



November 2006

Document **G80**

ROI CASE STUDY DIGITECH SYSTEMS CHILDREN'S HOSPITAL NEW ORLEANS

THE BOTTOM LINE

The Children's Hospital in New Orleans deployed Digitech Systems PaperFlow and PaperVision Enterprise to electronically store emergency room patient records on site in order to reduce costs, improve patient care, and increase staff productivity.

ROI: 103%

Payback: 1.8 years

THE COMPANY

In the years following World War II, a poliomyelitis epidemic attacked thousands of children, leaving many handicapped. Concerns about these children led Elizabeth Miller Robin, a polio victim herself, to establish a rehabilitation hospital for children. The facility became a reality in 1955.

Throughout its history, Children's Hospital has served as a teaching facility where faculty from the Louisiana State University Health Sciences Center forms a strong pediatric teaching program. In 1976, Children's Hospital was expanded to become a full-service general pediatric hospital. It has since expanded continually to meet the growing health care needs of the community.

Today, Children's Hospital is a 201-bed, not-for-profit regional medical center. It cares for children from birth to 21 years in more than 40 specialties, including life-threatening illnesses, routine childhood sicknesses, and preventive care. In 2004, Children's Hospital provided care to more than 56,000 children who came from all 64 parishes in Louisiana, 41 states, and six foreign countries.

THE CHALLENGE

Although Children's Hospital had outsourced scanning patient records that were stored in a Digitech Systems PaperVision Enterprise repository, emergency room files had no electronic monitoring and were still manually created and stored in the hospital. This created a number of challenges:

- Under the current system, files were not stored in a PaperVision Enterprise repository until after being sent offsite. As a result, only original paper documents existed, which were passed around between various hospital employees in the emergency room and were often misplaced, resulting in incomplete billing.

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- Because of the lag between document creation and electronic storage, the productivity of doctors, nurses, and administrators was often hindered by having to manually create, locate, file, or fax patient documents, reducing the quality of patient care.

To avoid the growing cost of manually storing files and misplacing emergency room documents, the Children's Hospital of New Orleans needed an automated manageable process to enter, search, and distribute patient records.

THE STRATEGY

In 2003 the Children's Hospital wanted to electronically manage their emergency room documents in order to save money, time, and personnel by making information quickly available to the medical staff. Because the hospital was already using Digitech Systems to store inpatient records, the hospital chose to do the same for their emergency room records.

In 2004, the hospital elected to move the scanning process in-house using PaperFlow to input documents into the PaperVision Enterprise document repository. Scanners were installed in each department so that staff members could put files into the system and then immediately access patient records electronically.

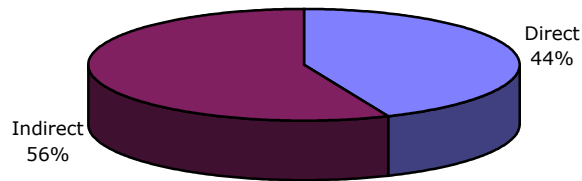
The program was taught to the power user in a one-week training class and was later extended to other staff members with one to two days of training presented by the project manager.

PaperFlow and PaperVision Enterprise are now used to manage records and files associated with explanations of benefits, billing, managed care contracts, HIPAA privacy notices, diagnosis sheets, and admitting documents. Any record that the hospital must keep for an extended amount of time can now be scanned into the system. PaperVision Enterprise also includes an autofax feature that eliminates staff processing of community care cases in which documents have to be sent to an outside physician. The Children's Hospital continuously finds new ways to use Digitech Systems's PaperFlow and hopes to bring inpatient document processing onsite soon to duplicate its successes with emergency room in-house scanning.

KEY BENEFIT AREAS

The Children's Hospital of New Orleans achieved a number of benefits from deploying PaperFlow:

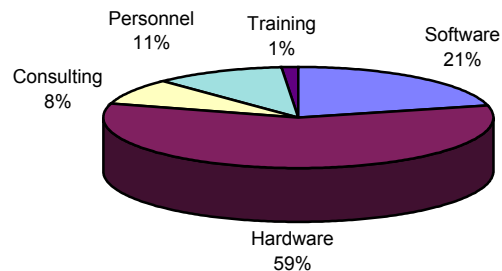
- PaperFlow reduced outsourcing costs, saving \$46,000 a year by moving emergency room record scanning in-house.
- Increased revenue. Because documents are now scanned upon patient arrival, The Children's Hospital has significantly reduced the amount of misfiled records that interrupted the billing process, enabling the hospital to collect full payment for patient care.
- Improved staff productivity and improved patient care. Employees eliminated wasted time looking for missing documents or faxing community care forms to primary care physicians, allowing doctors and nurses to focus on providing medical care to patients.

