

IT as a Value Center

(Not a Profit Center nor a Cost Center)

The Problem

For many years, the cost of IT has challenged organizations. They have wrestled with questions such as: how do we allocate IT costs, should IT be considered an overhead expense and are we getting the most value possible for our investment? All too often, the fundamental problem has been built into these questions – the focus on cost. In most other areas of the organization, maximizing profit or, in the case of a not-for-profit, maximizing the funds available, provides a clear focus and metrics to determine success or failure. In theory, simply aligning the IT spending with these maximizing profit/funds goals should be sufficient to avoid any questions about value for money. Unfortunately, it hasn't turned out to be as simple as that and the questions persist, particularly at the strategic or application portfolio level.

This paper demonstrates how a value visualization culture – one where all stakeholders (IT and business) have a clear understanding of the goals of the project and expected business value – should and can transform the IT department from a cost or profit center to a value center. Although IT as a cost center is a good and probably essential starting point for the steps towards value visualization, and IT as a profit center sets IT on a path towards separate goals and priorities, it is IT as a value center that enables an organization to keep a lens on maximizing value through proper prioritization of upgrades and enhancements of existing technologies to meet the ever-changing needs of their customers.

How can we tell if we are getting value for money from IT?

Determining how we are getting value from our IT investments is a two-step process. First, we need to establish that we are getting value from IT by finding a way to measure that value. Next, we need to find a ratio metric that represents the value that we are getting per unit of money. It's tempting to think of this metric as simply return on investment (ROI) and the classic financial definition of ROI is not a bad metric to use here. However, we prefer to use our term, "value productivity", which allows for definitions of value that are not necessarily financial, such as reducing time to market for a product or improving customer service.

Before considering our two-step process further, we need to establish a context for the discussion of IT value. We have described our methods for, and the benefits of, value visualization at the tactical level in another paper, titled "How can we get

more value out of software development”¹. In this paper, we consider the strategic context of value delivery by IT. These are the conversations that should take place amongst the senior management team and the senior stakeholders of an organization. The business value of IT should also be a topic, at least occasionally, at the board level.

We do not suggest that the senior management team or the board should participate in the development of the value metrics which form the inputs to their discussions about priorities. We do assert that they must understand the process that we describe in this paper sufficiently well to be able to challenge the inputs they receive.

The desired output from the conversations about value from IT at a strategic level helps determine if the project will bring value to the organization, how much value will be delivered, what option is most appropriate (in-house, outsource or COTS solutions), and then prioritize the backlog of projects by value. These facts will enable IT to pull projects in according to the currently-funded IT capacity. If the senior management (or the board) is not satisfied with the rate that projects are being pulled from the backlog then they can increase the funding for IT. Equally, when budgets are being cut, this information can be used to identify which projects to eliminate or defer to another time.

The backlog and the rate of flow of value through IT are all easy to visualize for senior management in business units and IT. This information enables high-level decisions to be made without knowing all the details. However, very few IT organizations are structured to deliver this important information – forcing organizations to make IT project decisions based on cost vs. the value they bring to the organization.

Of course, even with the efficient prioritization of projects by value, senior management and the board could be dissatisfied with value delivery by IT – IT’s “value productivity” – if IT is operating sub-optimally.

The optimal operation of IT is a tactical issue that can be addressed through a concept such as the Value Visualization Framework (or VVF), a 5-step process that helps focus the business unit and IT on value streams for each application development initiative.

Finding a way to measure value

For the purposes of measuring the value delivered by IT in the context we have described, we must not constrain ourselves to business value. We must also consider what we will call “architectural” value, which we will define as the degree to which the technology infrastructure, hardware and software, is optimized to deliver maximum business value. For example, 20 years ago a book store with a local area network connecting point-of-sale terminals to process credit card payments and track inventory could have felt that they were ahead of the game. Then Amazon came along. More recently, in many cities, the best way to get a taxi at short notice was to stand by the curb and raise your arm. That has been changed by Uber and others.

Our point here is that the success of Amazon and Uber are both good examples of IT delivering business value, but that business value was necessarily preceded by the prior delivery of an IT architecture to support the business model – in both these examples, an online customer service platform (supported by integrated physical delivery).

Of course, comparing business value and architectural value is a little like comparing apples and oranges. Architectural initiatives should always lead to business value but it will be business value in the future not business value now. For this reason, architectural initiatives generally tend to lose out to business value projects that deliver value now (or soon) even though this can be a path of diminishing returns as projects get harder and more expensive to deliver with “just enough” new architecture. To ensure balance, we must prioritize at the portfolio level based on “economic value” – the financial benefit provided by the IT initiative.

