January 9, 2022

Mind the Gap:
Expected vs Real Business Value from IT Modernization

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January 9, 2022

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Executive Summary

Federal organizations often have a sub-optimal uptake of IT capabilities by the Lines of Businesses (LOBs), (the mission-oriented organizations) in federal agencies, resulting in missing value, a gap between the expected and actual value received from IT for the cost of the investment.

The Problem

This unanticipated lack of uptake, and subsequent failure to maximize agency value (Return to Mission) is due to:

- A lack of a Value Accounting method, which includes the definition, planning, process design (mapping) and tracking of value, and
- A lack of persistent LOB -centric view through the development lifecycle.

These two organizational phenomena result in a disconnect between the LOBs that need new IT capabilities (systems, software, applications), and the IT departments that are attempting to produce meaningful capabilities to support mission activities. LOBs rely on IT to get the right software delivered, and then feel underserved when it isn't fit for use. The value of a system is only as good as its ultimate use, adoption or uptake by the mission-delivery side of the organization, and if the LOBs aren't using the new tools, then the actual value is missed.

What is to be done?

- Executive Integration: Implement regular, facilitated, "meetings of the minds" between C-suite level leaders throughout the entire IT demand process, from planning through uptake.
- Implement Value Accounting: create the requirement and method of accounting for value, defining what constitutes value, what should be expected from the application of the proposed systems, and establishing a monitoring and data collection process.
- Implement Value Mapping: process redesign and analysis indicating where value can be increased
- Implement Change Management: At the business level from the Value Mapping phase through the uptake and monitoring phase, Change Management techniques are needed to ready the business line workforce. The change management effort extends through the value data collection process.
- Commit LOB resources to the IT department as they use modern techniques to enhance business alignment during development, including:
    - Adoption Train Engineer (from the business) at the portfolio level
    - Consistent incorporation of more end-users and/or customers into discussions with development teams throughout development
    - Business Scrum Teams during the release and acceptance for uptake cycle, as a mirror to the scum teams during development, many end users, minimal IT representation

Introduction

Information Technology (IT) has long strived for better "alignment", that is, responsiveness to the underlying business needs and drivers. As the executives change and direct strategy to respond to external market or political forces, the Lines of Business-level executives engage with the IT executives to ensure that IT capabilities (i.e., the organization's systems and software applications) can support the business-level efforts. Over time, IT has adapted to improve their ability to support businesses with key methodologies such as Agile and its expansion into the Scaled Agile Framework (SAFe®) into Development and Operations (DevOps), and ensure better customer design responsiveness through User-centric design (CX, UX) integrations. Recently, the incorporation of technological capacity (through IT Modernization and cloud-based services) goes well beyond bringing marginal improvements.

And yet, with all of the improvements in IT, IT delivery and modernization, the Return on Investment (ROI), or more specifically in a government context, the Return to Mission (RTM), has not been maximized. The decision to budget IT funding is based on an expected return. This return has not consistently been defined or captured, leaving executives perplexed and frustrated. As a result, there have been notable gaps between the expected and the sense of realized value of the IT expenditures. Relative to the massive IT spend, organizations can choose to expend minimal resources to close the gap of the value of IT and its RTM.

Lack of Value Accounting

While all organizations have an embedded, structured, systematized, and tool-supported method of capturing costs (a financial system and accounting system), both planned and expended, there is no correspondence for capturing their value. In government organizations, the proxy of financial return does not even exist. Without a specific effort to define units of value (for which "dollars" are useful for private sector organizations, whose ultimate mission accomplishment is net profit), the public sector (government and nonprofits) is handicapped in its ability to measure return. Without a defined unit of measure it is impossible to plan what the expected return of investment is for a change in business operations, nor the cost of supporting IT systems. Furthermore, without a plan for capturing this value, the organization faces increased difficulty in designing improved workflows or ways of doing business that the new IT should support.

