

FROM PAPERWORK TO PATIENT CARE

Top 10 hospital increases accuracy and efficiency with QuarkXPress Server forms solution

In a fast-paced teaching hospital, the last thing staff wants is to be held up by paperwork — such as outdated pre-op forms, out-of-stock billing forms, or missing after-care handouts. Instead, hospital staff prefers to spend its valuable time on face-to-face patient care. And the last thing any hospital wants to do is waste time and money on creating, printing, storing, and delivering forms that rapidly become outdated. The time and money are better spent on patient care.



To ease paperwork hassles and keep the focus firmly on patients, Hennepin County Medical Center (HCMC), one of the largest hospitals in the Midwest, worked with software services company Digicomp and Quark to revamp its forms creation processes. The accounting department, which had a deadline for meeting new federal government accreditation standards, drove the project. However, with the capabilities of the FormsX Server, powered by QuarkXPress® Server, HCMC quickly realized that other areas of the hospital could benefit. As a result, the hospital expanded the project to include its Health Information Management (HIM) department, which provides all the data gathering and information forms used by staff. While the accounting department paid for and maintains the system, the bulk of the forms — and therefore the bulk of the time and cost savings — are from HIM.

Over the last 18 months, HCMC migrated slow, manual, paper-based processes to a Web-based system that guarantees accuracy and access, requires no training, and increases the productivity of doctors and nurses. The affordable system paid for itself in less than a year — eight months in fact — and has a low overhead in terms of hardware and administration. In addition, HCMC — previously a county facility — just transitioned to a private facility. As a result, another goal of the organization is independence — no relying on county services or costly, proprietary solutions. The new on-demand forms system helps meet that goal as well as addressing the hospital's patient care and teaching goals.

The paper chase

To fully appreciate HCMC's new system, take a quick look at HCMC's form needs and the outdated processes they had in place. With almost 500,000 patient visits per year, the billing forms alone involved tens of thousands of pieces of paper. Each clinic within the hospital has its own billing forms, which require change when



THE BENEFITS

- Instant access to a central repository of several thousand forms encourages focus on patient care — not paperwork
- Intuitive, Web-based solution provides ease-of-use for the influx of new staff at a teaching hospital
- Billing-form creation slashed from three weeks to three days — including approvals
- Achieved a breakeven point in eight months through increased efficiency and eradicated waste

THE CLIENT: HCMC

Hennepin County Medical Center (HCMC), the third largest hospital in the Twin Cities, is a Minneapolis-based Level 1 Trauma Center and a public teaching hospital. Ranked among America's Best Hospitals in U.S. News & World Report's annual ranking of the best medical care — for the tenth year in a row — HCMC provides emergency/critical care and complex procedures for patients from throughout the upper Midwest.

THE QUARK PARTNER: DIGICOMP

Digicomp, Inc. is a Minneapolis-based software and services company that specializes in design, automation, and Web application solutions for the business forms and security document industries. Through their partnership with Quark, Digicomp combines the on-demand publishing power of QuarkXPress Server, which harnesses the high-quality typography and graphic support of QuarkXPress to deliver solutions to their customers. Digicomp, founded in 1991, is privately held. www.digicomp.us

new physicians come on board (a frequent occurrence at this teaching hospital), when billing codes change, and when new procedures are introduced. On top of that, the billing forms need to meet governmental regulatory requirements. The Health Information Management department also produces several thousands of forms that change as medical technology evolves and procedures change.

"We were paying \$70 per hour for design, plus printing, plus storage on the billing forms," said Toby Michalson, HCMC's revenue management manager. "On top of that, it took the vendor three to four weeks to deliver." To save money, HCMC would also order in quantity. "Say we printed 10,000 forms, then we only used 3,000 to 4,000 before they went out of date. There go the cost savings," lamented Michalson.

Wanting to slash the costs, waste, and dependency on other vendors, Michalson said the hospital decided to change its billing form creation process in late 2004. The project was also planned to include HIM's data gathering and informational forms. So Michalson turned to the IT department, which called in the experts.

"The system paid for itself in eight months, allowing us to effectively meet our financial goals."

