



Predictive project analytics

Will your project be
successful?

A new approach to reducing project risk

Most corporate executives understand that business growth hinges on an organization's ability to effectively manage major capital investment campaigns, changes to business processes and the adoption of new technologies. Yet, despite their inherent strategic importance, these very projects frequently experience cost overruns, run late or fail entirely.

The more complex the project, the greater the likelihood of failure. In fact, projects between \$1 million and \$3 million have a 34 percent chance of success, while those that are \$10+ million have just a 7 percent likelihood of success.¹ Even projects that reach completion experience challenges, with nearly half failing to meet time, budget, and/or quality goals.

Despite the inherent complexity of large projects, insufficient time is devoted to risk management until risk becomes an issue. During the early stages of most projects, potential risks are identified but are "filed away" and typically are not actively referenced as part of the project management. As the project progresses and risks surface, teams scramble to build mitigation and remediation strategies and do not consistently consider the impact to either the project phase or the project as a whole. The reasons for project failure are diverse, ranging from poorly defined requirements, lack of access to specialist resources and competing priorities to the constant pressure in-house teams face to deliver more quickly at lower cost. Whatever the cause, the consequences of project failure can be severe – including significant unforeseen costs, operational failures, regulatory non-compliance with potentially accompanying penalties, customer dissatisfaction and loss of competitive advantage or market share. When a complex project loses, the business loses.

Given the potential severity of these repercussions, leading organizations have always searched for ways to keep their projects on track. Research studies provide insight into the factors that contribute to success and failure, but cannot predict the outcome of a particular project. Traditional risk assessments deliver expert opinions related to project outcomes, but cannot pinpoint specific control gaps that can cause a project to go off the rails. And virtually no tools exist that can help organizations identify in advance which projects will fail and how to get them back on track.

Until now.

Research illustrates that in 2010 alone:

21%

of projects were cancelled prior to being delivered or were never used

Only

37%

of all projects succeeded in delivering the required functionality on time and on budget

46%

of projects were over budget

63%

of projects were either challenged or failed

71%

of projects were delivered late²

¹ "Chaos Report," Standish Group International, 2010.

² CHAOS Summary 2010 Report, Copyright 2010 The Standish Group International, Incorporated

The evolution of project management

Since the 1950s, project management (PM) has played an integral role in steering organizations through the intricacies of getting work done. First-generation project management approaches integrated project planning, control, and management with time management approaches. The National Aeronautics and Space Administration (NASA) was a pioneer in project management, driven by the organization's pressing need for a framework to contain project risk and scope. In the mid-1980s, competitive pressures and a need to get products to market faster saw most manufacturers implement PM approaches and solutions for new product development. In this second generation of project management, the Work Breakdown Structure (WBS) helped project managers and systems engineers break projects into smaller, discrete work elements. The use of WBSs allowed businesses to better organize and define the work and scope of the project.

In the late 1980s, a need arose for project management in areas other than manufacturing and engineering. Global competition was heating up just as such project management organizations as the Project Management Body of Knowledge (PMBOK) and the Association for Project Management (APM) were emerging to put structure to the PM discipline. Project management processes became distinct and separate from product development processes, and PM methodologies underpinned the business management methods of the day, including business process reengineering and total quality management.

By the early 1990s, the discipline of project management had become a core competency for many organizations. PM manuals, procedures, tools, templates, and applications were widely disseminated through corporate intranets. PM practices were also used in change management, which officially arrived in 1994 with the publication of the first "State of the Change Management Industry" report in Consultants News.³

Over the past decade, third-generation, strategic project management has emerged to address the ongoing concern of value creation on the part of organizations. Inconsistency between strategy and project management and the need to address complex social, economic, and business issues has propelled project management to a new level of strategic importance and delivered a new set of challenges. In trying economic times, businesses have further sharpened their focus on reining in cost and extracting value from projects.

