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PART

A Guide to Moving Forward with Modernization

15. Launching and Sustaining Modernization Initiatives

Launching and Sustaining Modernization Initiatives

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The case studies that we have provided in this book are merely a snapshot in time. Some of the case studies were onetime projects while others are ongoing initiatives. In either case, executives must fund initiatives to maintain a sustainable modernization program. IT does not have an unlimited supply of funds to spend as it wishes and, as a rule, this means the business must continue the flow of project funding over an extended period of time. As a result, sustained business value must be demonstrated over time.

This chapter discusses various aspects of launching and sustaining modernization initiatives. This includes a discussion of pitfalls to avoid, modernization principles, tool and service strategies, where to start, and what to expect in the future from modernization.

MODERNIZATION PITFALLS

More than a few modernization projects have been launched only to be canceled during the project or after initial implementation. In other cases, a project that was considered successful by IT was rejected out of hand by the business. These situations demonstrate that while the launch of a modernization effort is important, the sustainability and business adoption of these efforts are equally important. The following are some examples of common pitfalls that stymie or shut down modernization projects.

- Failure to communicate the value of a modernization project or longer term program to the business is the biggest risk to modernization sustainability. This is a very common situation that results in projects that are launched, partially delivered, and then canceled in a subsequent budgeting round. IT historically has not wanted and has not had the capacity to cost-justify modernization or other types of projects to the business. It has been easier for IT to fall back into its comfort

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zone and focus on IT cost cutting, which could actually result in less value to the business depending on the approach taken. Engaging the business early and often is a lesson learned in terms of sustaining support for modernization of IT architectures over the long term.

- Viewing modernization as a tactic, as opposed to strategically, results in a situation where the visibility of these efforts never gains critical mass. Industry analyst firm Gartner Inc. stated that:

“IT modernization reinstates IT strategic planning at the heart of the CIO cabinet. Most CIOs will need to develop new skills and competencies in their management teams to deal with the significant challenges of IT modernization.”¹

In other words, management must view modernization strategically to really make a difference. Historically, however, modernization has been viewed in a tactical sense and focused on programmer productivity as the main benefit. Tactical thinking undercuts the real value of modernization, which should be architecture-driven, not driven by programmers or IT cost reduction. Tool vendors have magnified this problem by positioning tools at a very tactical level and not fully understanding or communicating the value of modernization as a transformative engine for IT and business architectures.

- Selling modernization as a way to lower IT costs is a shortsighted approach that hinders modernization’s visibility and curtails the use of modernization to strategic projects. As discussed in Chapter 1, selling modernization as an IT cost savings device will not get the attention of senior executives because the benefits of potential IT cost savings are limited when compared to the business benefits modernization can deliver. IT spending represents a very small relative percentage of revenue, typically less than 5%.² The non-IT side of a business, on the other hand, consumes 95% or more of the spending pie. Simple math tells us that there are significantly greater opportunities to save money on the business side than can be gained on the IT side through the effective and strategic deployment of IT resources. IT should, therefore, focus the power of modernization on establishing and sustaining benefits to the business. Applying the business architecture/IT architecture alignment approaches discussed throughout this book avoids the pitfall of focusing exclusively or too heavily on IT cost reductions.
- A lack of coordination among teams that could benefit from modernization can significantly hinder sustainability of a modernization initiative. Limiting tool and service investments to a single project or area can also restrict the success and acceptance of a modernization program. In some cases, companies have had

modernization tools in place for years, but have limited the use of those tools to a single area or even a single person. The result of this approach is that it dramatically restricts the potential benefits of modernization and denies the opportunities modernization can offer to areas that really need it. We have even seen situations where one area was attempting to procure modernization tools while another team already had similar tools installed and in use. In another case one area of a company dropped maintenance on a tool while another area of that same company was attempting to justify acquisition of that same tool. Having a centralized modernization center of excellence, which is discussed later in this chapter, goes a long way to addressing this issue.

