

How to Implement Winning Strategic Facility Plans under Uncertainty

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I. Introduction

Many Facility Managers feel they are in the grasp of the “Facilities Vortex.” It can control their life - sucking in money, equipment and most importantly time. They are always responding to emergencies and fighting fires. There is no time to plan and barely enough to respond. Breaking the grasp of the “Facilities Vortex” is hard and it seems that Strategic Facilities Planning is one of those “rainy day” activities whose day never comes – especially for those caught in the Vortex. This paper will explain how to break free of the Vortex through Dynamic Strategic Facilities Planning, which involves the following five-step process:

- Gathering Information
- Analyzing Demand versus Capacity
- Analyzing Financial Impact
- Communication
- Implementation

Dynamic Strategic Facilities Planning is an approach to Strategic Facilities Planning under uncertainty. There is no magic and there are no expensive computer programs that are prerequisites. It's a “Best Practice” and one way to explain how it's different than other approaches is by comparing it with the challenges of sailing across the bay. With a sailboat, the captain must be tuned in to the environment. The prevailing wind direction will influence preliminary plans. Once underway, the wind can shift and adjustments must be made. Dynamic Strategic Facilities Planning is like sailing in that it's a way to survive the changing wind directions that are the new realities of today's business environment.

II. Strategic Facilities Planning – A New Model

Strategic Facilities Planning is an industry buzzword that describes the process of providing a physical and financial roadmap for fulfilling an organization's infrastructure requirements. Every organization does it, and it's usually heavy on the architecture or interior design and light on scenarios and financial analysis. Dynamic Facilities Planning flips the emphasis to a heavy commitment to financial analysis and minor emphasis on the architecture and interiors portion of the plan.

In today's uncertain business environment, organizations often develop multiple scenarios, then when things change, a scenario is selected, and quickly refined into an action plan for the business. This approach is the heart of Dynamic Strategic Facilities Planning and can be illustrated through the experience of one facility manager at a Call Center/ Data Center for a major consumer products company. Sixteen scenarios were developed in his plan. Past construction and operating costs were analyzed and metrics (measures of facility performance) were developed. The financial impact of each scenario, including Net Present Value and 15-year cash flows were studied. Stacking charts and site plans were also



Fig. 1 – The Facilities Vortex



Fig. 2 - Instead of having a Strategic Facilities Plan, many Facility Managers tend to get caught up in (and controlled by) the problems associated with unforeseen events.



Fig. 3 - Sometimes the results for the organization are disastrous. It's better to plan ahead.

developed and included as an appendix to a management report that eventually made its way to the Chief Financial Officer.

Shortly after the “backwards” process of presenting was finished, the company announced a merger and a prospective tenant put a call on the facility’s option space – forcing the organization to make a quick lease decision. In order to meet the lease-required eight day decision window, the facility manager put together another management presentation (involving only 4 of the 16 scenarios) and led a team that included the corporate real estate vice president, a contract broker, the site manager and appropriate financial analysts from headquarters. A decision was made and a deal was struck. This could not have happened at the large, widely dispersed consumer products company without the active involvement of upper management in the facility planning process. Dynamic Strategic Facilities Planning was the activity that got management interested and involved. This paper will share some of the best practices for each phase of Dynamic Strategic Facilities Planning and will start out by providing a theoretical framework to help understand how Dynamic Strategic Facilities Planning ties together all types of planning activities.

Definition

Dynamic Strategic Facilities Planning is a systematic and continuous process where organizations make decisions about desired future facility infrastructure needs, then determine how future needs will be accomplished and how success will be evaluated.

The key points in this definition that make it different from other types of strategic facilities planning are the phrases “continuous” and “how success will be evaluated.” The measurement of success via a balanced score card or set of metrics implies an on-going interaction between the facilities staff and management, where the facilities staff is held accountable for facilities performance.