We assert that, like beauty, value is in the eye of the beholder. Hence, there is often some subjectivity to value measurements. Of course, we always prefer to work with hard numbers and most things can be expressed in currency in some way, however roughly. However, getting to hard dollars can be so difficult that it is seen by many as a justifiable reason for not attempting to measure value at all. Even if we have value metrics in hard dollars, preference comes into play. For many years, Amazon did not make a profit, but it was still considered a “valuable” company. Clearly, a process for establishing relative value is a desirable way to help jumpstart value measurement.

Value should be determined by an informed and representative team of individuals that includes the smallest set of business and IT managers that can agree on business value as well as the size of the project and can establish a consensus around the outcomes that will survive challenges from the rest of the organization.

To find a way to measure value, we recommend using relative economic value, especially when financial data is hard to get, incomplete or unknowable. To enable relative economic value prioritization, we need to consider two metrics that are fundamental to economic value: “Cost of Delay” (CoD) and “Weighted Shortest Job First” (WSJF).

Cost of Delay

*“If you only quantify one thing,
quantify the Cost of Delay.”*

Reinertsen 2009,

“Principle of Product Development Flow”

The Cost of Delay for a project, which could be a new feature or a large body of work, is the daily (or weekly or monthly) cost to the organization of not completing the project under consideration. For example, an airline might currently be using two online reservation systems due to a recent merger. The cost of operating

the two systems in parallel is, say, \$100k per day. If the airline can support all of its customers on just one system through an IT conversion project the cost of the single system is \$60k per day. The airline has pretty good data on this because they know what they were paying before the merger and they know what they are paying now. The Cost of Delay of the IT conversion project (Project A) is \$40k per day. Let’s say the senior management team is considering another project (Project B) with a Cost of Delay of \$20K per day. Remember the Cost of Delay includes the cost of the project up to the point that it is completed.

If both projects have the same duration (e.g. 90 days) and there is only capacity to do one project at a time (and capacity is always limited at some level) then the economics of the prioritization decision are:

Project A first:

Project A cost = (90 days delay * \$40k) = \$3,600k

Project B cost = (180 days delay * \$20k) = \$3,600k

Total cost = \$7,200k

Project B first:

Project A cost = (180 days delay * \$40k) = \$7,200k

Project B cost = (90 days delay * \$20k) = \$1,800k

Total cost = \$9,000k

It is clear that the higher Cost of Delay project, Project A, should be done first.

More generally, Cost of Delay can include several different types of value, such as the value to the customer or business, the value of timelines and how it impacts the business.

Figure 1: Types of Value included in Cost of Delay in Scaled Agile Framework (SAFe)

Type of Value	Definition	Examples
User/Business Value	Relative value to the customer or business	They prefer this over that Revenue impact? Potential penalty or other negative impact?
Time Criticality	How user business value decays over time	Is there a fixed deadline? Will they wait for us or move to another solution? What is current effect on customer satisfaction?
Risk Reduction/ Opportunity Enablement	What else does this do for our business	Reduce the risk of this or future delivery? Is there value in the information we will receive? Enable new business opportunities?

Source: Derived from <http://scaledagileframework.com/wsif/>

As demonstrated in the examples, the Cost of Delay can significantly impact the economic value of a project and needs to be carefully considered when prioritizing software projects.

Weighted Shortest Job First (WSJF)

In our explanation of Cost of Delay, we assumed that both projects had the same duration. The reality is most projects don't often have the same duration. WSJF addresses the impact of projects with different durations through the following formula:

$$\text{WSJF} = \frac{\text{Cost of Delay}}{\text{Duration}}$$

Returning to our Cost of Delay examples, let's assume that our duration for Project A is now 360 days while Project B remains at 90 days.

$$\text{Project A WSJF} = \frac{\text{Cost of Delay}}{\text{Duration}} = \frac{40k}{360} = 111$$

$$\text{Project B WSJF} = \frac{\text{Cost of Delay}}{\text{Duration}} = \frac{20k}{90} = 222$$

The job with the highest WSJF provides the greatest economic benefit – in this case Project B. To validate this, let's look at our Cost of Delay calculations again:

Project A first:

$$\text{Project A cost} = (360 \text{ days delay} * \$40k) = \$14,400k$$

$$\text{Project B cost} = (450 \text{ days delay} * \$20k) = \$ 9,000k$$

$$\text{Total cost of delay} = \underline{\$23,400k}$$

Project B first:

$$\text{Project A cost} = (450 \text{ days delay} * \$40k) = \$18,000k$$

$$\text{Project B cost} = (90 \text{ days delay} * \$20k) = \$ 1,800k$$

$$\text{Total cost of delay} = \underline{\$19,800k}$$

Cost of Delay, WSJF and Value

We have introduced WSJF as a metric that will allow us to prioritize projects, but our examples so far have used real numbers. What do we do to get started when we don't have real numbers, such as at the portfolio planning stage?

