Unlocking the value of your program investments

How predictive analytics can help in achieving successful outcomes
Introduction

Project success leads to competitive advantage

Companies continue to be challenged in executing complex projects. Despite the many advances in project management and development techniques, the overall ratio between successful, challenged and outright program failures has not changed significantly over the past 15 years. However, both the complexity and the costs of failure have gone up as project approaches have not kept pace with the new complexity.

Based on EY’s analysis, approximately US$682b is wasted on underperforming projects across the globe annually. This wasted amount of project costs, unrealized benefits and team “burnout” is both unfortunate and unnecessary.

The challenge in unlocking the full potential of an organization’s capital investment has a direct impact on market competitiveness. EY has found that organizations that are successful in delivering large and complex programs outperform their competition in the market. This means there is an urgent imperative for organizations to fundamentally improve performance on their programs and projects.

Project success must be seen in a broader perspective to fully understand how vital it is in positioning the business to thrive in the future and in building the confidence of the organization’s customers. Therefore, it is important to examine the impact of project success beyond just the short-term focus of costs, schedules and immediate benefits; also to look at the implications of achieving strategic goals, customer quality and overall reputation in the market.

While helping clients with their strategic projects, EY has gained an understanding of when and where projects get off track, and on the interdependency of the root causes of issues and risks that result in poor project performance. We have developed practical and innovative ways to help you identify the right projects to undertake, assess whether you are ready to execute them, predict where they will struggle, identify the root causes of current issues, determine if the project team is aligned to your executives’ definition of success and, most importantly, what decisions and actions are needed.

The role of senior management

Project success leads to competitive advantage – this means that senior management can have a profound impact on their most important company programs and thus its business success. Unlocking the value of these programs requires having the right information to decide what projects to develop that are aligned with the strategy, the ability to execute and the capacity to absorb the changes to the full effect.

Obtaining the right information begins with asking the right questions. In doing so, senior management is better positioned to take a leadership approach that is proactive, comprehensive and strategic. However, to maximize investment outcomes, this new way of thinking and approach to managing strategic projects must be ingrained within all levels of the business and project structures.

The journey to unlocking your program investments and this new way of thinking begins with asking a set of five basic, but important, questions:

1. Are you doing the right projects?
2. Are you ready to run a major project?
3. Is your project set up for success?
4. How well are your important projects doing?
5. Are your people aligned toward success?

This report shows how portfolio management and predictive analytics can improve your project success and unlock the value of your program investments.
How can you unlock the value of your program investments?

Achieving initiative success requires understanding the entire program life cycle – we call this “the program and project continuum.” A misstep at any major phase along the way can have significant consequences, affecting performance and the achievement of planned outcomes. Unfortunately, the vast waste in spending for under-performing or failed projects by companies is both unnecessary and avoidable.

We continue to see inadequate techniques being applied, lacking focus, and disjointed management along the full continuum. By understanding where and how programs and projects get off-track in delivering their value, you can proactively balance an early mitigating response consistent with success goals. EY has identified a series of processes and tools that will aid in improving program investment performance and deliver better value, with fewer surprises.

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<td>- Increasing the ability to influence outcomes by adapting the project's design, team, processes and controls</td>
<td>- Understanding forward looking risks along defined success criteria</td>
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Organizational success requires expanding beyond “doing things right” to include “doing the right things.”

### Portfolio Management

<table>
<thead>
<tr>
<th>Description</th>
<th>Key objective</th>
<th>Key activities</th>
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| A group of programs and/or projects managed in a coordinated way to support business strategy and to deliver benefits in line with strategic objectives | Doing the right things | - Strategic-fit/alignment  
- Governance  
- Agility  
- Financials/ investments |

### Program Management

<table>
<thead>
<tr>
<th>Description</th>
<th>Key objective</th>
<th>Key activities</th>
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| A set of interrelated projects, managed in a coordinated way to attain the selected program's business objectives and benefits | Realizing the benefits | - Verification and validation  
- Prioritization  
- Resources |

### Project Management

<table>
<thead>
<tr>
<th>Description</th>
<th>Key objective</th>
<th>Key activities</th>
</tr>
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</table>
| A temporary endeavor to create a unique product, service or result | Doing things right | - Scope  
- Quality  
- Cost  
- Time |

