teams, enhancing Trigon's profitability.

### Competitive Advantage Through Telecommuting:

Telecommuting has allowed Trigon to deliver additional levels of customer satisfaction with the ability to place Customer Service Representatives on-site at member organizations. Trigon has already implemented this "virtual office" capability through (Trigon on-line Paperless System) workstation at their 113,000 member program at the Commonwealth of Virginia, and the 13,000 member program for the Newport News Shipbuilding facility (see attached article). Trigon views telecommuting as providing them an additional level of competitive advantage.

Trigon's future vision for telecommuting includes the expansion to home-based claims processing, and the competitive ability to leverage their existing member sites when competing for new business opportunities. Other benefits of telecommuting that the Pilot Team identified included: the ability to expand on their available labor pool opportunities, lower labor costs, place satellite offices in less expensive rural locations, and the ability to alleviate some space constraints as they exist in Richmond today.

Awareness of the benefits of telecommuting reached an even higher level of understanding with the challenging weather conditions of this most recent 1995/1996 winter. With the future implementation of home-based telecommuting, their claims processing would not come to a standstill, while the backlog increased with each mail delivery during inclement weather when employees cannot travel to the physical office sites. Additionally, telecommuting could be a further benefit in workload balancing during peak periods. Telecommuting could provide them the means by which to keep on top of the 15-day interest requirement for unpaid claims, and the 31-day turnaround required by Medicare for reimbursement, which became a most serious backlog this past winter impacting revenue streams and causing significant corporate headaches and concerns.

### ***2.) What were the key motivations behind installing this system?***

Trigon Blue Cross Blue Shield is the largest health insurer in the state of Virginia, and the 19th largest in the country, with more than \$2 billion per year in revenues. Trigon provides coverage to approximately 1.8 million Virginians, and is also one of the largest employers with about 4,000 full

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time employees, of which 1,100 are in medical claims processing and customer service in the Richmond facility.

To maintain their market position and to gain competitive advantage, Trigon decided to investigate new technologies to streamline processes and improve turn around for medical claims processing instead of continuing to invest in outdated, slow to retrieve, and expensive to maintain microfilm technology. Their CEO drove the effort after a site visit to Sigma Imaging Systems in New York.

Additionally, they had identified the long-term direction for corporate growth would be through the acquisition of doctors' practices and Health Maintenance Organizations (HMOs). This was strategic to their ability to remain competitive and prosper, for which the system would need to be flexible enough.

The original consideration was first based purely on the replacement of microfilm based archives which delayed claims processing anywhere from 2-6 days as well as customer inquiry follow-up. To determine how best to leverage what was originally just imaging technology, Trigon put in place a Pilot Team to assess how they might further leverage technology for strategic business goals. This team assessed three different levels of implementation termed "propositions" for consideration by their executive management team.

The team also took into consideration the unique requirements that the acquisition of managed care facilities may have on the automation of documents. There would be a relatively high added intensity of documents within these managed care environments and the system would need a great deal of flexibility to address this. New document types were likely to emerge from the episode-based and outcomes-based product and reimbursement strategies being discussed in the managed care environment.

In addition, the team assessed how telecommuting could provide an additional level of competitive advantage. They identified the advantages and customer satisfaction benefits associated with on-site customer service offices at member sites, home-based claims processing, ability to expand on labor pool opportunities, lower labor costs, place satellite offices in less expensive rural locations, and to alleviate space constraints in as they exist in Richmond today.

### ***3.) Please describe the current system configuration (number and type of software, servers, scanners, printers, storage devices, etc.):***

#### **Clients:**

600 Pentium and 486 based workstations with 21" monitors.

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Two Remote Workstation Sites Supporting 126,000 members via ISDN technology

### **Scanners & OCR:**

Four 923 Kodak Scanners, processing approximately 60,000 documents per day.

Recognition OCR throughput up from 90,000 per month to 250,000 per month

### **Storage:**

Four HP Jukeboxes supporting over 12 million images

### ***4.) Describe how the company has been impacted by this system. Be as specific as possible:***

Business process design improvements that have leveraged the power of teams, and developed a more streamlined, responsive organization with multi-functional job redesign that has provided Trigon more flexibility in the enhancement of customer satisfaction levels as well as employee job satisfaction and morale.

