

The *ALM Vanguard*: Capital Projects & Infrastructure Consulting



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Overview

Capability Drivers

This year is shaping up to be one of the strongest for capital projects, despite political and economic uncertainties. Project volume is up, and consulting provider pipelines are full, though the number of megaprojects is falling, forcing providers to make up the difference with a greater number of smaller projects. This also means smaller-sized clients, with less experience in capital projects. The increase in project volume is due to a few reasons. The world's governments are struggling with aging infrastructure, although financing those projects is a particular challenge for governments and consulting providers alike. On the private sector side, technological changes in product design and delivery are matched and driven by customer expectations. This brings greater attention to asset quality and life cycles as well as costs. Geographically, North America is leading in capital projects spend, though with plenty of room for more investment. Western Canada is experiencing a strong boom in mining and natural resources-related projects. Asia Pacific has growth in both government and private sector projects, with big growth in public infrastructure in China and mining & natural resources in Australia.

There are challenges, however. Volatile commodity prices inject a greater dimension of risk at a time when clients are increasingly risk averse. US tax reform and other policy changes have freed up cash for capital projects, but changes in cash repatriation rules and the increasingly protectionist bent of the US government (with the growing politicization of trade policy) are having countervailing effects. That latter issue is particularly bedeviling because it raises uncertainty over how long any current trade policies will continue, especially after 2020. Climate change is also a challenge, both because of increased extreme weather events, but also because of the political cloud around the underlying science. These examples highlight the need to balance the long-term capital strategies of client projects with the short-term political realities on the ground.

But other challenges face the industry as well. Like transaction advisory, capital projects have a poor success record with stubbornly high cost and schedule overruns. This is an area where consulting providers have been focusing recently. Contractor performance is also a common problem, exacerbated by the fact that the construction industry is infamously slow to adapt newer technologies, including project management software and solutions that could reduce cost and schedule overrun problems. In fact, far too many construction companies are still operating in much the same way, with the same procedures and models, as their forebearers nearly a century ago. This has made it difficult for the industry to attract talent with the new data and technology skill sets it so sorely needs. This has created a vicious circle whereby some in construction are slow to invest in technology because they cannot employ people with the skills to manage that technology and those with the right skills do not look to the construction industry for careers because of its under-investment in technology.

The stress construction firms are under is very real, however. The failure of Carillion PLC in the UK in early 2018 has put the health and performance of construction companies under government and investor microscopes. This stress is driving some industry consolidation, and consulting providers are benefitting from the industry's resulting brain drain.

Consulting to capital projects & infrastructure

The traditional service delivery approach for consulting providers to capital projects has been through their construction, infrastructure, transportation or public sector industry practices. This is still largely true across this space, but some market leaders have been moving to further develop and bolster their offering around design and planning for capital projects,

Overview

Capability Drivers

injecting strategy, risk management and a quantitative, economic impact dimension into project planning in a bid to avoid pitfalls and unexpected outcomes later. There is also a growing need for technical expertise that favors smaller, specialist consulting boutiques, though some larger providers are investing in those capabilities. Capital projects are also becoming very closely linked to digital transformation-type services as consulting providers find themselves helping to close data and technology gaps for clients in projects, both in terms of the technology itself and the technology experts. Some providers now offer, in effect, staff and capability augmentation services for the duration of projects.

In the public sphere, the sheer scale and cost of projects are increasingly being defrayed through hybrid models, such as consortia. These consortia were initially a competitive challenge for consulting providers, but more recently many owners/investors have come to realize that consulting providers are best suited to identify and improve the performance, financial and operational risks of projects. Also, these consortia are beginning to take long-term ownership views of assets and look to consulting providers to help ensure optimal asset performance over the asset's life cycle.

As capital projects become more complex, consulting in this space is an increasingly lucrative business, and a growing number of construction and engineering firms have been creeping upstream to offer advisory services. However, while they offer deep technical expertise around the construction process, they are weak in risk, regulatory, supply chain, talent, finance strategy, and asset management. Few construction or engineering companies have the data analytics capabilities of many consulting providers. On that basis, some consulting providers view these construction and engineering companies as more complementary than competitive, though some providers are also in turn developing internal construction and engineering capabilities.

