

Executive Overview

Engineering, Construction, and Operations

Executive
Summary

SAP Solutions

SAP Innovations

References

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Grow with the Project-Centric Enterprise



Enabling the Construction Lifecycle

Market Situation

The Innovation-Driven
Business

Business Priorities

SAP Innovations

Large-scale construction projects are complex and risky. An integrated platform supporting the full construction lifecycle helps engineering, construction, and operations (EC&O) firms manage projects, avoid risk, and stay competitive.

Low margins, intense competition, and demands for faster completion times increase risks and put enormous pressure on EC&O firms. At the same time, a company's cash position and liquidity are crucial to success and growth.

Globalization creates new challenges with even more competition and increased project complexity. It's harder to communicate with partners, vendors, and customers across time zones and language barriers.

In this highly competitive market where margins are constantly under pressure, operational excellence combined with greater efficiency is key to achieving profitability.

To achieve operational excellence, project-driven firms need an integrated and project-centric solution – one that provides project visibility and enables process efficiency so they can maximize productivity, minimize cost overruns, and provide sustainable returns on operating assets.

Find out how leading EC&O companies take advantage of SAP technology and solutions to bridge the gap between the design blueprint and construction realities, accessing real-time information across the entire budgeting process for smarter decision making.

Become a best-run EC&O company.



Building New Business with Confidence

Market Situation

**The Innovation-Driven
Business**

Business Priorities

SAP Innovations

Drive success through project visibility and business insight.

Improved Information Availability

Engineering superiority is driven by the quality of the design and rigorous operational controls during the construction phase. The ability to maximize both labor productivity and procurement profitability of raw materials and equipment is critical.

Increased Transparency

Improved project visibility from the construction site through to business operations gives firms greater contextual insights to manage risk and improve project profitability.

Integrated Portfolio

Companies need to keep projects on track and within budget. An integrated system provides timely, accurate information that drives agility and the ability to adapt to changing business requirements.

**Best-Run Engineering,
Construction, and Operations**



Laying the foundation for operational excellence via maximum project profitability, reduced risk, and automatic, schedule-driven processes is essential to ongoing success in the construction industry.

Business Priorities for Best-Run EC&O Companies

Market Situation

The Innovation-Driven
Business

Business Priorities

SAP Innovations

Best-run engineering, construction, and operations companies build their reputation on completing even the most challenging projects on time and within budget by maximizing productivity and efficiency while managing and mitigating risk.

- Bid to Contract Award
- Project Delivery
- Project Portfolio Revenue and Profitability
- Asset and Facility Operations
- Human Resources
- Finance
- Procurement
- Information Technology
- Technology and Platform



Understanding the value drivers for each of these priorities is key to executing as a best-run EC&O company.



SAP Innovations

Market Situation

The Innovation-Driven
Business

Business Priorities

SAP Innovations

Leveraging technology is critical for profitability and efficiency in construction. User-driven enterprise mobility, performance analytics, and cloud solutions are key to optimal project management from the office to the work site.

In an environment of tight margins, intense competition, and demanding clients, technology innovation is playing an essential role in the profitability and performance of successful construction companies.

They gain competitive advantage and keep projects on track by leveraging real-time information.

Integrated solutions for EC&O from SAP span the entire project lifecycle. From planning and design to project management to operations, SAP solutions provide comprehensive visibility enterprise-wide. And they can help companies interact with strategic partners, manage documents, and track the shipment and quality of materials for greater control.

When workers are at a job site, they can leverage mobile solutions from SAP to extend the work platform, providing a flexible, secure working environment anywhere, anytime.

Closely monitor key performance metrics by running real-time analytics with the SAP HANA platform that streamlines applications, analytics, planning, and predictive analysis on a single platform.

Achieve optimal productivity and collaboration across project teams with cloud-based applications.



Engineering, Construction, and Operations Value Map

SAP Solutions

Build new business with confidence.

