

Managing Capital Project Risks in a Challenging Environment: What Health Care Boards and Executives Need to Know

The American Hospital Association's



**CENTER FOR
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Monograph Series

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Overview

In the wake of unprecedented capital construction and technology spending, the meltdown of financial markets, and other health care market dynamics, it is time for renewed risk management by the C-suites and boardrooms of hospitals and health care systems.

This monograph discusses today's market environment, current capital market perspective and related risks, and then outlines a project management approach and questions that must be addressed to help board members and executives more effectively manage capital project risks while achieving organizational strategies and goals.

This publication includes information and insights as well as tools, references and other resources that can help boards and executives more confidently participate in the heightened oversight, scrutiny and decision-making about capital projects needed in the current economic environment. It can be used in a variety of ways, including as background for a board retreat or educational session focusing on strategic planning and capital spending; as a resource for board Executive and Finance Committees or other board subcommittees charged with overseeing planning and implementation of capital projects; and for health care organization executives involved in these activities as well.

Market Environment and Risks

More than ever before, health care organizations will be confronted with complex strategic and financial decisions when they seek to invest capital in facilities and technology. The current economic crisis has forced providers to suspend, delay and rethink their capital allocation plans perhaps unlike any period in the past. The new Administration's health care reform plans may further challenge capital spending.

Notwithstanding this, the United States as well as our health care system will continue to require infrastructure improvements, technology and capacity not to mention a competitive position to remain a going concern.

To put capital spending in perspective, health care construction spending was approximately \$35 billion from January 2007 to January 2008. Median one year

information technology (IT) spending per bed in 2007 was in excess of \$5,800, which did not reflect the full spending for multi-year technology installations — a spending trend that continued in the first half of 2008 (AHA, 2008). In light of current capital and recessionary pressures, the forecast for health care construction in 2009 is \$26 billion, down 25 percent. However, we predict this figure will go lower if the capital markets are slow to thaw and/or the federal government's response puts further pressure on reimbursement. Similarly, technology spending will and must slow based on many providers' lack of access to the capital markets. This, however, will place greater financial pressure on provider operating budgets to fund in-progress implementation of projects such as electronic health records and maximize their intended value.

Construction and technology spending will slow based on a re-examination of whether new facilities or IT systems are imperative to the hospital's strategic plan and whether or not the investment can produce a sufficient risk-adjusted return on investment.

The silver lining in all of this is two-fold: emotional, or non-essential, capital spending has stopped and construction escalation has in fact declined. Turner Construction's 4th quarter 2008 Healthcare Construction Cost Report is showing zero construction escalation — labor costs continue to rise at the rate of inflation and profit and costs for materials and overhead are down.

Hospitals and health system boards need to have a renewed appreciation and understanding of the risks associated with construction and technology spending, which needs to become an even higher priority for hospital leadership. Lack of attention to overall capital construction and technology spending, particularly in the increasingly volatile environment, can lead to strategic and financial decisions that tremendously increase the day-to-day risk of operating the hospital.

Consider the following example. A hospital in a rapidly growing region is at capacity, has an aged facility, is experiencing operational inefficiency and needs to advance technologically. Consumers and payers are demanding improved care and competition is increasing, as well. To handle growth and sustain its position as a provider of choice, the hospital makes a decision to invest in a replacement facility.

Because the hospital has been borrowing and spending aggressively, its financial position is not particularly strong. As a result this hospital must be much more attentive to the total amount of risk that capital spending places on the organization to meet its strategic initiatives. In this example the project moves forward and the cost per bed is 20 percent more than anticipated. The risk and outcome of this project results in greater enterprise-wide financial pressure than is warranted and reduces the organization's cushion to absorb further economic downturn.

The scenario described above is not uncommon and needs to stop. As health care leadership strives to help their organizations remain competitive, expand, modernize facilities and integrate the latest in technology, they have less time to focus on the total amount of risk the organization is taking as it endeavors to achieve its targeted strategic position. However, the bottom line is clear. Increased risk associated with construction and technology spending puts added pressure on the hospital's financial position. Capital allocation becomes tighter and other strategic initiatives may need to be put on hold, delayed or potentially abandoned. In the current environment the role of the board is also clear. Boards must now step up and engage in active oversight and scrutiny of capital spending projects to help ensure their hospitals and systems remain financially viable.

Barry Rabner, President and CEO, Princeton HealthCare System in Princeton, NJ, worked closely with his board during the planning phases of their replacement hospital project to reduce the possibility of project failure. In his commentary, "Capital Project Success Depends on Strong Board Oversight" (Trustee, January 2009), Rabner writes, "Project risk was understood to be high, given the system's position in a highly competitive market and in a state in which more than half of the hospitals operate at a loss...During the current economic downturn, the system's Board of Trustees and senior leadership believe that strong board oversight will play an even more important role in continuing to move the project forward... Numerous significant steps were taken to reduce the possibility of project failure. Key among them were efforts to strengthen the board of trustees." Efforts included, among other things:

- Establishing a Board Replacement Project Oversight Committee which meets monthly or more often if needed. Attendees include the system's CEO, CFO, Program Manager, financial advisor and select board members.

- Sharing project budget and time table monthly with the Executive Committee of the board and at all board meetings. It is also available on the password-protected board website. Project information is shared with the Executive Committee of the medical staff and at quarterly medical staff meetings.
- Establishing a Project Finance Subcommittee of the Board Finance Committee. Their role was to insure that optimal financing was obtained and all other capital sources were managed properly.

Access to Capital

For some hospitals, access to capital markets for construction and IT funding is becoming increasingly difficult. Particularly troubling is that smaller organizations that need to be responsive to the marketplace and industry challenges are likely to have problems accessing capital to support expansion/renovation projects and the very technologies they need to stay competitive. A key to attracting capital will be an organization's ability to demonstrate a plan of action that addresses risk. Lisa Goldstein, Senior Vice President and Team Leader for Moody's Investor Services says: "Hospitals that have prepared a well-conceived project with a specific business plan including, analysis that demonstrates the impact of the project on the enterprise, realistic project budget, schedule, transition plan, and an overall risk mitigation strategy are more likely to attract capital....Bond ratings are affected by the quality of the business plan which in turn contributes to the cost of capital."

Whether it's the beginning of the end or the end of the beginning of the health care construction boom, the need to better manage risk remains. For now, the factors that led to the boom are still in place: antiquated facilities, need for technological advancements that enable hospital efficiency and quality, code compliance (such as California seismic requirements) and the aging baby boom generation. The overall effects of factors such as the current recession, tighter access to capital and declining reimbursement all have an impact on health care capital projects and will continue to slow down spending (see Illustration 1 on page 8 "Contributing Influences on Healthcare Capital Projects"). However, essential projects will continue to be implemented despite the overall economy. Therefore, hospitals and health systems need to ensure that they are appropriately focused on capital spending and risk associated with it.

