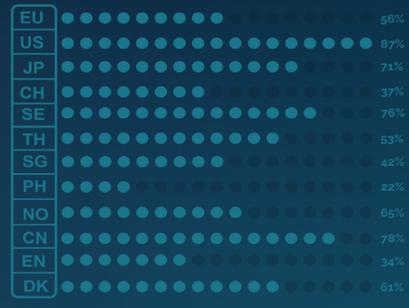




The Business Case for Enterprise Project Performance

Drivers, Benefits, and Competitive Advantages
of Pushing Beyond the Project Status Quo



Contents

What is Enterprise Project Performance?

- 5** | Business Outcomes of Enterprise Project Performance
- 6** | How Enterprise Project Performance Works
- 7** | Maximizing Returns and Margins on Project Investments

Current Industry Realities That Make Enterprise Project Performance a Necessity

- 9** | Over Budget and Behind Schedule
- 10** | Increasing Governance and Compliance Needs
- 11** | Forecasted Industry Growth
- 12** | Capital Projects Industry Primed for Digital Disruption
- 12** | Skilled Labor Shortage

Enterprise Project Performance KPIs

- 14** | Efficiency
- 15** | Predictability
- 17** | Control

Financial Impact of Enterprise Project Performance

- 19** | Reduce Project Costs
- 20** | Reduce Opportunity Costs
- 21** | Reduce Related IT and PMO Costs

Technology for The New Era



The capital projects landscape is changing. Shifts in the workforce, drastic industry expansion and new technologies will soon disrupt the Engineering & Construction sector all at once. Further, project complexity continues to grow, making it increasingly difficult for projects-driven organizations to meet expected performance levels. While some companies will be ready for the industry's new era, those failing to take proactive measures will not.

Industries reliant on large capital projects – and Engineering & Construction in particular – have historically been resistant to new processes and technologies. But for organizations to thrive in an evolving and increasingly competitive market, they'll now need to embrace change rather than being content with the status quo.

To navigate the industry's transformation and enable their own digital evolution, organizations need near real-time access to more accurate information. They need greater standardization and better predictability, enabling timely corrective action to shape positive project outcomes and deliver business objectives.

However, most organizations are dealing with a tangled web of internally developed tools, siloed commercial software and Excel spreadsheets to run their projects. This setup acts as a barrier to high levels of project performance, leaving organizations unequipped to deal with the complexity of today's projects, unable to drive strategic alignment and lacking the confidence to make good business decisions.

So how can organizations turn this liability into a competitive advantage? How can project teams leverage massive amounts of project data to improve outcomes? How can executives ensure everyone is on the same page, working toward the same goals in a standardized way? How can decision makers positively impact performance with confidence?

The answer is a single environment for the full lifecycle of projects that allows project stakeholders across disciplines to work more efficiently and effectively together. The answer is an **Enterprise Project Performance strategy**.



What is Enterprise Project Performance?

Enterprise Project Performance (EPP) is a mindset that expands from improving outcomes of individual projects to one that also heavily considers achievement of business objectives for ALL projects within your organization. Thus, an EPP software platform facilitates this approach by integrating processes that span the full lifecycle of projects, inclusive of portfolio, project and contract management and the sub-processes that enable them. EPP improves efficiency, predictability and control across all projects, programs and portfolios in an organization for all stakeholders.

The result: **maximizing project success.**

WHAT IS ENTERPRISE PROJECT PERFORMANCE?

Business Outcomes of Enterprise Project Performance

The right EPP platform gives organizations clear visibility into their financial, human and equipment resources. This enables enterprises to measure the performance of their projects while allowing project teams to effectively communicate and manage risks and changes. At the same time, it helps companies to select projects that are aligned to their organizational strategies, avoiding mistakes at the very earliest stage of the capital planning process.

EPP increases service providers and contractors' margins and maximizes project owners' investment returns by providing:



Cost and schedule predictability that leads to significant cost reductions



Efficient data management and analysis that enables more timely, reliable decision making



Company-wide visibility into all project and opportunity data to promote transparency needed to drive proactive behaviors



Standardization and control over all project processes, regardless of the size and type of project

WHAT IS ENTERPRISE PROJECT PERFORMANCE?