GUIDING PRINCIPLES OF MODERNIZATION

Establishing a set of modernization principles (generally accepted truths that guide one's actions) provides management, planning teams, IT architects, and project team guidelines for dealing with existing software architectures. Any project that directly or indirectly involves existing systems should consider and incorporate the following 15 modernization principles as a guide to action.

1. Any project that directly or indirectly relies on or contemplates modifying any existing software systems should have knowledge of those systems that is appropriate to that project.
2. Assessment of existing application and data architectures incorporates all systems that are directly impacted by the planned initiative and includes all interfaces to external systems or entities.
3. Depth and breadth of an assessment is directly proportionate to the amount of information required for a subsequent project phase.
4. Initial assessment activities focus on gaining a breadth of knowledge about the IT architecture.
5. Subsequent assessment activities focus on gaining a depth of knowledge about the application and data architecture.
6. Metric derivations of existing application and data architectures are essential to qualitative analysis of those environments and to modernization planning.
7. Functional and semantic redundancy and inconsistency is rectified across application and data architectures as appropriate to satisfy the need for modularity, cohesiveness, and consolidation within a given project or target architecture.
8. Business requirements are driven by the transition plan between the as-is and to-be business architecture.

9. Business architecture must be considered and incorporated into a modernization project as appropriate based on the impacts to the application and data architecture.
10. Modernization projects restricted to technical architectures will yield limited value to the business architecture and the business.
11. Software to be transformed into a model-driven, object-based, or services-oriented architecture must be cleansed of structural diagnostics, functional redundancy, semantic inconsistency, and other design and architectural pathologies.
12. Modernization disciplines are incorporated into planned and ongoing projects as is appropriate to the success of those projects.
13. Modernization projects evolve through a series of stages where each delivered stage provides demonstrable business and/or IT value.
14. Initial modernization project stages achieve early wins for frontline business users through the alignment of business processes, user interfaces, and shadow systems.
15. Later modernization stages achieve value through the alignment of application and data architectures with business capabilities, semantics, and governance structures.

These principles can be augmented with internal principles based on the evolution of modernization projects and teams. Be aware, however, that principles are descriptive and not prescriptive. In other words, principles guide one's actions and do not dictate how to achieve an end result.

Modernization principles should be considered and applied by management, planning teams, IT architects, project teams, business architects, and analysts responsible for working with IT. The responsibilities associated with these principles do not fall just on one party but are rather directed at all relevant and affected parties. If your enterprise establishes a modernization center of excellence, the center becomes the keeper of the modernization principles.

SETTING UP A MODERNIZATION CENTER OF EXCELLENCE

A modernization center of excellence is an organizational unit that serves as the nerve center for modernization efforts within the enterprise. A center of excellence does not necessarily perform all modernization work, but this team does provide the support structure for successful modernization deployment.

Modernization work is typically coordinated within IT architecture teams, but this has led to the "borrowing" of personnel to assign them to modernization work on a part-time basis. Part-time commitment to modernization creates a

situation where individuals have only cursory knowledge of modernization topics, a lack of vision as to how modernization can help the enterprise, and little vested interest in success.

The part-time commitment pitfall can afflict management as well as analysts and architects. For example, the head of enterprise architecture at one insurance company became a “drive-by” methodologist. In this role, he would subvert standard approaches, practices, and even naming conventions established by his team and outside experts based on whims of fancy. This part-time approach, which resulted from the lack of a center of excellence and no full-time modernization leadership, threw projects into chaos. The modernization center of excellence, coupled with a set of foundational modernization principles, addresses these issues. Such a center of excellence ideally has the following responsibilities.