Dynamic Strategic Facilities Planning Process

Dynamic Strategic Facilities Planning is a business process or approach to planning that can involve one or more of the following planning tools:

- **Master Plan** – a plan for a building or site that lays out future expansion, renovation and design parameters (like a universal plan). It’s a precursor to design and the intent is to help owners understand site limitations and capacity as well as guide future architecture and interior design efforts.
- **Tactical Strategic Facilities Plan** - is like filling buckets up with water. The people are the water and the buckets are the buildings. The goal is to get the optimum size bucket ready without spilling any water. Tactical Strategic Facilities Planning is a short-term (less than 2 years) construction plan that can involve one or many sites. A reorganization that requires re-stacking of several mid-rise buildings is a good example of a Tactical Strategic Facilities Plan.
- **Long-Term Construction Plan** - starts with identifying primary and secondary drivers of growth, then develops computer models of future scenarios. Costs for each scenario are determined and incremental differences in costs, quality and organizational support are evaluated.
- **Real Estate Plan** - can range from site-specific land use plans to organization-wide plans for purchasing, holding or disposing real estate.
- **Asset Disposition Plan** - fixed assets often out live their useful life and can require capital investments to facilitate sale. On-going operating costs of underutilized and non-productive assets are analyzed with respect to the investment required to position the facility for sale

On the first page of this paper, a cartoon shows a snowball enveloping a facility manager as it careens downhill. The further the snowball rolls, the bigger it gets. It's like the "Facilities Vortex." **Figure 4** shows a model of Strategic Facilities Planning that builds upon the snowball analogy. Tactical planning is leading other types and the relationship between planning tools is unbalanced. Facility managers using this approach to planning say that planning should not extend beyond two years because that's the time period for business planning. While that may be the official corporate position on planning, you can bet that there are people in most large organizations looking farther than two years into the future.

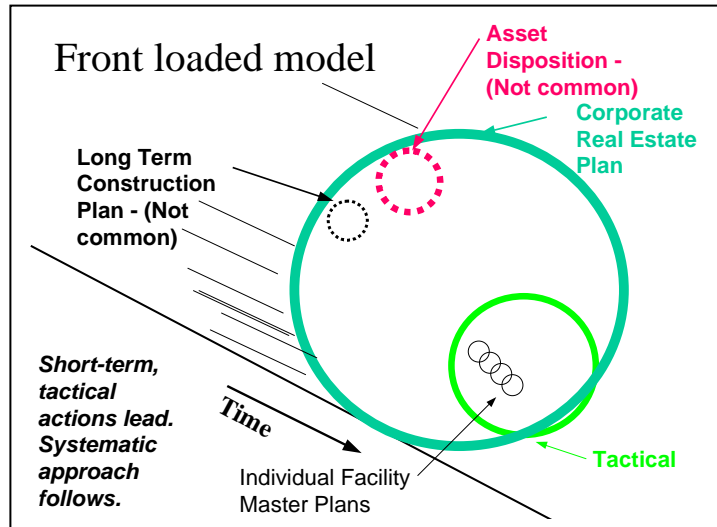


Fig. 4 – Unbalanced model of Strategic Facility Planning

Taken in context of the life of the building, issues such as worker productivity and controlling operating cost are more important than construction cost. For example, a \$150 per square foot new building might realize a total operating cost of \$800 per square foot with an additional \$8,000 per square foot spent on salaries and benefits over its forty-year life. This is why Strategic Facility Planning is business planning.

Figure 5 shows the Corporate Real Estate Plan (or organization's Real Estate Plan) leading planning efforts as the planning snowball rolls downhill. The key phrase in Real Estate Planning is "Organizations know thy self." Organizations have belief systems about real estate and facilities that range from one of pure cost to that of a value-added infrastructure that can help or hinder productivity. Planners need to know their corporate perspective, then use planning tools and metrics to communicate how facilities and real estate help or hinder corporate objectives. Ownership goals (own versus lease), financial goals and performance measures are all criteria that help measure the performance of a Real Estate Plan.