How Enterprise Project Performance Works

Many organizations that plan and execute major programs or capital projects use numerous disparate systems and Excel spreadsheets often with almost no automated integration. This splintered environment of siloed tools creates inefficiencies, diminishes visibility and prevents standardization.

The scale of modern projects – with higher complexity, more risk and slimmer margins – mean there is no room for error and no time to waste. In the new era of capital projects, using multiple, disjointed platforms will result in failure to keep pace, especially when many competitors are already a few years into their digital transformation journey. ***Disjointed systems create redundant, manual and error-prone processes that kill efficiency and reduce accuracy. This leads to cost and schedule overruns that, when multiplied across an enterprise, have a massive impact.*** What companies need today is a single, connected system that unifies project data sources.

The projects ecosystem needs a solution similar to an ERP, or Enterprise Resource Planning software. An ERP breaks down silos between business units and provides a single view of an enterprise's financial and operational performance.

An EPP system works much the same way by providing a single, unified view of all projects in an enterprise. While most companies bought into this centralized approach for ERP systems decades ago, mission critical projects are still being managed in Excel! It's high time the EPP and projects' financial impact were taken as seriously.

In fact, a company's EPP system works in conjunction with its ERP. The ERP/EPP systems run in unison to automatically exchange vital data and serve as an integrated hub for managing projects and programs from beginning to end.

“ Organizations are 20% less likely to deliver projects successfully without a single source for performance data.”

2019 Project Controls Survey Report, LOGIKAL Project Intelligence



WHAT IS ENTERPRISE PROJECT PERFORMANCE?

Maximizing Returns and Margins on Project Investments

EPP facilitates the following components of capital-productivity excellence, as identified by McKinsey & Company:

Aligning capital strategy and allocation – EPP helps enterprises ensure their capital strategy is aligned with their overall corporate strategy. It helps companies evaluate each project through the lens of the value it creates for the organization. EPP also enables enterprises to regularly monitor their capital spending to ensure capital is allocated effectively across businesses.

Portfolio optimization – EPP enables management teams to weigh the value of one project over another. It helps organizations perform business case evaluations for each project. Then companies can make refined tradeoffs in the selection of projects to be added to a portfolio, reduce risk and examine portfolios using scenario analysis. For contractors, this process revolves around the evaluation of opportunities to bid on and add to the portfolio of work they'll do on behalf of customers.

Streamlining project concept and design – World-class enterprises streamline their project concept and design by selecting projects that are complementary to each other, as well as by optimizing projects for cost and value. For example, how many projects can be replaced with lower-cost alternatives? How many projects can be adjusted to cut capital spending? How does this project compare to those we've executed in the past? EPP arms organizations with the information needed to have confidence in these critical decisions.

Applying flexible project governance and stage-gate process – Rather than implementing a single, rigid approach to project management, EPP helps companies use tailored portfolio management methods and workflows depending on the size and complexity of the project. Smaller projects might have fewer stage gates, while larger, more complex projects might include more stakeholders, stage gates and evaluation criteria.

Establishing organizational enablers even for small projects – Organizational enablers involve the structures, processes, and communications that drive projects to the intended outcomes. These are central tenets of an EPP where people, processes and tools are interconnected. Within EPP, work processes are institutionalized within the system. The software serves as both training for best practices as well as ensuring compliance. Everyone works off the same set of data and approvals are built-in and fully auditable, so executives and project teams are on the same page. Different-sized projects require different levels of rigor and procedure. Your EPP will ideally have the flexibility to assign different processes, methods, coding structures, thresholds and governance based on what is most appropriate but also standardized for that particular project class. Then roll up to enable organization-wide reporting.





Current Industry Realities That Make Enterprise Project Performance a Necessity

Few industries are as complex and challenging as those delivering capital projects. New demands and obstacles, both internal and external, face the construction sector daily – from the sheer size and scope of projects, engineering complexity, volume of interdependencies, change during long project time horizons and more. And although challenges continue to mount, few countermeasures have been established within the industry over the past several decades.