Lack of Value Definition

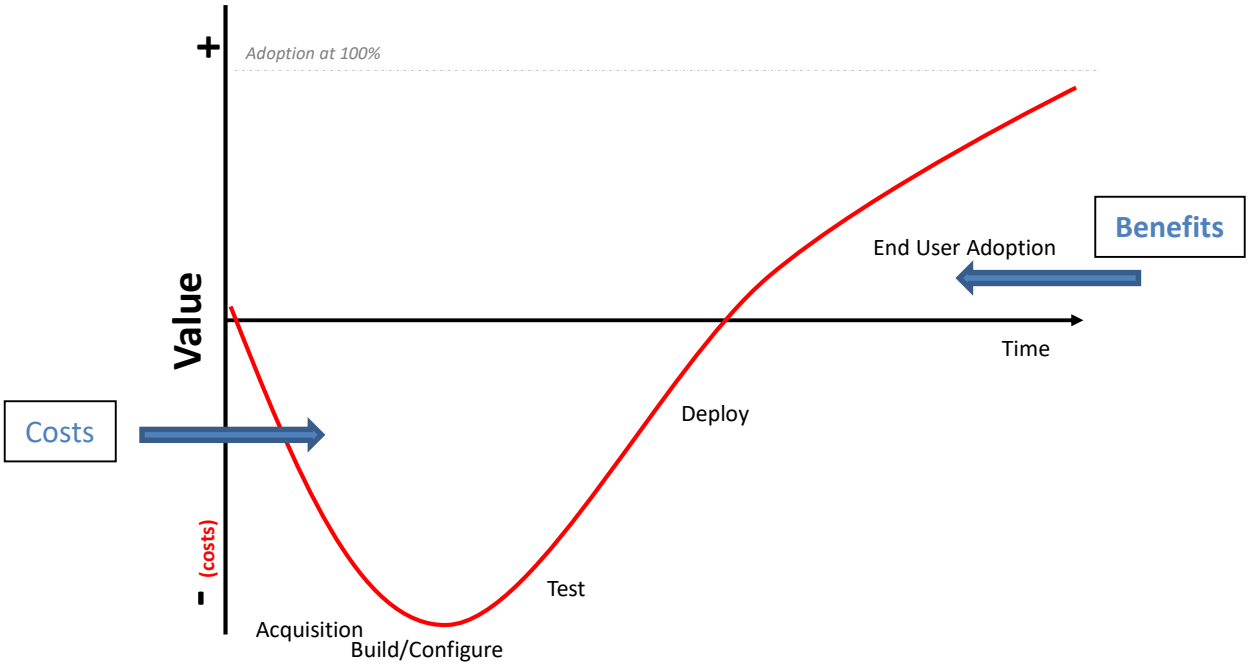
Lines of Business (LOB) (programs, bureaus, administrations) within federal agencies would improve their RTM if they could define what attributes constituted a measure of value. Evidence of this return is difficult to be seen if the unit cannot be adequately counted. But ultimately, the unit comes from what the executives of the LOB think is valuable. What is valuable should be made measurable, so that a delivered IT capability can be evaluated, looking at the overall volume of units of value for the cost incurred. With the definition of value, the LOB can undertake the design of improved business processes, the planning for that value, and a system (i.e., processes and methods) of tracking the RTM.

Lack of Value Planning

Having a thorough understanding of the value that offsets cost during the planning phase provides numerous benefits to the mission delivery of the LOB. An input into process design are design constraints for the future state of the business operation. These design constraints come from the expectations of what will create the units of value - in this case, the RTM. LOBs could set expectations of their own need for the delivery of the IT capability, shape the input of the functional and feature design requirements, and establish the plans for user training and full use of those capabilities when they are released. Additionally, the expectations placed on the LOB staff for use, adoption, and/or uptake of the system can be submitted as performance expectation inputs (i.e., management systems).

