VALUE STRATEGIES FOR SUCCESS IN BUSINESS PLANNING

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BIOGRAPHY

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Stephen Garrett, CVS is Partner and Chief Operating Officer of Kirk Value Planners (A Member of Kirk Associates), which specializes in provide comprehensive facility economics, value planning, education, and value management services. Steve has over 25 years of professional experience including extensive skills in value based decision making, project criteria development, costing, scheduling, quality assurance / quality control (QA/QC), strategic planning, and program management for large, complex projects for national and international clients. As partner, he typically leads highly skilled, multi-discipline teams in generating strategies and recommendations for projects ranging from hundreds of thousands to billions on 5 continents. He is also skilled in life cycle costing with his experience including office, government, manufacturing, institutional, health care, education, and laboratory facilities. Steve received his Bachelor of Architecture degree from Lawrence Technological University. He is a guest instructor for Lawrence Technological University and the University of Michigan. He is a Certified Value Specialist (CVS), has been a member of SAVE International for over 10 years, teaches certified SAVE International courses and currently serves as the President of the Greater Michigan Chapter.

ABSTRACT

Many see business opportunities only to discover later their potential project was shot down for lack of sufficient benefits and return on investment. Both government and private industry must put together a "business case" to justify a new project opportunity identified by the stakeholders. For private industry, this is usually a Proforma analysis which indicates the components of the proposed project, the goals to be achieved and the financial analysis including internal rate of return (IRR). For government, the project must be justified by the improvements to be gained in operational effectiveness, service to the public, improved sustainability, and lower life cycle costs. This is sometimes measured as a benefit to cost ratio.

This paper discusses a number of value planning strategies for improving project business case success, and ultimately, the project venture itself. Two case studies (one government and one from private industry) will be used to illustrate how these strategies have turned around "marginal projects" to ones of great success. Use of strategies such as, the value methodology, FAST, needs analysis, post occupancy evaluation, visioning, project performance measures, risk analysis, collaborative workshop iteration for maximum creativity, and evaluation techniques of Choosing By Advantages, Life Cycle Costing & Proforma Analysis will be explained to continuously explore, and improve, options for maximum project success.

VALUE PLANNING BUSINESS CASE PROCESS

The business case begins with a **government organization** identifying a "public need." For **private industry** it might be an opportunity to "expand the business or consolidate operations." Facility needs might include a new administrative office building or the expansion of an existing museum. Facility opportunities for additional revenue might include constructing a new hotel, shopping center, or housing complex. Non-facility needs are also explored. For example, improvements in the operation of the business, consolidation of the organization, shifts to web sales in lieu of store sales.

A number of "measures of success" are used by government and private industry to assess the business venture alternatives. Following are some of the more customary.

Government Measures of Success

- Benefit to Cost Ratio (Choosing By Advantages Decision-Making Method)
- Service to Community
  - Operational Effectiveness
  - Services for Taxpayer
  - Environmental Protection
  - Better Visitor Enjoyment
  - Improved Safety
  - Enhanced Sustainability
- Low Capital Costs
- Low Annual Costs
  - Staffing Cost
  - Energy Costs
  - Maintenance Costs
  - Replacement Costs
- Low Life Cycle Cost (Total Cost of Ownership)

Private Industry Measures of Success:

- Internal Return of Return (IRR)
- Short Breakeven Point (Year in which accumulated costs and accumulated income are the same or "breakeven")
- Corporate Image
    - Service to Community
    - Environmental Protection
    - Enhanced Sustainability
- Low Capital Costs
- High Annual Income/ Revenue/ Sales
- Low Annual Operating Costs
    - Staffing Costs
    - Energy Costs
    - Maintenance Costs
    - Replacement Costs
- Taxes
- Low Life Cycle Cost

Information is gathered to determine if the need or opportunity might be met by a renovation to an existing facility, construction of an addition, or building a completely new facility. An additional alternative is to "do nothing." In some cases constructing a new shopping center, for example, my not produce the return on the investment required to justify the expenditure.

Figure 1 which follows illustrates the process followed in a typical Value Planning Business Case Process (VPBCP). Reading from right to left, the effort begins with initiating the project planning process. Information is collected to "establish quality, determine size, and generate cost." Next, project function requirements are defined using traditional function analysis techniques. This is done to conduct a Value Planning Workshop. It is an iterative process of Exploring Options and Optimizing Value. During this stage it may be determined the project just doesn't meet necessary business case expectations for Internal Rate of Return or Benefit to Cost. Through collaborative effort with various stakeholders, exploration of additional options may result in a new solution that will meet the thresholds required. If this happens, the business case strategy moves forward, with management approval.

The VPBCP allows management to thoroughly explore options and assess the results in real time decision making workshop setting. For marginal projects this allows exploration of ways to save the project rather than abandon the potential new venture. Using a variety of value based strategies allows for enhanced success.