Project life cycle

Start

- How well are your important projects doing?
  - Multi-dimensional cube risk analysis

- Improving insights on true project performance and hidden risks to enable decision-making for the greatest positive project impact
- Ability to focus and tune processes for increased project performance and optimal benefit realization

Implementation

- Are your people aligned towards success?
  - Decision priority analysis

- Improving alignment of executives and project teams for effective operational trade-off decisions consistent with the project's success objectives
- Giving clarity on stage-gate criteria for more effective team focus and objective-based “Go/No-Go” decisions at implementation

Execution

- Benefits delivery

Closure

- Benefits delivery
- Benefits delivery

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Are you are doing the right projects?

Screening for project innovation value

Innovation is how companies stay ahead of their competition; this means that successfully executing innovative projects will drive competitive advantage. However, just successful execution is insufficient – first, organizations must identify and choose the right projects in which to invest.

The strategic leadership of innovation is not a natural activity for executives focused on managing a business. Financial reporting pressure, budgeting processes, customer and investor relations and risk-averse decision-making all contribute to a slow realization of potentially disruptive innovation in the organization.

The key in helping executives identify project potential and then to enable them to nurture the most valuable and innovative programs is to have the right processes and tools in place to efficiently sift through all the project ideas in a consistent manner, in order to predict which projects are most likely to be successful. Additionally, resources will be better leveraged by concentrating efforts on the project ideas that are most important to the business.

An effective screening of innovative project ideas requires a balanced analysis that can be performed efficiently, consistently and at the earliest possible time, i.e., prior to expending effort on a detailed “return-on-investment” (ROI) review or analysis. In this way, resources are better focused and can be allocated to the project ideas with the greatest merit. Inserting a pre-portfolio screening process that enables a balanced management criteria is essential to the portfolio governance process.

EY has found that leveraging a concept called “inventive merit” provides an efficient and effective screening for innovation ideas as a front-end to the portfolio management process. This analysis provides a balanced view that measures not only the quality and significance of the idea itself, but puts it into a larger context enabling a more informed decision process prior to the business case being developed.

Measuring inventive merit entails the examination of four areas: inventive concept, embodiment merit, operational practice and market dynamics. By having a balanced view on the merits of a project idea across these four dimensions, companies can prevent appealing projects with a low overall likelihood of success from being accepted, and avoid rejecting projects that are evaluated by only a single dimension but which have a high inventive merit.

In practice, using project inventive merit screening process involves each team measuring and mapping their project idea across these four dimensions. The result visually depicts the unique value dynamic for each potential project. In this manner, both sponsoring teams and management have an early and more effective decision criteria prior to investing resources in ROI and business case development.

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1. This concept is based on George R. White’s research on “Management Criteria for Effective Innovation.”
Measuring project value and alignment with business strategy

When examining an existing portfolio of projects, either for the first time or as part of a standard review process, it is important to identify inappropriate projects that do not support the corporate strategy and are not adding value. These projects are at an increased risk of failure and may limit the capital that is available to undertake more appropriate projects with higher inventive merit and reward. Investment resources are always limited, so organizations should always be keen to overcome such potential value leakage.

While some organizations excel in the execution of project management, many still do not have a mature portfolio management process in place – this can cause issues with the strategic alignment of programs and projects. The result is that although the organization may deliver projects on time and within budget, the value delivered from those projects is not aligned to the organization’s strategy. This represents a misallocation of investment capital, essentially wasting project money in the portfolio.

Typical issues faced by organizations who struggle with keeping their portfolio under control include:

- Too many projects running at the same time that ultimately do not deliver the expected results because of a lack of focus or lack of select resources and underperformance
- Strategic objectives that are not supported by a project or program
- Wasted investment in a project or program that is not aligned to strategic objectives

Leading practices leverage project portfolio management tools, processes and techniques to assist organizations in balancing their portfolio of projects. When analyzing a portfolio, examining multiple metrics within financial, benefit, status, alignment and economic value areas is advised. In this manner, management has a more effective decision criteria in determining whether a project should be stopped, accelerated, monitored as it is executed, or evaluated to improve value and achieve strategic goals.