Finally, a major theme unfolding in capital projects is the adaptation of manufacturing processes and techniques: lean, 3-D printing, modularization, standardization, and robotics. This trend favors consulting providers with strong industrial practices.

Providers in *The ALM Vanguard™* of capital projects & infrastructure consulting space share these essential differentiating attributes:

Project design & management: Being able to help clients with initial project design, planning and management is crucial for helping clients avoid cost and schedule overruns. This includes more than the technical construction of the asset, but the life cycle strategy around that asset, taking into account regulatory, market, technology, human resources and other influential factors.

Enhanced risk management: Having a detailed and sophisticated understanding of risk assessment, management and strategy is key for successful providers. Risk in capital projects comes in many flavors, and helping clients navigate these effectively contributes to fewer negative outcomes. Different providers approach risk differently; some come from an actuarial perspective, others an auditing & controls perspective, still others a legal one, but all contribute to helping clients avoid pitfalls.

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TAS: On the face of it, transaction advisory has little to do with capital projects unless the client strategy entails a joint venture or divestiture. However, successful providers have been increasingly involving their transaction advisory practices in capital projects for a few reasons relating to financing and successful delivery on complex projects, as well as partner and investor sourcing.

Capability/talent augmentation: For projects below the megaproject level, clients often lack the internal resources to execute an asset strategy. While only a handful have formalized the practice, many consulting providers are helping clients with targeted staffing and other resource augmentation, until clients can scale up and take over themselves. This is part and parcel to the focus on getting projects across the finish line with minimal cost and schedule overreach.

Digital: Clients in capital projects – whether owners, investors, construction or engineering companies – all too often find themselves undergoing a digital transformation along with the project. Even those clients already adapted to a digital business environment do not have near enough capacity and in-house expertise to digest and manage the data involved with a successful project. Successful providers bring exceptional digital resources to the table.

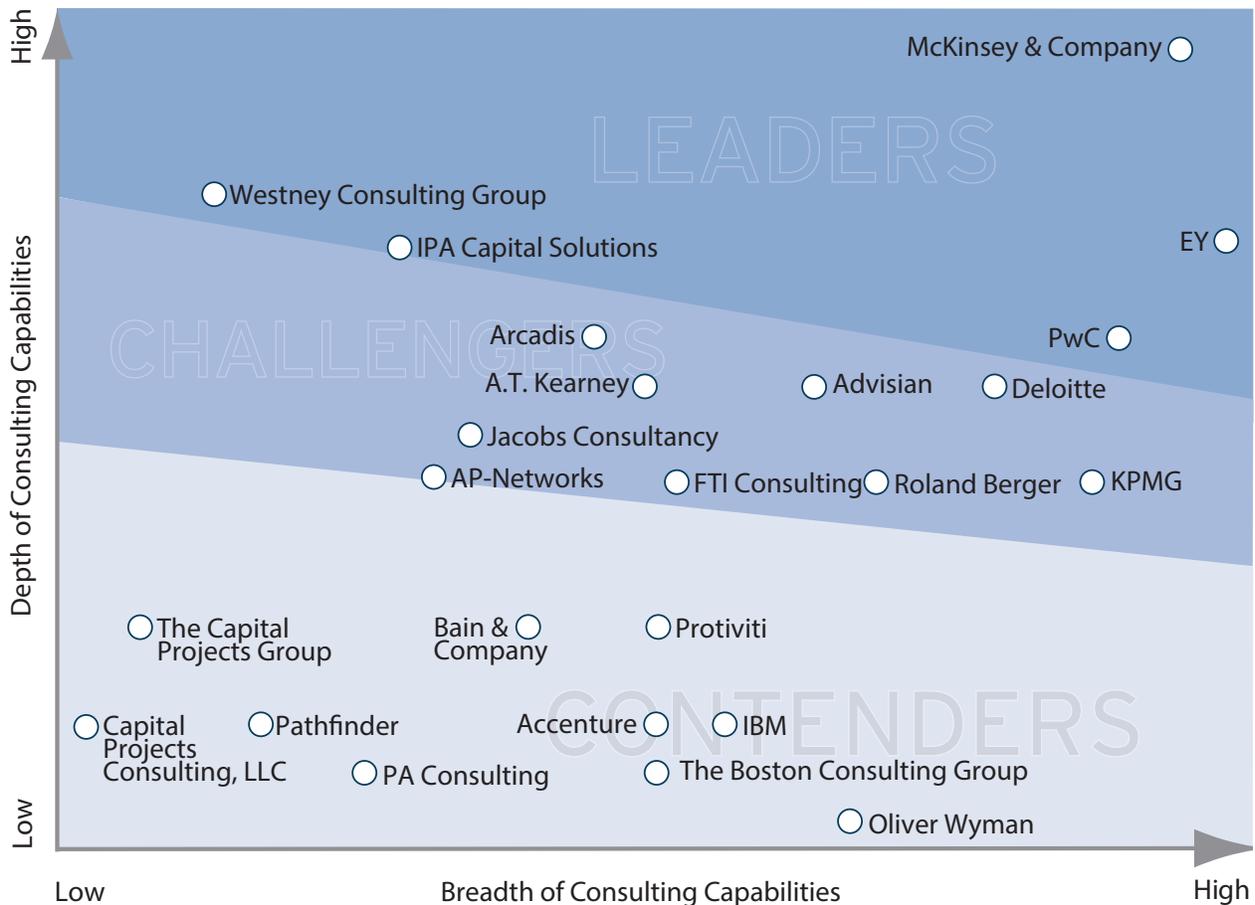
Innovation: The more successful providers are also able to utilize new methodologies and technologies in capital projects such as drones, AI, and AR/VR.