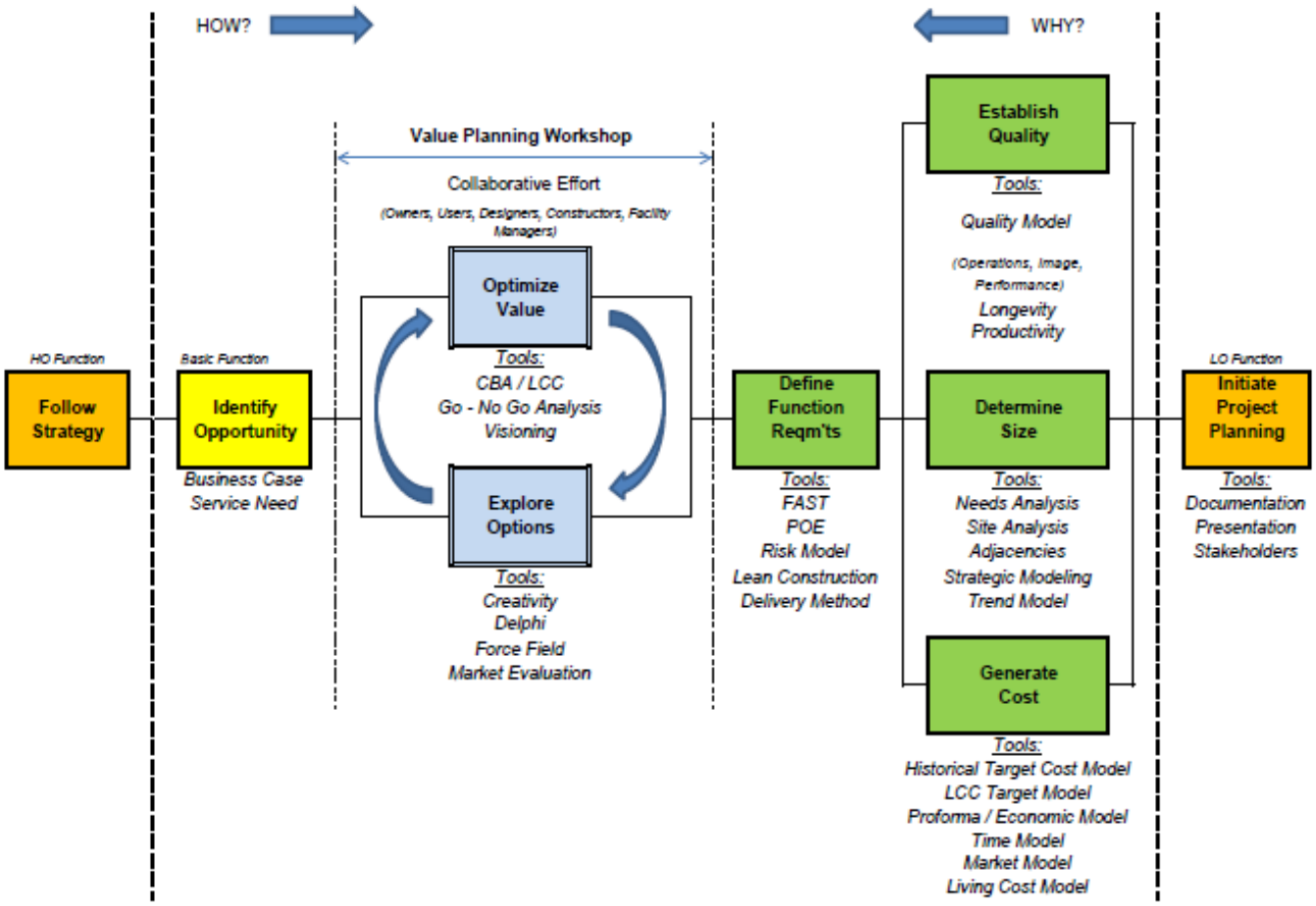

Figure 1, Value Strategies Process for Success in Business Planning

STRATEGIES FOR SUCCESS

Done correctly, value based design decision-making is about value over the lifetime of the facility being analyzed. The value methodology (VM) is not simply about money, it is, as the name suggests, about value, which includes important issues such as operational effectiveness, flexibility, comfort, site & architectural image, cultural values, engineering performance, safety & security, environmental sustainability, construction schedule and initial and long term cost effectiveness.

Some claim VM is only for projects over budget. The experienced have found that VM should always be applied whether the project is within budget or not. For example, when a project is within budget the VM team focuses on adding even greater performance while finding cost savings to pay for the added features to stay within the budget. If over budget, the VM team first

focuses on meeting the budget then looks for opportunities to add performance. **Figure 2** illustrates various options to add value to a business.

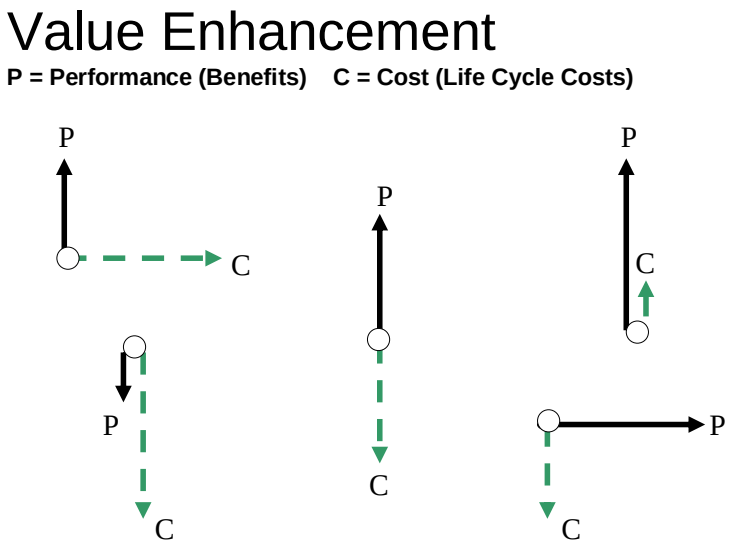

Figure 2, Value Improvement Options

The power of value based design decision-making is in the methodology. The six step problem-solving process focuses on increasing value by improving performance (quality) and lowering cost (life cycle cost). The steps of decision-making are:

1. Information gathering and benchmarking, for example creating cost and quality models
2. Function analysis, which is the exercise of stating the project purpose in a verb/noun form
3. Creativity phase, which does not stop with the first workable idea
4. Evaluation of ideas generated using life cycle cost analysis and using benefit cost comparisons
5. Development of those ideas into a workable preferred alternative using "choosing by advantages"
6. Recommendations to the decision-makers balancing benefits and costs

All project delivery methods can take advantage of the use of VM techniques such as:

- Function Analysis, to properly understand the project requirements
- Creativity, to expand the number of alternatives considered
- Life Cycle Costing, to understand the long term impacts of alternatives
- Value Process, for improved problem solving and decision-making
- VM Workshop Setting, for consensus building
- Post Occupancy Evaluation, for feedback on decisions reached

A simple project is usually only studied once, preferably at the value planning stage. Large/ complex projects may apply VM at several stages of design as illustrated in **Figure 3** below.

Value Studies at different stages of application

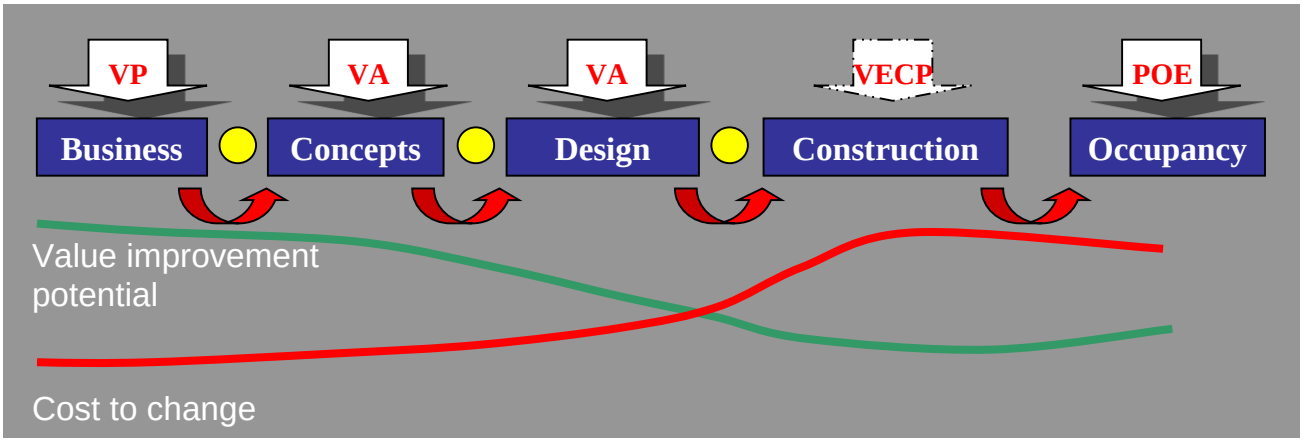

Figure 3, VM Applications during Project Delivery

VM, as a proven problem solving methodology, offers significant benefits for the owner when properly applied during the design process. Several VM techniques are presented which help overcome some of the concerns about implementing VM in the design and construction industry.

VM stages of application and techniques have continued to expand over the past twenty years. Today, VM is highly effective in the early planning stages of a project as well as during various stages of design and construction. Since the design-build process spans from project planning & definition through design and construction, VM offers a variety of unique techniques that improve upon the project's performance. These value enhancements include:

1. Construction cost savings of 5-15%, or more
2. Life cycle cost optimization
3. Function-based project criteria definition
4. Balanced quality, program and cost expectations
5. Project risks identified along with mitigation strategies
6. Improved schedule coordination and project delivery
7. Enhanced business process/operational effectiveness
8. Expanded design alternatives, using "value based design Charrette" approach
9. Design alternative selection, using "Choosing by Advantages" VM technique

Tools to "Establish Quality"

The **quality modeling** process assists in the defining, measuring and managing of owner quality expectations. An interactive workshop setting, with owner and user participation, allows project expectations to be brought out, explored and documented. The relative importance between these quality elements is then explored, prioritized and documented with the owner. The quality model consists of narrative descriptions of each quality element and a graphic diagram which shows the relative priorities. An illustration is shown as **Figure 4** below.