Project portfolio analysis

EY’s toolset assists in identifying those projects in the portfolio that should be continued and accelerated. Importantly, it also identifies those projects that are candidates to be stopped, freeing up capital and skilled resources for more important initiatives.

For more information on how portfolio management can unlock the value of your program investment, please see our Portfolio management transformation report.

ey.com/portfoliomanage
Are you ready to run a major project?

Large programs are more complex ... and complexity exponentially increases risk.

Measuring complexity and residual risk of the project

Prior to starting an initiative, organizations often fail to understand the complexity and residual risks of that project – a common cause of struggling projects. Companies that understand complexity (and properly adapt to it) have a much higher success rate when it comes to implementing large, high-value initiatives. Companies that do not take complexity properly into account may be able to execute smaller projects successfully, but struggle with the unique dynamics of larger, more complex projects.

Complexity drives risk, so the project’s governance, processes and controls – and the project team’s capability to understand and adapt to that complexity – will determine the residual risk of the project and have a direct impact on the success of the program. The goal should not be to reduce the complexity of the project, but to reduce the risk associated with that complexity – the residual risk of the project. Risk reduction is normally attempted by applying the organization’s standard governance, controls and processes; however, this approach generally is insufficient to control more complex projects and becomes an administrative burden for smaller, less complex projects.

The objective is to reduce the overall risk profile so it is below the organization’s tolerance for risk for that category/class of project. The approach should be to adapt the projects’ governance, controls and processes, as well as the team’s maturity, to address the specific areas that are driving risk from the inherent complexity.

Measuring and visualizing the complexity drivers of risks on a project allow early proactive measures to be taken to address these drivers and reduce the remaining (residual) risk to an acceptable level. It is important to identify the areas driving complexity within the project (i.e., team constituents, suppliers, time, organizational change, scope and development) and, more importantly, discover the areas where residual risks remain and can therefore be proactively addressed. Symptoms relating to the failure in properly addressing these areas will result in project performance issues downstream, representing a lost opportunity for early and less costly remediation.

Complexity analysis

EY has discovered 17 factors of complexity that seem to be the primary drivers of complexity and, therefore, risks in projects. This aids organizations in understanding of the size of the gap between the project’s complexity-based (inherent) risks and their current ability (maturity) to effectively manage those risks. We find that visually depicting the complexity/risk relationship helps in management understanding and decision-making.

If the complexity analysis tool identifies high residual risks in particular areas, the governance, processes, tools and team maturity should be adapted to match the level of complexity being undertaken. Failure to properly adapt will lead to project inefficiencies and suboptimal performance and outcomes.

For more information on how measuring inherent and residual risks of projects can unlock the value of your program investment, please see our Predicting program risks improves success report.

ey.com/predictingrisk
Is the project set up for success?

Predicting project challenges

The foundation for a successful program is set before the project even starts. Based on the analysis of key start-up areas, future challenges can be predicted.

A lack of addressing, or taking shortcuts, in crucial start-up areas will lead to a significant impact on project success. EY has found that successful companies take the time to have effective pre-start reviews that assist in determining the degree of readiness in these critical areas, whereas unsuccessful organizations tend to wait until symptoms of unresolved risks and issues actually arise, then react by “firefighting” with problem solving and minimally effective decision-making.

The challenge in modeling predictive risks prior to the project start is believability — at this stage, there are no actual symptoms of program risks; in fact, there is an atmosphere of unwarranted optimism. However, it is imperative that the project team provides a forward-looking view of anticipated risks to executives. This will allow adjustments to be made to the project early in its life cycle when there are more options available to address anticipated risks that are less costly to implement and that will minimize the overall impact of those risks to the project’s success.

Predictive risk analysis provides insight into:

- **Areas that introduce risks** — these areas will have a negative impact on the project and should be the focus of mitigation plans
- **Areas that mitigate risks** — these areas will have a positive impact on the project and should be maintained and, if possible, strengthened
- **Risk neutral areas** — these areas will have a marginal impact to the project, but this is often where low-effort improvements can have a high impact on success

A forward-looking pattern-based analysis is critical in determining if projects are set up for success. The challenge is that most techniques used in industry today fall short in properly determining those aspects crucial for project execution effectiveness. A predictive risk analysis examines vital areas (project selection, governance and accountabilities; project management and the deadline effect; project team capability, discipline, credibility and multi-team collaboration; and supplier capacity) to determine if any of these are introducing risk, mitigating risk, or are neutral areas that could be improved. The resulting analysis will provide a visual view for all areas so that a determination can be made regarding the individual and/or combined area’s potential impact to project success more easily.
Predictive risk analysis

EY has developed a predictive risk analysis tool that helps determine areas that should be strengthened to stop introducing risk and areas that should be maintained to continue to mitigate risk.