- Establish and maintain a set of modernization principles.
- Work with executive teams to determine overall modernization strategy and options to support business and IT initiatives and plans.
- Maintain a centralized set of modernization skills to support management, planning teams, and project teams on an as-needed basis.
- Provide methodological and project planning support to assist with scenario identification and customization, plan development, project role definition and staffing, deliverable definition, and assistance with monitoring project progress.
- Coordinate efforts to develop, measure, and communicate return on investment value from a business and IT perspective. This role is essential and requires coordinating with project teams and project stakeholders.
- Serve as the knowledge center for in-house modernization tools and maintain an awareness of additional industry tool options. In addition to serving as a clearing house for tools and tool support, the center also provides tool integration as required based on the latest tool integration standards.
- Review and maintain a set of service vendor options and relationships for service-supported, in-sourced, and outsourced projects.
- Recommend project deployment options based on project requirements, constraints, and time frames. For example, the center would ensure that a project that is best completed as an outsourced effort is not taken as an in-house initiative.
- Provide modernization staff to fulfill project roles on an as-needed basis.

Enterprises that have not established a modernization center of excellence, regardless of what they call it, have had difficulty sustaining modernization programs. In these situations one-off projects, even if they were successful,

were the beginning and the end of a given modernization effort. Long-term modernization benefits are best achieved if there is continuity from project to project and the center of excellence provides this continuity.

MODERNIZATION TOOL/TECHNOLOGY STRATEGY

The number of false starts and re-starts that organizations have taken with modernization tools over the years can take its toll. Sometimes management sours on modernization and blames the tools or the vendor. It can take years to recover. Other times tools are deployed and lost in the organization infrastructure. To avoid this, management should establish a coordinated tool strategy that is driven by the types of projects that need to be completed, existing and target computing architectures, and the in-house versus outsourcing strategy pursued.

In-house tool functions needed to provide a minimum level of modernization support for an enterprise should focus on architecture analysis. Tool deployment on a given project can take several weeks or months if the tool is not already in-house and no usage procedures have been established. On the other hand, if it is merely a function of rolling the tool out to another team and applying established procedures to load a given application or applications into the tool repository, this time frame can be reduced to a week or so. The modernization tool or workbench needed to support ongoing assessment efforts should include the following features.

- Ability to analyze the main language environments, execution artifacts, database definitions, and user interface definitions
- Open repository that supports the analysis of these artifacts in a variety of ways
- Visualization capabilities to support the systems analysis from a variety of architectural perspectives
- Ability to customize visualization features to extend the baseline analysis capabilities
- The ability to produce and customize assessment metrics
- Standards-based exchange format so other tools can share IT architecture metadata as input to visualization, refactoring, and/or transformation efforts

These tool features provide a solid baseline for launching and sustaining a wide variety of modernization projects, as long as the methods and disciplines are clearly defined for a given project. If the tools are not coupled with adequate methodology and expertise, their value will be limited. Additional tool capabilities for refactoring and transformation could be licensed or brought in-house through service providers. These tools would have the following features.

- Ability to find and/or remove certain structural diagnostics
- Code slicing and code aggregation capabilities
- Code structuring capabilities
- Data definition rationalization and standardization
- Data definition extraction and data model creation
- Business rule extraction and transformation
- Transformation capabilities to model-driven architecture (MDA) or similar abstractions
- Appropriate testing tools to validate systems that have undergone modernization

The types of tools unlikely to be brought in-house are onetime transformation tools such as those used to move from one language and/or platform to another. These tools are typically owned and used by service providers and generally this work is done off-site. A service provider strategy should accompany a tool strategy as the two go hand-in-hand. A service vendor agreement may be used as an option to bring a tool in-house and test it out on a live project. This approach typically shortens the procurement cycle and gets project efforts moving more quickly.

MODERNIZATION SERVICE PROVIDER STRATEGY

A service provider strategy can vary based on the types of projects, environments, and the ability of in-house personnel to perform modernization work. There are different types of providers and each has its own relative strengths and weaknesses. Some providers only perform certain types of work and many providers are specialists in a given area. In addition, some service providers carry their own toolset while others use tools that never leave the provider's "factory" environment. Other providers may have tool vendor relationships or may use whatever tools an organization has already installed. The following service options are available to support modernization projects.

