PLANNING ASSUMPTION

September 26, 2003

The Foundation of Sound Technology Investment: The Total Economic Impact™ Methodology

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Giga Position

During this period of corporate contraction, economic pressures and tight spending, evaluating where an organization should expend resources can be a business-critical decision. No longer does the IT department have entitlement to funds for projects that are technically sound or are qualitatively beneficial. Prior to funding, an IT organization must be able to answer the question, "What will we get for our money?" Properly analyzed, this will include not just the estimated spending over the life of the system or initiative, but it would also include an evaluation of potential business benefits, future options and relative risks. Evaluations based solely on cost can, and often will, lead to improper decisions with a questionable impact on organizational goals. Clearly, what's important is not what is spent, but what an organization gets in return.

To this end, Giga developed the Total Economic Impact™ (TEI) methodology in 1997 and has been using it to analyze and support IT decisions. The TEI methodology embraces traditional cost analysis and a best practice approach to minimizing costs and extends it by explicitly incorporating analysis and quantification of both business benefits and flexibility, while tempering these three categories with an analysis of the risk effects (see Figure 3). Where most IT-oriented financial analysis looks at IT efficiency, TEI adds business alignment and effectiveness considerations. By using TEI, an organization can evaluate project and product decisions in light of individual organization goals. Technology decisions will be better aligned with business needs, project success rates will increase, risks will be better understood and mitigated, and business growth will be accelerated.

Recommendations

Project approval and funding will be facilitated with the creation of a sound business case that evaluates project costs, benefits, flexibility and risk. Ignoring any of these categories in the analysis can lead to the suboptimization of resources and the selection of an inferior choice.

Traditional measures used by many IT organizations do little to assist them with their difficult selection process. IT organizations traditionally focus on either cost minimization or technical elegance, at the expense of sound business analysis. A complete project analysis will also include quantification and monetization of business benefits, flexibility and risks.

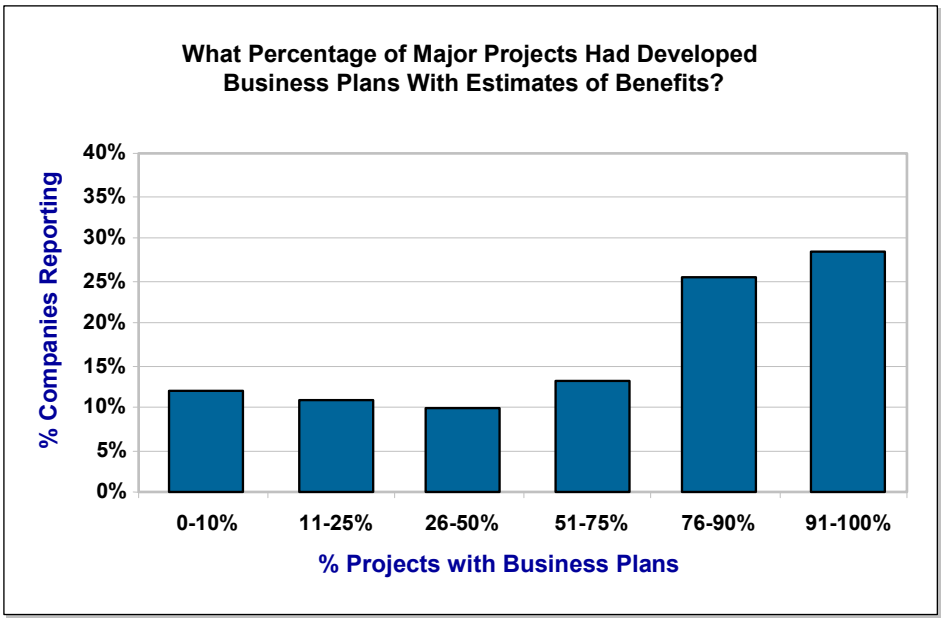
Once created, the benefits, goals and metrics for success for the project should be communicated to all involved in the project and can be used as a basis for tracking project success after implementation. This will lead to better focus on the part of the project team, minimizing overall spending and increasing the chance of project success. The business case that is developed cannot be put on the shelf and ignored. To achieve the maximum benefits, the document must remain "alive" and follow the project through implementation and benefit realization.

The business case for the project should be distilled to a single sentence: "We will be doing _____ to make _____ better, as measured by _____, which is worth _____." When discussing the project, use this entire sentence to reinforce the project and its value.