![Forcefield analysis graph]

**Impact on project success prediction**

Once the predictive risk analysis is complete and it is determined which areas are introducing risk, the impact on project success can be predicted. The impact is measured as the risk of missing, or experience slippage, on one of the factors for success.

We have found six primary factors that define success and have to be considered in trade-off decisions for a project: time, cost, benefits, scope, quality and organization.

As part of defining success factors for the project, the relative priority of these factors should be determined for decision trade-off purposes. At most, two of these factors should be the highest priority for the project (e.g., benefits and time), with the other factors being given successively lower priority. Identifying more than two factors as the highest priority for success limits the ability for making effective trade-off decisions, aligning project operational decision making at all levels and in implementing risk mitigation activities (i.e., decision empowerment). These success factor priorities must be communicated to the governing bodies and the project team so decisions are aligned throughout the project.
The predicted impact to the six factors is compared against the factor priority (which defines success of the project). If there is high risk that the success factors will be missed, or slippage experienced, then adjustments need to be made on the areas introducing risk, as described above, to lower the impact on the high-priority factors. If only low-priority factors have a high risk of being missed or slipping, the project may still be set up in an acceptable manner.

**Predicted risk impact**

Using predictive modeling that illustrates risks across the same six success factors allows leadership to more accurately determine the changes needed most aligned with that project’s success.

For more information on how predicting risks and impacts can unlock the value of your program investment, please see our *Predicting program risks improves success* report.

ey.com/predictingrisk
Measuring the risk state of your project

Key stakeholders need accurate, relevant information so they can make effective decisions to mitigate risks and improve project success. All too often, project status reporting does not give leadership a true picture of how a project is doing until it is too late.

There is usually political pressure to keep a project in a “green” status; there is also a tendency for information to get distorted as it is rolled up from the workstream level to the project level to the executive reporting level. This distortion and loss of transparency results in executives having an unwarranted optimism concerning the true project performance and its chances of success, which almost always leads to surprises arising late in the project execution.

Determining the true risk state of the project involves looking objectively at both a non-distorted view of the current state performance across several dimensions, and at a forward predictive view. This means that the organization’s leadership can proactively make fact-based decisions that will have a direct impact on project success.

Risk state analysis

It is important to look not just at the discrete risk items, but, more importantly, the risk interdependencies across several dimensions. EY’s “Cube” framework has three primary domains – program governance, project management and technical solution – with each domain having nine areas. The risk state of the project takes a multi-dimensional risk view by assessing the risk of a total of 27 areas based on the type and complexity of the project, plus the interdependencies among each facet across domains.

After the initial risk state is identified and the desired risk state is determined, remediation plans can be put in place to improve the chances of project success. When determining the desired risk state, the goal is not necessarily to get the entire cube “green” – the goal should be to focus on the root-cause drivers and specific areas that will have the greatest impact on planned benefits and outcomes. Also, care must be taken to ensure that the risk and opportunity plans are sequenced appropriately to mitigate risks in the most effective order and to maximize opportunities.
A typical recovery progression

The diagram above shows an example of a risk-state analysis. The red areas represent the highest risks that should be addressed first. From this initial analysis, a desired risk state should be determined (which may not be all “green”). Then remediation plans can be developed to get from this risk state to the desired risk state. If there are dependencies among the areas, certain red and even selected yellow areas may need to be addressed prior to others.

A typical recovery progression

Current state Step 1 Step 2 Step 3
Are your people aligned toward success?

Measuring priority and empowerment alignment

EY’s experience has shown that a majority of decisions are made by the project team with only a few being made by executives; therefore, it is critical that priorities are aligned throughout the project so that the project team makes decisions that are aligned with leadership’s definition of success.

When measuring alignment, we utilize the same success factors identified previously — time, cost, benefits, scope, quality and organization.