- Tool providers often have a services team that helps with product installation, project setup, initial analysis work, and customization. These teams are not geared to work outside of the domain of their own technologies.
- Project-based service providers will work in-house on a project-by-project basis. In these cases, the provider fills all project roles including project management and project delivery. These providers are useful for well-defined, in-house projects but little or no skills transfer typically occurs.
- Off-site factory service providers have unique skills and tools that provide a variety of modernization options that range from analysis

to refactoring to full-scale transformation. These providers are highly valuable for migration projects where in-house tools are not available and there is no need or desire to transfer these migration skills to in-house analysts. Relationships with these providers should be coupled with a strong on-site team that may include additional service providers.

- Service providers also offer support functions that create a “blended team” approach. The benefit to this approach is that the provider delivers certain skills while in-house personnel learn on the job. This approach is typically coupled with in-house tools, in-house project management, and vendor provided methodology or process support. Blended teams create a best-of-breed solution in many cases because everyone on the team is well suited to their respective roles.
- Specialty teams can perform a single set of modernization tasks; for example, there are firms that specialize in lift and shift projects that move the technical architecture from mainframe COBOL to Windows .NET COBOL. This work can be in-sourced as well as outsourced.

Any given modernization initiative may combine one or more of the previously listed service approaches. It is important to ensure that the right mix is applied to the right type of project. The center of excellence serves as a sounding board to ensure that the right service strategy is followed. The important consideration is to have a clear understanding of what is to be accomplished and ensure that the service provider takes its directions from you and not the other way around. Too often an enterprise will outsource accountability and knowledge of the work being done and this can only lead to problems.

WHERE TO START

The question as to where an organization should start with a modernization effort is quite common. Much of modernization is common sense, assuming one has a foundational understanding of the general concepts, principles, disciplines, and scenarios. This foundation assumes that IT management and architects have educated themselves on the topic of modernization and engaged external resources to extend this baseline knowledge as required. Here are some areas to focus on when beginning your modernization journey.

Assessing Requirements

Modernization is driven by specific business and IT needs. Determining requirements involves examining business and IT plans, identifying executive priorities, and examining the business and IT environment to see what needs to change. This process is not uncommon at most organizations, but the

difference from an architecture-driven modernization point of view is that the requirements are viewed through a transformational perspective. All strategies should be viewed as an issue of how to get from where we are to where we need to go. This requires articulating not just the target business and IT architecture but exposing the as-is business architecture and IT architecture along with articulating a transition strategy to incrementally achieve the to-be version.

Assessing Appetite

The knowledge of and appetite for modernization may be very low at your organization. This may require some education of management and architecture teams. On the other hand, moving forward with a modernization strategy may require soft-selling some of these ideas by building on small victories. Addressing user interface modernization can build small victories with the business communities. As this occurs, modernization analysts can begin looking at an SOA scenario or addressing consolidation concerns through modernization as a common sense way to meeting business challenges. The concept of modernization itself could remain as a behind-the-scenes concept. The best way to determine an approach is to assess the appetite for modernization without overselling it as a panacea.

Building Support/Selling the Concept

Based on the appetite for modernization as a unique discipline, the center of excellence and other individuals promoting modernization will need to sell benefits. One approach is an honest assessment of the work done to date on IT projects, including project overruns and failures. This may be coupled with a portfolio management program. Highlighting past failures may be politically unpopular but can be a good way to communicate to executives that what has been tried in the past has not worked. Project transparency is one principle that modernization projects should adhere to and other projects should do the same. A second approach involves selling the idea of incremental value, which is beginning to hold sway with management over the “big bang” project theory.

Beyond these ideas, the best approach is to seek out planned projects or ongoing initiatives where modernization can play a role. This may involve a project that is in trouble because of a lack of understanding of the current IT architecture or a project where there is a clear need for a transition strategy. These cases are areas where the center of excellence can promote the use of modernization.