Bid to Contract Award

Project Delivery

Revenue and Profitability

Asset Management

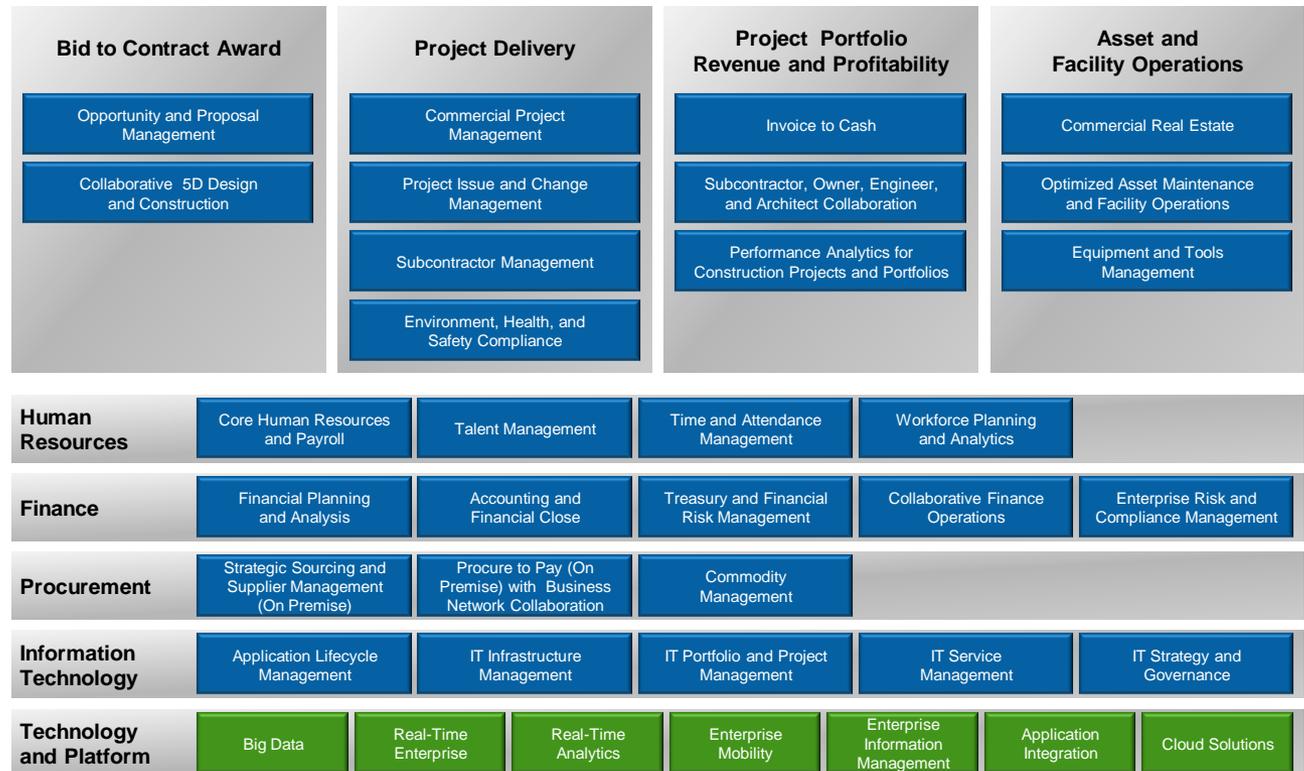
Human Resources

Finance

Procurement

Information Technology

Technology and Platform



Bid to Contract Award

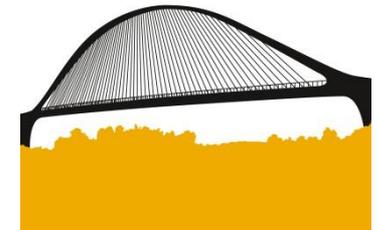
SAP Solutions

Bid to Contract Award

Priorities

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Success depends on the ability to accurately assess complex project requirements and respond on time, specify competitively priced materials, and schedule subcontractors with the best skills and experience – all at the right price.



What is the cornerstone of a successful construction business? The ability to produce accurate, timely, and profitable bids.

Yet the increasing complexity of projects, the growing specialization of trade partners and construction methods – combined with a greater array of material technologies – demand more sophisticated collaboration techniques.

Enabling effective bid management requires unified business data across departments, access to integrated design and estimation tools, and advanced collaboration capabilities.

Integrated and collaborative systems help drive more accurate estimates and improve win rates through access to past project estimate information.

In fact, the ability to collaborate with key stakeholders through widely available, real-time project information strengthens not just companies' relationships with subcontractors and suppliers but their ability to bid successfully.

19%

Higher sales achievement when sales and business development adopt collaborative opportunity management

Source: SAP Performance Benchmarking



Bid to Contract Award

SAP Solutions

Bid to Contract Award

Priorities

SAP Solutions

Improve win rates with more profitable project outcomes by using real-time pipeline visibility and collaborative design and estimation tools.

Become more agile and competitive and win more profitable projects with virtual collaboration software and real-time multidimensional and project estimate data.

Opportunity and Proposal Management

Enhance the efficiency of the bid management process with robust collaboration tools; deliver more timely, competitive, and profitable bids by leveraging unified data across departments; and mitigate risk by basing estimates on real costs and margins.

Collaborative 5D Design and Construction

Enable more accurate procurement through more precise estimating capabilities by leveraging integrated 3D computer-aided design technology with project estimation tools.

2.3x

Higher proposal conversion rate reported by top 25% companies than by bottom 25% companies

Source: SAP Performance Benchmarking

Benefits

- Enhanced business development efficiency
- Improved win rates
- More predictable outcomes
- Tighter collaboration with partners



Project Delivery

SAP Solutions

Project Delivery

Priorities

SAP Solutions

There's a fine line between profitability and project overrun. Best-run companies leverage collaboration and insight to ensure projects are completed in scope, on time, and within budget.



Most established construction companies have a strong command over the “sticks-and-bricks” part of the business. Yet all too often the foundations of these businesses are precariously balanced on inefficient processes and cumbersome business practices.

Under tight trading conditions, these systemic flaws can derail the company's profitability and competitiveness.

To overcome these challenges, firms need to take a good look at their internal operations and business systems to determine how they can improve operational efficiency to strengthen their performance.

Optimal project management is critical, and the ability to deliver tighter controls to project managers is central to operational excellence. With these controls at their fingertips, everything from conceptual design to execution, plus tracking and monitoring of workforce productivity, is available in real time.

80%

Of companies report lack of seamless integration between project and resource management systems

Source: SAP Performance Benchmarking



Project Delivery

SAP Solutions

Project Delivery

Priorities

SAP Solutions

80%

Reported no portfolio-level roll-up capability of project schedules and resources deployed, as well as limited integration with customer and supplier plans

Source: SAP Performance Benchmarking

Maximize productivity and profitability with coordinated, integrated systems and processes for operational excellence in project delivery.

