



SPECIAL REPORT

Six Priorities for AEC Investors



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Introduction

In the U.S., aging infrastructure, new resilience requirements for both buildings and the grid, heightened regulatory compliance, the transition to renewable energy and populations that are on the move — both between states and into the country itself by way of immigration — are fueling solid growth in the architectural, engineering and construction (AEC) market. Taken together, these factors are creating an unprecedented opportunity for investors in this space.

Those looking to leverage this investment opportunity will need to prioritize six issues:

1. Fortified funding
2. Differentiation vs. resources
3. Operational upside
4. Purposeful, realistic growth
5. Talent pipeline
6. Artificial intelligence (AI) position

The country's infrastructure is only getting older

AEC has multiple different components, but they share some common overall themes (see Figure 1).

Figure 1

Overview of AEC components

NON-EXHAUSTIVE

Service category	Description	Example services provided	
Architectural services	Involves the process of conceiving and planning the form and function of buildings/structures	<ul style="list-style-type: none"> • Architectural design • Urban planning 	<ul style="list-style-type: none"> • Visualization and rendering services
Planning and design	Focuses on the conceptual and preparatory stages of the project, setting the stage and creating the vision for the project	<ul style="list-style-type: none"> • Conceptual design • Structural design 	<ul style="list-style-type: none"> • Site planning
Engineering services	Includes the technical aspects of construction and the collaboration of multiple engineering disciplines to ensure projects are structurally sound and feasible	<ul style="list-style-type: none"> • Civil engineering • Mechanical, electrical and plumbing engineering 	<ul style="list-style-type: none"> • Geotechnical engineering • Environmental engineering • Structural engineering
Construction services	The actual building of structures and the management of the construction services in order to meet the design specifications	<ul style="list-style-type: none"> • General contracting • Construction management 	<ul style="list-style-type: none"> • Design-build • Preconstruction services
Project management	Activities related to the oversight of the entire project's life cycle and ensuring that it meets its objectives in terms of scope, quality, time and cost	<ul style="list-style-type: none"> • Project scheduling • Cost management 	<ul style="list-style-type: none"> • Risk management • Procurement management
Geospatial services	Provides the measurements and spatial data necessary for initial designs/ongoing construction services to ensure accurate project completion	<ul style="list-style-type: none"> • GIS mapping 	<ul style="list-style-type: none"> • 3D scanning and modeling
Environmental services	Manages environmental impact of construction projects with a focus on compliance with environmental regulations, and therefore helps to manage integrate sustainable practices to address ecological concerns	<ul style="list-style-type: none"> • Sustainability consulting • Waste management 	<ul style="list-style-type: none"> • Environmental impact assessments

Note: AEC=architectural, engineering and construction; GIS=geographic information system
 Source: L.E.K. research and analysis

A significant portion of the aging U.S. infrastructure needs to be repaired or replaced entirely. Indeed, investment in U.S. infrastructure has historically failed to keep pace with necessary upkeep, particularly when it comes to highways, streets and bridges.

But the outlook for transportation funding from federal, state and municipal bodies remains strong.

The American Society of Civil Engineers estimates that the U.S. has an outstanding need for more than \$6 trillion in transportation infrastructure investment by 2039. Greater federal funding is also needed to address historic underinvestment, such as in water and wastewater infrastructure, which averaged roughly 30% of spend from 2013 to 2021 (see Figure 2).

Figure 2

Capex share of water/wastewater expenditures (1977-2023)



Note: CapEx=capital expenditure; OpEx=operating expense
 Source: U.S. Census; EPA; L.E.K. research and analysis

The need for infrastructure spending is not limited to the federal level, however, and is supported by multiple state bodies. The California Transportation Plan 2050, for example, which is funded by a newly introduced fuel tax and electric vehicle road improvement fee, allocates \$5.4 billion¹ annually to related infrastructure for the next several years and will focus on transportation projects across all end markets.

Similarly, an aging commercial building stock and steady, if not high, commercial construction spending are driving commercial AEC demand.

Grid and building resiliency requirements

According to the Department of Energy, the average annual number of weather-related power outages increased almost 80% between 2011 and 2023.² In 2021 alone, the average home or business experienced an estimated seven hours without power due to outages.³ So, as part of the Infrastructure Investment and Jobs Act (IIJA), \$10.5 billion was allocated to grid resiliency through the Grid Resilience and Infrastructure Partnership (GRIP), which is in turn supported by investment in other areas.⁴

In the meantime, in response to the increasing number of climate events, requirements for new developments have increased so that those structures are built to withstand them, which is not only increasing the complexity level of individual infrastructure projects but also driving demand across service lines.