Emerging markets: In capital-intensive industries such as manufacturing or natural resources & power, most projects take place in emerging markets. Providers need to be able to deliver on complex projects in these regions.

ALM Vanguard of Capital Projects & Infrastructure Consulting Providers

The *ALM Vanguard of Capital Projects & Infrastructure Consulting Providers* assesses firms in terms of their relative ability to create impact for their clients. For this, the *ALM Vanguard* displays the relative position of the providers featured in this report, deemed capable in capital projects & infrastructure consulting, based on an evaluation of their overall capabilities according to a consistent set of criteria. Capability depth denotes a provider's capacity to get results for clients, while capability breadth indicates its ability to deploy that capacity across multiple client scenarios.

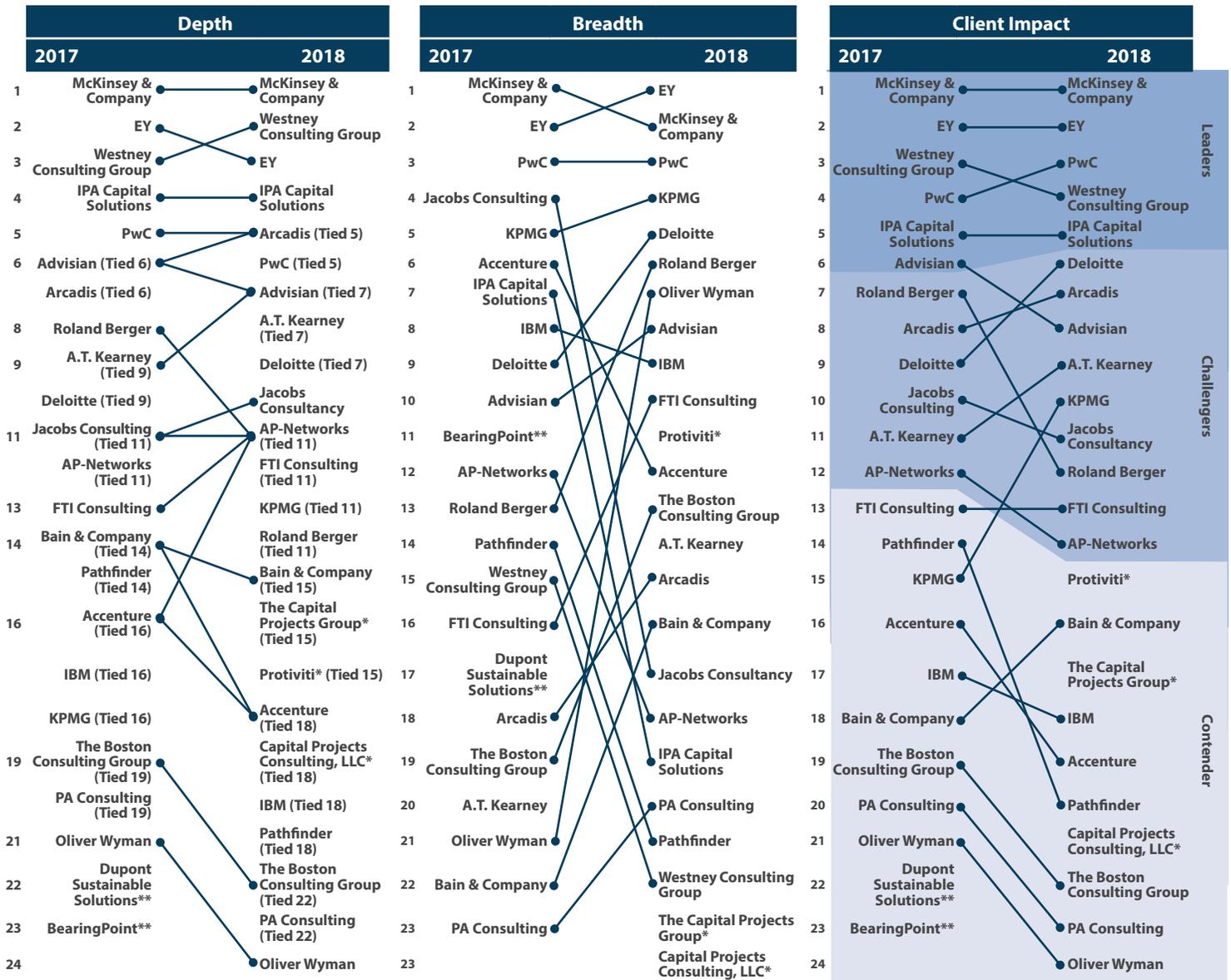
Consulting is distinctive from other industries because of the variety of client contexts that providers encounter in terms of ambitions, needs, and abilities that alter what it takes to create impact. As providers seek to deploy their capacity to create client impact (depth) across industry sectors, geographic regions, and interfaces with adjacent functional and technical capabilities (breadth), they increase the complexity of their engagement models. The downward slope of the lines that separate the tiers of the market captures the trade-off between low-complexity engagement models (designed to maximize the capacity to create impact for a narrow set of client applications) and high-complexity engagement models (made to maximize deployability and create impact for a wide variety of client applications).



Source: ALM Intelligence

Provider Capability Rankings

The figures below indicate the change in consulting providers' ranks in terms of their overall capability depth, breadth, and client impact. (See the Definitions section of this report for a detailed breakdown of underlying capabilities.) Ranking position number one denotes the top-ranked provider.



*Firms not previously covered, ** Firms not covered in 2018

Source: ALM Intelligence

Rating Level Summaries

ALM Intelligence rates providers according to a three-level scale based on their relative breadth and depth of overall capabilities. Each rating level corresponds to an area in the *ALM Vanguard* graphic bounded by a downward sloping line designed to equate engagement models of different degrees of complexity.