On line Explanation of Benefits (EOB's) and database of most frequent inquiries has empowered workload balancing across the DSUs.

Competitive advantage and expertise gained with on-site telecommuting Customer Service Representatives at large Member Service Organizations. Trigon has implemented this today at the Commonwealth of Virginia, a 113,000 member service site, and at the Newport News Shipbuilding, a 13,000 member service site.

Opportunity to expand labor pools, and defray workload balancing.

### ***4a.) What cost savings or increased revenues have been realized since the system was first installed?***

Thirty FTE (Full Time Employee) avoidance at \$32,000 annual benefit rate totaled \$960,000.

A 24 percent internal rate of return was projected, a 34.3 percent internal rate of return has been realized.

Microfilm cost avoidance: \$279,450 camera replacements, \$21,000 reader replacement, \$50,000 annual equipment maintenance, \$40,000 annual supplies and service.

OCR cost avoidance from Service Bureau Indexing: \$240,000 annually

**4b.) What productivity improvements have been realized?**

Productivity increased by a net 15 percent for those Health Claim Representatives with imaging and workflow on their desktops.

Identification of a Power User/Team Leader within each implementation unit was key to successful reengineering and start up.

The 21" monitors provide more concurrent and reasonably sized windows into the corporate systems running on IBM mainframes. The CINQ PowerBuilder application screen scrapes information for the HCR's eliminating 50 to 300 keystrokes.

Triggering of the workflow process by the IBM CHIPS system ensures FIFO processing of claims and ensures protection against any related regulatory impact.

Health Claims Representatives are now focused on the information delivered on the screen versus paper on the desk.

Workflow-enabled exchange between the Health Claims Representative and the Medical Advisors has realized an average 24-hour turnaround for closure of claims vs. 4-6 days with manual process. HCRs can quickly annotate and forward documents while ensuring work-in-process integrity (no lost documents) and copying. The productive burden of counting, routing, batching, aging, sorting, searching, annotating, etc., by Team Leaders has been dramatically reduced.

Customer inquiries are handled immediately on the phone by the Health Claims Representatives with access to information on Explanation of Benefits (EOB) provided by the membership plan and explanation of coverage from the Medical Advisors.

**5.) Describe the implementation process and methodology, the project team, and any change in management and business process reengineering issues addressed:**

**Reengineer or automate?**

Trigon chose to reengineer business processes prior to automation. The decision was based on the variety of needs for each of the seven Strategic Business Units (SBU), and their approximate 65 Dedicated Service Unit (DSU). Each operational division has different philosophies, practices and financial circumstances. Each of these SBUs required flexibility in how and when they might exploit the enabling PC, imaging and workflow technologies.

The pilot team also believed it to be in the best interests of the company to have a common document archive, versus potentially multiple system implementations by any of the SBUs or their associated DSUs. The team determined that it was critical to their environment to apply a redesign-first-

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then-automate mind set. The reengineering goals included the elimination of many hand-offs in the paper-based process, redesign for multi-functional job responsibilities, employee empowerment and increased job satisfaction, while capturing all information at the source.

With the needs for flexibility and a common document archive, and a redesign-first-then-automate mind set as their primary drivers the pilot team determined that a client server environment was the architecture of choice and then developed a three-proposition proposal for implementation as having the highest level of success for Trigon.

### ***The Implementation Process and Methodology:***

Proposition One: Implement an Imaging Pipeline:

The first proposition recommended a Richmond-based imaging pipeline to replace the antiquated microfilm equipment and avoid any additional investments in this technology. The pilot team realized that in order to encourage end users to utilize the system it was determined that an imaging pipeline would be the first phase in development. This phase, while rudimentary, was a critical-to-success factor to move individual endusers from the paper/microfilm environment to the PC/image display technology, a fair amount of claims needed to be accessible to jump-start the learning curve. The following were determined as critical factors to this phase -Proposition One of the implementation:

the service of a "Power User/Team Leader" within each DSU implementation is a necessity.

developed and implemented the infrastructure for digital images to replace microfilm as the

archive of record for claims and related documents in Richmond

four high speed image scanners placed into production in Richmond

researched and employed automated image quality enhancement technology to dramatically

reduce image re-scan issues. Currently experiencing image quality in excess of 99.7%

implemented "forms drop out" technology for efficiency in optical storage and network

utilization - forms reappear to end users.

pipeline paradigm provides customers a broad spectrum of choices in how to exploit image

capabilities for business results improvement. Customers may connect to the pipeline only for archive-only accesses, or may implement sophisticated workflows integrated with other systems.