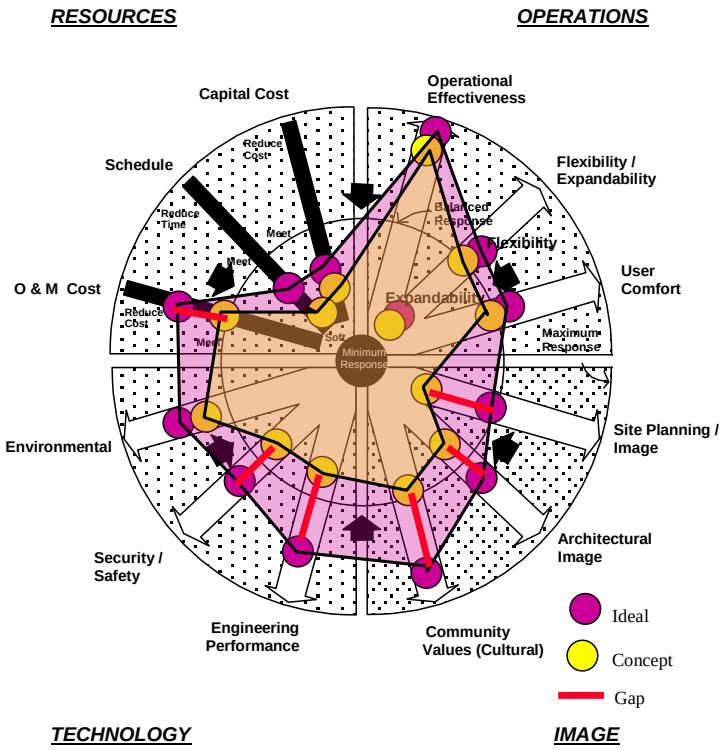

Figure 4, Example K-12 School Quality Model

Longevity

Methods to determine useful life of the project are important to the success of the business. The Longevity Model analyzes both the systems and the useful life of the project itself. Market trends and the future of the type of business are examined to determine the longevity of the business case.

Productivity

The business team must research the productivity of the operation of the business. Certain solutions will improve productivity significantly.

Tools to "Determine Size"

Needs Analysis

Business case alternatives explore visions under various scenarios. Needs Analysis is developed for each scenario.

Space Analysis

Once the Needs Analysis has been forecast, the business planning team begins to determine space requirements. Business case alternatives explore options for space requirements. Some options may not require space at all.

Space Modeling

Space Modeling is another VM tool which is used to assist in documenting space functional requirements. Space technical criteria, relationships and other information are also a part of space modeling. Benchmarking of similar space functions helps to validate overall needs.

Adjacencies

Diagrams are developed which illustrate the desired space adjacencies to best meet operational requirements.

Strategic Modeling

Strategic Modeling includes long term examination of the marketplace for the business being considered. Modeling the business financial success within this changing marketplace helps to determine long term success.

Trend Model

Visioning the future allows exploration of trends in the business. Will technology changes lead to the business no longer being viable in the future?

Tools to "Generate Cost"

Historical Target Cost Model

Research in costs of similar businesses helps develop a "target cost model" for the new business. This information also establishes Proforma goals.

Cost Modeling

Cost Modeling is a formal VM technique which ties quality and space requirements to a realistic cost budget. The cost model, **Figure 5**, is organized into project functional systems. UNIFORMAT is an elemental cost accounting system used by VM specialists to organize costs. Historical project costs, also organized by UNIFORMAT, permit benchmarking comparative information.

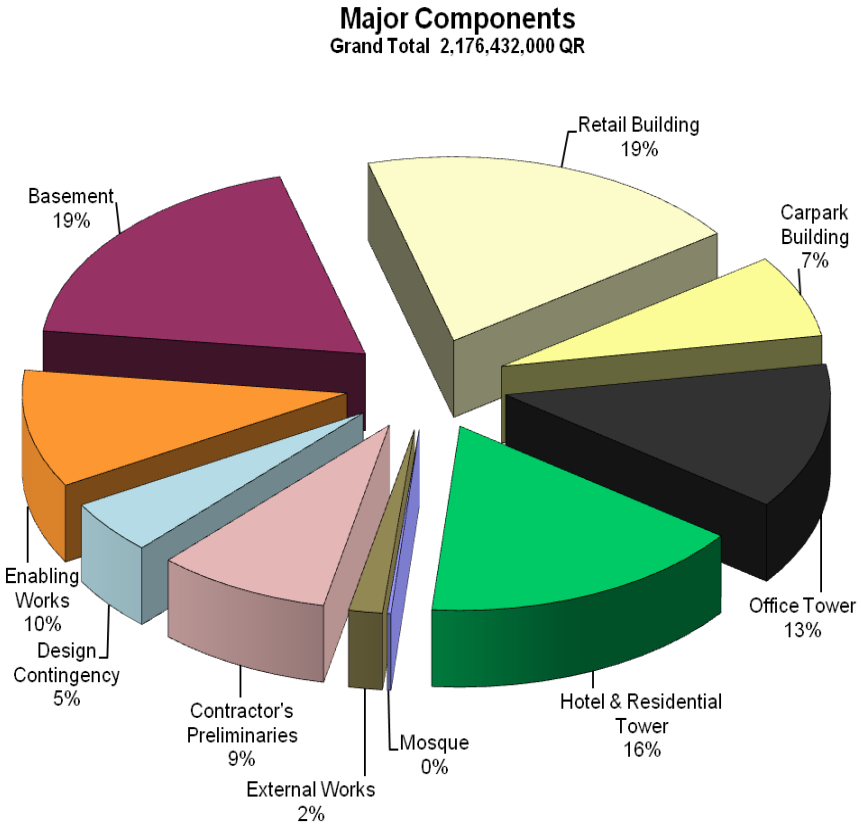

Figure 5, Example Cost Model for a Mixed Use Development

LCC Target Cost Model

Some owners also establish life cycle cost budgets for their projects. For those that do, the VM technique of **life cycle cost modeling** assists in setting realistic budgets. Normally, cost elements include:

1. Capital costs
2. Staffing costs
3. Energy costs
4. Maintenance costs
5. Replacement costs

6. Associated costs
7. Cost of Disposal
8. Revenue/ Income

All costs are converted to an equivalent present worth basis using the owner established economic criteria for discount rate and life cycle.

Proforma / Economic Model

A "Proforma or Economic Model" is used to assess the overall economic success of the project. Ingredients include: capital cost, operating cost, and projected income. A Proforma Model calculates the IRR (Internal Rate of Return) based on this information. The breakeven point is also determined. Breakeven is the year in which the accumulated costs and the accumulated revenue are equal.

Time Model

A **time model** is also prepared to relate critical scheduling activities with the overall anticipated project completion date. This VM tool permits discovery of potential problems and leads to improvements to the project schedule.

Market Model

As part of the business exploration, a market research effort is undertaken. Once completed, a Market Model is developed to highlight opportunities and concerns over time.

Living Cost Model

The cost model continues to change as options are identified. A "Living Cost Model" allows the team to quickly see the results. Interactive cost models during design Charettes are commonly used to keep track of cost impacts. Living life cycle cost models and Performa models are also helpful in assessing various business case alternatives.

Tools to "Define Function Requirements"

FAST

Traditional VM includes FAST (Function Analysis System Technique) diagrams to identify required functions for the business.

POE

Post Occupancy Evaluations (POE's) provide "evidence based design" information from previous projects to lesson the risk to the new business. Surveys of users help determine the relative success of the project. Features found to be of value are incorporated in the new business case to assure success.

Risk Model

The VM technique of **Risk modeling** assists in identifying the potential risks involved with the project. These risks range from geotechnical concerns to construction labor and material availability. The VM team creatively explores mitigation strategies for each of the high risk areas.

Lean Construction

Concern for "waste" and other types of lost resources are assessed using this approach. Originally "Lean" was a technique in manufacturing to improve operational effectiveness. It is an important tool for business planning as well.

Delivery Method

During the business case formulation, various project delivery methods are examined. These might include design/ build, Construction at Risk, Design-Bid-Build, and Integrated Project Delivery.

Value Planning Workshop

Once the above models are prepared, a value planning workshop is held to review all criteria for adequacy and completeness. In most cases, the quality and space expectations exceed the cost budgets. The value workshop study team includes participants from the owner, user, designer, constructor and facility manager. They explore a variety of options to get the project in balance. The workshop itself is structured following SAVE International Value Methodology. This methodology consists of the following phases: information, function, creativity, evaluation, development, and presentation.

Identify Opportunity

After the VP workshop … the business case is reviewed by management. Once approved, the project proceeds into design.

Summary of Business Case Key Questions:

- What is the Opportunity or Vision?
- What is the Basic Function of the Project?
- Who are the Stakeholders, Interests & Concerns?
- What are the Project Benefits & IRR?
- Why must it be done now?
- What are you willing to forgo to ensure you have a compelling project?

TWO BUSINESS CASES THAT CHANGED VALUE DRAMATICALLY

Example 1: Private Developer ~ Multi-use Hotel/ Office/ Retail/ Housing Project

Figure 6, Sketch Perspective of a Mixed Use Development Project

This private developer Mixed use luxurious complex is located in the heart of a major capital city and important tourist destination. See **Figure 6**. It is to be built on 66 thousand square meters, and complex includes a shopping mall, four star hotel, residential furnished apartments, restaurants, amusement center and health club & Spa.

This project provides investors with different competitive offers within the region. The business serviced apartments and comfortable offices are designed with different layouts and sizes to satisfy all needs. The complex includes parking facility for 3,600 cars in addition to the up-to-date other needed supporting services required for the operation of the project facilities. Project objectives included:

- Renewal of an urban site;
- Improved community demographics;
- Use of a central location;
- Being profitable;

- Creating a “destination” point;
- Being high quality
- Promoting sustainable design practices;
- Maintaining a long term development;
- Creating an “iconic” design.

Value Planning Objectives

Following is a summary of the objectives set for this VP study:

1. Raise the IRR for each component of the project (hotel, office, retail, apartments)
2. Shorten the number of years for breakeven point
3. Look for ways to lower the construction cost while satisfying or enhancing the project performance (building systems, layout, back of house, etc.)
4. Seek opportunities to increase income/ revenue (without adding to the construction cost)
5. Identify cost savings ideas for energy, maintenance and operational staffing costs
6. Identify project risks and ways to mitigate the risks
7. Review the project schedule for opportunities to shorten the duration
8. Look for opportunities to improve the project constructability

Results ~ Project Profitability

Based on the VP proposals developed in the workshop, the team identified a potential initial cost savings of 692 million QAR (change to dollars). These proposals also add potential revenue of 81 million QAR per year. Some additional O&M costs of 13.9 million per year were identified. The net additional income is 67 million QAR per year. Although it is recognized the owner will not fully accept all recommendations, this savings would have a significant impact on the profitability of the project.