Next comes the Long-Term construction plan, which is like a game of chess. Before a move is made, the implications on the next several moves need to be studied. By analyzing the implications of different approaches and strategies for construction over long periods of time (like 25 years), strategic insights into the wisdom of various approaches can emerge. Organizational change drives many facility projects and Tactical Strategic Facilities Planning is an organized approach to gathering information about change, then developing an appropriate facilities strategy to support that change. Tactical plans involve all impending design and construction activity and respect the Master Plan at each site. Asset Disposition studies are planning tools that many organizations ignore. Assets often outlive their useful life. Disposing of obsolete

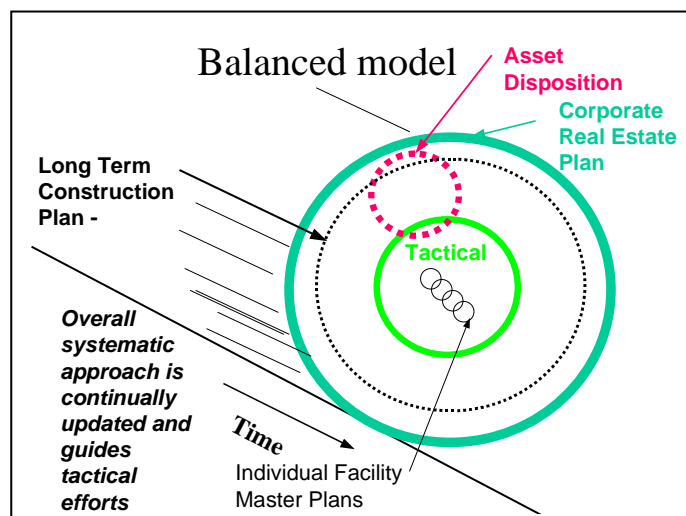


Fig. 5 – Balanced Model of Strategic Facilities Planning

or non-productive fixed assets requires a plan that dovetails with the organization-wide real estate plan and long-term business objectives. Under the balanced model, all the other tools guide the tactical plan, while in the unbalanced model, the tactical plan is the only plan or doesn't consider other planning issues in depth. All Dynamic Strategic Facilities Planning exercises should answer the question "what will it cost to get out of current space?" and "what will be the financial impact of shutting down a facility?"

III. Step 1 - Gathering Data

In the age of automation, facility managers are drowning in data, but thirsting for knowledge. Computer Aided Design and Computer Aided Facility Management programs, let facility managers know the location of every phone line, but don't provide insights into managing better. The accompanying "Pyramid of Knowledge" illustrates how layers of information build upon each other to create value for the organization. The lowest layer on the pyramid represents pure data like facility size or budget line items. The second layer starts relating pieces of information. For example, cost per square foot matches area and budget data from the first level to produce a facility benchmark. At the third level, trend analysis like change in cost per square foot over time provides meaningful knowledge about the facility and history. Insights can be gained by benchmarking best practices, and the pinnacle of the knowledge pyramid, "wisdom," can be reached when change efforts produce productivity improvements or create value for the organization. The first phase of a Strategic Facilities Plan always involves gathering information, and with Dynamic Strategic Facilities Planning, a greater emphasis is placed on presenting cost and benchmark data that ties facility performance to organizational performance.

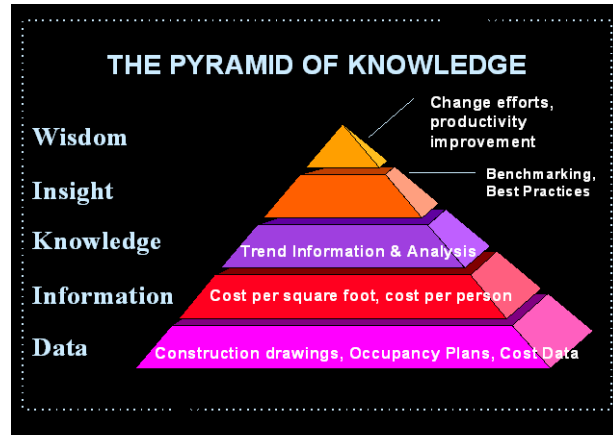


Fig. 6 – Pyramid of Knowledge

In order to assist organizations in making sound business decisions involving facilities, a Strategic Facilities Plan needs to provide at least four types of information:

- **Foundation Information** - This is basic information like temperature, blood pressure, weight and pulse that are taken at the doctor's office. If the readings are normal, they don't tell you much, but if they are abnormal, they may be indicative of underlying problems. Metrics for Foundation Information can include: operating cost, asset value, cost per sq. ft., cost per person and so on. The most important foundation information is "what is the cost of not providing this business service?"
- **Resource Allocation Information** - includes information about capital investment and people. Financial Analysis provides a starting point for each organization's risk analysis and questions about capital allocation to facilities could include: "What happens if appropriations fail to deliver expected return?" "If appropriations are committed, what is the magnitude and time period of the commitment?" "Are the physical surroundings a key ingredient in keeping

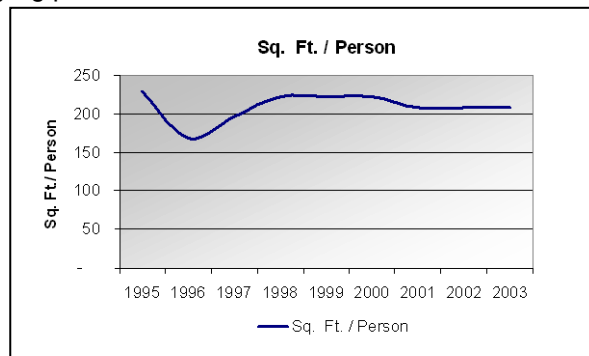


Figure 7 – Sq. Ft. per person

turnover comparatively low?" "What will be the staffing changes required by new work processes?"

- **Competence Information** – can be summed up in one word “benchmarking.” Executives are always interested in benchmarking cost and *the IFMA Benchmark Reports* are excellent sources of data.
- **Productivity Information** - involves worker, facility department and organizational productivity. Benchmarking is based upon the assumption that you can learn from, and become as good as the best. Facility Managers should not be surprised if they are asked to undertake a performance improvement program after presenting benchmarking and productivity data.

Information about these four areas can provide great insights into organizational effectiveness in the facilities arena, however there could be a lot of information to present to executives. Facility managers should structure the presentation like a Web Site. Start with a one page “status” and include no more than fifteen bullet points. Provide back-up charts like Figures 7-9 to answer potential questions and structure your report in layers. These figures show the three key measures that every Strategic Facilities Plan should include. The use of three metrics enables Facility Managers to educate executives about the interaction between each measure. For example, after additional space has been leased, the area per person will increase as will the cost per person, while at the same time cost per square foot will decrease. Keep in mind that the goal of putting together an executive information system is to crystallize management thinking about facilities.

The last critical piece of information in a Step 1 presentation has to do with capacity analysis. Depending upon churn rate, a facility can be at seated population capacity when occupancy is between 90%-98%. Facility Managers should estimate their capacity and explain how long the current facility can meet organizational needs. Two concepts will help explain the two types of events that lead to facility actions: Markers and Triggers:¹

- **Markers** – are facility milestones that require action. For example, when a building is fully occupied, some type of facility action is required to accommodate future growth. Allowing for lead times to complete projects will help establish starting dates for detailed facility planning.

