TVO Methodology: Valuing IT Investments via the Gartner Business Performance Framework

Total value of opportunity is a metrics-based, standard methodology for comprehensive investment analysis of any IT-enabled business initiative.

Management Summary

Total value of opportunity (TVO) is a Gartner methodology for determining the overall business value expected to be created by an IT-enabled business initiative. TVO uses the Gartner Business Performance Framework as a standard methodology for measuring the business performance impact of the initiative being modeled. This document describes the components of the TVO methodology. TVO is a quantitative and qualitative value methodology that applies a standard set of thought-leading concepts and models to answer seven key value questions about a potential IT investment:

- What is the initiative?
- How will we measure the business value?
- What does the technology do?
- How much benefit will we receive?
- How much will it cost?
- How do we take into account future uncertainty?
- Is the enterprise positioned to exploit these capabilities?

For a complete value analysis (and, therefore, a business case analysis) of a potential IT investment, it is critical to ensure that each of the questions above has been answered completely and in-depth. This means the question has been considered and an "accepted" methodology has been applied to answer it (by "accepted," we mean "agreed to by the stakeholders in the investment" — at a minimum, this includes finance, business unit sponsors, and IS organization sponsors).

Gartner's standard TVO methodology includes what we believe are the "best practices" — applied methodologies for each of the value questions. These components of TVO allow for a complete view of an IT-enabled business initiative, from the capability inherent in the solution, based on a technology perspective, to the ability of an organization to convert that capability into business value. In addition, the TVO components build a "trail of evidence" that link the IT capabilities to the resulting projected financial model that makes visible the business metrics and resulting business operations involved in unlocking that value.
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1.0 Description of the IT-Enabled Business Initiative

A succinct project description, that gives a guiding principle to both the IT and business stakeholders on the project to help decide scope and denote type of value expected is a good way to start any evaluation of a business initiative. Using an investment framework to categorize investments helps determine the type and timing of value to be expected, the level of risk that might be assumed, and appropriate types of funding. Starting with an investment framework can also feed portfolio management initiatives.

1.1 Project Description

A simple, high-level description of the project (generally a paragraph or less) should clearly state the overall business goal of the initiative and the main role of the technology being made available. This acts as an umbrella statement for the project and helps to focus the scope. As a first statement, there has to be just enough information to point in the directions of "what we are doing" and "why we are doing it." It is also the description that should allow all involved to make a decision about new requirements that appear after the project is under way (this is called "scope creep"). Another area to address in a project description is "whether this is the original intention of the project or not." Examples of project descriptions would be "provide wireless PDA capability to the sales force to enable just-in-time sales quotes and raise the one-call close rate," "upgrade the network infrastructure to support required capacity needs" and "renew the desktop inventory to drive down support costs, implement collaboration features, which are expected to result in higher satisfaction, cost savings and faster collaborative decision making." Inappropriate examples would be "install sales-force automation to automate sales information" (this response doesn't answer "why we are doing this" in a business-relevant way) or "make workers mobile" (this response doesn't answer what we are doing) or "build a data warehouse to consolidate corporate information"(this response gives no way to determine the proper scope — are we using all data, all the time? It doesn't tell us why we are doing this).

1.2 Type of IT Investments

TVO requires a mapping of an IT investment to the IT investment framework, as described in "Beyond the Business Case: Strategic IT Investment," Jeanne Ross and Cynthia M. Beath, October 2001, CISR WP 323, and described and depicted below.

The IT investment framework (see Figure 1) defines four types of IT investments, two related to infrastructure (transformation and renewal), and two related to business solutions (process improvements and experiments).
1.2.1 Transformation

Transformation investments are necessary if an enterprise finds that its core infrastructure limits its ability to develop applications which are critical to long-term success. A transformation process can affect an entire enterprise and all its business units. Funding often requires executive-level allocation, and is closely tied to long-term flexibility goals.

In this type of investment, risk is generally very high, and benefits, while potentially large, are difficult to directly quantify. In addition to an analysis of cost and short-term business benefits, future value calculations using techniques such as real option analysis (see Section 7) will be needed to completely account for the value in a transformational project.

1.2.2 Renewal

Renewal Investments are needed to maintain the infrastructure's functionality and keep it cost-effective. Goals of renewal investments include improving maintainability, reducing support and training requirements, or by making the current capacity more efficient. Renewal initiatives may also be driven by dwindling support from a vendor or the industry for selected products or technologies. Funding is usually accomplished through a business case based on a cost/benefit analysis and total cost of ownership (see Section 4 and Section 5), and owned within the IS organization.