The original project profitability prior to the VP session indicated an overall Internal Rate of Return (IRR) of 7.4%. The expected IRR of each component of the project was also calculated along with assumed revenue, and costs (capital and O&M). The revised project profitability after the VP session indicates an overall Internal Rate of Return (IRR) of 11.2%. This is a 3.8% increase in IRR or 51.4% overall improvement compared to the original design.

The discounted cash flow chart below **(Figure 7**) plots the cumulative income and the cumulative cost over the next 50 years. It indicates a breakeven point of 45 years (before taxes) for the current design and 21 years (before taxes) if the value engineering recommendations are incorporated.

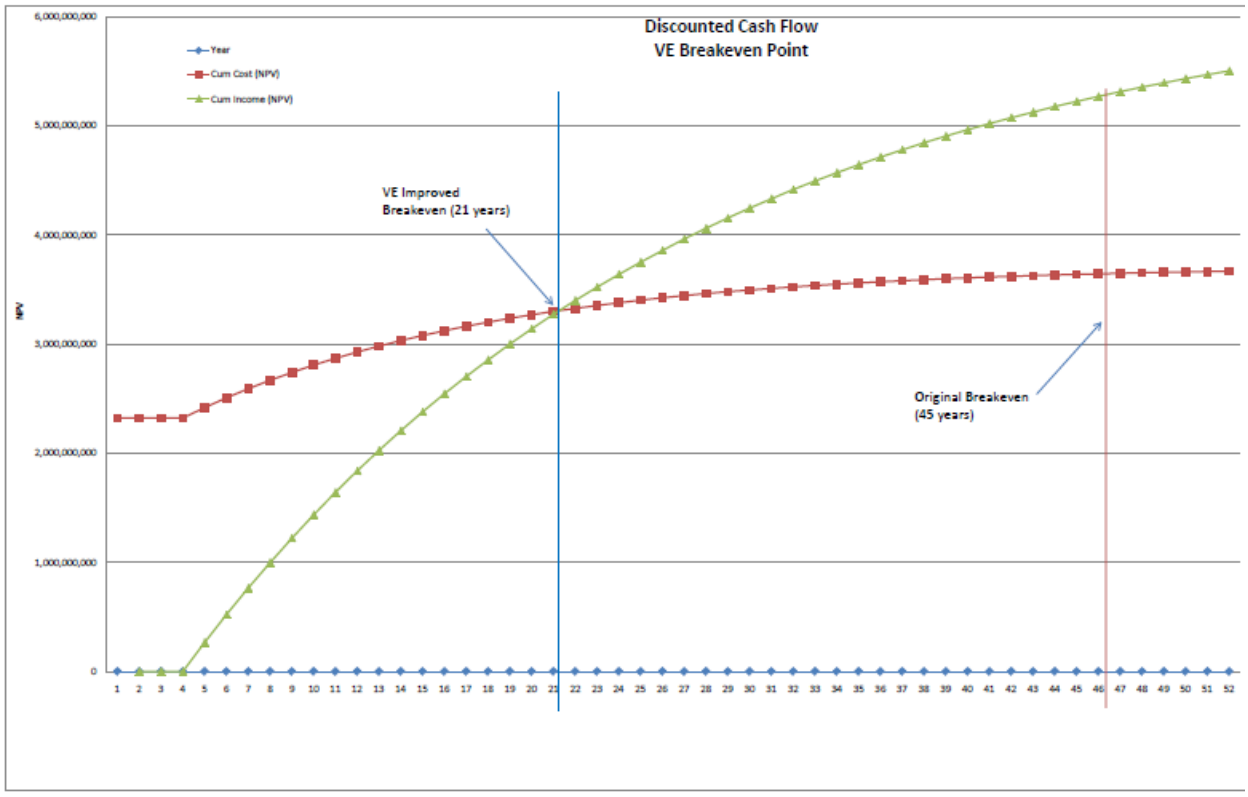

Figure 7, Discounted Cash Flow & Breakeven Point

Example 2: Government, Jefferson National Expansion Memorial Project

For government, a project must be justified by the improvements to be gained in operational effectiveness, service to the public, protection of resources, improved sustainability, and lower life cycle costs. This is sometimes measured as a benefit to cost ratio. In the case of the National Park Service it is Importance to Total Cost of Ownership. This concept is illustrated in a recent NPS project for the business improvement of the Jefferson National Expansion Memorial in St. Louis.

The Gateway Arch, **Figure 8**, is among the world's greatest structures and most visible icons. Its design was chosen in an architectural competition in 1948. After reducing 172 competitors down to five finalists, a panel of seven judges unanimously chose a design submitted by Eero Saarinen – the Arch.

Figure 8, View of the St. Louis Arch and the Jefferson National Expansion Memorial

Sixty one years later, a second competition was held. The "business" goal was to integrate the park, the east and west sides of the Mississippi River, the surrounding attractions and the downtown into a single vibrant and dynamic destination. This effort was to link the City, the Arch, and the River (CAR). The desire is for St. Louisans and visitors to the region to make a connection with this historic district and the river that made the city great. The winning design team was Michael Van Valkenburgh Associates, Inc. (MVVA).