Several harsh realities are trending in the capital projects industry.



CURRENT INDUSTRY REALITIES THAT MAKE EPP A NECESSITY

Over Budget and Behind Schedule

As seasoned project managers can attest, most projects and mega projects face excessive overruns, both in budgeting and scheduling. In fact, research from Ernst & Young has shown that completion costs are consistently almost 60 percent higher than initial cost estimates. Here are a few reasons:

- Inability to manage design and scope changes, identify and control risk, control supplier/contractor performance
- Optimism bias, poor initial estimates, inaccurate forecasting
- Lack of effective communication and collaboration across teams
- Low transparency limits accountability and fosters unproductive behaviors

“ Less than **6%** of projects deliver planned financial returns.”

Construction Industry Institute

CURRENT INDUSTRY REALITIES THAT MAKE EPP A NECESSITY

Increasing Governance and Compliance Needs

Construction is among the world's most complex and fragmented business ecosystems, with many disconnected people, processes and tools. This fragmentation is one of the main drivers of low productivity, causing an increasing need for governance and control.

A global construction survey asked companies of different sizes whether their investments in project governance and controls are reducing their project costs. The responses for corporations valued at \$5 billion or more were lukewarm (see figure 1), suggesting that continued investment in siloed project systems -- that lack an enterprise-wide focus and do not work to improve underlying processes and behaviors -- will continue to under-deliver on expected returns.

Clearly, great opportunity exists for technology that connects and streamlines the fragmented elements of the construction ecosystem.