Keep projects on track and within budget. Maximize productivity and profitability with comprehensive functionality to manage material, labor, equipment, and tools.

Commercial Project Management

Leverage integrated business and project systems to manage project financials and change management in one project-centric interface.

Project Issue and Change Management

Track and manage project issues, and anticipate and adjust variables to limit impact to schedule and cost.

Subcontractor Management

Improve subcontractor contract execution over long-term projects by handling partial invoices from subcontractors in one payment chain.

Environment, Health, and Safety Compliance

Reduce risk by facilitating comprehensive assessment of the environment, health, and safety (EHS) landscape.

Benefits

- Maximized productivity and profitability
- Improved financial visibility of projects
- Optimal collaboration among stakeholders
- Reduced risk and increased transparency
- Stronger buying power



Project Portfolio Revenue and Profitability

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Revenue and Profitability

Priorities

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Across the construction lifecycle, tightly integrating project execution with financial transactions, reporting, and analytics drives success. Enhancing collaboration and document management enables optimal resource productivity.



63%

Report billing system is inefficient for handling variations required by client arrangement such as percentage complete or by milestone

Source: SAP Performance Benchmarking

To meet more aggressive demands from project owners, EC&O companies need to implement sound financial management and reporting capabilities, as well as enable effective collaboration throughout the entire lifecycle of a major construction project.

To mitigate risk and help ensure growth in a difficult construction landscape, the ability to integrate financial processes with project deliverables is vital. Throughout project planning and execution, project stakeholders such as owners, architects, engineers, subcontractors, and suppliers all need on-demand access to critical documentation. This requires robust management and control.

In addition, comprehensive business intelligence across the entire project lifecycle allows managers to measure and adjust performance as required. Analytics based on industry-specific indicators allows them to monitor project status and take corrective action if necessary.



Project Portfolio Revenue and Profitability

SAP Solutions

Revenue and Profitability

Priorities

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Increase project profitability while managing and mitigating operational and financial risk.

Streamline tasks and project-related documents by connecting and empowering people with integrated information, documents, and business processes.

Invoice to Cash

Maintain healthy, stable financials and help ensure a strong project cash position with close management of the entire cash collection process – from invoice to payment.

Subcontractor, Owner, Engineer, and Architect Collaboration

Reduce unexpected project cost overruns by accelerating communication across project teams, while improving insight into changes and reducing execution errors.

Performance Analytics for Construction Projects and Portfolios

Manage financial and operational performance to deliver accurate insight into costing for improved financial planning and forecasting.

73%

Have limited capability to track project risks from identification to resolution stage, in collaboration with subcontractors and customers

Source: SAP Performance Benchmarking

Benefits

- Improved project liquidity
- Optimized invoicing speed and accuracy
- Clear insight into project margins
- Real-time information delivery
- Visibility into trend variance
- Identification of risks and potential impact



Asset and Facility Operations

SAP Solutions

Asset Management

Priorities

SAP Solutions

To differentiate and grow in today's competitive environment, EC&O companies need to evolve in order to offer complete lifecycle services and establish new revenue streams.



Tepid growth and rising operating costs continue to trouble the construction and commercial real estate industries.

Project owners, real estate investors, and facilities management companies are under constant pressure to increase their margins. Business priorities include the need to maintain high occupancy levels, invest in the right markets at the right time, and deliver projects on time and within budget – all while controlling operating costs and getting full reimbursement for maintenance expenses.

Businesses must achieve these goals while strategically planning for growth and diversification into new geographical areas. Best-run companies in commercial real estate use insight into every aspect of their business to make the right operational and strategic decisions. Actionable insights can empower organizations to maintain and increase margins in an ever-changing and competitive industry environment.

17%

Higher return on assets where an asset management system is integrated with other enterprise systems

Source: SAP Performance Benchmarking



Asset and Facility Operations

SAP Solutions

Asset Management

Priorities

SAP Solutions

Maximize return on assets, optimize equipment effectiveness, and manage risk.

Get real-time visibility into asset performance, manage the asset lifecycle efficiently, optimize asset usage, and cut costs by leveraging powerful analytics.

Commercial Real Estate

Develop holistic asset planning, building, and commissioning through integrated portfolio management, project management, and asset information management.

Optimized Asset Maintenance and Facility Operations

Increase uptime, narrow process variability, control maintenance costs, react faster to process disruption, and satisfy customers more consistently by gaining greater visibility into asset operations and performance.

Equipment and Tools Management

Drive holistic asset operations and maintenance by integrating, automating, and unifying all maintenance-related data, processes, and reporting.

22%

Higher asset productivity when asset lifecycle is optimized through long-term financial, utilization, upgrade, and replacement plans

Source: SAP Performance Benchmarking

Benefits

- Achieve superior asset performance
- Collaborate across the organization
- Help ensure efficient asset utilization
- Enable fast decisions and reduce disruption



Human Resources

SAP Solutions

Human Resources

Priorities

SAP Solutions

The construction industry is losing skilled labor and experienced management executives to retirement. Yet talent remains a true differentiator. Best-run companies are innovating in the areas of skill development and knowledge transfer.



To support growth and agility, organizations must give people the knowledge and technology to facilitate innovation.

And the construction industry is becoming increasingly sophisticated, with highly collaborative construction processes. Successful firms need people with the right technical skills.