**– Toby Michalson, revenue management manager,
Hennepin County Medical Center**

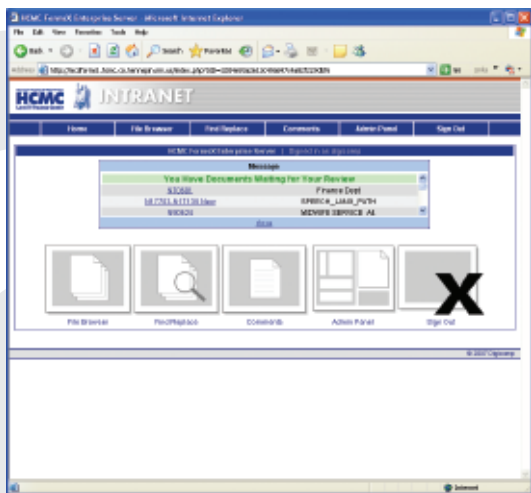
Looking for experts

The IT department at HCMC is charged with "providing the information technology to improve performance in patient care, clinical and administrative decision making, education, and research," so providing instant online access to forms definitely fit into its mission. The hospital started with Jay Sager, senior IT analyst, who determined system requirements and searched for vendors. Fortunately, a Canon® reseller familiar with HCMC's forms needs referred Sager to Digicomp®.

A particular strength of Digicomp is its experience in converting forms from the proprietary F3 Software Corporation Pro Designer for Windows® (PDW), a legacy file format, to the open-standards based QuarkXPress format. Rather than re-creating 1,500 existing forms, Digicomp provides a cost-effective transition path that leverages the content — but no longer locks it into a proprietary format. According to Digicomp, PDW was quite popular and many organizations, forms are locked in it — and are now looking for an on-demand solution like Digicomp's FormsX Server with QuarkXPress Server technology to liberate them.

"The key differentiator for Digicomp in choosing QuarkXPress Server is the fact that it harnesses the design, collaboration and production power of QuarkXPress, and then combines it with a Web browser, or XML data, to provide an on-demand publishing solution with server-based performance," says David Leland, president of Digicomp. "We believe customers are weary of proprietary systems and are looking for solutions that don't lock their content into a proprietary system. Instead, customers are looking to replace outdated and manual solutions with an open on-demand solution that offers flexibility."

Based on Digicomp's expertise and relationship with Quark, Sager recommended the company to his supervisors. After further research and reference checking, the hospital's capital committee approved Digicomp's development of the new system.



Hospital staff can easily search for forms through a Web browser.

“With the new Web-based forms system, hospital staff can quickly pull up the right forms and information — without losing valuable patient face time.”

– David Leland, president, Digicomp, Inc.

Inside the System

Digicomp modestly refers to its overhaul of HCMC’s accounting and HIM forms processes as, “Taking a manual process of managing thousands of forms and automating it.” In fact, the sophisticated system converted vast amounts of data and forms that were trapped in proprietary, paper-based formats requiring manual delivery to instant, print-on-demand delivery through any Web browser. The template-driven, Web-based system consists of Digicomp’s FormX Document Server powered by QuarkXPress Server along with five desktops running QuarkXPress and a Xerox® DocuPrint™ 92C for output.

The FormsX Server provides database searching capabilities so users can quickly find the forms they need along with automated routing for feedback and approvals. QuarkXPress Server, meanwhile, renders the text and graphics for pre-viewing and printing from anywhere in the hospital. Digicomp first converted all the form templates from the aforementioned PDW format to QuarkXPress. At that point, a form design expert revamped all the forms to produce a common look and feel, ensure clarity and consistency, and — more importantly — comply with regulations. In this phase, the high-quality typography and graphics support of QuarkXPress itself was key in addition to the power of QuarkXPress Server to provide online access.

“This fundamentally changed the way staff accessed forms,” says Leland. “The staff used to deliver hard copies of forms to each department — and now it’s printed on demand.” Without any formal training, doctors, nurses, and other hospital staff can simply go to a Web browser, search for a form, and print a PDF. The ability to perform live searches by content provided by the FormsX Server makes it easy for staff to quickly unearth the right form. Once found, the QuarkXPress Server enables print on demand of the HIM forms — rather than hard copy delivery — throughout the massive hospital complex. Rapidly used billing forms are still printed in house to a Xerox DocuPrint 92C, but in much more manageable quantities.