Launching the Center of Excellence

A center of excellence could begin with one person taking on the role of modernization coordinator. Selling the concept of a center of excellence may take time if the modernization concept has not been sold to management. However,

there still needs to be a centralized knowledge center because fully decentralized modernization efforts have been shown to be inefficient and ineffective, and have resulted in redundancies that undercut deployment efforts. Our recommendation is to begin small, set clear goals, define your roles well, and communicate how the center will support modernization efforts across the enterprise.

Establishing a Baseline Assessment

Opportunities for pursuing modernization work rely in part on having a baseline understanding of the IT architecture as well as how IT architecture supports the business architecture. To communicate with and sell senior management, the IT architecture will need to map to business capabilities, which in turn must map to the organizational units that perform those capabilities. This high-level mapping does not require tools, but is the result of organizational knowledge derived from selected business and IT professionals.

The business may already have a capability model mapped to various business units. If so, this model can be used as a target for mapping functions supported by various applications and subsystems. Analysts should also develop a high-level data structure mapping that is restricted to major data stores that cross application boundaries and are core to the operational validity of a major application. This baseline assessment can be built using a simple database or, if available, a repository-based, architectural modeling tool.

The last step involves mapping major projects and initiatives to each application so that there is a good understanding as to what types of projects are either in the planning stage or in progress. This entire concept may be sold as a portfolio management effort or as fulfilling simple IT audit and accountability requirements. This knowledge base becomes the foundation upon which future modernization planning and analysis will build.

Identifying Project Opportunities

One message has become clear as far as building management support. Go for the low hanging fruit that delivers the most value in the shortest time frame for the least amount of investment. IT traditionally has tried to make a big splash with large projects, big investments, and long delivery windows. We covered the relatively unsuccessful nature of these projects in Chapter 1. What may be counterintuitive to IT, but what has been proven to work is a concept that some organizations call a “quick win.”³ The quick win approach, also called the “rapid response” approach, relies on the concept of rapid response teams.⁴

Rapid response teams provide near-term value to immediate business requirements and deliver incremental value over a window of time that collectively add up to significant value. The overall strategy of launching quick win or

rapid response teams is geared at rebuilding IT's relationship with the business, exposing and addressing frontline user requirements, creating the user-driven view of the target architecture, and driving deployed front-end solutions as requirements into backend architecture planning efforts.

Other projects have a natural fit for modernization. Architecture teams, for example, identify non-standard or obsolete languages, code generators, database engines, or platforms that are ideal modernization targets. The approach for addressing many of these projects involves outsourcing the migration/transformation effort. The center of excellence should target these potential projects by discussing the business and IT benefits of moving off of these obsolete technologies sooner versus later. Note that the mix-and-match use of modernization scenarios still applies to these outsourced migration projects.

Beyond the low hanging fruit and migration projects, additional modernization opportunities should focus on any planned or early stage projects that replace or interface with existing systems. Another indicator involves multiple projects that impact the same applications or an interconnected set of applications. High-level assessment results discussed earlier should help identify project opportunities. In addition, follow-up interviews assist with identifying where business and IT owners have an interest in applying modernization as an option. Note that modernization should not be forced on a project team or business unit. There are typically enough opportunities to apply modernization solutions within an enterprise where the owners are inclined to try different options.

Procuring Project Funding

While the center of excellence may need to sell the benefits laid out in Chapter 1 to management on a case-by-case basis, a better option is to seek pre-funded projects that are ready to launch, but lack a strategy needed to achieve project objectives. In this way, the center of excellence is serving as a guide or mentor to project teams that are inclined to try modernization options as a way to achieve project goals. The project benefits and returns may already be in place and the modernization team can then ensure that the project approach and cost structure ensures appropriate returns on the investment in those projects.

