Road Map for the Development of an E-Healthcare Strategy

Irene Gilbert; Edward S. Johnson, DDS, MBA; Catherine Szenczy

ABSTRACT
This article presents a case study describing how Saint Francis Care developed its strategy for using the Internet and e-commerce. Planning strategies are discussed, as are implementation plans and expected benefits.

KEYWORDS
• St. Francis Care
• Web site development
• E-health
• E-strategy

Saint Francis Care is an integrated healthcare delivery system and the parent corporation of its flagship tertiary teaching institution, Saint Francis Care Hospital and Medical Center. The hospital is an anchor institution in North Central Connecticut, founded by the Sisters of Saint Joseph of Chambéry in 1897. It is currently licensed for 617 beds and 65 bassinets, making it one of the largest hospitals in Connecticut and the largest Catholic hospital in New England.

The first step toward system integration occurred in 1990, when a historic affiliation was forged between Saint Francis Care Hospital and Medical Center and Mount Sinai Hospital of Connecticut. This affiliation is believed to be the first in U.S. history between a Catholic- and a Jewish-sponsored hospital. After five years of active affiliation, the hospitals merged under a single license. The merger included the creation of a unified medical and dental staff.

The process of horizontal integration continued through an affiliation with Bristol Hospital—a sole community provider located a few miles to the west of Hartford. The Bristol affiliation model has proven beneficial to both organizations and has provided opportunities for consolidating services and departments such as the clinical laboratory, human resources, and occupational medicine.

Saint Francis Care also has a vertical integration component that broadens the continuum of services for the system. One key relationship is in
rehabilitation medicine. The Rehabilitation Hospital of Connecticut is a sixty-bed facility—a wholly owned subsidiary of Saint Francis Care. The facility offers specialized programs in traumatic brain injury and spinal cord trauma as well as general rehabilitation.

Saint Francis Care is also the largest provider of behavioral health services in the state. The Saint Francis Care Behavioral Health network includes an inpatient hospital and a statewide network of outpatient programs.

**Initial Web Site Development**

The initial Saint Francis Care Web site was developed six years ago when Internet technology was in its infancy in the healthcare industry. Like many early Web sites, the Saint Francis Care site served as an academic resource and was developed and maintained by the director of the Health Science Library. As Web technology evolved and a consumer focus emerged, new opportunities were presented. As a teaching hospital, health education and the promotion of health care services through the Web became important priorities for Saint Francis Care.

In 1997 a Web consultant was engaged to redesign the Saint Francis Care Web site, with the principal goal of creating a more consumer-friendly and easily navigable site. The hospital began to load its inventory of health education, wellness, and complementary medicine offerings into the newly designed Web-based calendar. A question-and-answer section was added—a step toward helping consumers locate classes or programs that addressed a specific area of interest. Saint Francis Care also hosted a network television program—Saint Francis Care Today—for two seasons. A total of one hundred programs were produced, and a catalog of the most current show topics was included on the Web site.

A public relations specialist subsequently assumed responsibility for maintenance of the newly launched Saint Francis Care Web site. When the hospital created a consumer-oriented Health Learning Center on the campus, it was linked to the Web site, which enabled consumers to request information on health-related topics.

**A New Beginning**

By 1999 the importance of the Internet to the healthcare industry could no longer be questioned; thirty million people were using it as a source of medical information, and healthcare was becoming the fastest-growing application. Approximately one-half of those seeking medical information through the Internet expressed interest in communicating with their physicians through e-mail. It was clear that consumer preference would drive the healthcare industry to embrace the Internet as an alternate medium for communication between providers and their patients. Physicians, already burdened by increasing patient volumes, worried that they would be unable to adequately
support their patients’ appetites for electronic communication and information. The mandate, however, was clear: one-third of patients surveyed said they would switch doctors if they could communicate with their new doctor through e-mail.¹

Although hospitals had begun to appreciate the growing consumer demand for Internet-based healthcare information and services, in 1999 most were preoccupied with upgrading their legacy systems and desktop computers to ensure their survival in year 2000. The majority of hospitals could boast they had a Web site. However, with few exceptions these sites consisted of static “brochure ware,” and most had not developed a comprehensive strategy for using the Internet to their advantage.