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implemented Propositions One and Two in the first quarter of 1995 with a 17 percent internal rate of return in Richmond

### ***Proposition Two-Redesign Document Capture Processes:***

Proposition Two identified that there was an excellent opportunity to improve the quality and productivity of Trigon's document capture processes. The pilot team identified reengineering of these processes could significantly reduce hand-offs of paper within teams, reduce the number of keystrokes and ensure a reduction in mis-keystrokes in the health claims processing. The document capture would also ensure that claims would be processed by date-of-service routing and a strengthened commitment to OCR/ICR technology would be quite attractive operationally and financially. The team analyzed the combined savings of Propositions One and Two to be slightly positive on the financial entry into the document archive process and that it would have significant operation and service potential.

The implementation was also designed to be flexible. The pilot team's goal was to provide each business unit a means to implement so they could make informed and financially wise choices as they became acclimated with these enabling technologies. The flexibility of implementation provided options so that one workgroup could elect to provide relatively few image/retrieval/print workstations provided by the proposition pipeline completion. Another workgroup might elect to implement desktop delivery of images for only exception claims processing or only for archive access. Other workgroups might determine to fully exploit automated workflow to provide more robust and automated workflow management capabilities and aggressively eliminate paper.

The following were determined as critical factors to Proposition Two:

Reengineer front-end processes to include a multi-functional job design

Incorporation of inventory building (claim) tasks, and a renewed commitment to exploit OCR/ICR technology.

Work process redesign to reduce hand-offs and employ teams

Implement Easel Inventory Enable (EIE) graphical software to deliver date-of-service specific document routing, and concurrent computer-assisted CHIPS (IBM) claims inventory building.

Design and development of graphical applications that will deliver significant key stroke reductions, system navigation assistance, and code deciphering for routine transaction sequences.

Eliminate CHIPS inventory building tasks by Team Leaders/Knowledge Workers in claims processing area.

OCR usage level to expand from approximately 90,000 claims per month to 275,000 claims per month.

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Implemented “data staging” capability to provide for flexibility in how electronic data flows through the CHIPS system

### ***Proposition Three—Leverage Trigon on-line Paperless Systems, “TOPS”***

Implement image-based automated workflows within operations areas based on acceptance of business cases:

- Provide automated routing, measurement and aging through automated workflow prioritization
- Major Accounts Business Unit leading the charge in the reengineering initiative, empowering all its team members with TOPS workstations and the resultant productivity and service enabling tools
- Proposition Three in Major accounts is providing the company a 34 percent internal rate of return
- Major accounts have also implemented remote TOPS services at Commonwealth of Virginia and Newport News Shipbuilders. Remote workstation innovatively provides a valuable learning curve for probable future remote graphical applications, satellite processing centers, or at home processing capabilities.
- Regional and Small Group Accounts and the Provider Inquiry Unit, have completed installing TOPS workstations
- Implement additional rules-based automated workflows by document type
- Continue implementation of Automated Mainframe Prompting to Workflow of Pending Claims
- Exploit facsimile capabilities for improved control and service
- Explore the business case for service scripts and improve productivity reporting
- Continue reengineering and reduction of pending cases

#### End-User Training

Trigon’s approach to their reengineering efforts incorporated close involvement of their end-user community and their identified Power Users/Team Leaders from each of the DSUs. Prior to implementing a training program Trigon surveyed the end-users as to how best meet their needs. The response was “give it to us in manageable chunks, in a phased approach and build upon what we learn with each subsequent session.” Trigon has since implemented a three phase training approach. They have also introduced a monthly Employee Newsletter highlighting productivity tips and most asked questions and answers, as well who to contact with additional questions and assistance.