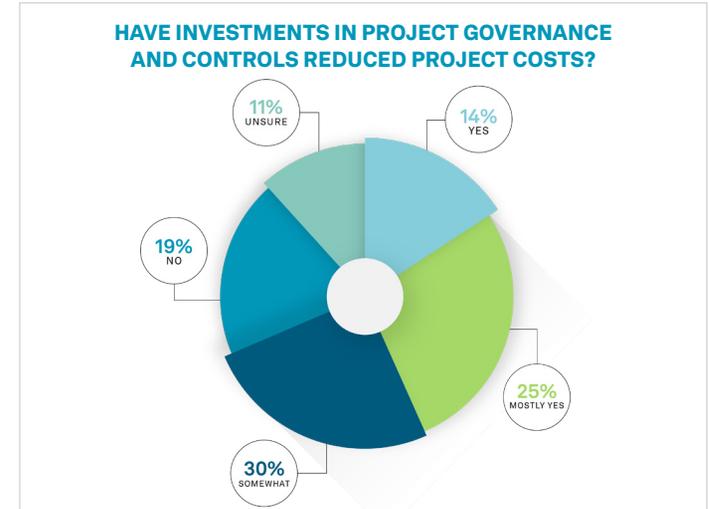


Figure 1: Source: Global Construction Survey, KPMG

Mapping the Construction Technology Ecosystem

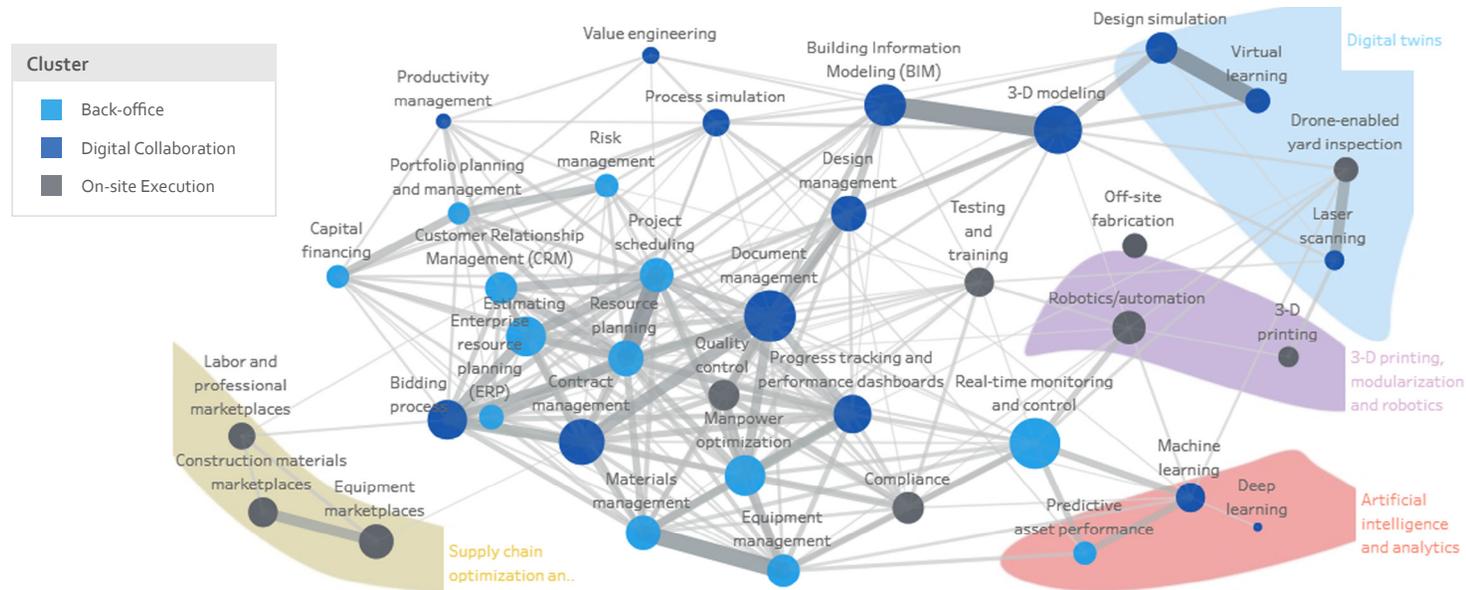


Figure 2: Source: Seizing opportunity in today's construction technology ecosystem; McKinsey & Company.

CURRENT INDUSTRY REALITIES THAT MAKE EPP A NECESSITY

Forecasted Industry Growth

Whether the capital projects industry is ready or not, global construction is expanding dramatically. The sheer volume of projects, as well as the expectations and performance demands placed on the industry, are now increasing at faster rates than ever before. For contractors and owners, project volume equates to increased risk, higher competition for resources, more complexity and more barriers to success.

Exactly how much growth is expected? For the near future, global construction is set to rise to almost \$13 trillion by 2022.

But further out, the numbers are even more staggering. According to the Global Construction 2030 report, by 2030:

- Growth in global construction will increase by 85%
- Spending will rise to \$21.2 trillion on capital projects
- Construction will account for 14.7% of the global GDP

Even further out:

- Through 2035, the world needs to invest \$3.7 trillion per year in economic infrastructure alone (transportation, power, water, telecoms) to keep pace with projected growth.
- Over the next 20 years, the world will need to invest a total of \$94 trillion on infrastructure.

Although this explosive growth will undoubtedly be overwhelming to the industry, companies who adapt properly will be able to lead the industry for the foreseeable future. Those who don't will struggle to survive.

“By **2030**, construction will account for **14.7%** of global GDP.”

Global Construction 2030 Report



CURRENT INDUSTRY REALITIES THAT MAKE EPP A NECESSITY

Capital Projects Industry Primed for Digital Disruption

The capital projects industry has been slower to embrace new technologies than other industries. R&D expenditures have also lagged behind.

However, increasingly powerful and accessible technologies could reverse that trend. Robust cloud-based tools, advanced finance platforms, analytics capabilities and more have primed the industry for a technological revolution.

New construction tech will transform the entire lifecycle process of capital projects, from digital design and preconstruction, to all facets of construction, operations and management. Upcoming technologies will include:

- Innovations in mobile collaboration technology
- Big-data analytics and IoT (the internet of things)
- 5D BIM (building information modeling)
- Geolocation technology and higher-definition surveying
- Advanced tech that makes future-proofing more possible in design and construction

Disruption and drastic changes historically create challenges that take industries by surprise. But those organizations that foresee the coming changes and embrace new technologies early will gain significant competitive advantages.