Rating Level	Providers	Description
Leaders	EY McKinsey & Company Westney Consulting Group IPA Capital Solutions PwC	The leaders are at the top of the market in terms of their capabilities to create client impact through their depth of expertise and ability to deploy it across a range of engagement models. They are unique in their ability to independently execute a broad array of projects across the full spectrum of client contexts. They range from providers in the top quintile in terms of depth of capability for low-complexity engagement models to those that combine above average depth of capability with the ability to deploy it across high-complexity engagement models.
Challengers	A.T. Kearney AP-Networks Deloitte Jacobs Consultancy Roland Berger Advisian Arcadis FTI Consulting KPMG	The challengers can execute end-to-end projects in low complexity engagement models or a substantial portion of project components in high-complexity engagement models. They range from those with above-average depth of capability for low-complexity engagement models to those that combine depth of capability between the bottom third and top half of the distribution, with the ability to deploy it in high complexity engagement models.
Contenders	Accenture The Boston Consulting Group The Capital Projects Group Oliver Wyman Pathfinder Bain & Company Capital Projects Consulting, LLC IBM PA Consulting Protiviti	The contenders can execute a substantial portion of projects in low-complexity engagement models or a single phase or project instance in high-complexity engagement models. They range from those with average depth of capability for low-complexity engagement models to those that combine depth of capability in the bottom third of the distribution with the ability to deploy it in high-complexity engagement models.

Source: ALM Intelligence

Leader Assessments

The *ALM Vanguard* of Capital Projects & Infrastructure Consulting Providers comprises the following Leaders.

“EY brings together a potent mix of well-established capital projects consulting involving project management, finance strategy, tax, GRC, technology & digital, operations consulting and industry expertise – all complemented by the firm’s capital agenda focus. ”

-Tomek Jankowski, Senior Analyst, Management Consulting Research, ALM Intelligence |

Provider Capability Ratings

The table below provides detailed capability ratings for Capital Projects & Infrastructure consulting providers. (See the Definitions section of this report for explanations of the capabilities.) Legend: ● Very Strong ● Strong ● Moderate ● Weak ○ None

Provider Capabilities: Capital Projects & Infrastructure Consulting									
	Discovery			Design			Delivery		
	Needs Assessment	External Market Insight	Internal Client Insight	Strategy	Operating System	Management System	Project Management	Client Capability Development	Enabling Tools
EY	●	●	●	●	●	●	●	●	●
A.T. Kearney	●	●	●	●	●	●	●	●	●
Accenture	●	●	○	●	●	●	●	●	●
Advisian	●	●	●	●	●	●	●	●	●
AP-Networks	●	●	●	●	●	●	●	●	●
Arcadis	●	●	●	●	●	●	●	●	●
Bain & Company	●	○	●	●	●	●	●	●	●
The Boston Consulting Group	●	○	●	○	●	●	●	●	●
Capital Projects Consulting, LLC	●	●	●	●	●	●	●	●	●
The Capital Projects Group	●	●	●	●	●	●	●	●	●
Deloitte	●	●	●	●	●	●	●	●	●
FTI Consulting	●	●	●	●	●	●	●	●	●
IBM	●	●	○	●	●	●	●	●	●
IPA Capital Solutions	●	●	●	●	●	●	●	●	●
Jacobs Consultancy	●	●	●	●	●	●	●	●	●
KPMG	●	●	●	●	●	●	●	●	●
McKinsey & Company	●	●	●	●	●	●	●	●	●
Oliver Wyman	●	●	●	●	●	●	●	●	●
PA Consulting	●	●	○	●	○	●	○	●	●
Pathfinder	●	●	●	○	●	●	●	●	●
Protiviti	●	●	●	●	●	●	●	●	●
PwC	●	●	●	●	●	●	●	●	●
Roland Berger	●	●	●	●	●	●	●	●	●
Westney Consulting Group	●	●	●	●	●	●	●	●	●

Source: ALM Intelligence

Best in Class Providers

Providers identified as best in class evidence deep capabilities in specific areas of capital projects & infrastructure consulting and stand out from their peers for their highly effective and often innovative consulting approaches and service delivery.

Capability Areas	Provider	Strengths
Management System	EY	EY brings critical operations and technology management capabilities to bear in capital projects, which are key for clients’ ability to manage their project’s governance issues, organizational structures, and performance.