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### Phase One Training:

As each DSU is scheduled to come on-line, Trigon provides them with a full day of PC Basics and Windows training. The goal is to assist them in transitioning from their 3270 dumb terminals to the 21" monitors with the ability to view multiple windows at once. Parallel to this first day of training, Trigon's Pilot Team will remove all of the endusers' 3270 workstations and replace with optimum-configured 21" monitors.

### Phase Two Training:

As the DSUs become comfortable with the PC and Windows technology a second half-day training is scheduled where they are introduced to CINQ, the graphical user interface PowerBuilder application. CINQ automatically navigates across systems and screen scrapes the data directly into the claims processing effectively reducing what once took 50 to 300 keystrokes to accomplish to less than 25 in most cases. Trigon continues to develop value-add Macros with the Power User/Team Leader for further automation of keystrokes.

### Phase Three Training:

The final phase of training where the PSUs are provided 1-2 hours training on the workflow in-box coupled with the integrated imaging.

*The following table demonstrates how the "Proposition's 1-3" and the Three Phases of Training are implemented, and how it is rolled out to the Strategic Business Units and their associated Personalized Service Units:*

SBU	Major Accts.	Regional Business	Gov't. and Individual
Technology	Proposition Three	Proposition Two	Proposition One
Workflow Half-day Workflow In-box Training.	<u>X</u>		
Workstation Usage Half-day PowerBuilder CINQ Training. M/F Integration Screen Scrapping	<u>X</u>	<u>X</u>	
Archive Only One Day	<u>X</u>	<u>X</u>	<u>X</u>

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Windows Training. Removal of 3270 Workstation. PC Avail Next Day			
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### ***Claims Process Engineering Progress Timeline***

1992-1994
Extensive Workflow analysis within Shared Data Preparation and Major Accounts with focus on reengineered process for improved quality, customer service, reduce lost documents and save time and money
Ongoing consultations with industry experts to explore the highest quality image capture, indexing, and distribution scenarios
Detailed financial models of both a pilot and large scale implementation, defining budgetary and cash flow expectations
Analyze and Identify Strategic Architectural Platform (UNIX, Novell, OS/2)

### ***Feasibility Study, Technology Architecture Decisions, Pilot, Exec. Level Financial Buy-In***

	<b>1994</b>	
Start of expanded OCR	January	OCR usage currently at 90,000 per month
	February	Document capture redesign approved
Management go-ahead for image pipeline	April	Team training completed for DMS depart.
	May	Management go-ahead for Local Major Acct. (LMA) workstations
	June	Data & electrical rewiring of LMA dept.
Inventory Enabler program implemented	July	OCR usage exceeds 250,000 per month
	August	Completed document management. office renovation
Associate training completed & install of 225 workstations in LMA department	September	225 Workstations Installed!
LMA begins use of macros, WP, etc.	October	Implemented Richmond imaging pipeline
Start image archive with LMA dept.	November	LMA dept. exploits "Customer Service Assistance" Program via PowerBuilder Front end

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Executive Level go ahead for automated prompting	December	One million images on line!
	<b>1995</b>	
	January	Implemented ADR Imaging APPC Interface
Piloted ISDN/offsite connectivity	February	Implemented Roanoke imaging pipeline
Executive Level go ahead for RBU, PIU, SGA dept. TOPS implementations	March	Three million images on line!
		Trigon Financial Dept. establishes "Internal Rate of Return" analysis at 34.3 percent exceeding pilot estimate of 25 percent.
		Reduction of Keystrokes from 300 to 25 or less.
	April	Ad Hoc Workflow begins
Begin TOPS installation In RBU/SGA depts.	May	4.7 million Images on line.
Remote TOPS Telecommuting installation at Newport News Shipyard for 13,000 Member Services pilot program	June	Live "TOPS" at Newport News Shipyard
	July	
Complete TOPS installation in RBU/SGA	August	6.7 million Images on line.
		600 Workstations Installed.
		Start of Automated Workflow and Image enabled processes in Major Accounts Site and Local Business Units
Remote TOPS Telecommuting installation at Commonwealth of Virginia for 113,000 Member Services Program	September	Retrievals sub 30 seconds, ISDN costs approx. two cents per minute
	<b>1996</b>	
	January	
Provider Network Management TOPS pilot begun	February	11.5 million Images on line.

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