Boards can play a critical role in focusing their organization's leaders on managing risks by addressing the following questions:

- How will the current capital markets affect capital spending risks?
- What is the strategic plan for the institution over the next 3-5 years?
- What risks should leadership address as part of their project oversight responsibilities?
- What constitutes the overall development continuum of a major capital spend?
- What is the business plan for the project?
- Will the investment deliver a clear, measurable benefit?
- What are the true costs of our planned new or renovated facility?
- What is the optimum project delivery method?
- What operational improvements have been identified and are being designed into the new facility?
- What might happen if project risks are not properly understood or managed?
- How do we balance project costs with desired quality and life cycle benefits?
- How do we recalibrate project scope and reduce operating costs to offset increased cost of capital/debt service?
- What can our hospital or health care system do to be well-positioned to secure the capital we need to continue to fund our strategic capital initiatives?
- What alternative non-traditional sources of capital can we access to fill the void created by the current turmoil in the credit markets?

Current Capital Market Perspective

As we all sort through the aftermath of the current global credit crisis and resulting “cratering” of equity values, we now realize the days of easy access to low-cost sources of capital are certainly over for the foreseeable future. This is particularly true for hospitals. In fact, virtually all health care bond issues in the queue as of mid-October 2008 have been shelved and the credit markets are essentially frozen for long-term bonds or variable rate demand bonds (VRDBs). Existing issues of VRDBs are being “put” back to bank issuers, resulting in re-sets (re-issuing of bonds) at higher interest rates for hospitals and amortization schedules being reduced from a

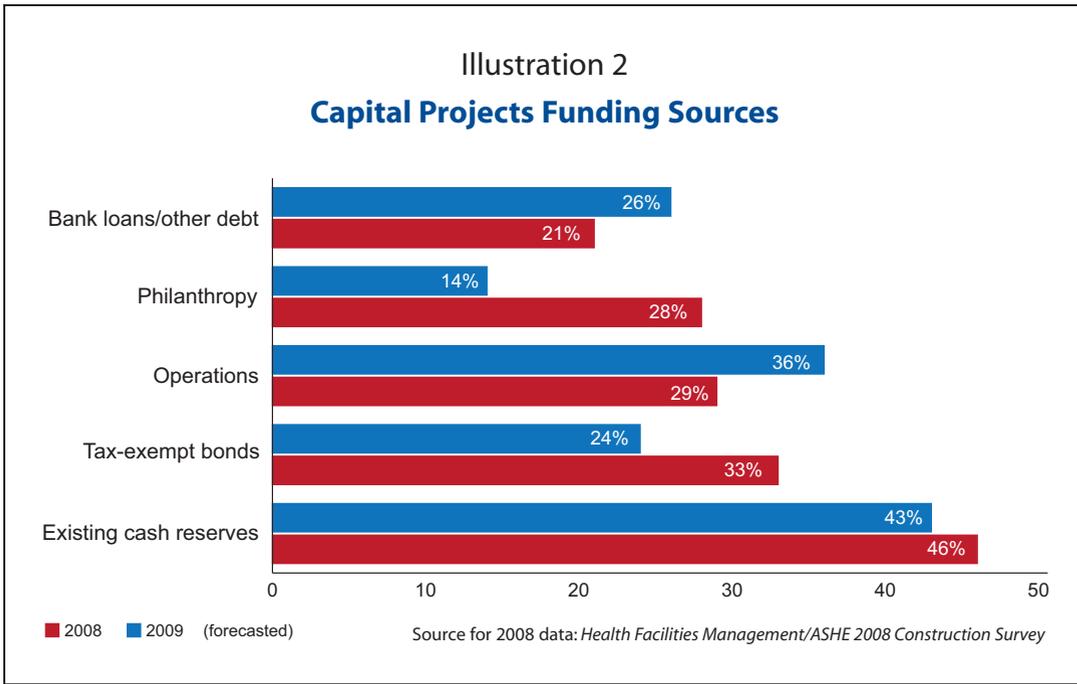
Illustration 1
Contributing Influences on Healthcare Capital Projects



Source: Navigant Consulting Inc.

typical 30-year down to a three-to-five year schedule. The demise of the auction-rate securities market was an early casualty of the capital market debacle as well, further limiting financing vehicles of choice for health care providers.

In addition to the difficulties health care organizations have experienced managing the liability side of their balance sheet as a result of the credit crisis, equity investment portfolio values and returns have significantly deteriorated the asset base of many health care providers and severely curtailed the use of investment returns as a source of capital to fund capital programs and current operations. These convergent events combined with the expectation that reimbursement levels will continue to be



squeezed have forced many health care systems to suspend all planning for future projects until further notice. Illustration 2, “Capital Projects Funding Sources” shows how funding sources are projected to change over the next year.

U.S. and world leaders are desperately searching for long-term sustainable solutions to thaw and stabilize the frozen global capital markets. Meanwhile, the new world order for health care providers needing to access capital markets in the foreseeable future will be severely tightened credit and a heightened scrutiny of business plans and hospital management team experience in and approach to managing the significant risks inherent in large-scale capital spending. Only health care providers with the most solid credit profile, business plans, management teams and risk mitigation plans will obtain financing.

First and foremost, capital sources will want evidence that providers have a track record of being good stewards of their limited financial resources. That starts with diligently “planning the work and working the plan”. With slim margins in a highly competitive environment there is no longer any margin for error. Hospitals and systems need to get it right the first time. A successful business plan is described on page 18.

Sample questions to ask third-party developers

- What financial and other criteria should we establish to pre-qualify developers/property investors?
- How well-capitalized is the prospective investor? Can they fund with speed and certainty?
- Do we expect the development or sale transaction to be treated as an off-balance sheet operating lease? If so, has our auditor reviewed the ground lease and hospital tenant lease documents and provided an opinion that the transaction will be treated off-balance sheet?
- What impact will the transaction have on our debt capacity? Have we obtained Moody's or Standard & Poor's perspective on the proposed transaction? Do we know what level of off-credit treatment we expect to receive? What variables will impact this level?
- Have we conducted a compliance review to ensure the proposed transaction complies with all Stark, private inurement and other regulatory requirements.
- Are the use restrictions structured to protect the organization in the future as the rapid pace of technological advancement changes what services and procedures can be performed in a physician's office?

More health care organizations will need to consider monetizing non-core assets, such as medical office buildings, health and fitness centers and ambulatory care centers, on their balance sheets and use the proceeds to fund new acute care capital projects and technology.

Using third-party developers to develop, finance, own and operate non-acute facilities has become commonplace among health care providers. In fact, many providers are starting to use private capital to fund acute-care projects including new hospitals and especially acute care, for-profit joint ventures with physicians. J. Michael Davis, Managing Director, Cain Brothers, agrees. "The high cost and limited availability of debt financing has unleashed an interest in monetizing existing real estate assets or securing third party developer capital for new capital projects. The current economic environment is leading many hospitals to evaluate real estate monetization strategies that provide access to capital and mitigate counterparty and financial risk. The competitive nature of today's health care sector demands

the most efficient deployment of capital and, oftentimes, the use of third-party real estate developers/owners can be an effective solution."