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³ Scott Whelehan, "Capturing a Moving Target: Change Management," Consultants News. Retrieved from: <http://www.changemanagementresources.com/2011/10/04/the-beginning-of-change-management/>

Benchmarking project success

Research shows that project success hinges on a range of factors, including the project's inherent complexity, the project team's capability level and the maturity of existing controls and governance processes. So it stands to reason that your organization could mitigate project risk, reduce the incidence of failure and close gaps if you could accurately benchmark your capabilities in each of these areas against similar projects

To help you achieve this, Deloitte compiled a predictive project analytics database that contains detailed information on thousands of completed projects, categorized by project type, complexity, management approach and outcomes. Predictive Project Analytics (PPA) is a project risk assessment methodology that provides foresight on potential risks and where immediate fixes for in-flight projects and programs (at any stage of the lifecycle) should be implemented to mitigate risk. PPA's predictive analytics engine is built on the Navigator© analytics database developed by the Helmsman Institute.⁴ This database contains over 2,000 projects across multiple industry sectors. One of the key outcomes of the Helmsman work was the development of the Helmsman Complexity Scale, which measures the complexity of projects across multiple domains and industries in order to predict potential risk throughout the project lifecycle. PPA uses the Helmsman Complexity Scale as a key part of its analytics engine. To realize the full value of PPA, additional databases, methodologies, and benchmarking information are combined with business and analytics expertise to uncover project complexity and risk. PPA represents the next step in the evolution of project management because it is:

- Research-centric: Early PPA research was carried out over several years by the Helmsman Institute and enhanced with databases and industry expertise that are used when performing analysis.
- Project-agnostic: The PPA database includes a range of project types that have formed the basis of the attributes and complexity scale.
- Low-cost/high-value: PPA delivers value by reducing project risk and avoiding potential project failures and/or overruns.
- Focused on early value: The very early stages of a project benefit from the analysis of complexity and the level of control required for project success.
- Able to prioritize results: PPA can tell which characteristics, if improved, would be most closely correlated with an increase in the likelihood of success.
- Cost-efficient: Using predictive project analytics, organizations can realize efficiency gains by reducing or eliminating unnecessary project controls in areas not at risk.
- Reporting is powerful, highly adaptable and dashboard based

⁴ "A Comparison of Project Complexity between Defence and Other Sectors," The Helmsman Institute, Sidney, Australia. www.helmsman-institute.com.

By empirically analyzing your project and comparing it to our database, the system provides you with an objective assessment of the inherent complexity and management characteristics of your project to help you determine whether you're on track for success or failure. Deloitte's professional analysis of the analytic results can then suggest what steps to take to improve your chances for success.

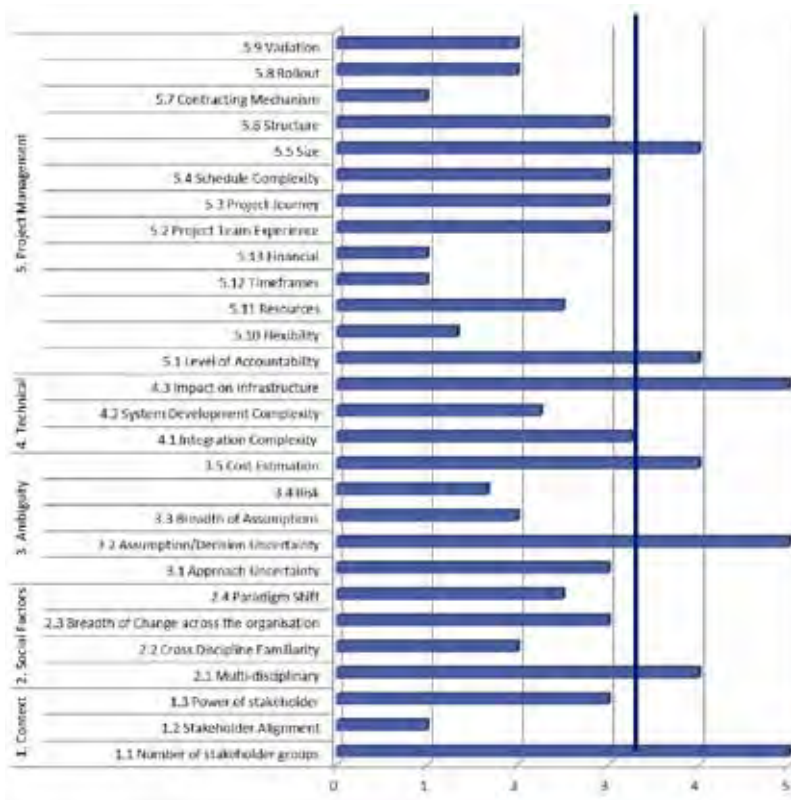
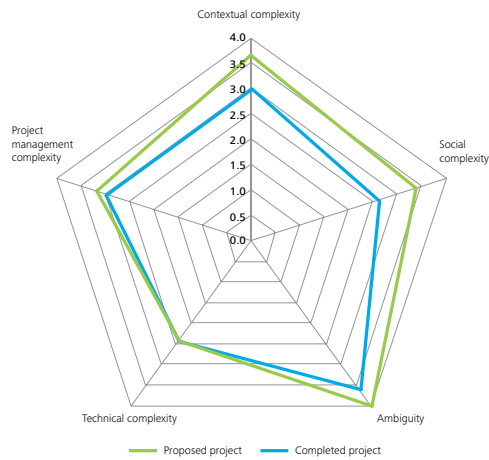
By comparing your current performance levels against predicted required levels, the tool can help pinpoint specific gaps, hidden obstacles and missing controls in 17 different areas, such as budgeting, scheduling, risk management and team capabilities. This allows you to determine the specific improvements or investments you need to make to increase the likelihood of project success. It also enables you to identify areas of over-investment, where you can spend less effort without affecting project results.