Lack of Value Tracking

With a unit of benefit defined and a way of quantifying the unit of RTM, the LOB can adequately plan the timing, amount of RTM that is achieved in the future, tracking mechanism(s). All organizations have accounting systems designed to capture costs, but few have persistent methods (or related tools) of accounting for value. In traditional investment analysis, the J-Curve effect is well known: the costs increase rapidly, creating a net-negative value. Over time, the costs decrease and the benefits begin to accrue, eventually passing a net positive moment (the "payback period") with ongoing or even increasing value into the future with falling or stabilizing costs.



The inability to track some form of RTM for federal LOBs means there is no linkage between the expected benefits and the realized benefit, creating a gap.

Lack of Value Mapping

Most IT Modernization is designed to support how IT will deliver better capabilities to the LOBs, and potentially reduce IT costs over time. This is the IT-centric definition of improvements to the organization. The Business (LOB) view looks to these capabilities in improve mission delivery. Such IT capabilities can have positive effects in three fundamentally different ways:

1. Creation of an entirely new service offering – ability to offer customers completely new methods of engagement, which create their own value. With each new capability comes new types of services that are available to meet the mission.
    - This is revolutionary, disruptive, rare, and changes or creates new LOBs.
    - Mission delivery is improved through improvements in the LOBs.
2. Creation of new methods of work allows LOB staff to perform in new ways, improving delivery of current services by increasing speed or volume, or in delivering new features to customers. More than a tool to accelerate current processes, IT capabilities can create new ways of doing the mission's work.
    - The improved way of working comes from process redesign and Value Mapping, which develops an understanding of how benefit is created in the short-term.
    - The addition of new tools and/or completely different workflows can be developed which will dramatically increase benefits.
    - Mission delivery is improved through the creation of LOB work processes.
3. Process Improvement that uses better tools to more consistently/speedily perform the same manner of work. With a better tool comes better outcomes of current work.
    - This is automation, essentially improving mission delivery at the lowest level of value, by improving current work processes.

Radical change in mission through new LOBs is difficult and rarely occurs. Automation gains have already been achieved. The gap in value of the costly IT modernization efforts come in the middle layer, the changes in the business processes that IT can enable. The future for LOBs to gain more value, more RTM from the IT investment is bound to their ability to perform process redesign, and to complete full value mapping (what processes currently and in the future can produce more value) of the work the business staff performs.

Lack of Business-Centric Perspective

The issue of point of view, or perception, is pernicious. The IT industry has long considered and adapted how development can integrate with LOBs and its users more carefully and consistently. Using 21st century techniques such as Agile, Scaled Agile Framework® (SAFe®), Customer Experience (CX), User Experience (UX), or a combination of software development and IT operation (DevOps), IT organizations have greatly improved the potential value of systems and the speed of throughput. Ironically, the better IT departments get at the process of delivering capabilities, the more apparent the gap in business commitment and business perspective. Despite the advances made by IT, even when they "get it right," the IT approaches have not highlighted, nor required the accountability for readiness, use, adoption, or uptake. *The LOB is accountable for the use of the system, and therefore is responsible for the regular integration with their solutions provider*. Methodologically, the business side

of the business-IT interaction has not had corresponding changes in perception and engagement. The approach to engagement remains asymmetric, at a detriment to the value of the system accruing to the business users.

The LOB Executives and Constancy

In the federal government, strategic planning cycles are long, and related IT planning descending from that strategy adds additional complexity and time. From strategy and multi-year planning come budget and acquisition planning, and finally project-level planning. These planning efforts must be coordinated and synchronized, which adds further complexity. Faced with these longer planning cycles and complexity, IT executives must rely on the LOB executives to commit to (and not readily change) their direction and the expressed need for effective, useful IT capabilities. Additionally, the IT department does not only need a budget for the new capabilities, but the LOB executive prioritization and assignment/availability of LOB staff to provide regular interaction.