Health care providers should be aware that most traditional developers/investors rely upon highly leveraged transactions and therefore will not be able to secure required project financing until the credit crisis subsides. All cash buyers, such as equity real estate investment trusts (REITs), have remained open for business and have prospered by being able to fund with speed and certainty in this dynamic environment.

Healthcare REIT, a health care REIT with one of the highest investment grade ratings and a strategic capital partner of Navigant Consulting, has seen a pronounced up-tick in deal flow and an improvement in the quality of projects in the recent past.

Although transactions with third-party developers and investors can be structured as off-balance sheet operating leases, hospital providers need to understand what impact such transactions will have on their debt capacity (see sample questions to ask third-party developers on page 10). Moody's has taken the position that even though a transaction may be structured to achieve off-balance sheet treatment, each transaction is evaluated on a case-by-case basis to determine its impact on a hospital's debt capacity. Depending on the level of materiality, a typical approach is to convert a hospital's scheduled rental payments to an equivalent of debt service to determine the level of debt it would support and therefore its impact on debt capacity. Moody's also has taken a more conservative position recently. They believe that even though the underlying debt financing utilized by a third-party developer/owner may be non-recourse to the hospital (the hospital is not responsible for the debt), if the project is located on a hospital campus which may house key hospital physicians and outpatient operations, should the developer/investor default on its mortgage, the hospital would have the "moral obligation" to step in and cure a loan default. Therefore, developers/investors that do not place mortgages on properties offer health care providers the potential advantage of lessening the impact a project may have on the organization's debt capacity.

Hospital executives and board members should ask risk management and control related questions, such as those listed above, when considering monetizing non-core assets or using a third-party developer to finance and own a project. These questions are related to issues such as use, control, approvals, sale, financing and facility operations. Health care providers that conduct the appropriate level of due diligence on prospective capital partners and establish appropriate levels of control will be in a much stronger position to manage the risks and rewards of accessing capital through private third parties.

Assessing Capital Project Impact on Hospital Bond Ratings

- Who will be overseeing the project?
- Is the current CEO involved or has another new senior executive been hired or appointed?
- Will the project be overseen by a committee?
- How will management maintain its focus on current operations?
- What has been management's history and experience with other sizable expansions?
- Were these expansions completed on time and on budget?

Source: Moody's Investors Service

The Development Continuum

The development continuum shown on page 15 shows activities that occur from the beginning to the end of a capital construction project. The continuum can help the board and hospital leadership organize, visualize and oversee these activities. Although presented in a linear format, many of the activities occur simultaneously to both accelerate speed to market as well as reduce risks. This section will discuss each part of the continuum and identify issues and opportunities for boards and hospital leaders to address to ensure that projects are successfully funded and completed.

It is vitally important that boards critically examine and explore options for how these projects will be managed (both internally and

externally). Time and experience needed to manage these projects toward a successful outcome are often underestimated and under-appreciated. Moody's Investors Service wrote a special commentary on how they incorporate sizeable capital projects into a hospital's bond rating. The commentary poses several questions listed in the box above that Moody's considers in their assessment. A project executive who has a history of working on successful sizable projects will be invaluable to this process.

The first part of the development continuum (up to the first Go/No Go decision point) represents the activities that need to be completed to allow the board to make informed decisions about the strategic, market, operational, facility, financial and capital aspects of the project. The project business plan should respond to an organizational

strategic need. The plan should explore all viable options. In most cases, the need for objectivity dictates the use of a third party. At this point in the decision-making process, prior to board approval of the expenditure, a key risk mitigation strategy is to use the two-party approach where one group generates the plan and a second group tests/opines on the plan. At a minimum, the market assessment, volume projections, and financial proforma should be prepared by experienced health care consultants recognized and respected in the health care financial community. Completion of these tasks is depicted by a definitive Go/No-Go decision by the board.

A major capital project is only one component of a business plan developed to meet specific strategic objectives of the organization, not the result.

In today's environment of limited access to capital, boards are encouraged to introduce a second Go/No-Go point as noted between the Design and Build steps in the Project Implementation section of the continuum. This second decision point coincides with the resolution of the final plan of finance for the project. For a relatively small percent of the overall capital spend (in most cases no more than 4-6 percent), management can advance a strategically necessary project up to the start of construction while other critical success factors, such as physician recruitment, are achieved or trending favorably, so as not to lose market timing. At the same time, the board can fulfill its stewardship role by not allowing project construction to begin until the plan of finance is completed. Along with the timing of the plan of finance comes a significant amount of certainty concerning the final scope, schedule and cost of the project. This certainty is becoming more important as the credit markets closely scrutinize the degree of risk prior to completion of financing.

The Project Implementation portion of the continuum depicts execution of the business plan and represents activities which need to be completed to effectively implement the plan. The emphasis on "business plan" rather than "project" is deliberate. A major capital project is only one component of a business plan developed to meet specific strategic objectives of the organization, not the result. Implementation activities need to be carried out in a systematic, controlled manner to allow ongoing monitoring and reporting to reduce risk related to schedule, budget and/or variations in project scope.

As shown at the bottom of the continuum, the capital expended is relatively small during the early stages of the project while the ability to impact the project's alignment with strategic needs is significant. Conversely, as the project moves into the construction stage, the ability to impact alignment with strategic needs is minimized and the capital expended increases rapidly.

Key activities within the development continuum are discussed in more detail below.

Strategic Plan

The management team defines the direction of the organization through a strategic plan which typically extends 3 to 5 years into the future and should be revisited and modified as often as needed depending on market and financial conditions. To achieve strategic goals, new or reconfigured facilities are often needed to house new service lines, expand patient care areas, house new technologies and/or replace antiquated facilities.

The most successful projects are those that have evolved to address defined strategic objectives. This is true today, more than ever, given the financial markets and the overall state of the economy. Ratings agencies and financial markets (once they are re-opened) will be very sensitive to understanding and appreciating the organization's strategic plans and supporting business plans.

If an organization plans to replace an aging physical plant, it is the board's obligation to ask "Are we spending tens of millions of dollars to build a new version of the

Essential, high return-on-investment projects will be prioritized accordingly and attract the "right" financing while non-essential or emotional projects will be suspended or abandoned unless philanthropic support dictates otherwise.

present"? and "What will be different about the way we are able to deliver care in this new facility?" If these questions cannot be answered satisfactorily, the business case for the new facility is not as robust as it should be. Further, reducing operating costs to help offset increased debt service should be mandated to achieve a project's return on investment.

A new facility can be the catalyst to change the way the organization does business, and in a sense, can help transform the organization. New facilities can and should be designed to deliver patient care more efficiently and effectively along with better quality outcomes, as further discussed in the Operations Planning/Process Improvement section on pages 21-25.

Defining the Purpose – Project Mission/Vision Statement

Prior to implementing the business plan, a project mission/vision statement and guiding principles should be established. For all major projects, such as a replacement hospital, and when diverse groups are involved, beginning with an educational component can help set the context for fresh thinking and a common understanding of a local version of “the hospital of the future”. Inviting a futurist along with industry experts to address a board/leadership planning retreat, for example, can create an atmosphere of innovation and thought leadership.