Skilled Labor Shortage

Adding to the challenge of dramatic industry growth is the reality that the skilled labor force is simultaneously diminishing. Baby boomers are exiting the construction industry due to retirement, leaving an ever-widening gap in the industry's productivity and knowledge base. How big is the gap? Research reveals that:

- Baby Boomers comprise 40% of the construction workforce.
- Baby Boomers comprise 54% of construction management.
- 10,000 Baby Boomers are retiring per day in the United States alone, and construction productivity is declining because of it.

As millions of new construction jobs are opening worldwide, it's imperative for enterprises to adopt tools that capture the knowledge of baby boomers, so new generations can benefit from it. Furthermore, these tools need to be easy to adopt and simple to use, keeping pace with the user experience that the new workforce has come to expect from technology in other areas of their lives.

Although the industry is fraught with challenges and change, organizations that adopt an EPP platform will have the tools needed to navigate the evolving landscape successfully. Many such organizations will even gain a competitive edge, due in part to their ability to add new layers of key performance indicators to their operations.





Enterprise Project Performance KPIs

Project executives often focus on financials as the key performance indicators (KPIs) to measure a capital project's performance. But focusing merely on immediate financial goals (such as how far a project is exceeding or meeting the budget) leaves out many other factors that contribute to success.

If the right KPIs aren't tracked effectively, it will be difficult for a company to gain actionable insight into the processes that need improvement, as well as effective processes that should be replicated across projects. It's important to monitor the right mix of key performance indicators so an enterprise can remain competitive while also achieving favorable short-term financial performance.

Essential KPIs that can shed light on a project's performance and success include measurements of the efficiency, predictability and control maintained by all parties involved in a capital project. EPP technology can help an enterprise add and measure these critical KPIs.



ENTERPRISE PROJECT PERFORMANCE KPIS

Efficiency

Leading EPP technology will enable an organization to implement and measure efficiency improvements. Specifically, this can be done by tracking KPIs such as:

- Reductions in the time needed to perform tasks, in the time booked for project management, in the number of report reviews and revisions and in delays to monthly report production
- Increases in resource involvement across multiple projects, in the frequency of tasks delivered on time and in the use of common tools and processes
- Improvements in response times to workflow actions, as well as in report-cycle time frames.

The capital projects industry is replete with counterproductive actions and repeatable tasks. EPP provides two ways of helping teams reduce these inefficiencies:

Enables teams to spend less time on unprofitable tasks – Research has uncovered that project professionals spend up to 60% of their time on non-optimal activities like conflict resolution, searching for project information and reworking errors. EPP technology can help organizations identify, measure and reduce the time spent on these low value activities. And in the modern workplace where the younger workforce has little patience for cumbersome systems, EPP plays a pivotal role in your talent development and retention strategy.

Automates repeatable tasks – Manually performing redundant tasks and processes can be immensely time-consuming for teams in any company. EPP technology integrates the sources of portfolio, project and contract data to automate the transfer of the data.

Automation includes the extraction, transformation and loading of critical data from general ledger, procurement, timesheets, scheduling and estimating. Besides boosting efficiencies, the automation of data export also increases accuracy by eliminating human error.

Predictability

No one likes surprises, but executives loathe them! Naturally, productivity and credibility plummet when a company’s capital project estimates end up being inaccurate. Although faulty predictions have been a long-running industry norm, they won’t be as forgivable in the new era of capital projects.

An EPP enables enterprises to implement and measure predictability improvements. Important predictability KPIS include:

- Increases in the number of projects completed on time
- Increases in the timeliness and accuracy of forecasts
- Reductions in late forecast changes
- Reductions in variations between budget baseline and final actuals
- Reductions in resource waste with improved schedule accuracy
- Reductions in the number of budget iterations prior to sanction, as well as in number of cancelled projects

Such improvements contribute to significant gains in cost and schedule accuracy of even the largest mega projects. Capital project enterprises naturally outperform the competition when best-case scenarios and promises are met.