1.2.3 Process Improvement

Business applications can deliver short-term profitability through process improvements. These initiatives are designed to improve operational outcomes of incumbent processes, not change the process. Funding is effective through the use of a business case built on a cost/benefit analysis and total cost of ownership (TCO). The owner will come from a business or functional unit within the target organization.

1.2.4 Experiments

New technologies present enterprises with opportunities or imperatives to adopt new business models. Successful experiments might ultimately lead to major organizational changes with accompanying infrastructure changes or they might lead to more incremental process improvements. It is a testing
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process that might require a business- or executive-level allocation to move beyond the considerable uncertainty that is inherent with this type of investment. Ownership falls to a business or functional unit. In this type of investment, the risk of failure is generally very high. Benefit analysis should ascribe some value to the learning that takes place — even from failed initiatives. Future value calculations using techniques such as real options analysis will be needed to most completely account for the value in an experimental project.

TVO assumes that cost/benefit analyses capture most of the value in process improvement and renewal projects. TVO can be used as a rigorous methodology to quantify the value in these cases. Experiments and transformational projects require deeper analysis into strategic alignment, risk and future value estimations. The TVO methodology will provide broad direction in those areas experimental and transformational projects as well as rigorous quantification for applicable areas of benefit, but they will not represent the cost/benefit analysis as the complete value picture.

2.0 TVO’s Use of the Gartner Business Performance Framework

To adequately describe the impact of IT on the business, TVO provides two key elements to the discussion, a framework of business performance measurements, and a way to use these measurements to communicate, in business language, the value of the IT investment. TVO is based on the Gartner Business Performance Framework, a set of precisely defined business measurements that holistically model the controllable business activities of an enterprise. Although an IT investment can almost never claim to be the only impact on a given high-level business metric, using the construct of the Gartner framework allows TVO to bring a visible chain of evidence from the capabilities of a technology investment to the modeled financial results. Stakeholders in the investment, including vendors, IS organizations and business representatives will be able to make more accurate and auditable decisions about the investments they make by analyzing the practicality of delivering to the chain of evidence as depicted in TVO.

The standard Gartner TVO approach models benefits against the metrics contained in the Gartner Business Performance Framework, as shown in Figure 2. Detailed definitions and examples of all metrics in the framework, and cause and effect relationships with other metrics are available in "Gartner Business Performance Framework v1.0: The Enterprise Reference Model," http://www.gartnerg2.com/wp/wp-0902-0003.asp. Other business performance metrics can be used with TVO — as long as the links to technology capabilities and to the financial impact on the business can be determined, and the metrics used meet the same key principles as those in our framework. This ensures their ability to correctly sense value changes within the enterprise. The principles are:

- All metrics (both aggregate and prime), when used collectively, are leading indicators of financial performance. Financial performance is defined as that performance which is measured by generally accepted accounting principles (GAAP).
- No more then seven (plus or minus two) metrics are to be used at any given management level.
- The metrics that constitute our framework are intended to be collectively exhaustive and mutually exclusive with respect to measuring the controllable activities of an enterprise.
- Our framework is hierarchical, focusing on the controllable activities within the enterprise that are managed at the executive and middle management levels. Our standard framework does not drill
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down to a detailed process or intradepartmental level (although we encourage the mapping of such metrics into our standard framework).

• Our framework is based on standard prime metrics that foster collaboration and facilitate comparisons to internal and external entities.

• Our framework is made flexible by an architecture that allows many combinations of standard as well as custom prime metrics which are configured into aggregate measurements. Our recommendation is to use 70 percent to 80 percent standard prime metrics and 20 percent to 30 percent custom prime metrics in an enterprise framework.

• The holistic nature of our framework captures the "cause and effect" relationships between business functions within the enterprise to ensure that all the effects of a specific change are considered.

• Our prime metrics are selected based on general availability in automated business transaction systems. We target metrics that are sourced from transactions which are externally auditable by authorities such as the Financial Accounting Standards Board, Occupational Safety & Health Administration and the Internal Revenue Service.

• Where necessary, we incorporate the key concepts of outside thought leaders to define specific prime metrics that are broadly accepted and applied within the industry. The metrics selected pass through each of the above criteria.