The project vision statement describes the purpose, organizational direction and expected outcome the project will provide. The project vision statement should:

- be memorable and provide guidance.
- be a clear road map for the future.
- be challenging and about excellence.
- be inspirational and emotional.
- inspire employees, physicians and other stakeholders.
- prepare for the future.

Guiding Principles

Guiding principles are values, strategic goals, and rule statements established by an organization’s leadership and set the stage to remake the hospital’s design, culture and practices (see sample principles at right). They broadly specify the direction of the project and link the vision to organizational action. Guiding principles are:

- explicit,
- measurable,
- attainable,
- related to key performance areas,
- written and communicated.

Guiding principles are used as a communication tool with all project participants and to ensure that overall project goals do not become subservient to stakeholder special interests. They should be used to evaluate options and make choices during the project planning and design stages.

Guiding principles may address such things as:

- Goals for improvement, which may include:
 - quality of care,
 - efficiency of care,
 - patient satisfaction,
 - staff satisfaction and retention,
 - financial performance;
- Cost;
- Flexibility;
- Sustainability;
- Patient and staff safety;
- Image; and
- Culture.

Sample Guiding Principles

- **All Decisions Will Be Made Within The Context Of Fiscal Responsibility**
 - Strike balance between first costs and long-term costs (identifiable payback)
 - Achieve best value options
 - Balance return-on-investment requirements
- **Optimize Operational Efficiency**
 - Reduce overall operations costs by 5-6%
 - Promote closer functional adjacencies, inter-service synergies
 - Potential universal bed concept
 - Move technology to patient
 - Patient flow and registration – navigating the system

Guiding principles should be developed in conjunction with, or at least reviewed by, the board because it is the board's role to ensure risk mitigation and alignment of the project focus with the hospital's mission, goals and values. The guiding principles will be used continually throughout implementation to assist in evaluating choices and the inevitable compromises needed to deliver a successful project. The guiding principles are the primary risk mitigation tool used for controlling "scope creep", or proliferation of out-of-scope activities, during the implementation process.

Business Plan

All major capital projects should be driven by strategic objectives. A business plan is used to develop the storyline, the basis from which to create, analyze, and ultimately recommend an option that meets these objectives. Components of a business plan include:

- Internal project management organizational structure—project leadership by a designated senior project executive and a steering committee comprised of board committee members, physicians and department heads.
- Project guiding principles that include operational/performance improvement metrics and objectives.
- Independently validated market-based volume projections.
- Cohesive physician integration strategy and buy-in.
- Right-sized facility plan, including projected inpatient and ancillary space capacity requirements based on service line volume projections.
- Independently validated financial feasibility study.
- Five- to 10-year financial projections with risk analysis.
- Experienced external team—program/project management, design, construction management and other qualified professional consultants.
- Realistic and well thought out total project budget, schedule and cash flow analysis.
- Project risk management tools and processes in place—scope, budget, schedule and controls.

Community Involvement

Community involvement is critical to the success of a major capital project and is important to better meet the needs of patients and families and the aspirations of those who provide their care. The definition of community includes at least these four major constituencies:

- patients,
- physicians,
- staff, and
- general community (neighborhood and beyond).

Each of these groups has very different, and sometimes competing, needs.

Patients generally focus their energy on services, access and cost of care.

Understanding consumers' wants and needs will continue to be a major factor in capturing market share as long as payment for services remains status quo.

Physicians have very real concerns about their personal efficiency, the spaces they work in and the value of the real estate they occupy and, in some cases, may own. Relocating the hospital to a new site five miles away, for example, has the potential to financially harm doctors with offices next door to the current facility.

Staff's primary focus is the delivery of effective, efficient and safe patient care and related support services. Because most new facility initiatives should first be driven by optimal operational planning and process design, the staff's role is increasingly affected by facility change. All change must be carefully managed to avoid additional risk and ensure the facility initiative achieves the required operational performance outlined in the business plan. Therefore, timely, adequate staff training/re-training must be a management priority and thoughtfully deployed at the correct time within the development continuum.

The community at-large typically expresses the most diverse concerns. The purpose of a robust input process is to uncover all concerns and develop a plan to address them. Providing opportunities for every group to give input in the decision-making process builds consensus. University Medical Center at Princeton (UMCP) conducted several community meetings prior to the completion of the business plan for its replacement hospital. These meetings included educational sessions in areas such as "best in class" new facilities, technology advances in medicine and customer satisfaction, and inspired thinking outside the box. As a result of numerous community meetings, UMCP has had overwhelming support at each point in the approval process for their replacement hospital, including no dissenting comments made at the Certificate of Need hearing for the project. The hospital is scheduled to open in 2011.

Community involvement at all levels provides valuable input, builds strong support, and helps reduce the schedule/project approval risks associated with physician withdrawal, community opposition and political grandstanding. Recently a Midwest health care organization that is planning to build a hospital in a market approximately

40 miles from the main campus, held a three-day design session with the community to discuss the new hospital and solicit input from various groups. Three sessions were designed specifically around (1) the community at large (open invitation to attend was advertised in local newspapers), (2) health care providers currently working in the market and (3) local business leaders and government officials. Besides being informative and soliciting opinions and feedback from attendees, the health care provider session was extremely successful because it sparked excitement from local health care workers who felt their needs and concerns in supporting a second hospital in their market were being addressed.

One of the most innovative communication and community outreach tools we have seen is the blog www.suttermedicalcentercastrovalley.org, which was set up to provide information to staff and the community during the design and construction of Eden Medical Center's replacement hospital, the new Sutter Medical Center Castro Valley scheduled to open in January 2013. On this site, Eden Medical Center's President and CEO, George Bischaney, writes, "We know that many of you who are reading this blog will have strong opinions you would like to share with us. We too feel that communication should not be only one-way. We believe that all of us are more effective when we work together and collaborate to solve problems, address questions openly and discuss issues of importance to the entire community... Through a variety of social media tools, including our blog, Internet video clips, podcasts, popular social networks such as Facebook, LinkedIn, MySpace, Twitter, YouTube, Flickr, FriendFeed and others, you will get regular updates on our progress, plus you'll have the opportunity to comment back, ask questions, and give us your opinions and perspectives."

This innovative use of technology is helping spread excitement to the community and staff, many of whom have worked at the existing hospital over the 52 years it has been in operation.

Community involvement marks the beginning of designing a facility around best practices. A balance between cost and consumerism is needed and warranted to execute the hospital of the future. It is imperative that total cost-per-bed and operating costs (labor and nonlabor) come down as debt service on the new

facility goes up. Consumerism, including the patient experience, which leads to differentiation, must not be pushed aside (in favor of reducing initial costs). Some form of sustainability and attention to life-cycle costs are paramount. Some hospitals are having a “knee jerk” reaction to the current economy and recent history of projects coming in well over budget and are looking only at first-dollar cost at the expense of flexibility, sustainability and other important attributes. We believe looking only at first-dollar cost is a short sighted view and the process should allow for thorough vetting before final design decisions are made, ensuring that balance between cost and quality is achieved.