In addition, companies must identify and retain new talent acquired through mergers and acquisitions.

Organizations that quickly respond with the right talent in the right places can secure a unique advantage in the marketplace.

32%

Less employee turnover by using workforce data analysis to design, implement, and monitor workforce optimization strategies

Source: SAP Performance Benchmarking



Human Resources

SAP Solutions

Human Resources

Priorities

SAP Solutions

38%

Lower costs for HR organizations with a high degree of internal integration compared to organizations with a fragmented HR environment

Source: SAP Performance Benchmarking

Enable the new world of work.

Enable growth and sustainability by coupling global capabilities, integration, and real-time insight with choice in the way HR processes and services are delivered.

Core Human Resources and Payroll

Consolidate HR and payroll processes onto a common global platform to unify workforce data and meet compliance obligations.

Talent Management

Improve strategic alignment, increase productivity, and accelerate results by identifying, developing, motivating, and retaining talent.

Time and Attendance Management

Streamline time-management processes for visibility into and control over labor costs to enhance resource effectiveness.

Workforce Planning and Analytics

Identify and analyze talent gaps and streamline workforce planning processes for efficient and effective management of workforce demand and supply.

Benefits

- Align people to organizational strategies
- Support global expansion into new markets
- Improve productivity and engagement
- Provide real-time insight into business needs



Finance

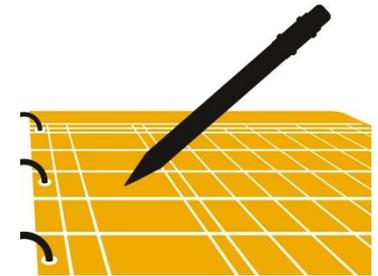
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Finance

Priorities

SAP Solutions

During one of the most difficult and volatile economies of modern times, financial organizations are struggling to achieve excellence. The responsibility of CFOs cuts across the entire construction organization. Sound stewardship must be balanced with value creation – and drive business efficiencies while managing risk.



In construction companies, the CFO is the driving force behind enhancing productivity, increasing resource efficiencies, and cutting costs to eliminate duplication and waste. CFOs need to help the organization deliver superior service at reduced cost and outperform financial objectives, contributing to business performance and shareholder value.

CFOs also need to ensure regulatory compliance and effectively manage risk to avoid liabilities. The first step in managing risk is to identify and analyze all its sources.

Contractual arrangements with employees, customers, and subcontractors need to be crisp and unambiguous. Safety needs to be a priority to protect workers on-site, as well as to guard the company from negligence or injury claims. It is critical to the mission to comply with increasingly complex regulatory requirements.

76%

Higher margin where finance system allows for historical and forward-looking views into financial and operational performance

Source: SAP Performance Benchmarking



Finance

With sustained market volatility and tighter margins, CFOs need to drive operational efficiency and leverage business insight to excel.

Robust finance processes allow people and companies to work together more efficiently and use business insight more effectively to outperform expectations.

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Finance

Priorities

SAP Solutions

Financial Planning and Analysis

Streamline budgeting processes, capture growth opportunities, and customize business flow to achieve goals.

Accounting and Financial Close

Close books and create financial statements on time with greater insight, accuracy, and compliance.

Treasury and Financial Risk Management

Improve the management of every activity associated with cash, payments, liquidity, risk, and compliance.

Collaborative Finance Operations

Automate key business processes in invoice to pay, receivables management, and shared services.

Enterprise Risk and Compliance Management

Proactively prevent risk events by automating risk, compliance, and international trade activities.

22%

Lower audit costs where organizations use automated rather than manual controls

Source: SAP Performance Benchmarking

Benefits

- Help ensure regulatory compliance
- Manage risk effectively
- Outperform financial objectives
- Create sustainable value
- Deliver superior service at reduced cost



Procurement

SAP Solutions

Procurement

Priorities

SAP Solutions

Companies often focus on building revenue, but, by saving on procurement, they can increase profits by five times as much. The key to maximizing procurement success in this critical profitability role is to deliver consistent quality, savings, and compliance over time.



Procurement leaders set a baseline for success by implementing best practices, excelling in category expertise, and working with key stakeholders on cost control programs.

While savings is always a priority, new objectives have emerged as well. Procurement must manage supplier risk and performance, improve process efficiency, drive innovation, and ensure sustainability practices.

Companies need solutions that provide the tools to cut costs as well as add value and support processes that include spend analysis, sourcing, contract management, operational procurement, supplier information management, and risk and performance management – available both on premise and in the cloud.

These tools, when coupled with an unparalleled collaborative business network, drive real-time insight and efficiency that can only be delivered through the power of “many.”

60%

Higher average annual savings for organizations with high maturity and leadership in procurement strategy

Source: SAP Performance Benchmarking



Procurement

SAP Solutions

Procurement

Priorities

SAP Solutions

76%

Higher strategically managed spend (direct materials) for EC&O organizations that proactively monitor contract terms, rebates, volume tiers, and renewals

Source: SAP Performance Benchmarking

Drive sustainable savings while supporting innovation.

Ensure best practices in the source-to-pay process, on premise or in the cloud, while leveraging the power of network collaboration for efficiency and insights.

Strategic Sourcing and Supplier Management (On Premise)

Find new suppliers through the Ariba Network, and manage these relationships through supplier management solutions. Identify and act on sourcing opportunities, and create favorable, low-risk supply contracts.