• Our framework will evolve and develop over time allowing benchmarking to continue throughout.
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The first step in using the Business Performance Framework is to develop a baseline of the performance measurements affected by the proposed solution. Through the metric selection and process of developing a baseline, meaningful business information and level setting about relevant business issues, strategic alignment and other factors takes place. Direct benefits must be modeled against the measurements selected, along with the impact on other areas of the enterprise’s operations. This impact can be positive.

**Source:** Gartner Research

**Figure 2. Gartner’s Business Performance Framework**

The first step in using the Business Performance Framework is to develop a baseline of the performance measurements affected by the proposed solution. Through the metric selection and process of developing a baseline, meaningful business information and level setting about relevant business issues, strategic alignment and other factors takes place. Direct benefits must be modeled against the measurements selected, along with the impact on other areas of the enterprise’s operations. This impact can be positive.
or negative. The measurements of the impact on other areas are called "cause and effect metrics." These business metrics are key to the analysis because they become the "living" part of the business case. The metrics should be monitored before, during and after implementation to determine how the projected value is being delivered.

Most of the business metrics will be "owned" in the appropriate part of the enterprise, outside of the IS organization. Therefore, effective measurements of improvements to selected business metrics requires buy in from the appropriate business areas. A business metric owner must understand, from the description of the project, the IT capabilities selected, the importance ratings of those capabilities to that business area, and whether the projected improvements can be achieved. These description of the project will also provide insight into what actions need to be taken within the business area to exploit those capabilities.

The source/owner for any data collected that is associated with the business metric calculations and any estimated changes to the business metrics should be recorded to allow for audit and verification of the data as the initiative proceeds.

### 3.0 IT Capabilities

TVO works from the hypothesis that, despite an infinite number of features and functions available from technology products today, there is a finite list of understandable, explainable, relevant capabilities that such products bring to an enterprise. This enables a standard TVO model to address a large range of investment product types.

A key step of the TVO process is to provide a front-end model that represents the general capabilities the technology solution brings to the overall IT-enabled business initiative. These are a little more abstract than specific features or functions, but they are concrete enough to allow the business impact to be determined. The list of IT capabilities is available below.

A TVO methodology user will select a number of IT capabilities that represent the major reasons the enterprise is interested in the potential technology investment (not necessarily everything the solution could possibly do). These capabilities (representing why this technology is of interest) will then be rated for their impact and importance on the metrics chosen from the Gartner Business Performance Framework (such metrics represent the areas of the business in which value is expected to be created).

The IT capabilities are divided into four capability classes:

- **Foundation** — "Must have" environmentals and infrastructure services.
- **Operational Support and TCO Goal Enablement** — The benefits most directly exploited within the IS organization.
- **Direct Business Enhancement** — The benefits that are most directly exploited by the business unit.
- **Knowledge and Information Management** — The benefits expected from increased use, sharing and access of information.

**Foundation (10)**

- Flexibility
- Extensibility
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- Scalability
- Reliability
- Availability
- Required Capacity
- Required Performance Upgrade
- Compatibility With the Current Infrastructure
- Security and Privacy
- Serviceability

Operational Support and TCO Goal Enablement (8)
- Platform Standardization
- Vendor Standardization
- Application Standardization
- System Consolidation
- IT Process Cost Reduction
- IT Process Speed Increase
- IS Staff Productivity
- IT Process Standardization and Integration

Direct Business Enhancement (6)
- Business Process Cost Reduction
- Business Process Speed Increase
- Business User Productivity
- Functional Enhancement
- Required Business Process Redesign
- Adherence to Required Business or Regulatory Standards

Knowledge and Information Management (7)
- Increased Access
- Increased Information Accuracy
- Increased Information Timeliness
- Increased Information Navigation and Synthesis
- Increased Sharing and Collaboration
Profile and Personalize

Solve or Recommend

4.0 How Much Benefit We Will Receive

At the end of this process, the TVO methodology will have made explicit the investment type of project, the specific capabilities and the qualitative impact of those capabilities directed to particular areas of the business. This information is used to project a change to the baseline value of the selected metrics — reflecting an actual change in the measurable business performance of the enterprise. Note that the IT investment cannot be extracted from the rest of the business initiative at this stage, as inherent people and process changes might be necessary to ensure the initiative succeeds and the metric targets are achieved. Therefore, we refer to the initiative as an IT-enabled business initiative. IT no longer stands alone. It is an inseparable part of the people, process and technology trio that defines a business. In addition, the use of key business metrics projects value by measuring the outcome of the various activities in a nonfinancial, nonaccounting measurement framework — this allows the metrics to trap both tangible and intangible value creation.