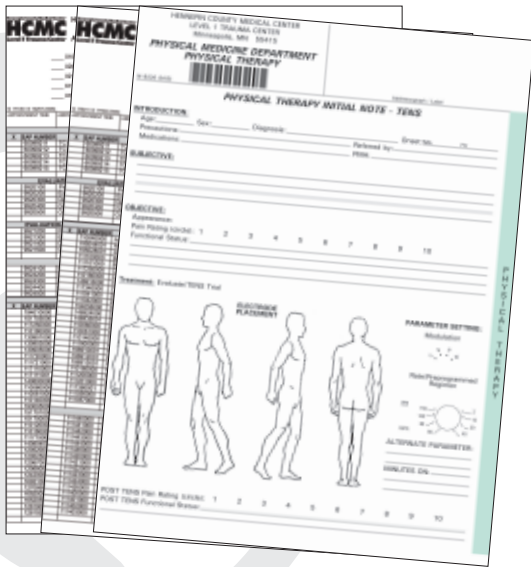
HCMC and Digicomp could not emphasize enough the benefits of quick access to accurate forms in a health-care environment. “As a major medical education resource, HCMC has programs and services for training tomorrow’s doctors and keeping today’s medical professionals current on the latest medical advances,” says Leland. “Therefore, the need for a simple and on-demand form solution was imperative in allowing HCMC to focus on its core function of providing patient care and medical training. The hospital staff quickly adapted to the new system because it’s easy to use — while the hospital’s management team enjoyed the gain in productivity found with the ability to readily manage regulatory compliance issues and streamline the process of managing thousands of forms.”

Aside from access to records and forms, the new system streamlines the creation and revision process of forms as well.

In-house editorial and design capabilities

While forms were outsourced in the past — requiring three to four weeks of time for the design or revision and approval processes — they are now produced in-house from QuarkXPress templates. Using templates not only ensures design consistency, but it also helps with compliance issues.

With FormsX Server and QuarkXPress Server working together, once a draft of a form is ready, it’s automatically routed through e-mail to the appropriate department manager for online review. Using any Web browser, managers can make comments or approve revisions. Once approved, new forms go directly online — ensuring that staff is always accessing the latest and greatest informa-



tion and forms. The QuarkXPress Server maintains the original files in case changes need to be reversed and tracks the revision history as well. Through this streamlined, collaborative, online workflow, HCMC can now revise a file in a matter of days rather than weeks.

In addition to forms, QuarkXPress brings its superior page layout, typography, and graphics handling features to the table, giving HCMC the opportunity to explore handling some of its outsourced PR materials as well. "As we gain independence, a selling point is that we can have an internal PR department do our own brochure," says Michalson. "It's definitely a benefit of having QuarkXPress on site — we can potentially use it for our entire spectrum of design needs."

Savings

Of the many benefits of HCMC's new forms system, one is difficult to quantify: the fact that it frees hospital staff to spend more time with patients. Many benefits, however, are quantifiable, and include:

Significant financial savings: The hospital estimates that the ability to preview forms on-demand and print locally saves approximately \$50,000 per year in printing, storage, and waste.

Time savings: The time required to revise a billing form was dramatically reduced from three to four weeks to just three days — one day to make changes and get approvals, one day to print the forms, and one day to deliver the forms.

Independence: The intuitive system backed by the ubiquitous power of QuarkXPress decreases dependency on outside vendors.

Revision control: The system tracks who did what, where, and when to ensure that proper changes are made and approved.

No training required: As doctors and nurses go through this teaching hospital, they quickly adapt to the Web-based system and are able to maintain focus on their core professions.

Easy access: Providing access to a database of forms through any Web browser eradicates barriers. The "type-ahead" feature of the FormsX Server makes it easy to dynamically pull up the correct form.

Accuracy: Forms on the server are guaranteed to be up-to-date and accurate, preventing any confusion over the "current" version of a form.

Performance: Hospitals operate 24/7/365 so 100% uptime is imperative. Digicomp and Quark understand this and provide a stable, scalable IT environment to meet the critical needs of health-care environments. According to Leland, HCMC's only downtime has been scheduled maintenance.

Scalable: QuarkXPress Server offers HCMC the opportunity to move from printing to actually filling out forms online. If they make this move, Digicomp's SecureX Document Server provides the level of security necessary to keep health-care records private. In addition to adding features, with the new system in place, HCMC has the opportunity to put even more information and paperwork online.

All this for an investment in technology that not only paid for itself rapidly, but also offers significant potential for continuing to streamline HCMC's paperwork while providing professional design capabilities. With Quark's technology and its business partner's solutions at work, the future looks good.

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