Source: ALM Intelligence

Provider Briefs

Leaders

EY	
Approach	EY brings strong project and complexity management credentials to capital projects, but its main focus is on the front end, designing projects correctly for both maximum efficiency and to avoid unwelcome outcomes later. This includes identifying business strategic drivers, making the project investment case, building the capability model, the process model and scenarios, the change & readiness roadmap, and the system model and data models. In the implementation stage, EY addresses managing alignment and control across a large and complex number of stakeholders, as well as building access to accurate information for updating the investment case, and stakeholder reporting and testing prior to commissioning. To this end EY uses the industrial IoT solution Intelligent Asset Management (IAM), which collects and shares data to improve productivity and reliability. EY also ensures the right equipment and materials have been acquired, using realtime information to inform and drive decisions, and developing a process for addressing request for informations (RFIs) for non-conformance. In the operation stage, EY organizes asset information and its distribution (e.g., to reduce the number of unplanned outages), ensuring the correct design and quality standards are being followed and, most importantly, designing the asset’s digital structures to optimize the physical asset’s performance. EY also utilizes its Transaction Advisory Services group for finance and its project management capabilities. Finally, EY also takes the lifecycle approach and designs an exit strategy for the asset. EY has a dedicated team for large-scale capital projects, known as the Major Capital Projects Advisory Services group, and its public sector group also has a strong record with public private partnerships. EY is also working with external alliance partners to develop a collaborative cloud-based platform for enhanced project management.
Practice Structure	EY addresses capital portfolio through its industry practices, notably its government and public sector, oil and gas, mining & metals, real estate & construction and power and utilities.
Service Delivery Model	EY’s approach to capital projects (via its industry practices) rests on three key legs: risk assessment and management, performance optimization, and supporting a capital strategy. And it underlines this approach with its adjacent capabilities in risk advisory, project management, supply chain & operations, system integration, global assurance tax and transaction advisory. The firm focuses on increasing revenue by optimizing the project mix, reducing costs through process efficiencies and supplier and contract management, and reducing risk (e.g., utilizing the stage-gate process) and governance to keep projects on track. The firm’s strength is in applying a balanced risk and improvement lens in assessing project feasibility and commercial viability, emphasizing the front end of the project phase, which largely determines project costs and outcomes. The firm offers end-to-end support from project appraisal through job one production and ramp up, and utilizes digital technologies to increase connectivity and improve the transparency into critical performance indicators.

Source: ALM Intelligence

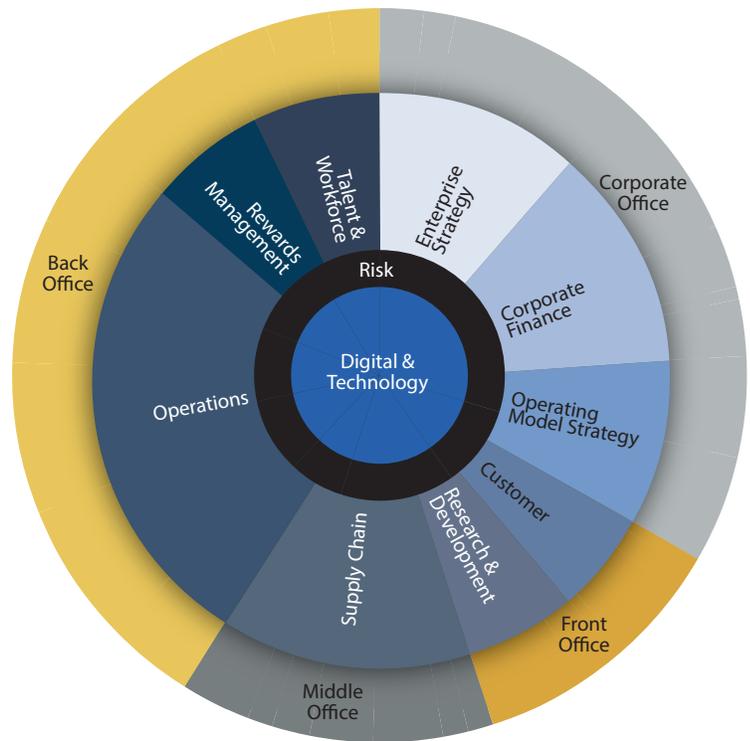
Definitions

What is Capital Projects & Infrastructure Consulting?