Effective risk management and success is all about performance

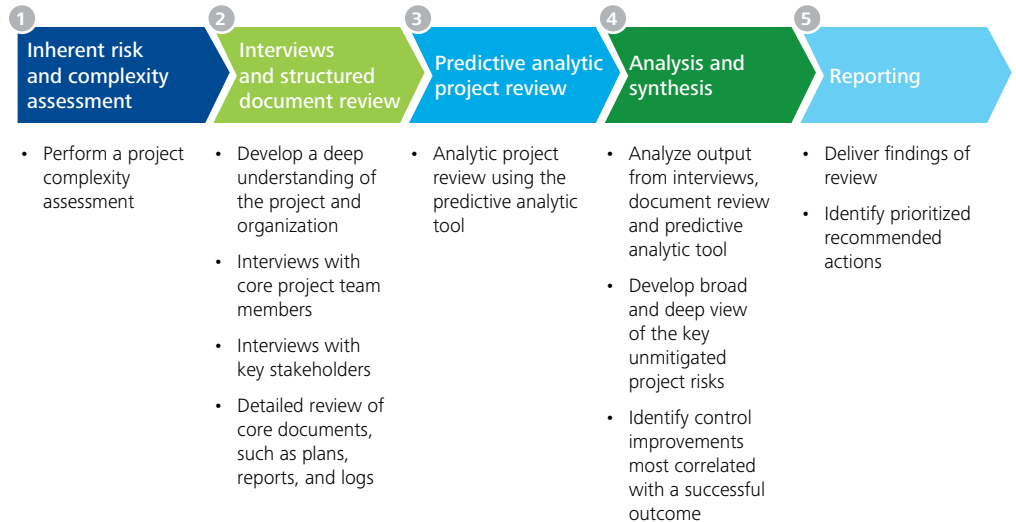
Following an in-depth review of recent research on project success rates and factors, Deloitte found a strong correlation between project complexity and project outcomes. Probably no surprise was the fact that more complex projects do fail more often. Oddly enough however, it's not the complexity itself that creates failure; it's not having the right people and controls in place. Research shows that a team that succeeds on a low-complexity project may fail as project complexity rises. Simply put, more complex projects require higher degrees of project management and control to succeed.

Project complexity comparison



Predictive project analytics: A methodology

Figure 1: Five-stage approach for managing project risk and costs



Here's how it works:

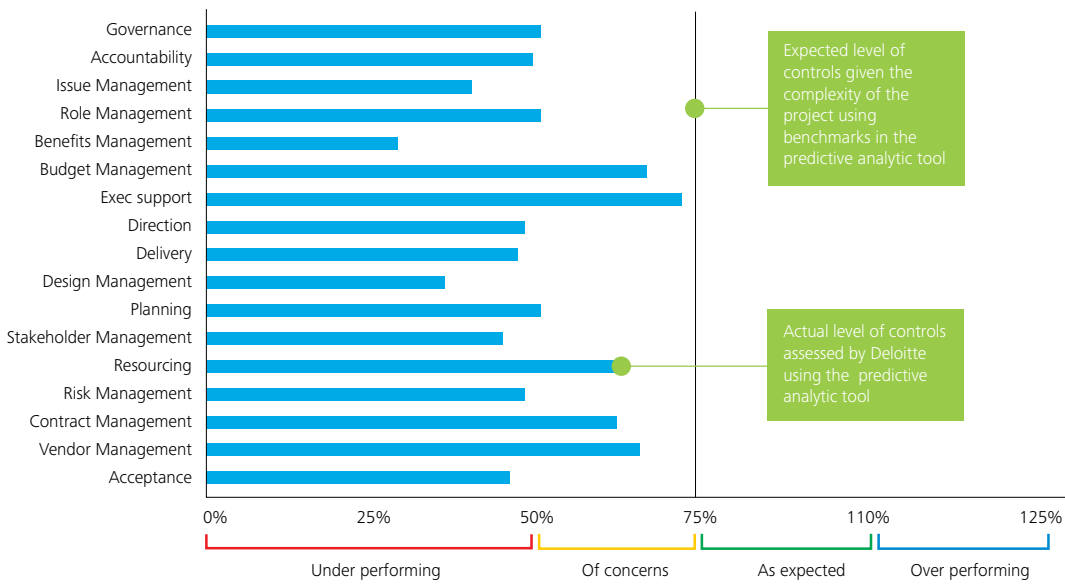
Our five-stage predictive analytic methodology lets us assess your project team capabilities, predict your project's required maturity levels and clearly identify ways to manage project risk and control costs.

- We begin by performing a detailed assessment of your project's risk and complexity to determine the level of controls and governance you need to have in place to deliver a successful project.
- This assessment is augmented by a series of interviews with key project team members and stakeholders, and further bolstered by a review of core project artefacts, such as plans, reports and logs.
- Next, we enter all this background information into our predictive project analytic tool, which produces a correlation between project complexity, controls and success using a database of thousands of projects, and then we incorporate an effective assessment of softer factors such as leadership and decision-making.
- By aggregating the outputs from our structured, experiential review and our predictive analytic capability, we gain a broad, deep view of your key unmitigated project risks and identify specific control/governance improvements that can help you achieve a successful outcome.
- Finally, you receive the findings in the format of your choice. Our objective is to avoid clichéd project commentary. Instead, our reports provide practical recommendations and prioritized actions that allow you to immediately address or avert specific identified project risks.

Predictive analytics technology

Demonstrated quantitative methods leverage a database of completed projects to infer the required level of control to maximize the probability of your project’s success. The database contains detailed information on over 2,000 completed projects, categorized by product type, complexity, management approach, and outcomes. By combining these quantitative methods and database of empirical project data, PPA can provide an objective assessment of the inherent complexity and management characteristics of the project. By comparing current performance levels against required levels predicted, the PPA technology can help pinpoint specific gaps, hidden obstacles, and missing controls under such categories as budgeting, scheduling, risk management, and team capabilities. This allows the organization to determine the specific improvements or investments that can increase the likelihood of project success. It also identifies areas of over-investment, where less effort can be applied without affecting project results.

Comparison of project control maturity against maturity needed for success



Actual vs. expected

Reining in project risk

Predictive project analytics work extremely effectively at the start of a project by helping you build the competencies you need to enhance success. However, the capability also adds value throughout the project lifecycle. By conducting this analysis during the course of a project, you can bring a floundering initiative back on track. Similarly, by assessing your project towards completion, you can avoid launching an initiative prematurely.

No matter when you leverage predictive project analytics, you position your organization to:

- Gain an objective overview of your project risks and exposure areas so you can close identified gaps
- Enhance project outcomes by prioritizing actions most likely to help you achieve success
- Realize early value from your projects by identifying specific measures you can take to keep projects on track
- Minimize potential financial, productivity and reputation-based losses by improving project oversight
- Drive greater organizational efficiency by eliminating unnecessary project characteristics and strengthening internal attributes that contribute to project success
- Reduce risk by assessing your project relative to those with similar attributes
- Benchmark your project against a database that includes engineering, capital works and technology projects and is effective regardless of project type

Crunchy questions

How can you determine if your company would benefit from using predictive project analytics? The answer is simple, ask yourself the following questions and answer them honestly:

- How often do your key projects meet the expectations of the stakeholders? Cost, timing, and performance are just three areas of expectations to consider.
- What has been the impact on your company from projects that have failed to meet expectations or just plain failed? Impacts can be far-reaching across people, process, and technology.
- Can you describe what your company would look like if your key projects were successfully completed? Would success attract the best talent, gain market share, or transform operations?
- Based on the answers to the questions above, can your company afford not to use predictive project analytics? What would stop your from using it?