Proof/Notes

The requirement for a business case, with estimates of expected benefits, is now required for major projects at the majority of organizations (see Figure 1). In a survey of Giga clients, almost 60 percent of the companies stated that they now require or develop business cases for greater than 75 percent of their major projects. In contrast, few organizations have an orderly process for the creation of these business cases. This makes selecting between project alternatives or between different projects more difficult, since there is no consistency of analysis, nor is there a consistent structure to these cases.

Figure 1: Requirement for a Business Case



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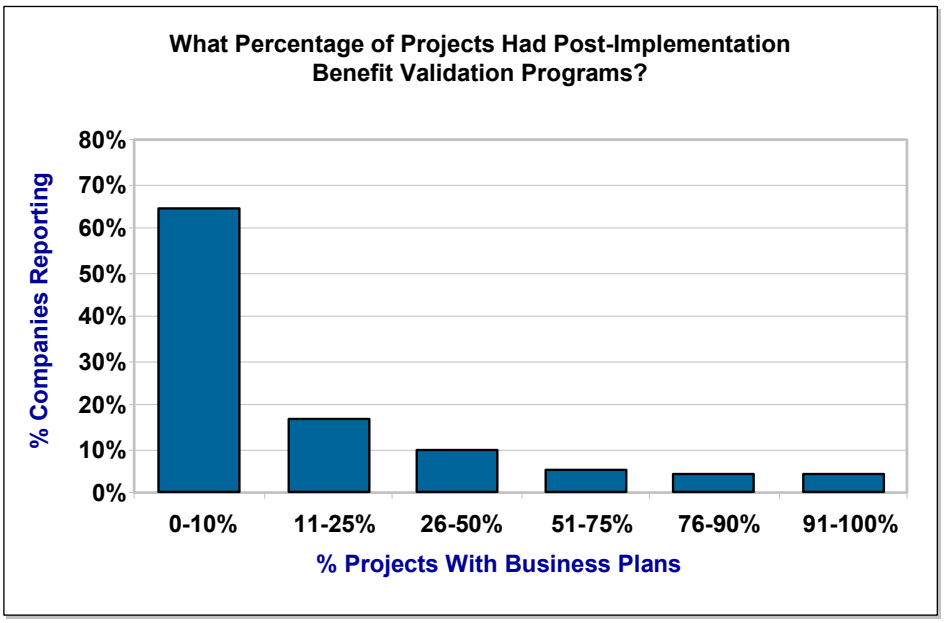
Furthermore, few IT organizations conduct any post-project review to evaluate and quantify the actual return of individual projects (see Figure 2). This contrasts other departments, such as marketing, where 20 percent or more of its budget may be dedicated to testing, measuring and evaluating strategies and tactics.

While there may be organizational reasons for the lack of post-project measurement and business case validation, a clearly defined analysis performed prior to project initiation and communicated to the project team at all stages of development and implementation will go far toward ensuring that project and business goals are met.

Figure 2: Little or No Post-Project Validation



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Total Economic Impact

Giga has developed an return on investment (ROI)-based methodology for analyzing and evaluating the costs, benefits and risks of IT decisions. This methodology, termed Total Economic Impact™, provides a holistic view of IT decisions by including costs, benefits, flexibility and risk. The TEI methodology, therefore, allows the measurement of the effectiveness of an IT decision or project and can be used as a proactive, predictive tool. Since it includes risk, TEI can also be used with a portfolio analysis methodology to determine the best mix of IT spending that aligns with organizational goals.

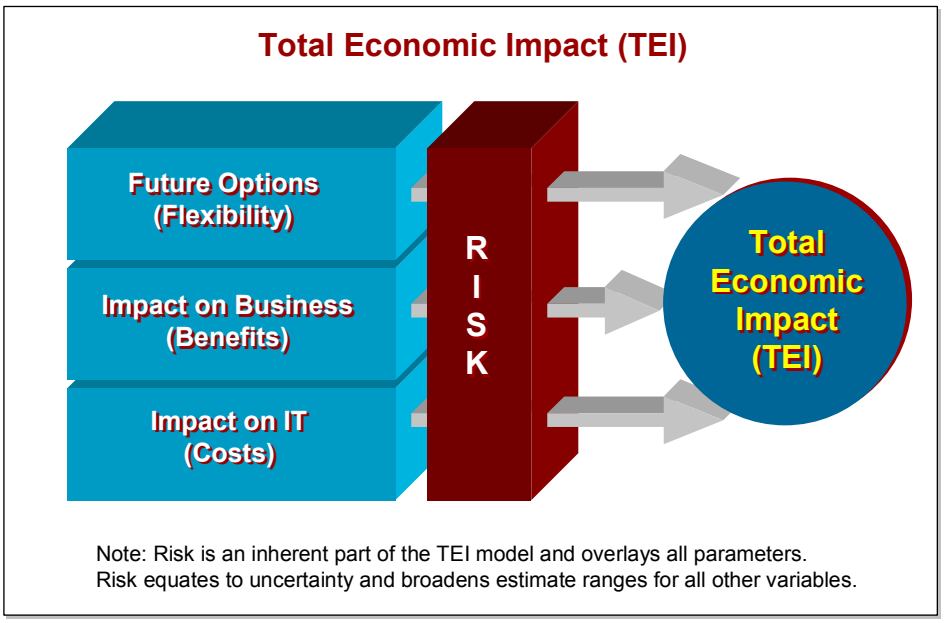
Unlike a cost or technology-based analysis, TEI does not rely on industry averages or factors applied to all organizations, but is more a methodology for evaluating projects. Additionally, TEI can be used at all stages of the project analysis — to create an initial "back of the envelope" evaluation, or a detailed and documented business case. The structure of both remains the same, and as such, leads to iterative refinement as more or better information becomes available. With TEI, one can produce the justifying analysis to prioritize projects and later prove or disprove their ultimate value.