Planning and undertaking a major capital project is often that green light and can be an agent for fundamental change, a transformation that is lasting and profound.

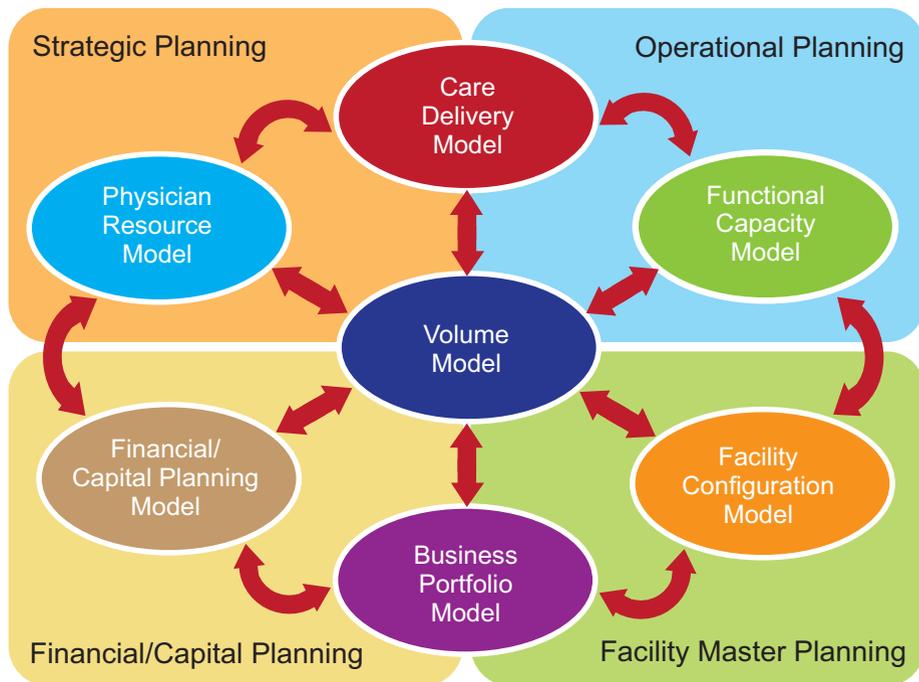
It is important to note that community input should result in modifications to the plan where they make sense or concerns being addressed at the early stages of a project. Input and involvement from the community should not be confused with approvals or vetos.

Operational Planning/Process Improvement

There are times when a green light exists that allows for the planning and implementation of fundamental change in a health care organization, change which otherwise may not be achievable. Planning and undertaking a major capital project is often that green light and can be an agent for fundamental change, a transformation that is lasting and profound (see Illustration 4 on page 22).

Existing health care operations can be plagued with parochial, ineffective and inefficient processes embedded within the environment that unless addressed will result in underperforming operational improvements. Formal operational process improvement or re-design can be very effective tools, but facility configuration may be a barrier to achieving best practice operations and related metrics. A project approved for its strategic and financial merit can be a catalyst for rethinking how operations and related facility configurations also can be accomplished in a new facility.

Illustration 4
Integrated Planning Process



Source: Navigant Consulting Inc.

Operational planning defined by creating/documenting process flows for key patient, staff and clinical/support activities within the organization should precede new space programming and design. By taking a clean-sheet-of-paper-approach, hospitals can create the desired patient experience within the context of a project’s guiding principles. New process flows can lead to aggregation of services and space in ways that challenge and eliminate historical departmental silos. New position descriptions and cross-training should be employed as part of newly developed staffing models, which will reduce labor costs and achieve a higher level of service.

Kurt G. Spiering, AIA, health care vice president/principal for HGA Architects and Engineers, advocates using a “lean” approach prior to design that eliminates waste at every possible level. As he explains in his article “Lean, Not Mean; Designing

Safe, Patient-Oriented, Cost Effective Hospitals”, “I have pioneered a pre-design process that applies a lean approach, which focuses on the patient experience, staff empowerment and the elimination of non-value-added (wasteful) steps during patient care. The result: A cultural transformation in healthcare delivery and the design of hospital facilities. Only when the pre-design phase is complete do we translate our findings into an architectural program that embodies the physical spaces required to support and sustain that lean healthcare delivery. In other words, the architectural design is about matching the expectations we have discovered during pre-design with a facility design that embodies the lean approach to customer service.” (AS&HF, November/ December 2007)

Operational improvements from this type of planning include: reductions in operating costs and space utilization optimization and use. Sutter Health System in Elk Grove, CA recently applied this approach. NCI and HGA Architects are working together on this hospital of the future where one of the major guiding principles is achieving cost reductions through operational planning and design. This prototype lean pre-design process resulted in a facility that reduced staffing by 40 percent, patient wait times by 50 percent, building square footage by 30 percent, and energy consumption by 25 percent.

Sutter Healthcare’s Eden Medical Center is using a LEAN approach in its operational planning for its replacement hospital, the new Sutter Medical Center Castro Valley Hospital. Digby Christian, Senior Project Manager, Sutter Health Facility Planning & Development, says, “We are driving waste out of the process by using a LEAN approach where all team members can question why we are doing something; why we are doing it the way we are doing it; and (ask) is there a better way (to do it)? This process is not costing us any more money but there is not enough data to date to say that it is costing us less. The method, however, will allow our projects to get to construction one year ahead of a traditional delivery model schedule, so we will save money on inflation while being first to market on our projects.”

The Medical Center is also working diligently to change old behaviors in planning for their new hospital. One of these operational changes will be the addition of a new shared observation space. As Andrew Flanigan, Senior Planner/Designer with

Devenney Group describes it, “This area is one of the exciting innovations—an all-in-one patient care room. Whether the patient has to go to a post anesthesia care unit, surgical pre-op care, recovery, injections or short-term observation, the shared observation space can serve all of these patient functions. It can be used during an ER (emergency room) overflow when all inpatient beds are full. And in a large-scale disaster scenario, it may also help to meet surge capacity needs. This will be a high activity area where patients who are in this unit will have actions being taken to improve and expedite their care process with the intent of improving outcomes and reducing the length of stay.” The space will also help maximize patient throughput which should increase volumes throughout the facility. Clearly this unit will necessitate cross training and new staffing models as part of this operating paradigm shift.

Operational planning occurred prior to designing Kishwaukee Health System’s replacement hospital in Dekalb, IL. Kishwaukee embarked on a three-month operational process improvement engagement which led to designing an integrated procedural-based platform as well as an integrated outpatient diagnostic hub in the new hospital. Shared resources including space, staff and supplies dramatically cut costs in these areas. Commonality in the processes within these areas was projected to support increased patient satisfaction and decreased medical errors, as well. The new hospital opened in October 2007.