Procure to Pay (On Premise) with Business Network Collaboration

Realize savings with compliant, user-friendly self-service procurement, services procurement, and plan-driven procurement. Collaborating on the Ariba Network makes catalog management, purchase order collaboration, and invoice-related transactions even more efficient.

Commodity Management

Optimize procurement, sales, and risk management for a consolidated, real-time view of commodity risk to react quickly to market changes.

Benefits

- Optimize spend under management
- Increase average annual savings
- Cut FTEs per billion in spend
- Drive innovation with suppliers
- Reduce cost and risk
- Accelerate turnaround



Information Technology

SAP Solutions

Information Technology

Priorities

SAP Solutions

Construction companies need to align IT with their business goals, transforming the IT organization into a strategic business partner. Business-oriented IT management is all about increasing efficiency and responsiveness.



25%

More IT projects generating positive ROI reported by organizations that drive joint leadership between business and IT

Source: SAP Performance Benchmarking

According to a study by Gartner, the IT organization – in an increasing number of companies – does not decide to invest in IT projects on its own. Other business units are now involved in driving IT investment decisions based on their business value.

In many organizations IT management is typically a matter of managing the technical IT landscape and systems. Yet new technologies such as mobile, in-memory, and cloud computing can bring value to the business in an unprecedented way.

They can also make the IT landscape more complex and require additional IT management tools to support them.

To master the business of IT, EC&O companies need to adopt best practices and leverage a portfolio of solutions to ensure efficiency, business continuity, and responsiveness. With a new generation of technology from SAP, the IT organization can become more relevant and add strategic value to the enterprise.



Information Technology

SAP Solutions

Information Technology

Priorities

SAP Solutions

14%

Lower IT spend where the business units have incentives aligned with the adoption of standard and common solutions

Source: SAP Performance Benchmarking

Evaluate and control IT risk, enable flexibility and scale, control and optimize IT costs, and maximize strategic value.

Align IT spend with business priorities, drive efficiency, increase responsiveness, and help ensure business continuity with a new generation of technology from SAP.

Application
Lifecycle
Management

Implement application lifecycle management processes, methodologies, and services to reduce total cost of ownership.

IT Infrastructure
Management

Identify and monitor all network assets and drive an integrated infrastructure and application lifecycle process.

IT Portfolio and
Project
Management

Manage portfolios and projects from start to finish, drive innovation, and develop cross-functional processes across disparate systems.

IT Service
Management

Align service desk operations with service-level agreements.

IT Strategy and
Governance

Automatically track and manage costs and risk across the IT landscape.

Benefits

- Better align IT to business strategy
- Shorten IT delivery and business cycles
- Maximize return on IT
- Reduce system upgrade and operation costs
- Lower risk mitigation cost and revenue loss
- Reduce critical business system downtime



Technology and Platform

SAP Solutions

Technology and Platform

Priorities

SAP Solutions

Businesses must drive transformation through technology innovation. Organizations that thrive can enable the real-time enterprise to improve the value of information, empower new developer and user experiences, and unwire their businesses to innovate and engage with customers, partners, and employees.



As users become savvier their needs escalate. They expect real-time insights, predictive analysis, and access to applications from the latest in mobile devices. They expect all of these capabilities to seamlessly integrate with their favorite social platforms. And the number of users expecting access is growing quickly.

At the same time, data volumes are exploding, while the window to capitalize on opportunities is shrinking. Users must be empowered with information available in an entirely new class of real-time applications. Developers must have a platform they can use to innovate faster than ever before.

Today's challenges are more complex than ever. Technology solutions can make the difference – the difference between surviving and thriving. Businesses must drive transformation through the innovative use of technology. Organizations that thrive will enable the real-time enterprise to improve the value of information, empower new developer and user experiences, and unwire their businesses to innovate and engage with customers, partners, and employees.

Technology and Platform

SAP Solutions

Technology and Platform

Priorities

SAP Solutions

Technologies drive change and help the business thrive.

SAP software enables the real-time enterprise, empowers new experiences, and unwires the business.

Big Data

Achieve tangible results on every business priority by continually accelerating the processes of acquiring, analyzing, acting on, and applying insights.

Real-Time Enterprise

Power a new class of real-time analytics and applications with an innovative data platform to give businesses a true competitive advantage.

Real-Time Analytics

Unleash collective insight through enterprise business intelligence, agile visualizations, and advanced analytics on any device and platform.

Enterprise Mobility

Deliver a platform for mobile development and security to innovate employee and consumer apps for any mobile device.

Enterprise Information Management

Maximize the business value of data – both structured and unstructured – across the organization.

Application Integration

Integrate application delivery to maximize agility across people, processes, and systems – within and beyond the SAP software landscape.

Cloud Solutions

Extend existing on-premise apps and infrastructure to enable new innovative business processes, gain greater insights, and unlock new business value.

Benefits

- Enable real-time operations
- Lower time to value and speed up innovation
- Turn data into an enterprise asset
- Innovate customer engagement



SAP Innovations

SAP Innovations

Applications

The SAP HANA Platform

Mobile

Analytics

Cloud

80%

Of decision makers think access to the right information at the right time is critical to their business

Source: SAP Performance Benchmarking

Razor-thin profit margins and stagnant demand are a reality for engineering, construction, and operations companies. Yet opportunities abound to leverage technology such as in-memory computing, mobile, and powerful analytics to drive competitive advantage.