**MARKERS
are milestones that
require action**

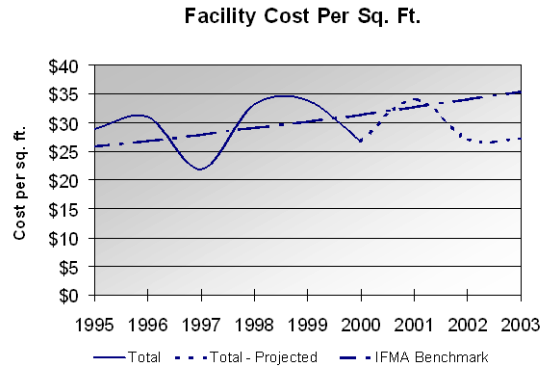


Figure 8 – Sq. Ft. per person

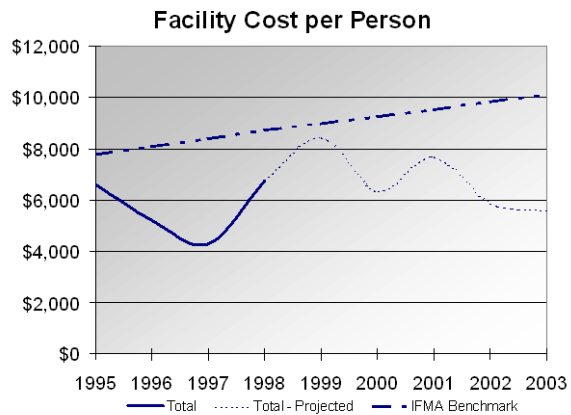


Figure 9 – Facility cost per person

¹ The concept of “Markers and Triggers” was presented by Karen Lalli and Susan Sawyer in the presentation: “Markers and Triggers: Strategic Facilities Planning in a Changing World,” at the “Highly Effective Facilities” conference sponsored by the American Institute of Architects in Cincinnati, Ohio, on March 4-8, 1998.

- **Triggers** – are unknown, future business actions that change the organization and require a facility response. While the exact events are unknown, a portfolio of likely triggers like a new product launch, merger, downsizing or reorganization are the most probable occurrences and can be considered in scenario analysis.

TRIGGERS
Are unknown, future business actions that require a facility response

While “Markers” and “Triggers” help organizations improve the reliability and understanding of facility forecasts, the real value of the executive presentation in the Data Gathering Phase is “Strategic Thinking” - which is the organization’s best thinking. “Strategic Thinking” should also include consideration of what the organization will become, and the executive presentation is a good time to float up trial versions of a facility vision and goals.

Vision guides future planning efforts

A facility vision describes a desired future state of the facilities that is a balance between the practical limitations of the workplace and desired organizational goals. A facility vision strikes a balance between ownership, financial and performance goals and the practical realities of coordinating the people, work, place and technology of an organization. A sample Facilities vision is included in **Figure 10**. It’s an ideal that is used to guide planning efforts.



Fig. 10 – Sample Facilities Vision

Organizational Goals

Once a Vision has been set, Goals lay out levels of performance that will fulfill the vision. The Vision and Goals might involve ownership, financial or performance related dimensions. For example a bank may set an ownership goal of a fifty-fifty ratio between owned and leased facilities as a way of balancing its real estate portfolio.

After the Vision and Goals have been set, the executive summary can be rolled out to executives in areas like Information Technology to start building bridges with their long term planning process. It also is a great tool to jumpstart continuous planning because the executive summary can be updated periodically.

IV. Step 2 – Analyzing Demand versus Capacity

The focus of this paper is planning under uncertainty, however very few organizations face a future that is absolutely certain or uncertain. The accompanying illustration shows that a limited range of options should be identified to target Strategic Facilities Planning efforts. In the past, many organizations focused on extrapolating past staffing trends into the future. While it is no longer possible to predict the future based upon the past, it is possible to identify a number of alternate futures (scenarios) and develop proactive action plans that will provide for “faster, better and cheaper” facilities planning as part of a continuous process.

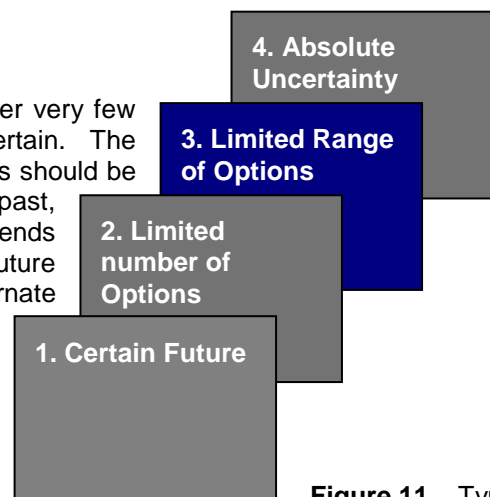


Figure 11 – Types of Uncertainty

Creating Scenarios

Collaborative teams are essential in establishing a limited number of scenarios that cover a limited range of probable futures. One way to begin building scenarios is to develop staff projections based

upon business drivers (obtained during Step 1 interviews with executives), versus growth projections gained from middle managers in the interview process of Step 2. If you combine the growth projects with two different approaches for meeting demand you have four scenarios, a manageable number for preliminary analysis.