4.1 Projecting Changes to the Business Metrics

After selecting key business metrics as the value indicators of the initiative, the metrics should be measured (form a baseline). The next step is to determine the target values, essentially the end-state value of the metric if the initiative is successful. The process to project changes in the business metrics is multifaceted. Expertise in many areas is required, some of which may include:

- Vendor- or solution-provider knowledge of the impact of their solutions in other enterprises.
- Business-sponsor insight into the processes affected by the initiative and measured by the chosen metrics.
- IS organization sponsor insight into the IS processes and a track record of delivery of similar projects.
- Benchmark data for the selected business metrics.
- External research and case studies on the projected impact of similar projects.

4.2 Adjusting the Projections for Value Perceptions

Our research has indicated that there is another factor to consider after the projected changes to the chosen business metrics are decided upon. The IT capabilities chosen and the importance the enterprise places on them should be used to make minor adjustments to the benefits, as calculated through changes to the business metrics. Often, the perception of importance and value placed on technology by the business sponsors is closely related to the reality. The importance of the ratings placed on each capability compared to the areas of the business affected by them, as described in the previous section, provide this linkage. Projected value can be more fully realized when the business sponsors rate the capabilities high in importance. This is where expectations can be recognized, owned and correctly managed. An initial set of general guidelines for initial linkages includes:

- The importance of the technology to the business area (which is represented by the metrics framework) is used to gauge the enterprise’s perceptions of technology in this area. Ratings can be one of five categories — "very important," "highly important," "moderately important," "limited
• Capabilities rated very important and highly important should lead to an assumption that the benefits calculated have the right attention and sponsorship to be achieved as calculated.

• Capabilities rated moderately important should lead to an assumption that the benefits calculated have risks to being achieved as calculated. If no mitigation activities occur to change this perception, the benefits calculated for this metric should be decreased by 10 percent to 15 percent.

• Ratings of limited importance or not important should be considered warning signs that the projected value in those areas may be harder to justify to the enterprise. If no mitigation activities occur to change this perception, the benefits calculated for this metric should be decreased by 20 percent to 40 percent.

• Operational and TCO enablement capability categories should generate an adjustment only for metrics within IT responsiveness, since we expect the value will be owned and monitored by the IS organization.

5.0 Total Cost of Ownership

TVO requires a total cost input for one-time and ongoing costs for the technology and business components of the initiative. It also requires identification of any cost “offsets,” in terms of reductions or savings to be identified. The major cost categories are shown in Figure 3 and discussed below.

<table>
<thead>
<tr>
<th>Incurred Costs</th>
<th>Year 0</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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<tbody>
<tr>
<td>Technology — One-Time</td>
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<td>Technology — Ongoing</td>
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<td>Personnel — One-Time</td>
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<td>Operations and Processes — Ongoing</td>
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<td>Technology — One-Time</td>
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<td>Operations and Processes — Ongoing</td>
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Source: Gartner Research

**Figure 3. Cost Categories**

Incurred costs are broken into three categories: technology, personnel, and operations and processes. Technology costs include all hardware- and software-related costs associated with the initiative, such as application programs, servers and networking. Personnel costs are defined as all the human resources costs (employee and contractor) that are associated with the initiative, including new hires, overtime for exiting hourly paid employees, and temporary help. Finally, operations and processes costs are all of the remaining business-related costs associated with the initiative, such as business disruptions, downtime or
latency. Each of these cost categories is further separated into one-time or ongoing to properly capture the total present value of the expenditure (see Figure 3).

Offset costs are defined as those benefits directly associated with the initiative that are too small to be captured by the improvements measured by the Gartner Business Performance Framework. Offset costs are broken into the same categories as the project costs. The purpose of these offset costs is to capture the incidental, byproduct benefits that often occur with the changes to business processes which result from IT-enabled initiatives. These byproduct benefits may not be the primary objective of the initiative, but they can have a significant financial impact. An example of the benefits captured as offset costs might be the reduced downtime resulting from a network upgrade associated with a customer relationship management initiative.