During this same year, the president, David D’Eramo, and the board of directors of Saint Francis Care issued a challenge to the newly hired chief information officer (CIO). They wanted to leverage the power of the Internet, along with complementary computer technologies, to build a customer-friendly information system that would improve and expand access to Saint Francis Care services for patients and physicians. They wanted to implement this new system as quickly as possible.

The CIO, working in collaboration with the senior vice president for public relations and communications, began to evaluate consulting firms and their approaches to the development of an e-health strategy. After evaluating several firms, they selected Cap Gemini Ernst & Young (CGEY), formerly known as Ernst & Young, LLP, as their partner for this planning initiative. This firm was selected because of its strengths in healthcare IT and healthcare Internet strategies, and because its approach to the development of an Internet strategy satisfied Saint Francis Care’s requirement for a rapid planning process.

Planning Process for E-Health Strategy

Saint Francis Care adopted the consultant’s recommended approach to developing its e-strategy. The Saint Francis Care senior management team began to identify potential strategic alliance partners that could enhance the value of their key e-health opportunities. They also summarized Saint Francis Care’s strategic vision and key business drivers, which would be used to build consensus around the priority of potential initiatives that would be developed during the planning workshop. The workshop used the CGEY accelerated solution environment (ASE) methodology to rapidly analyze and build consensus around the vision and strategic initiatives. Business cases were developed for the key initiatives defined during the ASE session.

The e-strategy project approach can be broken down into four phases. Each phase is a powerful combination of tools and services designed to help the project team collect e-health drivers and identify competitive solutions. The phases are as follows: (1) diagnostic, (2) strategy development, (3) strategy workshop (e-Day) and (4) business-case–value-proposition development.
The diagram in Figure 1 shows an overview of the Saint Francis Care e-strategy approach; a description of the planning process follows.

**Phase 1: Diagnostic.** This phase began with the coordination of the Saint Francis Care project team and the development of the project workplan, which was continually monitored and managed by the project management team.

This phase included the “internal scan” of Saint Francis Care. The project team’s focus was to identify the mission and business strategies, current Internet applications and data architecture, current e-health portfolio, and existing Internet capabilities (people, process, and technology), as well as the history of successes and failures of previous initiatives. Several focus group sessions provided an overview of the e-health landscape, assessed the effectiveness of current e-health strategies, and identified potential opportunities. The key deliverable from Phase 1 was the assessment of the current Saint Francis Care Web site and a baseline SWOT (strength, weakness, opportunity, and threat) analysis.

**Phase 2: Strategy Development.** The strategy development phase yielded a portfolio of strategic ideas developed within the context of e-health-industry leading practices and market trends, as well as the strategic objectives of Saint Francis Care. The portfolio was a key input to the e-Day executive visioning sessions, which would be held in Phase 3. But the focus of Phase 2 was an “external scan” of the e-health environment. The project team evaluated the
status of healthcare Internet strategies across the country and compared the capabilities of the existing Saint Francis Care Web site against some of the leaders in the healthcare industry. This comparison was performed at national, regional, and local levels. Information on the healthcare industry’s best practices was also provided, as well as best practices from industries with more mature Internet strategies. These included best practices on strategy development, technology, implementation, and other key components of their Internet solutions. The final output from this phase was a “Scan Fact Book,” which was used during Phase 3 and contained the following:

- E-health opportunities and initiatives that support Saint Francis Care’s overarching strategic objectives
- A vision of opportunities for connectivity with key constituents
- Prioritization criteria (critical success factors) to evaluate initiatives and opportunities
- Initial review and prioritization of initiatives and opportunities (derived from a database of national e-health initiatives)
- Interim work products for the e-Day, which included a “strategic agenda” that defined a conceptual framework for Saint Francis Care initiatives and future investments in e-health
- Summarization of the competitive analysis, best practices, and related information to support the planning process