Elements of TEI

TEI is composed of four main elements with associated tools and methodologies for quantification. The four components of TEI are:

1. Impact on IT or project cost
2. Impact on the business or business benefits
3. Future options created or future flexibility
4. Risk or uncertainty

Figure 3: Total Economic Impact Components



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Individually, each provides only a piece of the decision-support puzzle. Together, they provide an effective model for progressive IT-business analysis, management and decision-making when applied to a single project, and they provide the beginning of a potential portfolio analysis for IT expenditures as a whole.

Impact on IT (Cost)

No model for evaluating projects can avoid a comprehensive cost component. These cost estimates must include the following:

- The capital costs of the hardware and software, including the initial purchase price of the hardware and software and their upgrades.
- The ongoing maintenance and operations of the technology, including the IT staff and services it took to deploy, maintain and support the users of the technology during the evaluation period.
- The administrative costs for the acquisition and tracking of the technology assets by the IT department.

The TEI cost category contains the changes in IT costs relative to maintaining the status quo. Some cost models look to capture all of the potential cost areas, with the goal appearing to be the "conclusive" determination of the total costs for performing an IT function. TEI, on the other hand, is more concerned with the changes to IT spending that a project under consideration will involve. These cost changes, usually higher for a period of development or implementation and then potentially decreasing over time, can be considered as the investment required to bring this new initiative, application or technology online.

While an organization will likely encounter costs in other departments as part of a new initiative, Giga believes the analysis is facilitated by segregating the IT costs within the "impact to IT" or "cost" category and the non-IT costs in the "impact on business" or "benefits" category. Although it may be mathematically equivalent to interchange decreased IT costs and increased non-IT benefits in a final ROI analysis, the issue is one of control and governance. Generally speaking, IT only has control over its own budget. Spending in

other departments will likely be reflected in those departments' budgets and productivity expectations. Segregating the IT costs into one category allows the IT manager to "sign off" on this entire section of the analysis to improve the visibility and credibility of the discussions.

Impact on Business (Benefits)

With CIOs consistently ranking "aligning IT with business goals" at or near the top of their priorities, Giga finds the reliance on IT spending and efficiency, and the omission of user-driven and customer-driven metrics, paradoxical.

Quantifying the benefits derived from an IT decision must be made in light of an individual organization's goals. With this alignment, the contribution of IT can be measured in such terms as the following:

- User productivity, as measured by increased capacity to take or fulfill orders
- Program effectiveness toward market growth
- Organizational efficiency in terms of inventory turns or days of inventory in stock
- Customer satisfaction, in terms of additional sales to current customers or decreases in account turnover

TEI's benefit category captures the quantified data relating to changes in the non-IT departments. With many systems, the initial implementation will require changes to personnel or behavior in the effected user departments. Marketing people will either be unavailable or less productive in their marketing tasks. Sales people will be in training, instead of performing their chartered tasks. Therefore, new systems may have a negative initial benefit, as reflected in the goals of these departments, that will hopefully be compensated for by an improved long-term productivity gain.

Quantifying and valuing business benefits can be a challenge, especially if the organization does not have a previous history of benefit quantification. While features of a new system may be well defined, benefits are often described qualitatively. To properly evaluate the benefits of a new or a changed technology, benefit statements need to be followed by the words, "as measured by _____" and "which is worth _____."