6.0 'The Five Pillars of Benefits Realization'

Any total value methodology must incorporate the concept of conversion effectiveness — which measures the enterprise's ability to convert the investment into business value, and the results taken into account to set the correct expectations. TVO incorporates a methodology developed and used by Gartner Consulting called "dynamic benefits realization" (DBR), which allows an enterprise to study its abilities and expectations around IT investments, mapped to the specifics of the studied project in five areas, called "pillars" (strategic alignment, risk, business process impact, direct payback and architecture). This qualitative assessment is juxtaposed with the quantitative analysis of TVO (which represents the potential value to be derived from the investment) to represent the enterprise's ability to unlock the potential.

This methodology for evaluating IT investments rounds out the financially oriented perspectives of value that are used by the other components of TVO and driven through metrics changes of the framework. The "Five Pillars of Benefit Realization" are the keys to a methodology that assesses whether an IT-enabled business initiative, as modeled, is a "good" investment for a particular enterprise. Good in this context is defined as being well-enough aligned with the enterprise's view of the five pillars that the projected value created can be expected to be turned into benefits realized by the enterprise. From the enterprise's viewpoint, this is a measurement of "conversion effectiveness" — Can this enterprise convert this potential into real business value? From the viewpoint of a vendor, service provider, system integrator or other partner to the enterprise, this methodology points to "red flag" areas of misalignment or differing expectations. Our view on this is "pay me now or pay me later" — smart partners will tackle the indicated issues directly and help the enterprise develop remediation plans, alter the project scope, redefine the goals, or take other action to enhance the chance for overall project success. Further detail on this approach is available from Gartner Consulting and Gartner Research, and in a book published by Dr. Tony Murphy (originator of this methodology for Gartner), "Achieving Business Value From Technology."

The Five Pillars of Benefits Realization represent the connections between business context and IT investments. They represent a comprehensive set of perspectives that an enterprise must use to understand, evaluate, manage or retire IT investments. The five pillars can be summarized as:

- **Strategic Alignment**: The alignment of IT investment strategy with the realization of the enterprise's business goals and objectives.
- **Business Process Impact**: The impact on the requirement for the company to redesign business processes, more closely integrate the supply chain or similar process-intensive initiatives.
- **Architecture**: The integration, scalability and resilience of the databases, operating systems, applications and networks which the enterprise already has or plans to implement.
• **Direct Payback**: The conventionally understood benefits a project can deliver.

• **Risk**: Identifying the exposure of the proposed investment to failure or underachievement.

The diagnostic process used with these pillars consists of:

• Step 1 involves determining the value standards the enterprise is concerned with for each pillar.

• Step 2 involves weighting the relative importance of each pillar in the overall enterprise's view of making IT investment decisions. This gives a lens through which to view the current business context. Each pillar is weighted from 0 to 100 percent, and the total must equal 100 percent.

• Step 3 involves developing a score from one to 10 (where 10 is the best) of how well the particular IT investment being studied aligns with the each pillar. This gives a lens through which to view the potential impact of the IT investment.

The weightings and scores from Step 1 and Step 2 are combined to produce an overall weighted score, which can be applied against a Gartner standard scoring of the appropriateness of the investment (see Figure 4). The better aligned the needs of the business and the potential of the investment, the more likely the value projected will be delivered. Any areas where scores are mismatched (for example, an enterprise rated a pillar highly, but the initiative scored low against it, or vice versa) should be investigated to determine whether the initiative is warranted and appropriate within that business context.

<table>
<thead>
<tr>
<th>Perspective</th>
<th>Weighting</th>
<th>Score (average)</th>
<th>Weighted Score</th>
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</thead>
<tbody>
<tr>
<td>Strategic Alignment</td>
<td>30</td>
<td>8.0</td>
<td>24%</td>
</tr>
<tr>
<td>Business Process Impact</td>
<td>10</td>
<td>6.0</td>
<td>6%</td>
</tr>
<tr>
<td>Architecture</td>
<td>10</td>
<td>9.5</td>
<td>10%</td>
</tr>
<tr>
<td>Direct Payback</td>
<td>10</td>
<td>10.0</td>
<td>10%</td>
</tr>
<tr>
<td>Risk</td>
<td>40</td>
<td>0.0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Source: Gartner Research

**Figure 4. Five Pillars Analysis**

### 7.0 How We Take Into Account Future Uncertainty

A complete analysis must include an analysis of the elements of risk and time. In addition, the risk of the original investment can be roughly modeled by determining the proper cost of capital calculations for the financial analysis. TVO incorporates a qualitative risk analysis as part of the five pillars methodology, and provides a real option approach to future value.

