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Document **G33**

ROI CASE STUDY IMAGENOW CITIZENS MEMORIAL HEALTHCARE

THE BOTTOM LINE

By deploying ImageNow, Citizens Memorial Healthcare improved the productivity of its staff, avoided new hires in its insurance billing department, and improved its quality of care.

ROI: 1321%

Payback: 1 month

THE COMPANY

Established in 1982, Citizens Memorial Healthcare is a fully integrated and nationally recognized healthcare system located in Southwest Missouri. CMH consists of a 74-bed hospital that provides a number of services including inpatient care, outpatient care, emergency room services, behavioral health services, and imaging services. CMH also has a number of non-hospital facilities providing services such as independent living, diabetes care, long-term skilled nursing, and sleep disorder testing. CMH has 1,500 employees and provides services to people in seven counties.

THE CHALLENGE

In 2002, CMH began implementing a systemwide health care information platform with the goal of having 100 percent of medical records stored electronically. Meditech's document management system was deployed in late 2002, and after a number of data conversions, including all nursing data, approximately 90 percent of all data was electronic. However, the remaining 10 percent was critical for patient care, consisting of handwritten notes by doctors and some documentation from CMH's non-hospital facilities, and could not be accessed by Meditech.

THE STRATEGY

In mid-2003, CMH began looking at solutions that would enable it to electronically store these remaining categories of patient-critical data. In addition to looking at Perceptive Software's ImageNow, CMH evaluated systems from Valco and Bluechip. ImageNow was selected for a number of reasons:

- ImageNow was the only solution into which CMH could scan all of its existing forms.
- Other solutions had preset categories of document types that could be scanned, and this excluded a number of documents used by CMH.
- ImageNow enabled CMH to build applets to draw images or data from other applications.

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CMH then spent several months working with Perceptive Software on the deployment. Three people from CMH worked with three consultants from Perceptive Software. CMH visited other ImageNow deployments in order to learn about its deployment and best practices. CMH also spent this time working with Perceptive Software to plan the index fields to be associated with the documents that would be scanned. In mid-December, 32 super users were trained on ImageNow and the deployment team spent a week installing software, scanners, and servers, after which ImageNow went live.

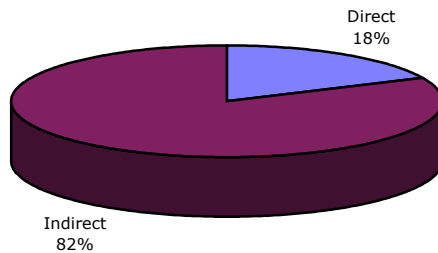
ImageNow is now used on a daily basis by 1,350 employees; every member of CMH's clinical and back office staffs in virtually all areas of the hospital. ImageNow has applets and a learn mode feature, both of which were used by developers to integrate the solution with existing solutions; including Meditech and several home medical equipment applications.

KEY BENEFIT AREAS

Adopting ImageNow has enabled CMH to improve the productivity of a number of its staff while also reducing paper costs. Key benefits from the solution include:

- Improved clinical staff productivity. CMH has 1,350 clinical employees who are now able to simultaneously view patient-critical documents needed for diagnoses and treatment. Because they no longer have to travel to different parts of the hospital — or remote facilities — to search for and retrieve documents, they are now 15 percent more productive.
- Increased non-clinical staff productivity. Electronic storage of documents enables simultaneous viewing of documents by multiple employees and has shortened many of the workflows in the accounts receivable department. This has improved the productivity in the accounts receivable, accounts payable, and insurance administration departments. The accounts payable department has redeployed one employee, and the coding department — which administers explanation of benefits forms with insurance companies — has redeployed three employees, avoided a fourth new hire, and eliminated overtime.
- Reduced paper-related costs. By scanning an average of 1.75 million documents per year into ImageNow, CMH has avoided the cost of purchasing the paper and storage of these documents.
- Accelerated receivables collection. Because billing is now completed more efficiently and interactions with insurance companies are now more accurate, CMH has reduced the time required to collect a receivable from 70 days to 55 days.
- Improved diagnosis quality. As a result of the ImageNow deployment, doctors are able to provide better service to their patients. Doctors are now better informed of patients' medical situations because they receive information more quickly, and all information is centrally available, enabling them to incorporate more information into a diagnosis.