One simple approach to estimating benefits requires the mental exercise of looking at two parallel versions of the organization — one with the anticipated system or change, and one without — at a designated point in the future. Evaluating the differences between these two environments, as measured against the system's goals, can lead to a benefits estimation of the system and an estimate of the direct benefits for the system under consideration.

As business benefits are measured outside of the IT department, it is important that "ownership" of the estimated benefits remain with the business department responsible. While the IT department can facilitate the discussion and quantification of benefits, the presentation and ultimate accountability for these benefits must be by the budget holder within the business. The importance of accountability should not be undervalued — tracking, putting in reporting mechanism and holding people accountable — is critical to the actual realization of benefits after deployment.

Future Options (Flexibility)

Future options, or flexibility, can be looked at as the value of the option to take a second or third action in the future. In this regard, it is much like a financial purchase option. With a financial option, one can purchase the right to acquire a stock or property for a price negotiated today. In the same regard, investing in additional infrastructure above today's needs, for example, can enable the deployment of future applications. In many cases, these applications may not yet be identified or budgeted, but their right to take these actions in the future still has value to the organization.

Generally speaking, flexibility benefits are those that will require a second project with a second set of investments. Only after the exercise of the options created by this second project will direct benefits be realized (such as increased productivity or revenues). Continuing the parallel with financial options, flexibility investments will expire over time as technology or market needs change. Likewise, as with financial options, working in a highly volatile marketplace will increase the value of the flexibility options. Quantifying the value of the options created through the increase in flexibility can be done using a number of tools (see Planning Assumption, Valuing IT Flexibility, Chip Gliedman).

Risk

No change is without risk. Likewise, no avoidance of change is without risk. Simply put, risk can usually be equated with increased uncertainty of an expected outcome. As such, risk expands any cost, benefit or flexibility analysis into a range of potential outcomes. Another way to picture this definition of risk is to imagine 50 organizations contemplating building or acquiring an application or technology and projecting the same costs and benefits. After the fact, if we were to perform an analysis of actual costs incurred and benefits achieved, we would find that there was a range of outcomes. Some organizations would spend less than the estimate, others more. Some organizations would overachieve the benefits, some underachieve them. This range of outcomes represents the impact of risk on our estimates for costs and benefits.

Among the key risk factors that can impact cost estimates are the following:

- *Project size:* Organizations are less accurate with their cost estimates for larger projects than for smaller ones. The larger the project, the greater the risk range.
- *Technology risk:* The risk that a product or technology will not actually deliver the expected functionality, resulting in higher than expected costs to deliver the same features and benefits.
- *Vendor risk:* The risk that the vendor of a product or technology may need to be replaced at some point in the project, driving up costs.
- *Resource availability:* The risk that the knowledgeable resources to implement the project are not available, resulting in higher than expected costs.
- *Legal or legislative risk:* The risk that the "rules" may change, forcing modifications to the initial technology plan.

Among the key risk factors that can impact benefit estimates are as follows:

- *Management risk:* Changes in management or management directions can impact the assumptions underlying our benefit calculations. For example, the divestiture or sale of a division may impact productivity gains that were expected over a larger group of workers. Likewise, a change in the management of a sales organization may trigger a replacement in a sales or customer management system, cutting short (and reducing) the benefits from its initial implementation.
- *Market risk:* The risk that market needs or competition may reduce the expected benefits from a system or technology.
- *Training:* If the users of a new system are not properly trained, benefits will be at risk.
- *Business process risk:* Often, other systems and processes must be modified concurrently to enable or maximize the expected benefits. Since benefits are measures outside of IT, the will of other departments to make the required changes represents a risk to benefits.
- *Culture:* Will the new system meet the cultural or behavioral norms of the expected audience?
- *Legal or legislative risk:* The risk that the "rules" may change, reducing the size or duration of expected benefits.

Within TEI, risk is quantified and its effect on ROI is calculated. With quantification comes the ability to decide risk mitigation or transference strategies, such as looking at the economics of splitting a large project up into a number of linked, smaller projects, or the transference of risks to an outside vendor that may undertake the project for a higher, but fixed, cost.

Alternative View

While it is difficult to argue against rational quantification of benefits and the evaluation of projects based upon the expected ROI, the presentation of numbers without credibility is of little benefit. Organizations must institute metrics, post project evaluations and open communication of results to build the credibility required. Likewise, a pre-approval analysis that defines benefits and metrics — that is replaced by a single-minded development plan focusing on "on-time" and "on-budget" as the only relevant criteria for success — will also render a TEI or other ROI analysis useless.

References

Related Giga Research

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