A significant element of the winning MVVA team competition scheme was the conceptual design for expanding and renovating the Museum of Westward Expansion/ Gateway Arch Visitor Center. Central to the design of the new museum was a new West Entry. See **Figure 9**. The competition concept addressed the goals of increased connectivity between the Old Courthouse and the Gateway Arch, and increased opportunities for the public to feel more welcomed at the Memorial with the provision of amenities and services that support a safe and enjoyable experience, as defined in the General Management Plan/ Environmental Impact Statement. By locating a new west Museum entrance at the existing landscape berm fronting Memorial Drive, the scheme also aims to minimize impacts on the historic landscape.

Figure 9, Competition Winning Site Plan by Michael Van Valkenburgh Associates, Inc.

The program goals (benefits) and conceptual design for the Museum expansion, described in the Competition addressed:

- Creating a New Connection to Downtown
- Reorganization and Development of the Museum Program
- Visitor Services
- Exhibitions
- Special Exhibition Gallery
- Education and Research

Value Planning Objectives

The Park Superintendent, Tom Bradley, challenged the value study team to do the following during the workshop:

- Use Unconstrained Creativity
- Think "Out of the Box"
- Use Sound Decision Making Methods (like Choosing By Advantages)
- Make Good Follow the Value Analysis Process (a Requirement of NPS/ federal law)
- Achieve Return on Investment (for taxpayers & donors)

Results

This business planning value analysis explored a number of options. The method of Choosing By Advantages was used to assess the business alternatives in terms of benefits to be achieved and the costs to be incurred. Alternative 1 Lite was identified as the preferred alternative. The advantages (benefits) over the other alternatives included the following:

- Significantly Better Creation of Connections to City (and View to Old Courthouse)
- Much Better Accessibility
- Much Better Welcoming of Visitors
- Moderately Better Integration of Interpretation
- Moderately Better Improvement of Working Conditions
- Much Better Screening Efficiency
- Much Better Staff Interpretation Efficiency
- Moderate Visual Arch Connection
- Significantly Better Flexibility Re: Funding Uncertainty
- Offers Moderately Better Enhanced Exhibits/Interpretation (25,000 SF)
- Offers Moderate Sized Café (3,000 SF)
- Slightly Better Expanded Store for Added Revenue
- Offers New Additional Rest Rooms Prior to Screening
- Significantly Improved Orientation/Trip Planning Prior to Screening
- Much Better Sheltering Visitors at Entry

Following is the Importance to Initial Cost Graph comparing all 7 alternatives (**Figure 10**).

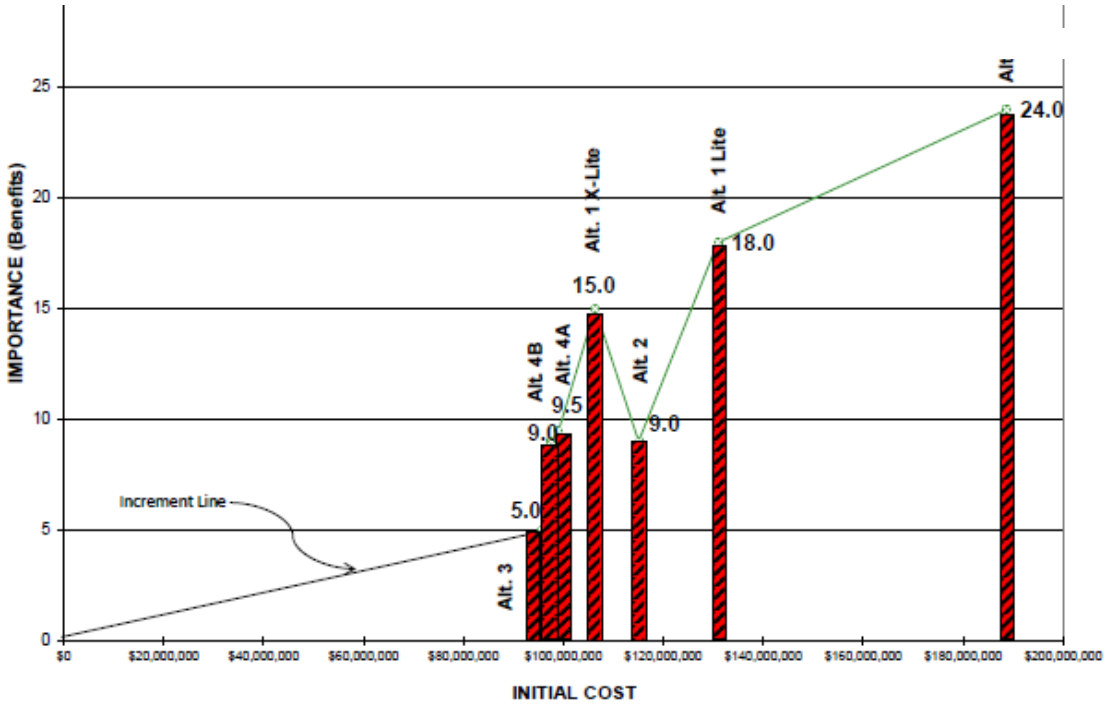

Figure 10, Choosing By Advantages - Importance to Initial Cost Graph

Following is the Importance to Life Cycle Cost Graph comparing all 7 alternatives (**Figure 11**).