Measuring predictability KPIS helps enterprises manage the key pillars of predictability: people, processes and technology. These three pillars cover all components needed to keep capital projects on track and are measured through successful implementation of:

- **Portfolio management**, including concept estimating and benchmarking, project development stage gate workflows, opportunity scoring and more
- **Project and contract management**, including iterative planning and estimating

- **Project and contract controls**, such as secure end-to-end transparency and timely reporting and communications
- **Performance management**, including time-phased performance baselines, the “living forecast” and multi-method forecasting
- **Predictability measurement**, such as predictability indices and incentives based on predictability

In the new capital-projects landscape, accurate predictions and estimates aren’t enough. EPP technology enables companies to add a new measure of predictability: **timing**.

A company making accurate predictions early in the process will outperform companies making the same accurate predictions later on. When budget and schedule overruns are predicted quickly, an organization gains more time to adjust its course and reallocate resources as needed. However, organizations who make accurate predictions toward the end of the project don’t have the time to take the necessary corrective action.

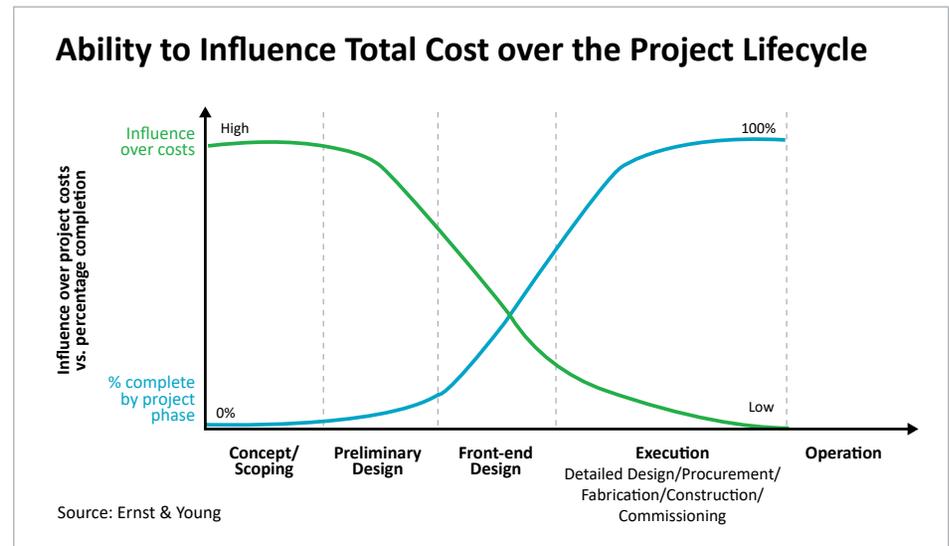


Figure 3: Source: Construction Industry Institute



Early predictability ***adds value*** by enabling the proper response to surprises and changes. Project managers who can foresee impending cost and schedule deviations can mitigate the causes by assigning the right people, implementing the ***right processes*** and encouraging the ***right behaviors***.”

Construction Industry Institute

Control

EPP technology enables a company to implement and measure Control KPIs that:

- **Measure, forecast and improve** the performance of every project in a portfolio
- **Integrate all project data**, including cost, change, risk, productivity and performance, into a single version of the truth
- **Analyze real-time analytics** at any data level
- **Gain consistency** in project delivery through promoting and enforcing standards

Control KPIs can help a construction company mitigate another unfortunate industry norm: unanswered requests for information.

Requests for information (RFIs) typically take more than one week to be answered, and many receive no responses at all.

EPP technology enables construction companies to measure and improve their RFI response times to help companies avoid program and project delays. Improving RFI responses also helps companies directly influence their daily productivity while enabling faster escalation and resolution of problems.

EPP technology provides teams with the data transparency and communication capabilities needed to reduce miscommunication and cut incidences of rework, which can have a huge impact on project costs. In fact, according to the Navigant Construction Forum, the total cost of rework can be up to 11% of the original contract value.