Real-world results

To give you an idea of how predictive project analytics work in action, take a look at these real-world case studies:

PPA scoring helps ensure ongoing project success

A large health care organization's multi-year, multi-phase clinical information project had experienced significant delays, using up a large portion of the overall contingency budget. Consequently, the board and executive sponsor sought to answer a number of key questions through project governance and review before moving forward with the project. These included:

- Is the project timeline reasonable for the project?
- Do the project structures, controls, and reporting reflect "leading practices"?
- Is the level of board and executive reporting appropriate?
- Is the contingency reasonable for this type of project given its current stage?
- Will the project, based on current execution strategy and governance, be successful?

Post-implementation review

Following the failure of a challenging project, this client asked Deloitte to carry out a post-implementation review.

By deploying our predictive project analytics system retrospectively, we were able to identify the issues which led to the project's failure.

This allowed us to compare the completed project against a scheduled upcoming project. Given the higher degree of complexity involved, we determined that the new project needed a much higher level of control and governance process to succeed. We then performed a predictive analytic review of the new project early in its lifecycle to determine in more detail what specific controls would be required. As a result of this analyses, the client was able to apply lessons learned from its troubled project to avoid similar future failures.



Project quality assurance

In an effort to ensure project success, this large company engaged Deloitte as a project quality assurance provider to assist it in carrying out a major finance transformation and ERP implementation. As part of our initial project risk review, we assessed the project using our predictive analytic tool.

The tool suggested that there were a small number of fundamental complexities within the project. These included implementing a solution which had never been attempted before, and engaging a systems integrator and project management team unfamiliar with the core elements of the proposed solution. Our analyses allowed us to identify key project management process improvements to help the client resolve these complexities.

As a result of applying PPA to the project, management gained a strong understanding of the connection between project risk and key success factors and achieved a holistic view of the project and its complexity. Because PPA practitioners helped to identify risks and improvement areas, management was able to improve project practices and controls. For internal audit, PPA provided higher value than simply focusing on past activities or compliance. The organization now relies on PPA reports to establish clear risk mitigation strategies that are objective and controllable, and that offer a clear focus for project success as a final outcome.

A number of powerful graphical reports can be produced and tailored to your environment and adapted to the nature of the project.



From opinion to objectivity

The next level of project risk management

Consultants have been predicting project risks and suggesting mitigating strategies for years, based on experience, knowledge and various risk methodologies – now we have tool that goes beyond individual expertise to provide comparative measurements against other projects across multiple categories.

The database provides objective data, not opinion. It's a benchmarked process that can clearly indicate where your project is missing controls and where it might go off the rails. And it's the only such tool available. If you have a critical project in process or in the planning stage, Deloitte's predictive project analytics tool can help your organization achieve success by objectively determining and mitigating the agents of failure.

In summary PPA has multiple uses and is unique to Deloitte, and complements our 12 years of experience providing Project Risk and Governance services across multiple industries and projects types

Benefits of predictive project analytics

- Project review – “eyes and ears” for management
- Independent assessment of project planning, execution, and protects project investment
- Independent monitoring of emerging project risks helps control operational and reputational risks
- Ability to determine the project portfolio risk profile

Lowers and contains project costs

- Independent assessment of project budget adequacy
- Independent assessment of ongoing budget needs and requests
- Prioritizes project so the right level of project management can be applied

Increase likelihood of project success

- Project of what could go wrong before it does go wrong
- Adherence to project plan
- Ability to identify the project performance cliffs

Gets projects back on track

- Unbiased, project-agnostic expertise alerts the project organization when timelines or objectives are threatened
- Interim recommendations focus and project remediation
- Expertise to re-scope and re-plan as needed.

Improves the project organization and project practices

- Employment of generally accepted practices and methodologies
- Leverage project investment by not re-inventing the wheel

Contact us

We can analyze your project, compare it to our database and tell whether it resembles a project which went on to succeed or fail. Deloitte's Project Risk and Governance services team has assisted a range of organizations successfully achieve their project objectives, from long-term complex projects to short-term initiatives. For more information on Deloitte's predictive project analytics tool, please contact our Canadian leaders:

National & Global Project predictive analytics

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