It should be noted that effecting such change as a part of a capital development initiative does not happen easily. Cultural change must coincide with requisite operational and facility changes. All levels of management within the organization may not have the experience or aptitude to navigate through the barriers and push-back that can occur when fundamental, not just incremental, change is necessary. Not all organizations are ready to embrace the fundamental change that will result from operational process improvement. Therefore, some health care organizations are now planning for major capital development projects differently. Rather than engage existing users in the planning process, these organizations are using a small group of senior thought leaders who are surrounding themselves with best-in-class program managers, planners, architects, and others and allowing innovative and best-practice thinking to prevail. Like many successful non-health care service organizations, they will later train staff (commonly new staff) into the culture and operating/facility paradigms which have been developed.

One such example is OhioHealth's new Dublin Methodist Hospital in Dublin, Ohio. Cheryl Herbert, President, R.N., was the only employed person involved in this new market hospital during its programming, planning and design. She embraced best practice operational thinking and evidence-based design throughout the planning and design processes (see keys to success listed at right).

One of the more challenging operational decisions was eliminating nursing stations. Cheryl knew this would be a struggle for some patient care providers and made sure that the goals, vision and operational model for the new hospital were clearly delineated during potential employee interviews. Few potential employees chose not to pursue employment at this facility, however, with over 5,000 applications for the initial 470 jobs posted, an overwhelming number not only supported, but embraced the challenge of the new work paradigm. After nearly 12 months of operation, Dublin is pleased to report some of the highest marks within OhioHealth in staff satisfaction and low employee turnover.

The keys to success of the operational planning process are:

- The hospital project executive is engaged early in the process and is a champion of operational change.
- Operating performance metrics are established upfront.
- Operating plans and facilities are designed around them.
- Technology spend should be determined based on a true enabling of operational changes so that there is a measurable benefit to the investment.
- Staff are recruited and trained to deliver patient experiences and outcomes that may not have been achievable without this process.
- Leadership and board commitment is necessary to make an effective and lasting change.

The True Cost of a New or Renovated Facility

Budget and Cost Overview

Board members and leaders often do not understand the total cost of new construction projects. Construction costs themselves, while a significant part of the total project cost, are only a part of the cost. We often see significant lack of understanding and

accounting for the components that make up the rest of total project costs, as well. Whether an organization is renovating or undertaking a replacement or new acute care facility, spending components are categorized as follows:

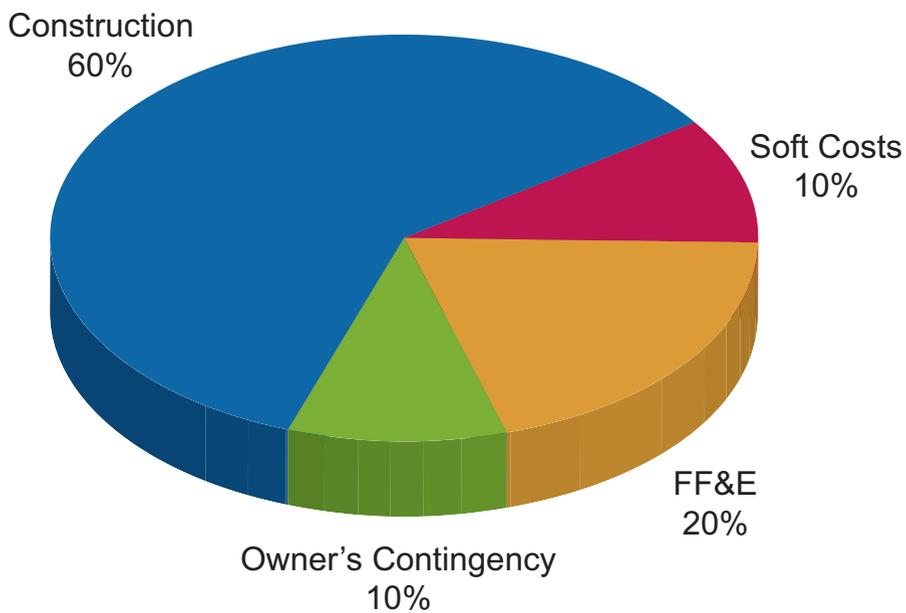
- land costs;
- site work:
 - on-site,
 - off-site;
- construction:
 - shell and core,
 - build-out (new and or renovated);
- FF&E (furniture, furnishings, technology, office and medical equipment);
- soft costs;
- owner's contingency.

An on-budget project maintains spending within the total of the categories listed above and is referred to as the Owner's Approved Budget. The Owner's Approved Budget is set to match the objectives of leadership and a project pro-forma aligned with the marketplace.

Each spend category must be carefully considered and accurately developed so that a proper Owner's Budget is developed. One miscalculation within any category can result in a project that is over budget. To reduce the possibility of this occurring, benchmarking within the categories can provide confidence that a successful budget has been established. This is particularly useful because very little detail is known early on when a budget is set and plugged into a project pro-forma. Categories which are most at risk due to unavailable information or high swings in scope definition are:

- Off-site site work. Unanticipated costs generally arise during the zoning and permitting process related to negotiated owner (hospital) contributions toward community improvements.
- FF&E in regard to information systems and technology.
- An underdeveloped soft costs itemization. A robust list of line items should be used which include: financing, tests, legal and accounting, design and engineering, fees and permits, taxes and consultants.

Illustration 5
Sample Total Project Costs — Replacement Hospital



Source: Navigant Consulting Inc.

Illustration 5 above outlines the generally accepted percentages of spending for several categories within the total project cost for a replacement hospital project. Twenty percent FF&E assumes a 40 percent reusability rate for existing FF&E. A new hospital project can anticipate having up to twice the amount shown for FF&E given that all new equipment and IT systems will be procured. Design elements such as “green” (LEED Certification or components thereof) will increase construction and soft costs by 1 to 1.5 percent; patient-focused rooms will increase project square footage by 2 to 4 percent and flexibility for future growth and/or re-use of space will increase square footage by 3 to 5 percent. With this knowledge, the board can now ask the right questions and be quickly informed about what premiums will be placed on the project for various design initiatives.

Developing and Managing the Approved Budget

When establishing a budget, construction costs are commonly assigned based on a facility's square footage. This is done early on in the process, is based on a combination of science (understanding the industry costs) and art (an understanding of where the project is heading with little detailed information at hand). This is by its nature a risky portion of the budgeting process and has broad-reaching impact. As a result the effort should be executed thoughtfully.

To be successful in the construction cost budgeting exercise, hospitals should gather as much reliable benchmarking information as possible. The major elements of cost should be broken down as follows:

- shell and core costs as influenced by a vertical or horizontal design model,
- esthetic components of the building's exterior,
- major interior public components.

Additional Cost Considerations

Hospitals will encounter significant additional cost considerations, such as traditional versus nontraditional engineering systems, commitment to LEED principles, degree of technology integration, and components of evidence-based design. The costs of any and all of these additional considerations should be balanced against the benefits they can provide. Guiding principles will also help hospitals navigate many of these design decisions. Several tips for ensuring project success are included in the box on page 29.