These KPIs – **efficiency, predictability** and **control** – cannot be measured using the siloed tools of the traditional capital projects industry. But through an EPP platform, an organization can evaluate these performance indicators, improve them and gain the financial benefits that result.





Financial Impact of Enterprise Project Performance

An EPP platform serves as a central, standardized system for construction and capital project companies to improve the performance of every project.

With higher levels of efficiency, predictability and control, an enterprise can reduce project costs, opportunity costs and related IT and PMO costs.

FINANCIAL IMPACT OF ENTERPRISE PROJECT PERFORMANCE

Reduce Project Costs by 5% to 10%

Through the effective planning and control made possible by an EPP platform, a capital project company can reduce its project costs dramatically. Such cost reduction results from:

- The ability to forecast more accurately
- Identifying, controlling and mitigating risk effectively
- Addressing potential problems proactively and early

 **ROI through good project controls targets 5-10% savings in CAPEX spend.”**

Delivering with Confidence, Deloitte



Business Case Driver	Value (% of remaining CAPEX spend)	Value (£ based on £5bn program)
Reduction in project management and controls headcount through improvement in project controls efficiency	0.5 - 1.5%	£25m - 75m
Reduction in capex out-turn through better decision making, improve controls, and a reduction in the amount of contingency used	4.0 - 7.5%	£200m - 375 m
Reduction in cost of capital, through better understanding of borrowing requirements and timing	0.5 - 1.0%	£25m - 50m
TOTAL Impact	5 - 10%	£250m - 500m

Figure 4: Source: Delivering with Confidence: Transforming Capital Project Delivery Through World Class Project Controls, Deloitte



Identifying project benefits lets the organizations gain focus and assign resources to the best projects. It's the way organizations increase their value."

The Strategic Impact of Projects, PMI



FINANCIAL IMPACT OF ENTERPRISE PROJECT PERFORMANCE

Reduce Opportunity Costs by 10% to 30%

An EPP platform can enable deep reductions in opportunity costs by helping an organization examine the business benefits of each capital project. Gaining full clarity into the benefits empowers project leaders to select the right projects and enables the organization to effectively allocate resources accordingly.

Knowledge of every project's benefits also helps a company measure project success like never before. It further enables the organization to fill in many project-knowledge gaps and create effective strategies for all future projects.



Figure 5: Source: The Strategic Impact of Projects, Project Management Institute.

FINANCIAL IMPACT OF ENTERPRISE PROJECT PERFORMANCE

Reduce Related IT and PMO Costs by 20% to 40%

EPP helps organizations cut costs through achieving IT efficiencies and system convergence.

The traditional complex and disjointed systems of the industry lack flexibility and offer few automation capabilities. Such inefficiencies lead to waste and high costs.

EPP can help deliver a 20% to 40% cost reduction possible by consolidating an organization's disparate systems and siloed tools. By harmonizing front ends and streamlining redundant capabilities, EPP simplifies system architecture and reduces overhead.

EPP also helps organizations cut PMO costs by automating reporting processes and eliminating manual activities that are prone to human error. Further, it enables organizations to effectively use resources across more of their projects.