Consistent Prioritization

IT executives (CIOs, CTOs, CISOs, CDOs) must sequence their portfolio's project-level work due to the dependencies between the organizations they rely on (LOBs, Acquisition, Budget) and the resources their own teams and contractors. From coordination with these organizations, to the use of Subject Matter Experts (SMEs), to technology resources, and to government staff on multiple systems and capabilities, the CIO must make trade-offs in resources and focus. Frequently LOB executives change their prioritization and focus within a timeframe that is shorter than the IT planning timeframe, making sequencing of projects and related dependencies extremely difficult for the CIOs. Ultimately this results in the wrong software at the wrong time for the current LOB driven priorities. IT will end up delivering what was asked for, but not what is needed. Keeping the strategically driven requirements stable long enough for IT (with ever increasing rapidity of delivery) to respond is imperative to producing software the LOB can value.

Commitment of Staff Resources

The key constraint on the amount of software development an organization may budget for, but the true constraint on the creation of valuable software (that can have consistent use and adoption) is the availability of the customer's voice and advocacy throughout the development process. IT departments can only produce as much valuable software as there are individuals from the business in the development (Agile, Scrum, Project) teams. At best, the voice of the customer is typically manifested through a Product Manager (who may not be from the business). Generally, any business staff interaction is near the beginning of a project, and in a group forum.

Business staff may be willing to participate in software development initially, but understandably perceive their job (indeed, their careers) as focusing on the mission services they participate in, not in "helping IT." LOB executives need to fundamentally change their mindset to "we are helping IT help us." Moreover, business-side managers must provide their staff as resources throughout the entire project lifecycle. The cost to the agency to ensure that the authentic business insight is provided in the development process is more than just budgeted funding. There is also the opportunity cost of the mission related (LOB driven) work that is not done while staff is committed to participating in the

development teams. This may be one of the biggest reasons for the lack of persistent engagement from an LOB perspective; it simply takes too much staff time.