Owner's Contingency

Owner's Contingency should be set with the expectation that all of it will be spent. Experience has proven that as a project moves through the development continuum, expenditures will become evident and monies will move from the Owner's Contingency to fund them without affecting the overall Owner's Approved Budget. Contingency should be set as a percentage of each spend category of the overall budget. As construction, site work and FF&E costs increase, so do the soft costs associated with them. For example, in a well managed project, 5-6 percent of the contingency should be available to transfer to other budget categories to allow for better scope definition and to give the user flexibility in programmatic decisions. A good rule of thumb is to have a reserve of 4-5 percent in the Owner's

Contingency which should be retained when entering construction. This will allow for the normal course of changes and unforeseen conditions which will occur during the construction process. If there is less than 4 percent left in Owner's Contingency when entering into construction, cost reduction options or an adjustment to the Owner's Approved Budget should be considered.

Giving deliberate, scientific and artful attention to this methodology will help avoid the industry pitfall of committing to an approved budget based on hearsay of cost per square foot or cost per bed, without benefit of additional analysis.

Inflation

Typically, we would discuss inflation within the context of the overall budgeting process, however, given today's environment we thought it deserved its own section. The past four years have seen hyper-inflation in health care construction, specifically on the East and West Coasts. It was only a few years ago that we were seeing 8 to 20 percent (California health care construction inflation in 2004 topped out at 20 percent) annual inflation numbers being carried on projects, with all parties still concerned that these numbers may not be high enough. This hyper-inflation has abruptly stopped and we are now in what looks to be a buyer's market in construction for at least the next year or two.

Keeping building costs in check is always a challenge. To best support cost-efficiency and project success, Joe Kucharz, director, Navigant Consulting, recommends hospitals:

- Employ an integrated team/fast-track project delivery model with C-Suite participation, clear accountabilities, and timely informed decisions.
- Create measurable guiding principles up-front, driven off the project's business plan.
- Build a team with a proven track record in the context of the guiding principles.
- Allow optimal operational plans/processes to drive programming and design.
- Utilize a thoughtful construction procurement strategy to minimize cost.
- Plan early for an effective transition/activation into the new operating model and physical environment.

HFMA, *Strategies for Managing Hospital Construction Costs*, November 2008

Table 1

Savings in Construction Costs		
Date	Bid Package Category	Variance (Savings) from Budget
August 2008	Site Work	6%
September 2008	Steel	12%
November 2008	Shell/Core	10%
December 2008	Glass and Glazing	21%

Consider the following example. NCI is currently managing three large replacement hospital projects located in the East, Midwest and Southwest, all of which are currently in the project bidding and negotiating phases. We reference a fourth project on the West Coast to provide a basis of comparison by region. Over recent months we have seen savings in bid packages that were unanticipated (see Table 1 for specific savings cited). We are also seeing manufacturers share in cost reductions.

We expect a volatile market for budgeting projects over the next year or two which will make it increasingly important to understand suppliers in your market and do a good job in estimating and locking in prices at the right time in order to share in these potentially short-term savings.

Project Delivery Methods

Very early in the development continuum, board and management must consider the selection of the optimum project delivery method to best mitigate risk and achieve the desired level of project controls necessary to assure organizational compliance and attainment of business plan objectives. The project delivery method is defined as the team members; the timing of their selection; the form of contractual relationship they have amongst themselves and with the owner; and the process used by the collective team to plan, design, and construct the facility initiative in conformance with the guiding principles. Historically the delivery method options available to hospitals have been few and static, some fraught with persistent cost and schedule overruns, others quite successful when properly executed. Coinciding with today's credit crisis, capital freeze and renewed emphasis on strategically focused projects, project delivery methods are evolving, some enabled by enhancements to computer-aided design

technologies. This section will categorize, summarize and discuss project delivery methods and identify selection considerations for boards and management as they balance decisions around scope, risk, project controls and speed to market.

Project delivery methods can generally be divided into three categories that span “old school” to “new school” thinking. Although some variation exists within each category, the general intent, features, pros and cons tend to remain the same for each category and are described below.

Category 1: Design – Bid – Build (Old School)

Often referred to as the traditional delivery method, under this approach the hospital contracts with an architect to undertake a design and provide a complete set of drawings and specifications. When completed, the hospital solicits fixed price bids from contractors to build the facility; the general contractor is selected and enters into an agreement with the hospital; and the general contractor builds the facility in accordance with the completed drawings and specifications. See the sidebar at right for pros and cons of this delivery method.

The core processes embedded within this delivery method support linear thinking and result in a longer, more linear schedule. The approach and contracts utilized also tend to support a silo mentality among the various team members, including the hospital. Since all team members do not participate

Design – Bid – Build

Pros:

- Hospital can focus on program/ scope, design and quality.
- Plans are complete prior to bidding.
- Ideally, architect prepares plans one time.
- Competitive selection of architect, but contractor by lowest verifiable bid.
- Architect is primarily in control.

Cons:

- Majority of risk for cost & schedule resides with the hospital.
- Longer project delivery time.
- All savings accrue to contractor, not hospital.
- If bids exceed budget, costly to hospital to redesign.
- More change order work.
- Contractors' incentive is to cut quality to maximize profit.

simultaneously, the expertise and added value each brings to the project is difficult to capture. In short, this approach requires a significant degree of experience and expertise within hospital management to plan the project correctly each step of the way to avoid the risk of subsequent cost and schedule impacts. Given that major capital spending projects do not occur daily, this delivery approach should be considered carefully against more contemporary methodologies. In fact, this delivery methodology is rarely used today by hospitals, with the exception of public projects.

Design /Build

Pros:

- Single source responsibility for design & construction.
- Significant focus on cost, especially minimizing capital “first costs.”
- Allows for schedule acceleration.
- Can provide an early guaranteed maximum price to the hospital.
- Minimizes time and involvement of hospital leadership.

Cons:

- Quality is at risk.
- Hospital input is limited in lieu of predetermined design solutions.
- All savings accrue to the design/builder.
- Will expose hospital to change orders after an early guaranteed maximum price.
- Design/builder is primarily in control.

Category 2: Design/Build (Newer School)

Recognizing the reality that managing major capital spends is not always a core competency of hospital management, the design/build delivery method places responsibility for many activities on the contractor and designer. Here the hospital contracts with a single entity, the design/builder, to provide both design and construction under a single contract. The design/builder, who is most often a contractor, provides a single point of expertise and responsibility during the design and construction of the project. See the sidebar at left for pros and cons of this delivery method.

In today’s unsettling economic times and if striving for the lowest initial capital cost expenditure is a priority, hospitals should consider this delivery method. Just as you might view a model home prior to a new home purchase, historically this delivery

approach has been well-suited to medical office and ambulatory facilities where hospitals can witness the expected quality, functionality, and long-term life cycle issues prior to contracting with the design/builder. Due to the process and facility complexities within acute care settings, this delivery method has so far been used in a limited way, although increased use is expected.

Boards must recognize that the selection of a trusted and competent design/builder is difficult, especially under a competitive process, and that once selected, the design/builder is primarily in control of most aspects of the project. For this reason, many hospitals look to an internal resource experienced in project/program management or to an outside firm to both assist with the design/builder selection process to ensure operational planning is integrated into the development process and to represent the hospital's interests throughout the design, construction and occupancy of the project.