From our work with challenged organizations, we have found that when decision alignment is poor:

- Decisions are revisited and overturned as stakeholders with higher authority change decisions to align with their own priorities.
- Decisions are delayed as the team tries to get consensus among stakeholders with competing priorities.
- The team becomes frustrated and refuses to make decisions that they are responsible for, delaying risk and issue escalation (passive-aggressive), or they start making decisions not aligned with the overall project success.

Poor decision priority alignment occurs more frequently on large complex projects since there are many more communication points between executives and the project team. This means that only select information is communicated, less often and more formally than on smaller projects.

When this misalignment occurs, we have found that it is very common that resources will align with the priorities of their functional areas, i.e., finance resources will align with the priorities of the CFO (usually “cost” and “benefits”), IT resources will align with the priorities of the CIO (usually “time” and “cost”) and operations resources will align with the priorities of the COO (usually “scope” and “quality”). This is why, prior to the start of the project, the priorities of the six success factors must be agreed upon and communicated to the governing bodies and the project team.
**Decision priority analysis**

A visually depicted decision framework helps to determine if a priority misalignment exists within and across governance tiers (including suppliers) that could lead to decision-making disconnects on the project – a key reason why many projects become challenged.

The diagrams below show an example of a priority alignment analysis. The degree of alignment needs to consider both alignment across each governance tier (horizontal alignment), and between each governance tier (vertical alignment). The degree of misalignment, each horizontally or vertically, will impact effective decision-making.

For more information on how improving the decision alignment of your important projects can unlock the value of your program investment, please see our [Building confidence in executing IT programs](ey.com/ITprm) report.
Unlocking the value of your program investments
Conclusion

Portfolio management and predictive analytics can help your organization successfully execute projects

Organizations that are successful in delivering large and complex programs outperform their competitors in the market. It is the new basis of competition. The problem is that many organizations spend effort executing the wrong projects and thus waste some of their valuable (and limited) resources.

The key is to help executives identify projects with the best potential and then to enable them to nurture the most valuable and innovative programs. This requires having the right processes and tools in place to assist organizations in balancing their portfolio of projects.

The ability to have a forward-looking view of risks and being able to predict the impact of those risks allows the organization to proactively manage projects. Surprises late in the project life cycle are costly and difficult to recover from. Being able to make adjustments to the project’s governance, controls and processes prior to the onset of issues allows the organization to increase the success of their strategic programs.

The early identification of necessary corrective actions and predictive risks leads to greater control of program performance and accelerated benefits achievement, resulting in:

- Reduced project cost
- Reduced project time
- Increased benefit realization
- Improved time to benefits
- Improved return on capital investments
- Increased competitive posture

How can EY help?

Our ability to provide a holistic fact-based objective risk view, from project selection to portfolio development, to project planning and through project execution, will help you unlock the value of your program investments. The differentiator is our ability to predict risks, understanding their future impacts and thereby making informed decisions to improve program performance.

We can help your organization regain control of your strategic programs and deliver meaningful value, fully aligned with your organization’s business strategy and risk tolerance. Depending on your particular need, we can assist in various reviews as outlined in this report. This can provide a comprehensive view of your organization’s risk position to support effective risk management.

We can also assist in developing a prioritized road map, and provide support and assistance in addressing those critical areas that will have the greatest positive impact. We can help you to effectively manage your key risks and strengthen your organization’s ability to successfully deliver large, complex projects.
Want to learn more?

*Insights on governance, risk and compliance* is an ongoing series of thought leadership reports focused on IT and other business risks and the many related challenges and opportunities. These timely and topical publications are designed to help you understand the issues and provide you with valuable insights about our perspective. Please visit our *Insights on governance, risk and compliance* series at ey.com/grcinsights.

**Portfolio management transformation:** how to effectively screen and align your program portfolio with strategic objectives

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We innovate in areas such as risk consulting, risk analytics and risk technologies to stay ahead of our competition. We draw on in-depth industry-leading technical and IT-related risk management knowledge to deliver IT controls services focused on the design, implementation and rationalization of controls that potentially reduce the risks in our clients’ applications, infrastructure and data. Information security is a key area of focus where EY is an acknowledged leader in the current landscape of mobile technology, social media and cloud computing.
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