BENEFITS**TOTAL: \$822,050**

- Improved admission process. Documents are immediately scanned at each station and are available to the appropriate parties.
- Reduced overhead costs. Documents once copied, put in folders, and stored physically are now electronically stored and filed. Chart usage has decreased 40 percent, and record storage volume has increased.
- Decreased turnaround time on patients. Physicians can follow up more easily and report lab test results to patients because files are better managed and able to be located.

KEY COST AREAS

Key cost areas for deploying PaperFlow and PaperVision Enterprise were software, hardware, personnel, training, and consulting.

COSTS**TOTAL: \$297,572**

The most significant cost was hardware and included the purchase of four new scanners for each workstation, two new computers, a new server, and server upgrades. Software, consulting, and training represent the remaining key cost areas for project deployment.

LESSONS LEARNED

The Children's Hospital of New Orleans found significant benefit in deploying Digitech Systems's PaperFlow and PaperVision; however, a challenge has been utilizing the program applications to their fullest capabilities. Currently, the hospital is trying to maximize the program features that most pertain to the emergency room storing and filing of documents. The project manager hopes to incorporate more features into their business processes and bring their inpatient care operations in-house when the doctors become more accustomed to using the system.

CALCULATING THE ROI

Nucleus quantified the costs of software, hardware, consulting, personnel, training, and other investments over a 3-year period to quantify The Children's Hospital of New Orleans's total investment in Digitech Systems's products.

Direct benefits calculated included decreased cost of document scanning outsourcing, reduced filing and storage costs, reduced postage costs, reduced chart costs, and increased revenue from complete billing. Indirect benefits quantified included increased productivity by doctors, nurses, and administrative staff. Time savings associated with a faster record search, retrieval, faxing, and filing were calculated based on the fully loaded hourly cost of an average hospital employee. A productivity correction factor was applied to account for the inefficient transfer of time from time saved to additional time worked.

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DETAILED FINANCIAL ANALYSIS

Children's Hospital

SUMMARY

Project:	Digitech Systems PaperFlow and PaperVision
Annual return on investment (ROI)	103%
Payback period (years)	1.76
Net present value (NPV)	114,526
Average yearly cost of ownership	99,191

ANNUAL BENEFITS	Pre-start	Year 1	Year 2	Year 3
Direct	0	113,000	123,000	123,000
Indirect	0	42,404	210,323	210,323
Total Benefits Per Period	0	155,404	333,323	333,323

DEPRECIATED ASSETS	Pre-start	Year 1	Year 2	Year 3
Software	0	0	30,000	0
Hardware	88,000	75,000	10,000	0
Total Per Period	88,000	75,000	40,000	0

DEPRECIATION SCHEDULE	Pre-start	Year 1	Year 2	Year 3
Software	0	0	0	6,000
Hardware	0	17,600	32,600	34,600
Total Per Period	0	17,600	32,600	40,600

EXPENSED COSTS	Pre-start	Year 1	Year 2	Year 3
Software	6,200	9,000	9,000	9,000
Hardware	0	0	0	0
Consulting	10,000	5,000	5,000	5,000
Personnel	840	10,500	10,500	10,500
Training	4,032	0	0	0
Other	0	0	0	0
Total Per Period	21,072	24,500	24,500	24,500

FINANCIAL ANALYSIS	Year 1	Year 2	Year 3
Net cash flow before taxes	55,904	268,823	308,823
Net cash flow after taxes	(748)	130,712	174,712
Annual ROI - direct and indirect benefits			103%
Net cash flow after taxes (direct only)	(21,950)	25,550	69,550
Annual ROI - direct benefits only			25%
Net present value (NPV)			114,526
Payback (years)			1.76
Average annual cost of ownership			99,191
3-year cumulative ROI			116%
3-year IRR			56%

FINANCIAL ASSUMPTIONS

All government taxes	50%
Discount rate	15%