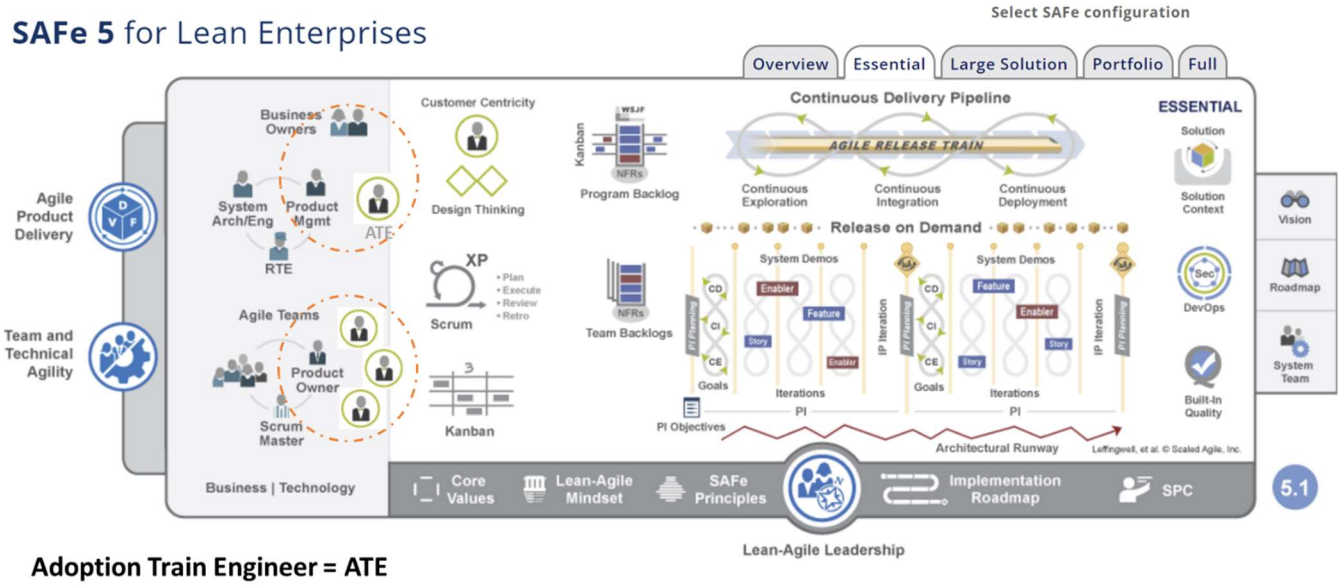
LOB Staff: Change Management

The punchline for creating value through IT for a federal LOB is in redesigning its workflows. That redesign, executing to the new Value Mapping, represents a change to how staff works. Anticipating and expecting change, from definition, to planning, mapping, training, and acceptance, is an exercise in Change Management. The accountability of change management resides with the LOB, and too often the responsibility for taking action, for contracting and planning for the change management, has rested solely with the IT department as it plans projects.

The change management process must, at a minimum, identify, communicate, and monitor how new work will be done. The more anticipated changes are addressed, the better the design of IT capabilities and the better their use after deployment. The best system, applied to workflow that has not been "normalized" and accepted, will produce less value than does a system that supports a workflow that staff are eager to adopt. Worse, in the face of a new system that has not been well normalized, staff will default back to legacy systems, simply because it is familiar, easy. The best system is one that is used, and LOBs, through a commitment to owning the change, can reap much more value from the IT systems they have invested in and rely on.

Business Representation Gap

One of the most advanced techniques that IT is justifiably proud in attempting is the SAFe® model of IT systems development at a portfolio view. This technique establishes layers of input, oversight, and evaluation through an iterative and condensed lifecycle model. During much of the process, the voice of the customer, represented by the Product Manager, as well as executive or senior management level "business owners" (owners of the mission activities in a federal organization) are incorporated. However, looking at the standard SAFe® framework, the intensity of the IT representation far outweighs and overwhelms the business perspective, as the observation of the number of roles and the number of individuals in those roles will attest. At the product level, there are business owners (loosely affiliated), but the core team is made up of a Product Manager, a Systems Architect (who interprets business needs at a technology level) and a Release Train Manager, tasked with establishing the cadence of releasing completed capabilities to the business unit and their owners. A similar collaboration triad from the business perspective that would reflect an adoption process, an Adoption Train Engineer (ATE), is needed.

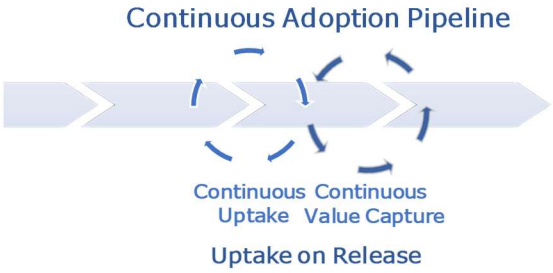


At the team level, there is an appropriate level of business representation for the integration of a team to build software in rapid iterations. As the business needs are interpreted and developed during the initial phases, the technical team's roles and headcounts greatly outweigh the business representation. Often in the early stages of design, organizations make the effort to consider customer input and use through modern Customer Experience and User Experience iteration techniques, driving the development and characteristics of features. A scrum team will have many technical experts, a Scrum Master, and one product owner (a business representative often, but sometimes an IT person standing in to represent the voice of the business.)

The IT development (agile) team can produce the capability, but there is no corresponding team with multiple users that can keep pace on the LOB side. Some, or even most users, may be trained in the use of the system, but both the amount of use or the breadth a capability's use (multiple use cases for example) is not maximized. The cost of production is the same either way, but the value accruing to the organization is not as high as it could be as a result.