Capital Projects & Infrastructure Consulting is part of Supply chain consulting forms part of the management consulting services directed at clients’ middle office activities. Its objective is to improve the way in which companies transform inputs into outputs to create value for their customers.

Supply chain consulting consists of seven services.

- Supply chain planning: managing the flow of information among value chain participants to inform supply and demand balancing decisions in response to market volatility and variability
- Capital projects: connecting enterprise and financial strategies to the supply chain by optimizing the capital portfolio and effectively managing new capital projects, including project design and engineering, procurement, and construction services
- Production strategy: configuring a company’s network of capital assets, optimizing the scope of internal versus externally sourced production activities, and aligning production technology to build the capabilities required to execute against strategic performance priorities.
- Production operations: improving the operation of existing capital assets by adjusting the plant layout, processing flow, and the management system for sustaining and furthering performance gains
- Asset management: maximizing the productivity of a company’s existing capital assets through reliability engineering, utilization optimization, and effective maintenance and repair services
- Logistics: managing the movement and storage of physical and intangible inputs, in-process inventory, and finished products along the supply chain and to end customers
- Sourcing strategy: enhance the value generated by external production input suppliers by integrating sourcing into product and production design choices, improving supplier selection, optimizing supply financing, and collaborating more effectively with suppliers.



Source: ALM Intelligence

Definitions

Consulting Provider Capabilities

Capability Areas	Capabilities	Descriptions
Discovery	Needs Assessment	Establishing goals and objectives for the project and determining which stakeholders need to be involved from the client organization, consulting firm, and third parties
	External Market Insight	Using knowledge and experience to create hypotheses through trend analysis, benchmarking, maturity assessments, and case studies
	Internal Client Insight	Obtaining internal client insights through assessments, data analyses, interviews, and workshops, and incorporating findings in the business case and roadmap design
Design	Strategy	Aligning the strategy with the goals of the client’s talent and business strategies
	Operating System	Configuring client resources – information, technology, talent and other assets – to generate the value-add intended by the strategy
	Management System	Mobilizing, managing, measuring, and motivating client resources to execute the strategy through governance, organizational structures, and performance management
Delivery	Project Management	Allocating, aligning, and coordinating resources in sequenced activities to execute and sustain the strategy
	Client Capability Development	Developing the client’s technical skills and adapting mindsets and behaviors to execute and sustain the strategy and process design
	Enabling Tools	Employing tools for diagnostic and design activities that support creating, executing, and sustaining the strategy

Source: ALM Intelligence

Provider Capability Rankings Descriptions

Depth: a measurement of a consulting provider’s strength based on its capabilities, including such factors as resources, proprietary methodologies, and intellectual properties

Breadth: a consulting provider’s ability to deploy its capabilities in multiple client scenarios across industry sectors, geographic regions, and interfaces with adjacent functional and technical capabilities

Client impact: a consulting provider’s capacity to get results for clients based on the combination of its capability depth and breadth adjusted by the degree of engagement model complexity incurred by its breadth across industry sectors, geographic regions, and interfaces with adjacent functional and technical capabilities

Methodology

Overview

ALM Intelligence has been researching the management, financial, and IT consulting industry for over 40 years, studying the global consulting marketplace at multiple levels. The resulting market analyses help buyers of consulting services to effectively target best in class providers, and help consulting providers to identify and evaluate business opportunities.

The proprietary research methodology comprises four components:

- Extensive interviews with consulting practice leaders, financial analysts, consulting clients, and clientside industry experts
- Data and background material from the proprietary library of research on the consulting industry and individual firms
- Quantitative data collection from primary and secondary sources
- Key economic data relevant to the sector(s) being analyzed

The research output for a project is derived predominantly from primary research.

Data is obtained through a centralized effort, with teams of analysts collecting, assessing, fact-checking, and refreshing baseline information on leading consultancies and consulting markets. This information populates an extensive knowledge base of consulting providers, widely regarded as among the most comprehensive in the world.

Working collaboratively, analysts narrow their research to the most discrete and pertinent intersection of consulting service/industry/geography.