**Phase 3: Strategy Workshop (E-Day).** This phase was a day-and-a-half workshop based on the ASE process, which uses a proven approach to interactive decision making and consensus building. The workshop brought Saint Francis Care’s internal decision makers and external stakeholders together to develop an enterprise e-strategy. The project team carefully planned the agenda of e-Day to ensure that the participants were educated; they needed a solid knowledge base of healthcare Internet strategies if they were to work productively and rapidly in the planning sessions. The participant list was developed to ensure that the group remained small enough to be effective yet included all critical stakeholders. Included were representatives from Saint Francis Care Hospital and Medical Center, its affiliate Bristol Hospital, its medical staff (both employed and community physicians), its board of directors, and affiliated community organizations, including major insurance companies.

The e-Day approach consists of three stages: (1) Scan, (2) Focus, and (3) Act.

- The Scan session provided participants with an overall background in e-commerce—e-health in particular. To accomplish this, the Internet strategies of leading-edge companies from all industries were included. The presentations covered the range of “e-opportunities,” primary “e-players,” leading practices, and new economic models.
The Focus phase was a facilitated session designed to bring the Scan ideas closer to home and begin to build Internet initiatives and priorities specific to Saint Francis Care. The participants were divided into six groups, each focusing on a specific customer group or business process. The focus groups included employees, patients, physicians, revenue cycle, supply chain, and community.

The Act phase required that participants prioritize their initiatives using the critical success factors established at the beginning of the retreat. The highest-priority initiatives were identified as candidates for deployment; however, they first had to pass one additional test. A business case for each had to be developed to justify the investment required. This exercise was done in Phase 4 by workgroups that were a subset of the e-Day participants; this took place in the month following the planning session.

The key e-Day deliverables were (1) the education of the Saint Francis Care senior executives and business partners, (2) consensus development around e-strategy and Internet initiatives, and (3) prioritization of Saint Francis Care initiatives that advanced the organizational mission and competitive position and served Saint Francis Care's strategic vision.

**Phase 4: Business-Case-Value-Proposition Development of Top Internet Initiatives.** In this phase, small work groups developed high-level business cases (value propositions) for the highest-priority initiatives identified during the e-Day. These value propositions included a high-level definition of project objectives, critical success factors, project scope, implementation timeframes, technical architecture, potential barriers, risk mitigation, cost, and value analysis. An assessment of the impact of the selected initiatives on the Saint Francis Care e-health model was also developed in a spider Web format. The creation of the value propositions provided senior management with the information required to make investment decisions, as well as a clear implementation plan to launch and monitor the progress of Saint Francis Care's e-strategy.

**Selection of E-Healthcare Initiatives**

Using the critical success factors outlined next as their criteria, e-Day participants identified their highest-priority initiatives. Following the list is a brief description of the initiatives that were selected.

- Enhance patient-physician-employee satisfaction
- Support Saint Francis Care as an integrated delivery network
- Improve supply chain management
- Reduce costs
- Increase market share
- Improve revenue cycle
- Address vendor support availability
• Address compliance issues
• Address an existing system's deficiencies
• Represent a key automation objective for users
• Represent a mandatory building block
• Represent proven technology
• Present a high probability of implementation success
• Maximize return on investment
• Minimize expected investment level

**Patient Care Initiatives.** Initiatives related to patient care and access to Saint Francis Care services for both physicians and patients quickly emerged as the highest priorities. We wanted to leverage the capabilities of the Internet to extend our healthcare services into the community and to provide customer-friendly access to all Saint Francis Care services.

The specific functions include (1) a physician directory with sophisticated search capabilities, (2) health risk assessments and personal health records for patients, (3) appointment scheduling requests, (4) wellness and disease management educational materials, (5) e-mail communication with physicians and hospital services, (6) moderated healthcare chat rooms and support groups, and (7) concierge services for patients. The primary objective of these patient care initiatives is to strengthen relationships with our primary customers: physicians and patients.