Scenario Tools

The “Demand versus Capacity” model is a useful tool for scenario analysis and presentations. Other tools include asset utilization models, design studies, operating cost and staffing models etc. These various tools allow for a holistic examination of the total organizational impact of facility changes.

The “Demand vs. Capacity” Model that is shown in Figure 12 is a chart developed in Microsoft Excel and can be duplicated by following the steps below:

- **Calculate projected staff levels by year** - from executive and departmental interviews (this will yield two growth curves)
- **Determine “Economic Order Quantity” for space** – just as businesses spend a great deal of time studying inventory and purchasing costs for supplies, facility managers, architects and real estate brokers should study the most efficient way to grow, shrink or relocate within a given market. Since space cannot be added in 250 sq. ft. increments as organizations add people, the ideal “Economic Order Quantity” should be determined and used in planning.
- **Target an ideal sq. ft. per person** – rentable sq. ft. for lease space and gross sq. ft. for owned space.)
- **Multiply projected number of staff by sq. ft. per person determine the space demand**
- **Plan for new space to come on line so that supply meets demand**

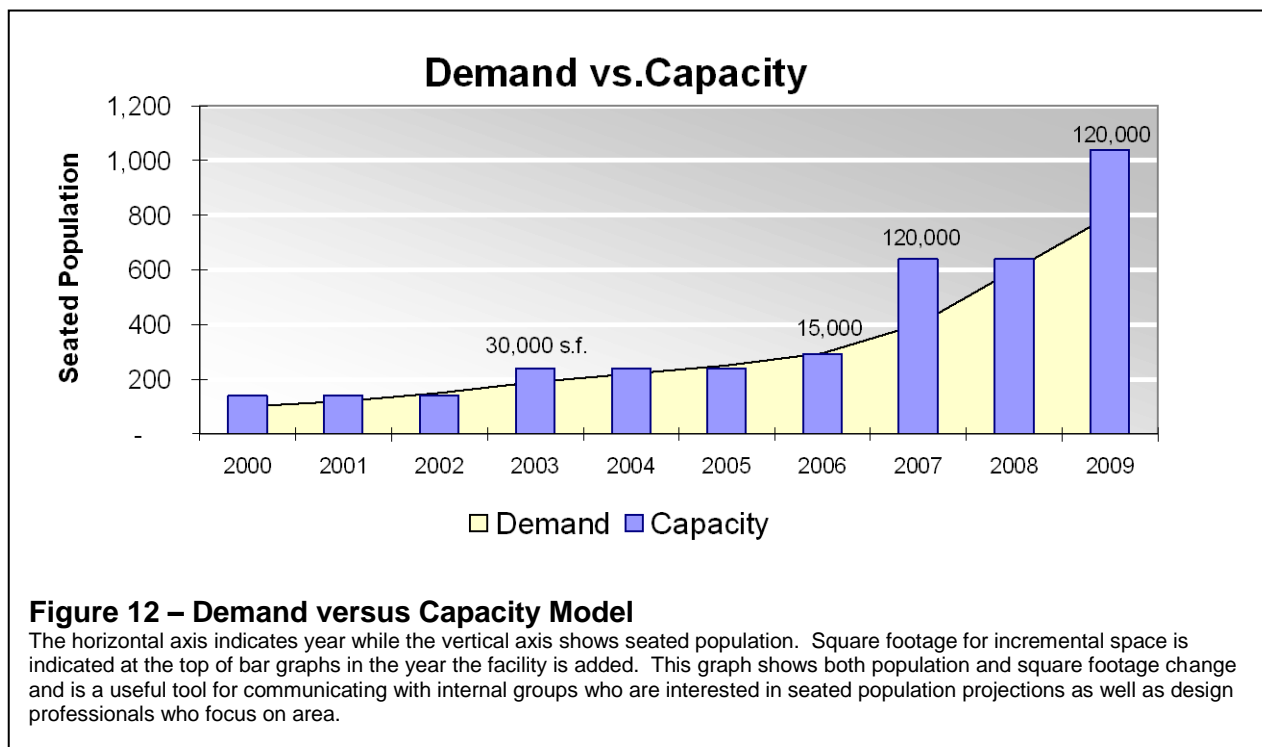


Figure 12 – Demand versus Capacity Model

The horizontal axis indicates year while the vertical axis shows seated population. Square footage for incremental space is indicated at the top of bar graphs in the year the facility is added. This graph shows both population and square footage change and is a useful tool for communicating with internal groups who are interested in seated population projections as well as design professionals who focus on area.