Misaligned Cadence

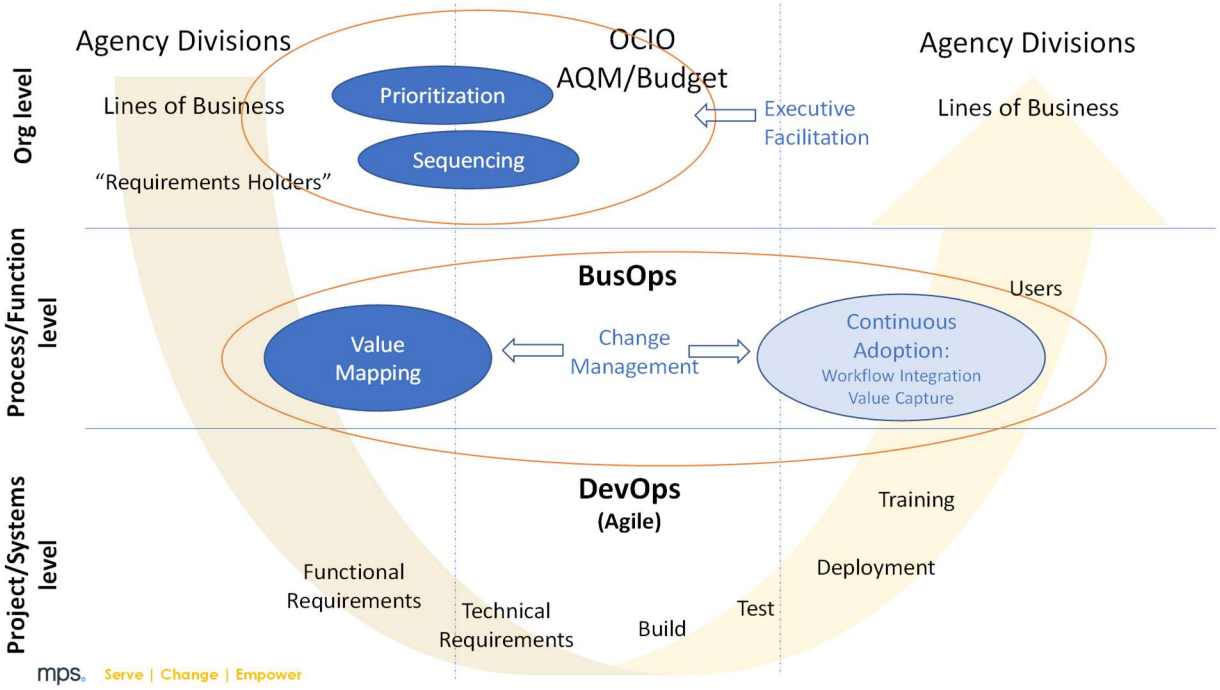
In even the most advanced release techniques, including bundling a release of software into single deployments, the community user is left out of the process. The user base adoption must be as rich as the fullness of the IT developers' output. The "Continuous Delivery Model" is helpful for IT to develop the cadence it needs to have ready software delivered to its customer. It may even be "pulled" by the customer ("Release on Demand"). However, the value in software comes from use and adoption, which appears to be managed by exception, that is, the rate of uptake or readiness for uptake is only known when it has failed or is not monitored at all. IT has reached a point where its rate of production, deployment and release outstrips the rate of effective adoption by the user base. What is needed to allow to LOB to keep pace and for the organization to maximize its RTM and take advantage of advancements in IT development is an Continuous Adoption Pipeline.



Summary

The value-creating adoption of IT capabilities can be manifested through the active, regular engagement of the LOBs across three perspectives:

1. Executive (strategy, direction, mission planning)
2. Execution (LOB workflows, program execution, citizen delivery)
3. Acceptance (business input to design requirements, functional and feature level).



In each of these layers, the LOB must persistently **engage** to get IT to provide what is needed, what will be used, and/or to help achieve the mission's new strategy. The executives must readily and continuously inform the IT executives of their needed outcomes, prioritizing needs so that IT can sequence delivery of capabilities. The management of staff and the staff that delivers citizen-facing work must be ready to perform differently.

"If a tree falls in the woods, and no one hears it, did it fall?" This is the value conundrum of federal LOBs. If the IT department delivers a system, but no one uses it, is it really an implemented system? Ultimately, value, whether well-defined, tracked, or not, can only be created when the business has full *use, adoption, or uptake* of the new IT capability. That uptake is driven by the perceived usefulness of the system, which is linked to improved workflows and the persistent **engagement** of the LOB during the IT planning, development, and deployment processes.