The answer is that we use relative values for the alternative projects under consideration. This white paper won't get into the specific details of how to figure out the relative values. However, there are specific methods, such as Fibonacci or modified Fibonacci that can help determine the relative value and prioritize IT projects appropriately.

IT as a Cost Center

Traditionally, technology was considered a cost of doing business, very similar to the marketing or accounting departments. Senior management would often use cost to determine which projects should move forward. The decisions were focused on operational efficiency and minimizing risks. However, as technology has evolved and now impacts almost every aspect of a typical organization, other factors

have come into play. Cost of Delay is a key metric for prioritizing by economic value. On this basis, implementing IT as a cost center should be a good start because IT leaders running a cost center should theoretically minimize Cost of Delay, thereby maximizing value delivered. Unfortunately, in the absence of clear directives and processes to enable Cost of Delay decisions, IT leaders (perhaps driven by their CFOs) tend to focus on minimizing cost or delay with resulting impacts on scope and, sometimes, quality – the classic iron triangle². This leads to, or is driven by (a true chicken and egg situation), the customers of IT also focusing on cost or delay. To be fair, this focus on cost or delay is understandable because, in the absence of good techniques for measuring scope or value, cost (in dollars) and delay (in days) are the easiest things to measure consistently.

IT as a Profit Center – a path towards separate goals and priorities

With IT typically considered an overhead cost (or a cost center), CIOs began having to really justify their IT projects (and often the importance of their own job). This led to the conversation of IT being seen as a profit center – where IT projects would actually generate revenue for an organization.

In considering IT as a profit center, we must clarify immediately that, it is often assumed that IT will remain within the organization. The motivation for IT as a profit center is that, surely, IT must “guarantee” value for money, right? We cannot reject this assertion out of hand because IT as a profit center does work. However, we do not recommend it for most organizations because the introduction of an “unnatural” internal profit center to an organization tends to be disruptive and counter-productive in almost all cases.

Perhaps, the best way to illustrate the problem is to examine the case where IT as a profit center works best – the independent IT service provider. In other words, the only way to get IT to work as a profit center is to

outsource IT (or some part of it). Of course, many organizations have done this and it works well if the outsourcer organization recognizes and accepts that the outsourcee organization, while prioritizing the interests of the outsourcer as good customer management, ultimately has its own internal goals to maximize its own profits. Most outsourcers understand, live with and manage this dynamic ensuring the continued attention of its outsourcee vendors by using several vendors in parallel, keeping contracts short and regularly competing those contracts.

Clearly, at a high level, the different objectives of the successful IT profit center and the methods that have evolved for ensuring accountability do not work for the internal IT organization. Even when half-solutions can be found for the internal IT profit center, there are practical issues of internal accounting whose complexity increases dramatically within very few iterations. For example, what does IT do with the profits it generates from the rest of the business? How should IT price its services? Cost-plus? For profit or sales maximization? Does the internal IT department have a monopoly?

We have set up the conundrum that constrains the chances of success for the in-house IT as a profit center model. It works best when it is outsourced.

IT as a Value Center – a transformation culture

IT has evolved way beyond providing solutions to improve business processes. IT's importance has grown. Today's technologies are offering organizations opportunities to create new capabilities and are critical components to influencing and supporting strategic business initiatives.

With IT as a cost center, IT is viewed as negatively impacting the bottom line. The value center approach flips this paradigm where IT is seen as critical to adding value to the balance sheet and to the customer experience.

A new e-commerce feature on a retail store's website, is an excellent example of a technology providing value and positively impacting the bottom line. The online store feature expands the retailer's reach to a customer base beyond those that visit their brick and mortar stores, increasing sales and market share – positively impacting the bottom line and also customer loyalty because of the enhanced customer experience.

To be seen as a value center, the CIOs are challenged with proving the business value – showing that their technology is worthy of continued investment.

As a value center, IT is both a guardian of the business value embodied in the organization's existing IT (which naturally tends to decrease over time) through maintenance and a provider of continuous increases in the business value of the organization's IT through upgrades and enhancements.

The balance of business value guardian and provider roles for IT varies based on industry, organizations and time. It is a key assumption of this paper that not all upgrades and enhancements necessarily add the same business value – some may actually decrease business value.

We have seen that we can use relative value metrics to prioritize projects. We have mentioned that executing

projects in order of highest economic value is not sufficient to maximize value from IT because we must also seek to maximize value flow – the number of projects flowing through IT in a given time period. We have coined the term "value productivity" for this value flow. It can be measured, with care, using the units of WSJF – perhaps counted with a time unit of per year, per quarter or per release.

By leveraging the proper metrics, all stakeholders can visualize the value and work toward the same set of goals on a project, helping transform IT from a cost or profit center to a value center.

References

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