After evaluating the “buy versus build” approaches, we felt that commercial software that was flexible enough to meet the specific needs of Saint Francis Care would enable us to implement our patient care initiatives rapidly and do it more cheaply than if we did the development in-house. Software products were evaluated during the summer of 2000, and the vendor selection process was finalized in September. An initial budget of $400,000 was developed to implement the first phase of the patient care initiatives.

The first phase will include designing a new Web site for Saint Francis Care and conducting a pilot project consisting of one hundred physicians who agree to communicate with the hospital and their patients through the Web for appointment scheduling, test results, and so on. We plan to begin implementing the first phase of the project during the second quarter of 2001.

**Revenue Cycle.** The highest-priority objective established by the revenue cycle focus group and selected in the final prioritization process was to perform a real-time verification of patients’ insurance eligibility prior to admission. The group felt that significant cost savings and reductions in accounts receivable could be achieved by eliminating the manual verification processes and the rebilling efforts that are required when the incorrect insurance carrier is billed.

We began to evaluate products to provide this function, however, and found that a separate product was not required. This function is included in the software we are purchasing to address the patient care initiatives, so a separate budget was not required; the implementation will be done concurrently with the patient
care initiatives. A budget and timetable have not been developed for the other initiatives like claims inquiry and denial management, which require new interfaces with payers. However, we have initiated discussions with local payers, and they have expressed interest in working with Saint Francis on these initiatives.

**Supply Chain Management.** Although this initiative was selected as one of the highest priorities, it was the only initiative that did not meet the criterion of rapid implementation. The focus group responsible for supply chain management felt that before we could fully exploit the capabilities of the Internet, our existing materials management system had to be replaced. They identified a potential annual savings of approximately $2 million by more closely integrating a new materials management system with our major suppliers through the Internet. During the final prioritization process, this initiative was selected, despite its estimated two-year implementation timeframe, because of the rapid return on investment that could be achieved. Commercial software will be purchased, and both an in-house processing model and an application service provider model are being evaluated. The budget request for this initiative was included in our 2001 capital budget request; if approved, the acquisition process will be initiated during the first quarter of 2001.

**Recruitment.** The highest priority identified by the employee focus group was to reduce the length of time positions remain vacant. The average duration of a job vacancy is currently eight weeks, and approximately 50 percent of all vacant positions have to be filled through overtime or temporary agency staff. The current process is very labor-intensive because all applications are submitted on paper, then sorted and sent to the appropriate department. Implementation of this initiative would enable candidates to search a database of available positions and then submit an application for the desired position(s). The supervisors recruiting for these positions could search the applicant pool and schedule job interviews with the desired applicants. The focus group estimated that the average vacancy duration could be reduced by one week and an annual savings of $400,000 in replacement staff could be achieved if this initiative were implemented.

In addition to this initiative, the group identified employee self-service capabilities for all common personnel transactions as another high-priority initiative. To address this requirement, we plan to implement the Web-based functionality available through the PeopleSoft Human Resources system (version 8). This is planned for implementation during 2001. The only expense we anticipate is the internal labor expense associated with implementation of the software, and we have not yet established the resource requirements and timeframes for this project.

**Summary**

The E-Health Planning Day (E-Day) was viewed as a success by all who participated. Using this focused process, Saint Francis Care was able to quickly identify and prioritize initiatives that advanced the strategic goals of the healthcare
delivery system and met the criteria established as our critical success factors at the beginning of the e-Day. We view this planning effort as the beginning of a continuous review and evaluation process, which will be repeated annually. This will enable senior management to measure progress against plan and make revisions as needed to accommodate the rapidly changing healthcare and technology markets.

References

About the Authors
Irene Gilbert is senior manager with Cap Gemini Ernst & Young, LLP, Hartford, Connecticut.

Edward S. Johnson, DDS, MBA, is senior vice president for public relations, Saint Francis Hospital and Medical Center, Hartford, Connecticut.

Catherine Szenczy is senior vice president for information services and CIO of Saint Francis Hospital and Medical Center, Hartford, Connecticut.