BENEFITS

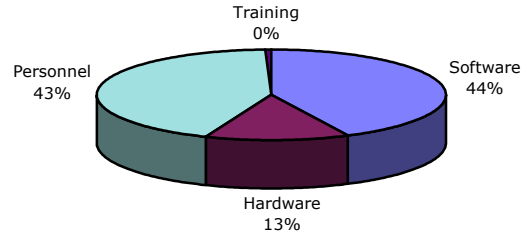


TOTAL: \$15,972,768

KEY COST AREAS

Key cost areas for the deployment included software, personnel, and hardware. Software consisted of the ImageNow solution, including seats for the majority of CMH's employee base. Hardware consisted of document scanners and servers sufficient for storage of all the new images to be retained. Personnel costs consisted of one IT staff member who supports ImageNow on an ongoing basis.

COSTS



TOTAL: \$653,486

LESSONS LEARNED

CMH encountered few problems during the deployment. Because Meditech had already been deployed, CMH staff was already familiar with the functionalities, features, and benefits of a document management system. Additionally, this was the second such deployment for the IT staff. As a result, deployment and adoption of ImageNow was relatively smooth. However, when organizations are deploying an image management system for the first time, training is usually needed to increase user adoption, and maximize the productivity gains from workflow changes.

CALCULATING THE ROI

Nucleus calculated the costs of software, personnel, hardware, and other investments over a 3-year period to quantify CMH's total investment in ImageNow.

Direct benefits calculated included avoided coding staff costs, reduced accounts payable staff costs, and eliminated paper-related costs. Indirect benefits included increased productivity of the clinical and accounts receivable staffs. These benefits were adjusted downward by 50 percent to reflect the fact that employees may not convert 100 percent of productivity improvements into time spent on other work.

DETAILED FINANCIAL ANALYSIS

Citizens Memorial Healthcare

SUMMARY

Project:	ImageNow
Annual return on investment (ROI)	1321%
Payback period (years)	0.08
Net present value (NPV)	5,727,157
Average yearly cost of ownership	217,829

ANNUAL BENEFITS	Pre-start	Year 1	Year 2	Year 3
Direct	0	962,090	962,090	962,090
Indirect	0	4,362,166	4,362,166	4,362,166
Total Benefits Per Period	0	5,324,256	5,324,256	5,324,256

DEPRECIATED ASSETS	Pre-start	Year 1	Year 2	Year 3
Software	107,085	74,000	0	0
Hardware	88,000	0	0	0
Total Per Period	195,085	74,000	0	0

DEPRECIATION SCHEDULE	Pre-start	Year 1	Year 2	Year 3
Software	0	21,417	36,217	36,217
Hardware	0	17,600	17,600	17,600
Total Per Period	0	39,017	53,817	53,817

EXPENSED COSTS	Pre-start	Year 1	Year 2	Year 3
Software	0	32,595	32,595	32,595
Hardware	0	0	0	0
Consulting	0	0	0	0
Personnel	0	94,500	94,500	94,500
Training	3,115	0	0	0
Other	0	0	0	0
Total Per Period	3,115	127,095	127,095	127,095

FINANCIAL ANALYSIS	Year 1	Year 2	Year 3
Net cash flow before taxes	5,123,161	5,197,161	5,197,161
Net cash flow after taxes	2,544,089	2,625,489	2,625,489
Annual ROI - direct and indirect benefits			1321%
Net cash flow after taxes (direct only)	363,006	444,406	444,406
Annual ROI - direct benefits only			212%
Net present value (NPV)			5,727,157
Payback (years)			0.08
Average annual cost of ownership			217,829
3-year cumulative ROI			2912%
3-year IRR			1296%

FINANCIAL ASSUMPTIONS

All government taxes	50%
Discount rate	15%