# Sustainable Approach to ROI for IT:
# What you may be missing in the bigger picture

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**What is Sustainability?**

The concept of sustainability was popularized in the 1980s. It was first applied to developing countries looking to select the right mix of technology transfer and direct foreign investment. Initially, sustainability referred to the ability of a country to support on its own a high technology investment, like a chemical plant.

It also looked at combining economic development with environmental & social concerns and evaluating investments as a means to enhance the life of current generation without putting in jeopardy environmental and social future. It expanded economic analysis to include impacts on: education system, transportation and power needs, quality of air and water, changes in the social fabric, to name just a few. The concept was embraced by such international agencies as the UN and the World Bank. Companies looking to enter new markets or make direct investments were pressured to apply this type of analysis. Some discovered this broader approach had merit for assessing business impact of any new investment. Today it is emerging as a new economic decision framework in large corporations and in the investment world.

This article discusses how Sustainability thinking can be applied to IT investments.

## INFRASTRUCTURE & TECHNOLOGY ENVIRONMENT:

Today's technological environment in any given company has evolved as an outcome of a great number of independent technology decisions made by different constituencies at different moments in time. Together they form a technological environment or infrastructure.

The sum of these earlier decisions constitutes a starting point for new initiatives. The prior investments can be seen as a source of subsidy for new initiatives, or the insufficiency of prior investments can be a significant hurdle. Using sustainability approaches, new initiatives can be analyzed from the point of view of how much they add to the existing infrastructure and how much they demand from it.

Simply, every new technological solution implemented today can be seen as a layer on top of an existing platform in a changing business environment. All technology decisions exist in an environment that includes prior investments. However, in traditional ROI approaches, no financial model is in place to analyze how these different parts combine and interact to create a new whole.

There are two major distortions that arise from this:

- Infrastructure capital is scarce.
- New business initiatives do not pay their fare share for infrastructure.

A typical result is that the first project to exceed the capacity of infrastructure gets charged the full cost of an upgrade, while all other projects get a free ride. In essence, the most recent project becomes the last straw that breaks the camel's back.

## Sustainable ROI Methodology:

Suppose there are three successive projects that become part of an environment, one after another: applications 1, 2 and 3.

| **Project** | **Incremental Value** | **Cost** | **% Network Utilization** | **Cumulative Network Utilization** | **Network Expansion Charge** | **Total Benefit** |
|---|---|---|---|---|---|---|
| Prior apps | NA | 0 | 45 | 45% | 0 | NA |
| App1 | 2.5 | $2 | 15 | 60% | 0 | +25% |
| App2 | 1.7 | $1 | 30 | 90% | 0 | + 70% |
| App3 | 4 | $2 | 15 | 105% | $3.50 | -38% |
| Future apps | ? | ? | ? | ? | ? | ? |

The need to spend on a network upgrade is created by all applications but is only charged to the most recent. Infrastructure utilization is not reflected correctly in the estimated cost of each of the projects. Thus, the last project may be either rejected or postponed, even though it is potentially more valuable to the company than the previous two that were approved. In fact, the second project should have been looked at more critically, as it alone utilized 30% of total infrastructure capacity, which was not properly reflected in its cost.

What happens if we evenly apportion the upgrade costs to the prior projects?

| **Project** | **Incremental Value** | **Cost** | **% Network Utilization** | **Cumulative Network Utilization** | **Apportioned Upgrade Cost** |
|---|---|---|---|---|---|
| Prior Apps | NA | 0 | 45 | 45% | $1.50 |
| App1 | $2.5 | $2 | 15 | 60% | $0.50 |
| App2 | $1.7 | $1 | 30 | 90% | $1.00 |
| App3 | $4 | $2 | 15 | 105% | $0.50 |
| Future Apps | ? | | ? | 195% | ? |


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App1 is break even: direct cost plus apportioned upgrade cost of $2.5 = benefit of $2.5
App2 loses money: direct cost plus apportioned upgrade cost of $2.0 > benefit of $1.7
App3 makes money: direct cost plus apportioned upgrade cost of $2.5 < benefit of $4.0

All three business cases in traditional ROI are wrong when even a rudimentary sustainability approach is applied:

| Project | Traditional ROI | Apportioned ROI |
|---|---|---|
| App1 | Plus 25% | Breakeven |
| App2 | Plus 70% | Minus 17% |
| App3 | Minus 37% | Plus 60% |

Systems last and extend their influence well beyond the lifetime of a typical ROI calculation. Every time a new system is introduced it can also be analyzed from the point of view of added benefit to the infrastructure and enablement of future benefits. We need to look at future benefits that wouldn't be possible without that investment.

What happens if we assume that likely future projects will consume another 45% of the capacity to be added, in return for new benefits?

| Project | Incremental Value | Cost | % Network utilization | Cumulative Network utilization | Apportioned upgrade Cost |
|---|---|---|---|---|---|
| Prior apps | NA | 0 | 45 | 45% | $1.05 |
| App1 | $2.5 | $2 | 15 | 60% | $0.35 |
| App2 | $1.7 | $1 | 30 | 90% | $0.70 |
| App3 | $4 | $2 | 15 | 105% | $0.35 |
| Future Apps | $7 | $5 | 45 | 150% | $1.05 |

| Project | Traditional ROI | Retro allocation - ROI | Retro – future allocation |
|---|---|---|---|
| App1 | Plus 25% | Break even | Plus 5% |
| App2 | Plus 70% | - 17% | Break even |
| App3 | Minus 37% | +60% | Plus 65% |

As we look closer at future benefits, there are two long-term considerations that come into play. The first is future costs and system utilization. The second is the derivative benefit of new capabilities built into the infrastructure. Using TCO approaches, most IT investments do factor in future support costs. However, there is relatively less understanding of derivative benefits.


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We have seen some simple examples of what's missing in the incremental cost / return model, if derived costs and benefits are not taken into consideration. Future derived benefits determine return beyond the scope of ROI in many ways. For instance, increased infrastructure capability may increase price in a merger. Fully depreciated systems instead of invisible assets can be hidden liabilities, as we saw in Y2K repair bills.

Sustainability concept is relevant as it articulates environmental costs and risks and assigns real dollar value to positive impacts. Furthermore, it applies to IT investments as it enriches our understanding of the value of infrastructure, provides a better decision model for TCO and helps to map the value of new capability to change. It may not be too much to hope it will transform today's presentation of budgets and the final decision to invest, as there is considerable merit in looking at each IT investment as something that changes the world it lives in. Based on our experience it takes about a week of preliminary assessment for you to start looking differently at your technology investment decisions. If you feel it's time you started accounting fully for the cost of new technology initiatives as well as for their future benefits, if you are ready to tap the potential of better resource allocation, give us a call and we will walk you through our methodology to show how it can help you unlock the benefits of Sustainable ROI.


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