Category 3: Integrated Project Teams (Newest School)

Given the inherent pros and cons of the above delivery methods and the fact that most hospitals desire to actively manage their degree of risk and involvement in a major capital project, an integrated project team delivery method can be utilized. Here the emphasis is on early team formation, selecting team members such as the project/program manager, planners, architect, construction manager, technology consultants and financial advisors and contracting and aligning the team's incentives and outcomes with the hospital's business plan objectives and the project's guiding principles.

The level of sophistication and teamwork needed to achieve required outcomes is complex and diverse. In most instances, hospitals turn to professional project/program managers, either via in-house staff or outside consultants, to act as a team catalyst and leader. See sidebar on page 34 for the pros and cons of this delivery method.

Arguably, the use of an integrated project team delivery method along with team incentives aligned with the hospital's, provides a robust platform for the necessary balance among low capital costs, reduced ongoing operating (labor and non-labor) expenses, and design innovations to address the patient experience and safety attributes. In addition, some of the newest evolutions in project delivery methods such as incentive-based contracts, single integrated forms of contracting amongst

Integrated Project Teams

Pros:

- Allows fast-tracking schedule acceleration, when desired.
- Supports LEAN thinking.
- Integrates operational planning.
- Risk mitigation through early guaranteed maximum price from the contractor.
- Allows hospital to choose the level of direct involvement by staff.
- Multiple opportunities to control/adjust cost and quality early on in the development continuum.
- Allows hospital to select timing of the competitive bidding process.
- Early building constructability reviews to mitigate design errors.
- Improves opportunity/choice for local participation.
- Supports “open book” contracting – savings to hospital or incentives with team.
- Opportunity to incorporate latest design techniques and technologies.
- Hospital, in conjunction with team, is primarily in control.

Cons:

- Multiple parties to manage within a cohesive process.
- Requires teamwork and team leadership.
- Does not focus on absolute lowest first costs.
- Requires “A Teams” to achieve best in breed outcomes.

team members, and the use of computer-aided technologies are best deployed within an integrated team format. However, board members should be cautioned that using some of these evolutions, prior to their being adequately tested, may impose increased project risk and a distraction to team members.

Boards and hospital leadership should carefully evaluate various project delivery methods and ultimately choose one that best aligns the incentives and accountabilities of project participants with those of all stakeholders.

Transition/Activation Planning

Once hospitals have committed the funds to design and construct their new health care facilities, the challenge of preparing the organization to effectively function in its new environment begins.

Many owners believe that the initial planning and design phase represents the most significant investment of an organization’s human resources in its new health care facilities. However, as award-winning as a design solution might be, a new facility’s true value can only be achieved by transforming it from bricks and mortar into an optimal operating environment.

It is no simple task to envision this new environment and then to render a design that supports that vision. Teams of highly qualified professionals are typically required to assist owners to create the structures and environments capable of enabling delivery of customer-focused health care services.

However, many owners struggle with operationalizing these new facilities for months, if not years, after occupancy to achieve the promise of functioning more efficiently and effectively. Since few owners can rely on prior experience in making the transition to a new facility, they should consider relying on the expertise of one of a small group of firms that specialize in transition and activation planning.

As defined by those who do this work, transition planning is the process of taking an existing operation and adapting it to a new facility, while activation planning is the process of opening and operationalizing a new facility.

Whether transitioning an existing operation, or activating a new one, preparing to operate in the new environment requires completing hundreds of tasks across all major disciplines within a prescribed period of time. According to Sandra Hamper, founder of Health Care Transitions, “My experience as Director of Internal Transition for Tripler Army Medical Center’s addition and renovation projects led me to develop our detailed listing of activities and a structured process for distributing the transition planning workload across several task forces and through them down to the individual staff level.”

But just as making a house into a home requires personalizing the spaces and making them work for you, transforming the hospital structure into an environment for healing requires detailed planning to optimize the numerous processes essential to positive outcomes. “Operations Readiness” is a process for applying LEAN Six Sigma methods to optimize functioning of the health care enterprise on behalf of its customers. Mapping out the critical processes, conducting simulations, developing operational narratives to clearly define best practices and effective functions, and modeling associated staffing requirements enables implementation of the optimal operating solution within a new hospital structure.

No matter what approach is taken to prepare for operating in a new environment, those who have gone through the process highly recommend starting the transition and activation processes early—as early as the development of the design solution, but no later than a full year prior to the scheduled opening day.

The value of transition planning for Platte Valley Medical Center in Brighton, Colorado was a direct result of the active involvement of line managers in the planning, troubleshooting, and preparing to apply solutions to operational challenges in the new facility. Few of the line managers or executive management had experience in opening a replacement hospital and relocating patients and medical equipment, so their active involvement in these processes resulted in confidence that they were prepared to continue providing health care services in a new environment.

For Iowa Health's new-to-market hospital in West Des Moines, activating the new hospital was a journey into the unknown, since there had been no new hospital commissioned in Iowa in many years. The hospital was provided a road map explaining how to move from the construction phase through all of the critical planning steps to make the new facility operational. The operational readiness phase consisted of tasks and activities assigned to a number of task forces which reported progress and identified critical path follow-ups to a steering committee. This approach demystified the variety of pre-opening tasks by breaking down the effort into specific disciplines and then further to specific individuals for execution and feedback.

Conclusion

Hospitals that do not completely understand capital project risks and how to manage them will reduce their flexibility to overcome uncertainty and succeed in their respective markets. Organizations that decide to manage risk by abandoning or delaying essential capital projects may find themselves in an uncompetitive position within a year or two. Hospitals need to plan for tomorrow's success. Over time the capital markets will thaw, health care reform will occur in some form, and health care capital project spending will continue.

Health care organization boards and leadership should seek a proper balance between capital project spending, deploying aggressive project delivery risk management and maintaining a conservative approach to fiscal and operational management. The following tips can help boards and leaders achieve such a balance:

- For strategic growth projects (such as ambulatory facilities, new market facilities, new service lines, and increased capacity) spend the soft costs today to put your organization in a better position to launch construction tomorrow. You can always choose not to move forward.
- Re-evaluate your business plans, overall capital allocation plans and project specifics. Modify assumptions to current/forecasted market conditions, build in cushion and prioritize spending accordingly.
- Assume the cost of capital will remain higher even for A-rated institutions. Rework your plan to reduce scope and operating expenses to offset the increased cost of capital.
- Take advantage of lower construction costs. This window of opportunity for lower costs will close and materials, profit and overhead will catch up.
- Utilize project delivery methods that align incentives and increase the accountability of all stakeholders.

The capital spending decisions made in the coming months have the potential to significantly reshape the U.S. health care landscape. No one wants to squander precious capital. Board prioritized strategic capital decisions must be executed for health care organizations to remain competitive and meet the needs of our communities. Strong governance and laser-like leadership must prevail.

“Twenty years from now you will be more disappointed by the things that you didn’t do than by the ones you did do. So throw off the bowlines, sail away from the safe harbor. Catch the trade winds in your sails. Explore. Dream. Discover.”

— Mark Twain

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