With more aggressive competition, tighter schedules, and increasing project complexity, EC&O companies are evolving into wholly services-based businesses. This environment requires a more project-centric approach where companies can operate and execute with precision by drawing on deeper business insights from across all levels of the enterprise.

By using SAP technology for cloud, mobile, analytics, and in-memory solutions, firms can benefit from comprehensive visibility across the enterprise. Our mobile platform solution delivers business process applications to teams on-site, regardless of device. With this transparency, project managers in the field are empowered by the data at their fingertips. Real-time access to analytics eliminates guesswork to support better, more informed decisions.

Optimal productivity is also critical to ongoing growth and success. With our cloud-based HR solutions, companies can optimize their use of human capital and always identify the best people for the job. In addition, analytics solutions from SAP leverage best-practice key performance indicators to monitor and improve financial, operational, and project performance.

SAP Business Suite powered by SAP HANA

SAP Innovations

Applications

The SAP HANA Platform

Mobile

Analytics

Cloud

48%

Of organizations foresee a need to have predictive modeling and complex optimization techniques for Big Data analysis

Source: SAP Performance Benchmarking

SAP Business Suite software powered by SAP HANA enables engineering, construction, and operations companies to quickly access increasing volumes of transaction data to more tightly control project performance, anticipate scope changes, and optimize resource productivity.



Bid to Contract Award

Assess the opportunity and decide to chase it, coordinate the bid workforce to develop it, and submit the bid on time. Perform rapid estimating with the aid of 3D visualization and richer data. Source and embed material and services, build the plan, and then decide upon margin scenarios.

Gauge potential opportunities for business growth and focus efforts with intelligence and analytical views of clients and opportunities.

Project Delivery

Monitor and analyze large, complex projects to decide faster, helping ensure the best possible resource productivity and project profitability. Enable real-time progress monitoring throughout the project lifecycle. Maintain healthy project margins by analyzing financials and logistics data to decide and react effectively.

Leverage high-speed business analytics to improve project-level profitability by obtaining real-time insights into cost, performance, and timeliness of projects. Make real-time purchasing decisions for raw materials based on the latest demand forecasts.



The SAP HANA Platform

SAP Innovations

Applications

The SAP HANA Platform

Mobile

Analytics

Cloud

Delivering complete project lifecycle capabilities, EC&O companies amass vast amounts of transaction data. When the data is integrated and available in real time, better decisions can be made with deeper insights and actionable information to improve project delivery and profitability.



Big Picture

Across the industry, EC&O companies struggle to access, analyze, and leverage the breadth of their business data. These companies assiduously collect more and more data on projects, suppliers, contracts, and payments. But when data is located in silos, it only provides a sliver of business intelligence. The complete picture is missing. By using the SAP HANA platform, the best-run EC&O companies of tomorrow can exploit Big Data from across their entire business and then optimize business strategy and achieve competitive advantage.

Project-Level Profitability

Leverage high-speed business analytics to improve project-level profitability by obtaining real-time insights into cost, performance, and timeliness of projects. Identify risk exposure and gain transparency into potential losses.

Analyze procurement spend across the whole enterprise to gain deep visibility into spending and identify areas where savings can be made. Make real-time purchasing decisions for raw materials based on the latest demand forecasts. View detailed employee information to help optimize workforce planning.



SAP Innovations

Applications

The SAP HANA Platform

Mobile

Analytics

Cloud

40%

Higher employee productivity
when mobile access is
provided to employees
across all levels

Source: SAP Performance
Benchmarking

Mobile

Mobile technology has the power to transform the way project managers, engineers, and subcontractors work on-site. EC&O companies can greatly increase efficiencies by leveraging mobile technology for better communication, improved workflow, access to real-time data, and project procurement on-site.



New Capabilities

Enterprise mobility empowers the construction industry with new capabilities. Leveraging mobile solutions from SAP, companies can improve project performance by accessing and sharing project information, wherever their employees are, whatever the time, whatever the device.

In the field, engineers, project managers, and subcontractors can all access core project data such as work schedules, manuals, and maintenance records in real time to help them run their projects more efficiently.

Decisions On the Go

Eliminate manual processes for projects by enabling on-site procurement, materials management, equipment management, and safety observation reporting – all from mobile devices.

Increase productivity and efficiency by minimizing the need to handle data twice. Empower construction workers to access enterprise applications on their mobile devices on-site so that all project progress reporting to clients is accurate and current. Field data entry also allows for real-time data in the accounting and payroll systems. IT can leverage these powerful solutions to manage and secure mobile data, devices, and applications.



Analytics

SAP Innovations

Applications

The SAP HANA Platform

Mobile

Analytics

Cloud

20%

Higher revenue per employee in organizations that are using information to identify strategic and competitive advantages

Source: SAP Performance Benchmarking

Building a solid foundation for success demands tight control of costs and finite management of projects underway. By monitoring and controlling performance across construction projects, industry-specific performance analytics software helps businesses track progress and stay on course.



In a low-margin industry, project managers, engineers, and superintendents must be more focused and decisive to reduce delays and keep projects on track. Use business analytics applications to sort, categorize, and analyze data based on predefined criteria, to quickly identify areas that need additional investigation. Now teams can spend their time analyzing the important information, not sifting through reams of useless data.