Heightened regulatory compliance

Federal, state and local regulations continue to evolve, prompting a need for services that support complying with them. For instance, in addition to existing water quality parameters, California requires the use of a matrix to assess the health of its streams. And in light of the steady increase in the level of urbanization over the years, construction projects in areas with a high level of urbanization and an extensive network of existing infrastructure led to more frequent right-of-way considerations, and by extension increased construction complexity.

Indeed, retrofitting and repairing older infrastructure often requires additional engineering considerations and modifications to bring the outdated structures/ materials used up to the latest codes and standards. This creates greater project complexity for commercial and residential projects, as well as for infrastructure projects, requiring more engineering and expert support.

Energy transition

There has been a significant shift from fossil fuels (e.g., coal, gas) to renewable energy, primarily solar and wind generation; from 2010 to 2023, the percentage of renewable generation rose from 13.4% to 22.7%. This shift is expected to continue, with the U.S. Energy Information Administration forecasting that wind and solar will make up about 48% of U.S. energy generation by 2034. (To learn more, see *How to Invest in Shoring Up the US Grid*.)⁵ This transition creates increased demand for AEC infrastructure.

Population movements and immigration

The U.S. continues to experience population movement between states. For example, New York saw its population decrease 0.52% from 2022 to 2023 while Florida's population rose 1.64%. And small annual changes add up over time: Texas logged significant population growth over the past five years, adding approximately 1.5 million residents.⁶

These population movements, together with ongoing immigration, will eventually require upgrades to the surrounding commercial and civil infrastructure, which could help drive demand for AEC services.

Investment considerations

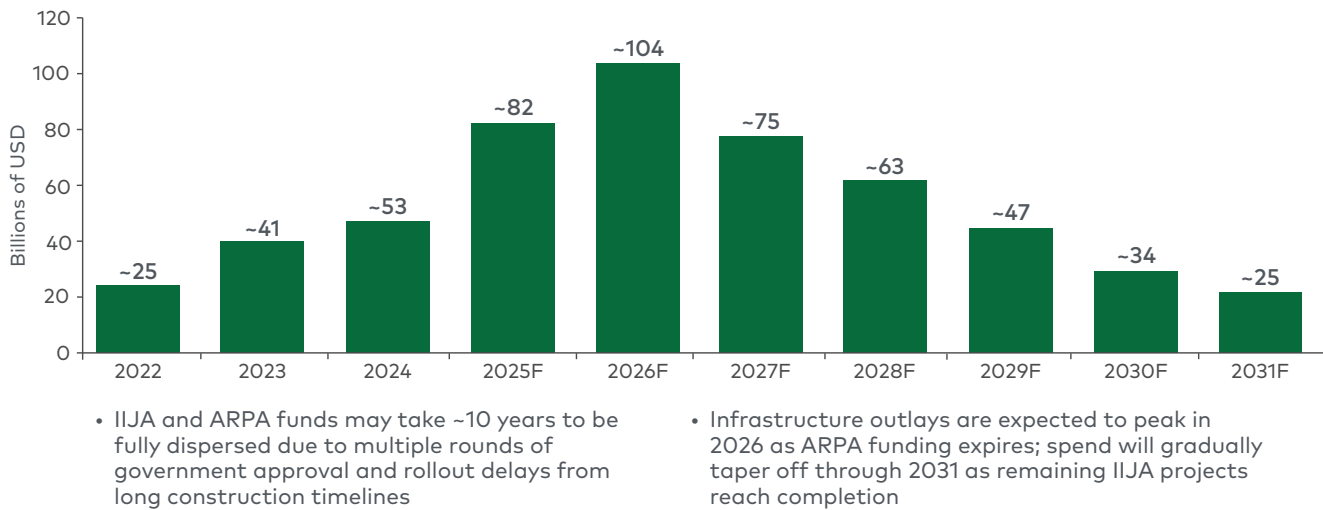
With all that in mind, there are half a dozen priorities that investors in this space need to consider.

1. Fortified funding: Know that the money is there

The AEC sector is benefitting from an increase in infrastructure investment and a diversity of funding sources.

Together, the American Rescue Plan Act and the IIJA are expected to contribute an estimated \$635 billion in net new funding to infrastructure projects between 2021 and 2031. By the end of 2024, approximately 22% of that funding had been spent on projects, indicating that such spending will continue for several years. Funding is expected to peak in 2026 (see Figure 3).