When discussing project funding, planning teams should avoid the trap of pitting modernization against traditional solutions. As shown in some of our case studies (e.g., Chapters 7 and 9), projects can involve a hybrid of modernization, new functionality, new design, and even commercial-off-the-shelf (COTS) options. There may be multiple ways to achieve project objectives, and modernization should be considered as a portion of the solution where it can help achieve those objectives.

The basic way to determine how modernization can either curtail or reduce project costs, while ensuring that the project will ultimately succeed, is to evaluate the impact of applying various modernization tasks to certain stages of a given project. Consider the following sample questions as they apply to various project scenarios.

- Can a modernization assessment assist with understanding where and how to integrate, migrate, or deactivate existing application systems, subsystems, and data structures during the deployment of a COTS package and, therefore, lower the cost of deployment?
- Will migrating and transforming an application from the current environment achieve the same goals and reduce the costs, time, and/or risks over a project that plans to rewrite that application using a Greenfield approach?
- Can a new application and data architecture design be populated and deployed more quickly and cost-effectively by capturing and reusing functionality from the existing application and data architecture than by other means?

These are just sample questions and should be posed to management and planning teams by the center of excellence. Moving modernization options into the executive suite, as directed by Gartner, requires moving beyond the overly simplistic either-or decision cycle that has dominated the modernization discussion in years past. When positioning modernization from a project perspective and from a cost justification perspective, focus on the ability of modernization to provide more cost-effective and efficient solutions to traditional IT challenges.

Service Provider Analysis and Procurement

Most organizations lack in-house modernization expertise and need to bring in help for modernization planning and deployment efforts. Recognizing that not every service provider delivers the same types of service is an important step in starting down a successful road to architecture-driven modernization. For example, tool vendors are not good at strategic planning. Companies that perform off-site migrations are rarely interested in providing, nor are they equipped to deliver full service on-site support. Some service providers offer planning support while others offer implementation support. The trick is to know who to hire to perform certain tasks at various stages of modernization deployment. The general guidelines below are a good way to get started.

- Seek planning advice from individuals that have no vested interest in selling you a tool, helping with project implementation, performing off-site migrations, or providing ongoing in-house support. This avoids the conflict of interest in hiring a partner at a larger firm that recommends his team for all of your modernization needs.

- In addition to initial planning advice, other service providers can assist with the creation of an initial assessment across business and IT architecture boundaries. An assessment of this nature is analyst-focused, not tool-driven, and establishes a foundation for subsequent project planning and building an overall modernization strategy.
- If a migration initiative is planned, look at the various off-site migration service providers that can deliver those projects. Seek automated solutions over manual approaches and verify that the vendor is not building tools on your dime — unless this is a one-of-a-kind project.
- If you have project-specific needs and lack in-house expertise, but want to in-source a project with a defined starting point and ending point, look for full-service providers with expertise in the required tasks to be performed. Many times these service providers have their own tools or will recommend and deploy a third-party tool that they use on a regular basis.
- If you plan to perform ongoing assessment, refactoring, and transformation work in-house, look for a service provider with this expertise that can offer methodology support, training, and skills transfer. This is highly recommended, although each of these requirements should be clearly spelled out in the agreement. Skills transfer tends to take a back seat when project time frames and deliverables are on the line.
- If you have a near-term need to install and deploy a tool, work with the tool vendor's team to deliver a project-ready tool environment. As an alternative, certain tool vendors may also be able to recommend a third-party service provider to help with the project.

Note that some tool vendors have separate service teams that can actually provide full-service offerings that are not necessarily tied to a given tool. In addition, if business architecture analysis is required and the business has not performed work in this area, you may want to bring in this additional area of expertise to work with business teams. Finally, consider the service provider strategy discussed in Chapter 2 when looking at support for modernization projects. There is no “one size fits all” solution to modernization service options and the center of excellence will need to manage the vendor strategy.