The experience and knowledge of the analyst team are critical to the success of these research endeavors. Directors and associate directors average over a decade of consulting and/or analyst experience, with an emphasis on professional services. Junior analysts typically bring an average of five years of consulting and/or analyst experience.

The group's long-term relationships with consulting clients and industry leaders are based on trust and respect. ALM Intelligence's fundamental goal is to deliver objective assessments and insightful viewpoints on the management, financial, and IT consulting market.

Methodology

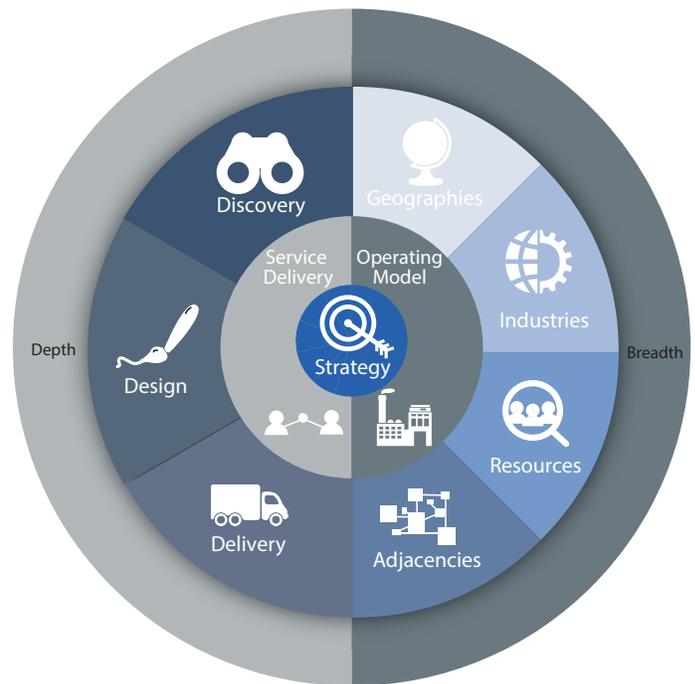
How We Evaluate Consulting Providers

ALM Intelligence’s goal is to deliver objective assessments to help buyers of consulting services effectively identify and maximize the benefits of working with best in class providers.

ALM Intelligence evaluates consulting providers with respect to a particular consulting area in terms of the following baseline criteria. The general criteria below are refined and customized over the course of the research effort based on input from clients and providers:

- **Consulting approach:** What are providers’ points of view on the root causes of client challenges? How do those points of view inform choices about how best to resolve them? How do providers view the intersection of these needs and solutions with other consulting or non-consulting offerings or cross-cutting themes?
- **Consulting organization:** How do providers organize and deploy their capabilities? What sort of consultants and other human resources do they possess, and how do they obtain and use them? What sorts of partnerships, collaborations, and alliances with external parties do they use to bolster their capabilities?
- **Consulting service delivery model:** How do providers deliver their services? Do they employ any particular processes or methodologies, preconfigured tools, or other unique elements of service delivery? Do they follow any particular sequence or direction in their service delivery? How do they measure outcomes?
- **Client pain points and needs assessments:** What factors most influence successful engagements in the opinion of clients? What capabilities do providers need to bring to their engagements to be compelling? What sources of differentiation matter most to consulting buyers?
- **Future development:** What investments are providers making or planning to make to enhance their future capabilities?

In addition to briefings with consulting buyers and providers, ALM Intelligence uses a mosaic approach to derive its findings. This incorporates primary research conducted with industry practitioners, academics, and other experts and secondary research on providers’ public information and other third-party sources of data and analysis.



Source: ALM Intelligence

About ALM Intelligence

ALM Intelligence provides accurate and reliable market sizing and forecasts on consulting services worldwide, needs-analysis and vendor profiling for buyers of consulting services, timely and insightful intelligence on the top consulting firms in their respective markets, and operational benchmarks that measure consulting performance. ALM Intelligence's research spans multiple service areas, client vertical industries, and geographies. Our analysts provide expert commentary at consulting industry events worldwide, and offer custom research for Management Consulting and IT Services firms. More information about ALM Intelligence is available at www.alm.com/intelligence/industries-we-serve/consulting-industry/.

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