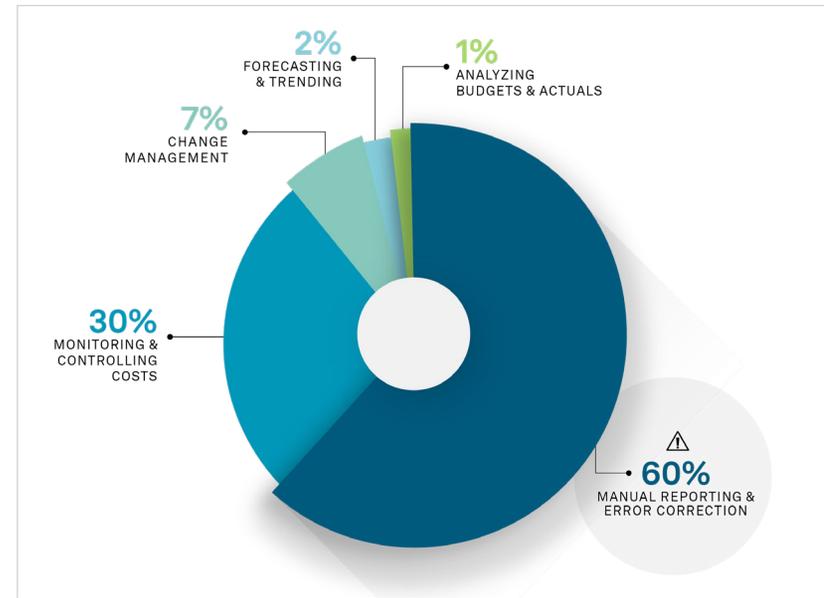


Figure 6: Low value activities at 60% before implementing EPP.

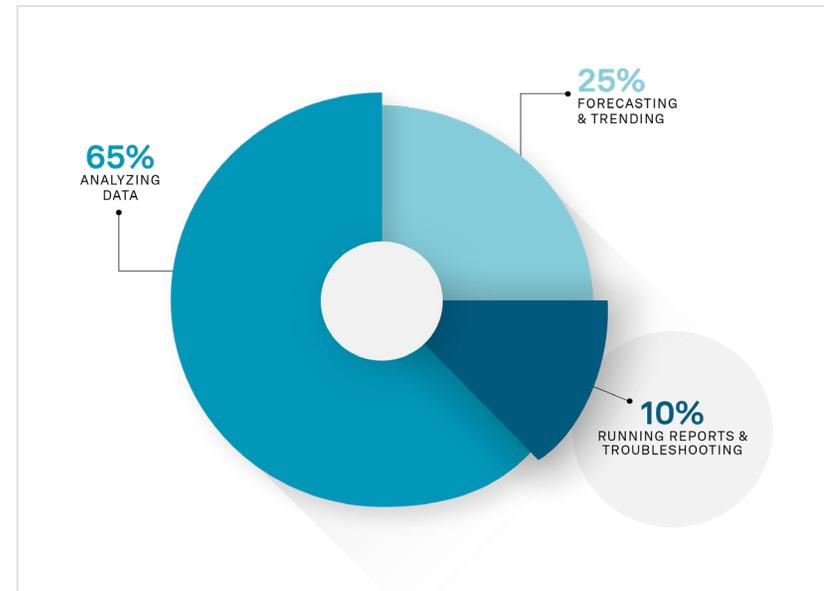


Figure 7: Expected time distribution with EPP.



Technology for The New Era

EPP is on track to create a wave of change that propels organizations forward in the new era of engineering & construction. By gaining unprecedented levels of efficiency, predictability and project control, enterprises with EPP technology will successfully navigate the industry's coming uncertainties.

Through leveraging the right technology, any entity operating in the capital projects industry can generate previously unrealized business value at every stage of the project lifecycle.

Where do you begin? Leading companies around the globe are trusting EcoSys as their Enterprise Project Performance system of choice. Such organizations include many of the top engineering, procurement and construction firms, owner operators, program and project management firms, government agencies, general contractors and more.

Today and moving forward, it's not merely the "strongest" players who will thrive in the new environment of capital projects. Future success is for the smartest, most efficient enterprises and the fastest predictors. For those interested in adopting the latest technology, the time is now.



About Hexagon

Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications.

Hexagon's PPM division empowers its clients to transform unstructured information into a smart digital asset to visualize, build and manage structures and facilities of all complexities, ensuring safe and efficient operation throughout the entire lifecycle.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 21,000 employees in 50 countries and net sales of approximately 3.9bn EUR. Learn more at hexagon.com and follow us @HexagonAB.

© 2020 Hexagon AB and/or its subsidiaries and affiliates. All rights reserved. 02/20 PPM-US-0768A-ENG

Talk to an expert about how an EPP strategy can benefit your organization, visit: ecosys.net/lets-talk-epp.

hexagonppm.com | ecosys.net