**Risk** — Three types of risk must be assessed. Business risk assesses the possibility that business or market conditions will change in ways that affect the value delivered from this initiative. Technology risk assesses the possibility that the technical, vendor, support or price expectations underlying the initiative will change during the initiative. Management risk assesses changes to culture, process or governance that affect the value delivered by this initiative. This structure is outlined in "Managing Risk When Making IT Investment Decisions," SPA-14-3116.

**Future Value** — Many IT-enabled business initiatives, particularly those with infrastructure components are not expected to deliver all their value to a single source or meet a single need within a precise time frame. A complete value analysis must enable some quantification of the future value that an initiative,
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having been completed previously, would deliver to the business at a future time. A simple example of future value is how a network upgrade to enable a Web-based enterprise application could bring value to a future self-service application to customers or future intranet developments.

TVO uses the Black-Scholes Option Pricing Model to create a synthetic option to determine the present value of the ability to perform a "phase 2" and "phase 3" of the modeled initiative or to implement new projects based on having implemented the modeled initiative. These assumptions are considered to represent a somewhat-simplified approach to the actual manner of IT investments (for example, European call options can be exercised only on their exercise date, and it is debatable under what circumstances committed or planned projects would actually not be exercised). However, we believe the value analysis is very much enhanced by the application of standard option theory to the modeled initiative. The standard inputs for this methodology are:

- **input 1** the estimated expenditure for this future project or phase.
- **input 2** the value expected to be generated from this phase or project (the expected benefit or the benefit required to meet the required rate of return for acceptable investments).
- **input 3** the length of time (in years) from the initial project start until this phase or project will be undertaken or considered "expired."
- **input 4** the risk-free rate of return for investment from now until the time indicated by input 3.
- **input 5** the volatility of this investment — the deviation on the expected return on assets

The value of the option should be incorporated in the final financial analysis.

Although a synthetic option could be created to examine the value of implementing the initial phase of the project as well, TVO does not generally include these scenarios at this point, but may in the future, based on our evolving research findings. The initial focus of a TVO analysis is more about analyzing "how much value," rather than "is there enough value vs. doing nothing or other things with the same dollars." The introduction of option theory for additional projects and phases was necessary to get this type of enabling value included into the "how much" discussion in a standard way.

8.0 Reporting

The TVO methodology provides a way to analyze an IT-enabled business initiative and develop reports in the following areas:

- **Financial** — The TVO methodology can be used for the underpinnings of a number of financial models for investment analysis. The costs and benefits collected should be apportioned out during the years for which the initiative is to be studied. At this point, standard discounted cash flow (DCF), net present value (NPV) or internal rate of return (IRR) calculations can be used as well as the value of any options created.

- **Value Expectations** — The investment framework categories should be used to set proper expectations for the timing, type and risk associated with the initiative that is being undertaken.

- **Business Impact** — Business benefits should be reported broken down by business area (as represented by the aggregate areas in the Gartner Business Performance Framework) to ensure buy in, and proper attention from the business areas that are affected by realizing the benefits of the initiative.
• **Benefit Realization** — In this document, the Five Pillars of Benefit Realization is presented as a qualitative methodology to be added for management discussions on alignment, risk and payback of the modeled initiative. However, if an enterprise understands the impact of each pillar on its particular ability to convert the projected value into actual business benefits, this methodology can be quantitatively related to value projected.

• **Monitoring Value Delivered** — The business metrics used to define the business benefits of this initiative become the language of monitoring the value delivered as the initiative proceeds. A TVO analysis requires a baseline measurement of these metrics to derive financial impact, so the exercise is already complete, and sources of the data needed have been verified. If the bulk of these data sources are from automated systems (or can be made automated), this monitoring can also be done electronically from a project management application, performance scorecard or other analytical system.
Appendix A: References


4. "Achieving Business Value From Technology" by Tony Murphy.


TVO Methodology: Valuing IT Investments via the Gartner Business Performance Framework

Appendix B: Acronym Key

DBR  Dynamic benefits realization
DCF  Discounted cash flow
GAAP Generally accepted accounting practices
IRR  Internal rate of return
NPV  Net present value
TCO  Total cost of ownership
TVO  Total value of opportunity