Improved Project Profitability

The SAP Performance Analytics for Engineering, Construction, and Operations analytic application provides visualization across relevant data to support optimal decision making. This single application supplies comprehensive business intelligence across the project lifecycle, covering all aspects of project execution, while enabling connectivity to virtually any data source – both internal and external. Rapid deployment means faster ROI, and a preconfigured data model with more than 60 predefined reports speeds time to value.

Enhanced Agility

See at a glance the status of business and project execution and use ad hoc query functionality for further data analysis when required.



Cloud

SAP Innovations

Applications

The SAP HANA Platform

Mobile

Analytics

Cloud

65%

Of organizations believe that cloud will amplify other technology megatrends (for example, enterprise mobility, Big Data, and analytics)

Source: SAP Performance Benchmarking

The speed and flexibility offered by cloud computing is creating new opportunities for best-run EC&O companies. Cloud applications from SAP and the open SAP HANA Cloud Platform allow companies to build differentiating solutions at the point of engagement – establishing nimble global business networks or connecting faster and more directly with customers.



Empowering the Project Team

Cloud computing in the construction industry serves mission-critical back-end functions – such as payroll and HR management – as well as on-site collaboration with access to cost estimating, project planning, and control. Cloud-based solutions from SAP can empower project teams in the field to work remotely.

Robust Remote Access

With growing levels of business consolidation, decentralization, and an upswing in travel-based positions, companies' ability to offer solid remote-access technology to their employees is becoming a critical factor in achieving success. With multiple stakeholders working across each project, team members need to provide a high level of transparency and accountability. Cloud-based solutions from SAP let construction company employees access applications wherever they need them, so they can maintain and report on project deliverables from the construction site.

Greater Collaboration

Facilitate greater levels of collaboration among multidisciplinary team members from within and outside the construction company with access to applications through cloud and mobile platforms.



Best-Run Customers

Best-Run Customers

A2Z Group

HCC

IESA

Mota-Engil

Oskomera

Techint

Vista Land and Lifescapes

Why SAP?

60%

Of the top 100 global
contractors run SAP

Source: SAP Performance
Benchmarking and ENR

8 of the top 10 international EC&O companies run SAP software.

10 of the top 10 EC&O companies in Latin America run SAP.

9 of the top 10 EC&O companies in Europe, the Middle East, and Africa run SAP.

8 of the top 10 EC&O companies in North America run SAP.



Customer Co-Innovation

Best-Run Customers

A2Z Group

HCC

IESA

Mota-Engil

Oskomera

Techint

Vista Land and Lifescapes

Why SAP?

1.9x

More projects delivered on or below budget among best-managed IT initiatives

Source: SAP Performance Benchmarking

SAP collaborates with leading EC&O companies using the EC&O Executive Advisory Council to lead co-innovation and continuous, incremental enhancements – from project delivery to performance management.

EC&O Executive Advisory Council

IT and business area executives from leading EC&O customers meet with SAP solution developers to set the course for enhancements and innovations for EC&O industry solutions.

Co-Innovation Partners

The EC&O industry team is able to collaborate – both formally and informally – with customers and partners to address specific industry needs.





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Why SAP?

Key Challenges

- Achieve a higher standard of control in inventory management
- Gain access to more accurate and timely financial and operational reports
- Make better-informed business decisions faster

Resolution

- Implemented an SAP Business All-in-One solution for a single, integrated, scalable, platform-independent solution
- Established a strong, team-based IT support system
- Focused on key areas of need while planning incremental expansion

Key Benefits

- Improved project profitability through better supply chain management
- More accurate expense controls with enhanced item-cost identification

3%

Higher profit margins on projects

15%

Saving on vehicle-running costs

25%

More efficient processing of sales tax returns

“Implementing SAP software will transform the group into an efficient, cost-effective, operationally sound organization with clearly defined decision-making mechanisms for future growth.”

Manoj Gupta, Director, A2Z Group





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Why SAP?

Key Challenges

- Develop quantity-based budgeting, a key requirement in the construction industry
- Eliminate complexity and errors caused by spreadsheet-based estimation and budgeting
- Enable senior managers to analyze budgets more simply and faster
- Facilitate budget preparation for employees at all organization levels, including staff working at remote locations

Key Benefits

- Reduced time needed by senior management to review and evaluate budgets
- Enabled better management control through accurate comparison of material consumption across projects
- Enhanced budgeting process by eliminating potential for error
- Helped tendering department to accelerate estimation and budgeting

-350

Overall staff days needed for planning, budgeting, and management approval per year

50%

Reduction in budget preparation time needed by planners

9–12

Months expected project payback period

“The budgeting software based on SAP ERP provides vital support to a key business process at HCC. It helps to strengthen the creation, review, and tracking processes for budgets.”

Satish Pendse, Chief Information Officer, Hindustan Construction Company





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Why SAP?

Key Challenges

- Manage complex oil and gas processing and compression modules for six floating production, storage, and offloading (FPSO) vessels
- Improve decisions by consolidating engineering, procurement, and construction (EPC) data and 3D models
- Comply with international regulations

Why SAP

- Integration of the SAP ERP application, engineering data, and Smart Plant CAD data into one visual interface
- Unmatched real-time visualization

Key Benefits

- Implementation of a 3D HTML5 application and the SAP 3D Visual Enterprise rapid-deployment solution in five months
- Visual contact for a comprehensive, heterogeneous IT landscape

“The experience of IESA, coupled with the technology embedded in SAP 3D Visual Enterprise applications, enabled us to innovate and raise the bar for the building information model of our 6D hub, ensuring a high-performance enterprise management layer.”