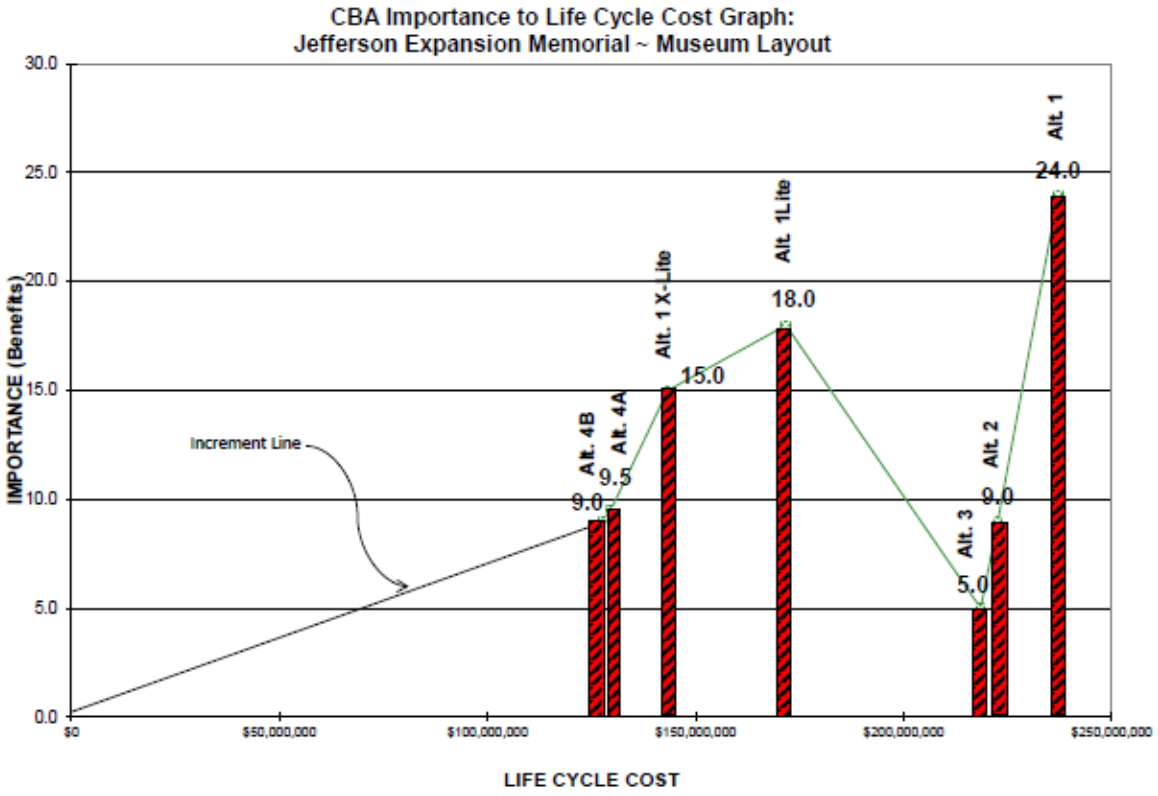

Figure 11, Choosing By Advantages - Importance to Life Cycle Cost Graph

SUMMARY & CONCLUSION

The Value Planning Business Case Process (VPBCP) allows management to thoroughly explore options and assess the results in real time decision making workshop setting. For marginal projects this allows exploration of ways to save the project rather than abandon the potential new venture. Using a variety of value based strategies allows for enhanced success.

Both government and private industry have found it to their advantage in assembling a "business case" to justify a new project opportunity to apply VPBCP. For private industry, this is an improved Proforma analysis which indicates the components of the proposed project, the goals to be achieved and the financial analysis including internal rate of return (IRR). For government, the project is justified by the improvements to be gained in operational effectiveness, service to the public, improved sustainability, and lower life cycle costs. This is a higher benefit to cost ratio.

This presentation discussed a number of value planning strategies for improving project business case success, and ultimately, the project venture itself. Two case studies (one government and one from private industry) were used to illustrate how these strategies have turned around "marginal projects" to ones of great success. Use of strategies such as, the value methodology, FAST, needs analysis, post occupancy evaluation, visioning, project performance measures, risk analysis, collaborative workshop iteration for maximum creativity, and evaluation techniques of Choosing By Advantages, Life Cycle Costing & Proforma Analysis are used to continuously explore, and improve, options for maximum project success.

The following matrix, **Figure 12**, summarizes the opportunity to use value strategies for improved business planning success based on the experience of the authors. It also shows the degree of improvement in the project economics and the non-monetary performance enhancements.

Industry	Business Opportunity	Economics	Performance
Healthcare	High	Moderate	High
Education	Moderate	Moderate	High
Transportation	Moderate	High	High
Hospitality	High	High	High
Retail	High	High	Moderate
Government	Moderate	High	High
Financial	High	High	Moderate
Manufacturing	High	High	Moderate

Figure 12, Business Planning Opportunities

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