V. Step 3 – Analyzing Financial Impact

Different members of the Strategic Facilities Planning team have different perspectives on cost. Architects expertise is in the area of life cycle costs, Facility Managers are concerned with operating cost and executives are interested in the impact on earnings. Knowing what has been spent historically on projects is important. One *Fortune 500* company cut facility costs per person moved by 50% by analyzing historic move costs, then setting standard costs for future projects. There were a number of other factors that contributed to the reduction, but there would have been no reduction without the cost study. By preparing a concise report on the various types of cost and financial impact, Facility Managers can forge a link between Strategic Facility Planning and the core business.

Private Sector Financial Analysis

Financial analysis in Strategic Facilities Planning is different than the financial analysis used in requesting funding for a specific project. Project financial analysis is rigid in that calculations are being performed to integrate the project with company cash flows, budgets and earnings projections. In Strategic Facilities Planning, sensitivity analysis is an important ingredient. With sensitivity analysis, different variables are changed –one at a time – to examine how they impact various financial metrics like Net Present Value or Cash Flow. Sensitivity analysis seeks wisdom and knowledge about the impact of variables like operating cost per sq. ft., future lease payments, construction cost and depreciation. Once the impact of variables has been studied – preferably with the aid of a spreadsheet – the incremental differences between scenarios need to be compared. By studying the spread in Net Present value and understanding the effect variables have on the result, Facility Managers can gain some strategic insights. For example, a change in depreciation through the implementation of tax-advantaged design can have a significant financial impact on a scenario. Lengthening the period of evaluation beyond the standard ten year corporate standard is advisable –especially with long-term planning - because buildings last 40 years or more and require continuous investment of funds.

Financial analysis sometimes yields interesting results. Consider the case of a large consumer products company that experienced a reduction in workforce size and a Strategic Facilities Plan was developed to consolidate space. During early evaluations, a leased facility with a \$1 million penalty for breaking the lease was considered a “keeper” due to the penalty. However as more information about depreciation and operating cost was gathered, it was determined that depreciation was in excess of \$1 million per year and breaking the lease and paying the penalty would generate positive cash flow within the year. Because cash flow was a corporate focus at the time, the facility was vacated –even though the proposition had a negative earnings impact.

Financial Analysis Tools

Every company has a unique method of evaluating capital projects. Many companies make high-level decisions about leasing or building space as part of their supply chain management strategy, so “lease-buy” is not listed as a financial analysis tool below. The following are some tools that can be integrated with Strategic Facilities Planning:

- **Net Present Value (NPV) Analysis** – used when comparing scenarios where the annual financial impact is always negative.
- **Internal Rate of Return (IRR) Analysis** – similar format to Net Present Value Analysis, except that with IRR Analysis, the annual cash flow goes from negative to positive.
- **Total Annual Facility Cost** – shows how ownership costs impact the bottom line. This differs from NPV and IRR analysis in that it includes current operating cost in the analysis.
- **Metrics** – like cost per rentable sq. ft., cost per person and others are used to provide insights that have a different perspective from pure earnings impact.

- **Benchmarking** – in the financial arena focuses on cost, but other factors like sq. ft. per person and the idiosyncrasies of specific buildings can influence cost at a base level.
- **Cost Segregation and Tax Advantage Design Studies** – reclassify real property from a 40 year depreciation life to a shorter personal property designation. This reclassification can have significant short-term cash flow implications and greatly influences Net Present Value and Internal Rate of Return calculations.