Pedro Feu, Project Manager, IESA Óleo & Gás S/A

Simplify

Access to an overwhelming volume of 3D data models

Centralize

Visual integration of documents, drawings, databases, and data codes

Collaborate

Improve the ability of various areas to work together, including project owners and partners, increasing productivity

Visualize

Operational and executive dashboard for oil and gas EPC process, allowing direct interrogation of the business using 3D FPSO module drawing





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Why SAP?

Key Challenges

- Eliminate manual data input
- Reduce manual effort for gathering data and generating reports
- Create a consistent process to record and deliver financial data

Implementation Best Practices

- Selected a proven partner
- Engaged a dedicated project manager
- Maintained tight control of scope

Key Benefits

- Streamlined consolidation processes to increase user productivity
- Increased accuracy of financial data; reduced risk by eliminating errors
- Improved traceability for data audits

40%

Reduction in time
needed to perform
consolidations

30%

Reduction in time
needed to create
additional month-
end reports

“SAP Business Planning and Consolidation supports our growth strategy by streamlining our budgeting, consolidation, and management reporting processes.”

Nuno Coelho, Controlling Director, Mota-Engil Group





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Why SAP?

Key Challenges

- More efficient processes
- Higher quality output
- Sharper quoting and planning

Resolution

- Deploy an SAP Business All-in-One solution available from Dimensys Business Solutions
- Integrate support for all international activities into a single solution

Key Benefits

- Accurate, up-to-date, and consistent data
- Clear, scalable reports available at any time
- Expected project cost savings and failure savings of €2.5 million per year
- Less paperwork and manual effort, minimizing the risk of errors and data loss

50%

Reduction in failure cost, down to €1 million

3

Days for month-end financial consolidation

127%

Increase in revenue per employee, up to €400,000

“With SAP software, Oskomera closed the information management loop between money, time, materials, and documents.”

Stefan Rink, Information and Communications Technology (ICT) Manager, Oskomera Group





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Why SAP?

Key Challenges

- Develop a structured control system to monitor costs
- Streamline and optimize cost controlling
- Improve tracking of data and materials
- Standardize top management reporting
- Avoid reclassification for a single version of the truth

Resolution

- Implementation of the SAP Business Planning and Consolidation application
- Commitment to project and standardization criteria across all lines of business
- Deep involvement of purchasing, construction, administration, and controlling departments

35%
More efficient
data collection
and validation

40%
Faster learning
curve for new
resources

50%
Faster data
consolidation
company-wide

“The SAP solution allowed us to streamline processes and provide project managers with current, accurate, and reliable data in real time. These improvements are crucial to our business.”

Gian Giuseppe Orlando, Project Control Manager, Techint Compagnia Tecnica Internazionale S.p.A





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Why SAP?

Key Challenges

- Implement a scalable solution to cope with business growth
- Integrate and harmonize business process into a single solution for improved accountability and control
- Ensure availability of timely, accurate data for better analytics

Resolution

- Deployed the SAP ERP and SAP Real Estate Management applications
- Adopted industry best practices and deployed SAP standard solutions instead of customized applications
- Ensured successful rollout with executive sponsor support

75%

Reduction in time needed to close books

95%

Less time needed to calculate sales commissions

90%

Less time needed to post sales transactions

“We selected SAP because, given the rapid growth of our business in recent years, it was critically important to choose a partner with a strong reputation and proven track record in implementation.”

Manuel Paolo Villar, Chief Executive Officer, Vista Land and Lifescapes Inc.



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Why SAP?

The SAP for EC&O solution portfolio underpins business profitability and growth by leveraging an integrated enterprise to increase resource productivity, mitigate risk, and deliver full construction lifecycle services.

Operations Focused

SAP has comprehensive experience in the construction industry and has worked with engineering, construction, and operations customers for more than 30 years. The SAP for EC&O solution portfolio integrates operational data with back-end data across all business systems, not just financials and controlling.

Tightly Integrated, Comprehensive Business Solutions

More than 3,100 construction businesses worldwide leverage SAP for EC&O solutions across the entire value chain and project lifecycle.

Leveraging Communication and Collaboration

SAP innovations in mobile technologies empower project professionals in construction companies to collaborate extensively with internal and external stakeholders and orchestrate profitable project management from the field.



Find Out More About How Your Organization Can Become Best-Run

Benchmark Your Performance

Position your organization for dominance in this new economy with the business performance benchmarking program from SAP – available free to SAP customers and select prospects. The SAP benchmarking program has helped more than 3,000 organizations assess their strengths, uncover areas for improvement, and identify best practices and IT strategies that generate clear, tangible value – not someday, but today.

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Executive Overview

Engineering, Construction, and Operations

Executive
Summary

SAP Solutions

SAP Innovations

References

Contact Us

CMP 28929 (14/01)

Go for a test-drive. Visit us online at:

www.sap.com/eco

<http://scn.sap.com/community/engineering-construction-and-operations>

<https://twitter.com/SAPConstruction>

www.youtube.com/watch?v=c9PGkjiH0Cg&feature=related

The SAP logo is displayed in white text on a blue rectangular background. It is positioned in the bottom right corner of the image, partially overlapping the construction site and the General Post Office building.

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