Tool Analysis and Procurement

When looking at how to get started with tool analysis and deployment, you will need to consider a range of options in the market and tie those options back to your project and service-deployment strategy. Assuming you have followed the service provider guidelines from the previous section, you should have a general idea of the tool and approach you want to pursue.

Assuming that you plan to perform in-house work that is either partly or entirely under the control of in-house teams, you will need a basic modernization workbench that fulfills the requirements set forth earlier in the section Modernization Tool/Technology Strategy. Consider the following approach for getting started.

- Determine the amount of in-house modernization assessment, refactoring, and transformation work to be completed across various application areas.
- If multiple substantive projects are envisioned and there is an off-the-shelf tool available to support project-related environments, identify tools to support those projects.
- Establish tool evaluation criteria to support the analysis and selection of a suitable modernization workbench. The center of excellence should establish a tool/vendor evaluation criteria that covers all major features and functions as well as platforms and technologies. Criteria should include “must have” product capabilities as well as “nice to have” capabilities to avoid having to re-evaluate tools using conflicting or inadequate evaluation criteria. The center of excellence also ensures that duplicate tooling is not being procured and that the most effective and efficient vendor relationships are established and maintained across various areas.
- Based on the evaluation criteria and a systematic analysis and selection process, identify the vendor and tool to be brought in-house.
- Establish a reasonable tool installation and deployment plan. The tool setup will take a week or so but initiating the tool and loading up information for a first-time project is likely to run 2–3 weeks or more depending on the situation. Verify that you have expertise on-site that has done initial project setup and tool population before. This is typically the tool vendor.
- Plan to address any installation or customization issues early and often with the vendor. Assign a tool support person from the center of excellence to broaden tool usage across application areas that can benefit from the tool.

The most important point is to not let the tool dictate your project plan or modernization roadmap. The tool is subservient to the tasks and subtasks contained within your methodology, which is driven by work plans that have evolved from one or more scenarios, which in turn are driven by business and IT requirements and strategy.

Rolling Out an Initial Project

We recommend using the term “initial project” instead of the term “pilot.” The term pilot implies that a test is being performed whereas initial project implies that real work is getting done. The goal of an initial project is not merely to test a tool, if there is a tool involved, but to exercise your judgment regarding scenario selection, project staging and staffing, cost justification, estimating capabilities, methodology, in-house team coordination and management, service provider support, and all other aspects of what would be involved in subsequent projects.

Lessons learned should be collected and managed through the modernization center of excellence. Having a centralized knowledge center becomes critical to ensure that the modernization benefits and lessons learned are shared accordingly. In addition, the cost justification process within an enterprise will have to be fine-tuned to incorporate modernization-based thinking. The center of excellence should be the knowledge and support center for planning and justification, just as they support tool, methodology, and related skills and disciplines.

MODERNIZATION: WHAT TO EXPECT IN THE FUTURE

As modernization concepts evolve, organizations must continue to stay abreast of how to apply these advancements to existing systems. Unless an organization achieves a nirvana state of perfect architectures that reflect perfect designs and deployments, which is highly unlikely anytime soon, modernization will continue to be required to understand, refine, and retool existing systems. This means that modernization will become part of the overall project planning ecosystem. Under this concept, the following will become commonplace.

- All project planning sessions will consider modernization concepts as an integral part of any project that involves existing systems.
- Executives, management, and planning teams will seek to determine how they can deliver business and IT value more efficiently and effectively through modernization.
- Cost justification will seek to determine how understanding, migrating, and/or reusing existing systems functionality can benefit a project.

The future of modernization as an industry will reflect improvements in a number of areas as well as much wider acceptance. Given that the alternative to understanding and leveraging existing software assets is to not understand them and allow these assets to stifle business and IT strategies, common sense dictates that modernization concepts will only grow in acceptance and popularity. The degree of maturity of an IT organization will, therefore, evolve to include the ability to understand and modernize its valuable software assets as a common way of doing business.

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