Public Sector Financial Analysis

Facility Managers in the Public sector should consider the difference in Total Annual Facility Cost (which includes occupancy, lease, insurance, support, environmental and life safety costs as well as construction costs when evaluating scenarios. Cost analysis is worth the investment in time. CenterPoint Human Services recently considered how to consolidate leased space on the main campus and evaluated two scenarios. The first involved building a new 63,000 sq. ft. building and the second involved renovating existing space and construction of a 20,000 sq. ft. building. When construction cost, operating cost and lease savings were considered, the difference in the two scenarios' Total Annual Facility & Construction cost over ten years was \$29 million. Facility Managers in the Public sector are often constrained in what they can do. Performing a financial analysis for Strategic Facilities Planning can help remove some of the barriers, because it is the type of information that finds its way into the hands of high level decision makers.

VI. Step 4 – Communication

The three “C’s” of Strategic Facilities Planning are “Communicate,” “Communicate,” “Communicate.” Strategic Facility Planning communication patterns should resemble a scatter gram rather than an up and down conduit.

Today, communication options are limitless. For example, some companies use e-mail, closed circuit television or even the old reliable newsletter. One company that was renovating a twenty-story building prepared weekly stacking charts that also highlighted future moves. They were distributed to the mailroom, loading dock, computer support groups, payroll department, personnel and numerous other groups. The security guard at the front desk even had a copy and was seen giving the CEO, who was visiting from out of town, a thirty-second status on the project. At the same company, a War Room was prepared (see **Fig. 13.**) that showed the construction schedule on one wall while the other wall displayed every office floor plate in the company. One evening, when the Facility Manager came back to work after dinner, he saw the cleaning contractor explaining to his staff, how assignments would change each week, using the War Room as a visual aid.



Fig. 13 – War Room with schedule wall. Each row is a floor and each column is a week. Color-coded plans are displayed as the status of space changes.

Communicating a Strategic Facility Plans is complex because the plans themselves are often complex. Different audiences have different needs, and in a large organization, external relations could almost become a full time job. Just remember – “a picture is worth a thousand words” when you are presenting.



Figure 14 – The Vision Room at the Kansas Capitol. William D. Groth, Statehouse Architect (right) prepares for a meeting with Michael Treanor, of Michael Treanor Architects, P.A. The room was developed to serve as a communication tool that would keep elected officials, media and public informed about the progress of the *Historic Structure Report* and *Master Plan* for the \$120 million restoration of the building. The Vision Room was put together by Treanor Architects' staff. Mounting surfaces are four-foot by eight-foot sheets of black foam core, held together with hinges. Items on display include original drawings and photographs as well as enlarged pages from the report. There are about 20 visitors per hour to the Vision Room.

VII. Step 5 – Implementation

When a plan is complete, the next step is detail planning for projects that will carry out the plan. The Strategic Facilities Plan is a roadmap to the future. It's a repository of planning information and is a quick reference for when the boss calls. At one *Fortune 500* Company the Chief Operating Officer would walk over to the facility planner's cube and borrow "the plan." The plan included all the sq. ft. and cost data, site plans, occupancy plans as well as brief facility plans (cost, scope, schedule) for scores of potential projects. The COO would return the plan after an hour or so, ask some questions, make some copies, then return to his work. This is an example of Strategic Facility Planning being integrated to a core business. In many companies the Strategic Planning process is totally disconnected from the Strategic Facilities Planning process. With business Strategic Planning, a strategic direction is set. Marketing plans are developed and production plans follow. It's usually after all the other steps have been completed that the Facilities group is consulted. This is unfortunate for the core business because construction or renovation projects are usually the longest lead items in the company's Strategic Planning process.

Many Facility Managers are burdened with the "Facilities Vortex" and can't get out. Using techniques from Dynamic Strategic Facilities Planning can help Facility Managers improve their process and along the way jump-start performance. One company, with 2.5 million sq. ft. of office space, spent 9 months improving the Strategic Facilities Planning process, then cut the cycle time for planning from 5 months to 5 weeks. Another company developed a score card for the facility director and has tied his bonus to how well his department performs. Integrating Dynamic Strategic Facility Planning concepts with current work practices can help Facility Managers jump-start their career, jump-start planning performance and enhance the profitability of the company.