Figure 3
IIJA and ARPA infrastructure outlays by segment (2022-2031F)*



*Years represent federal fiscal year, which begins in Q4 of the prior calendar year
 Note: IIJA=Infrastructure Investment and Jobs Act; ARPA=American Rescue Plan Act
 Source: Congressional Budget Office; White House; Department of Transportation; Clark Hill, Union Pacific; American Road & Transportation Builders Association; Department of the Treasury, L.E.K. research and analysis

But while much of the emphasis is placed on the IIJA, it is not the largest part of infrastructure funding. The flow of funds for municipal water, for example, includes user fees (85%), municipal bonds (9%), federal and state bonds (4%) and balance sheet capital (2%). And in transportation, the national distribution between federal and state funds has remained relatively stable for the past two decades, averaging

roughly 70% from state funds — making it clear that even prior to the IIJA states have consistently supported transportation projects.

That said, specific water, transportation, power and commercial-facing AEC services can vary significantly from these averages; for example, L.E.K. Consulting recently assessed a service where state and federal funds accounted for just 20% of funding.

Given the multiple sources of funding, knowing where lumpy and temporary funding exists and where enhanced federal spending may be encouraging larger-than-normal scoped projects, the pursuit of more marginal projects or the pull forward of projects is critical.

This requires distinguishing between AEC projects that are need-/recurring-based and where funding changes are not significant and/or do not lead to project acceleration versus those that may have had pull forward/increased activity or increased scope as a result of "juice" from federal funding. Companies that have a broader footprint — and are less dependent on, say, a single state or type of infrastructure — may be less prone to infrastructure funding lumpiness from a single funding source or entity. That's why investors need to assess the likelihood of a pull forward and/or diversify into a broader set of funding sources.

2. Differentiation vs. resources: Learn how to navigate the AEC terrain

The competitive AEC landscape is highly fragmented and features local market companies, niche market specialists, cross-market experts and turnkey providers.

- **Local market companies:** Local or regional firms that have strong, well-established relationships within the communities they support. As a result of the positive brand recognition they enjoy and the relationships with key decision-makers (e.g., local municipalities) they've built that enable them to secure projects, they bring those local relationships and resources with them.
- **Niche market specialists:** Firms that have built a presence within a specific end market and are considered thought leaders/experts within the field and/or differentiate themselves with their specialized knowledge within specific subcategories (e.g., wastewater treatment facilities) and subsequently come to the table with resourcing and some level of expertise.

- **Cross-market experts:** Local or regional firms that have positioned themselves as experts across end markets (e.g., brownfield site remediation) and have subsequently differentiated themselves by their expertise along a wider range of markets (e.g., civic, transportation, residential). They bring with them resourcing and some level of expertise in a broader set of areas versus that of their niche competitors.
- **Turnkey providers:** National/multinational firms that have vertically integrated multiple capabilities/expertise across a broad range of markets. Differentiated by their brand recognition, these go-to providers for large/complex infrastructure projects (e.g., new transit/railway systems) bring deep resourcing, expertise and relationships, but there will be gaps in what they can provide in all three of these areas in some local geographies or end markets. That's why these firms often need to partner with a local player, so that they can be a source of business for local market companies that might be viewed as reliable, trustworthy partners to a larger player. It's also why there is a high degree of competition in the AEC space.

When investing in an AEC asset, you are buying resources/capacity on the ground, relationships and/or expertise. Potential investors can assess companies based on their level of expertise and differentiation through the use of a scorecard — smaller firms are more likely to have built expertise if they have created pockets of expertise in, for example, a specific state and end market or in a specific service. Smaller firms may also have a bounded set of local relationships.

Generally speaking, the competitive landscape for AEC services is highly fragmented, but some specialized end markets (e.g., architectural services in science and technology) are more consolidated due to the advantages of expertise and reputation in those markets. That said, the top 10 firms account for 60% of revenue. Compare that to the competitive landscape for engineering firms in high-demand markets, such as Texas/Louisiana, which is much more fragmented and where the top 10 firms account for just 40% of revenue.

With that in mind, investors should consider looking for unrecognized pockets of expertise — and be clear as to what they are purchasing.

3. Operational upside: Approach the opportunity with caution

Many AEC firms have poor operational practices, which gives investors an opportunity to provide fixes. Common problems include:

- **Value-added extra services not bid on or priced appropriately:** Investors can increase prices in select areas.
- **Poor demand management, hiring to peaks:** While a firm may be committed to customer service, some staff to peak demand while failing to put mechanisms in place that anticipate when it will fall and opt not to shed resources when such falls take place, providing an opportunity for better resource management.
- **Inadequate balance between central resources and delivery resources:** Well-run firms not only need to have sufficient financial, HR and legal resources to be competitive, but they also need the right delivery resources. To get there, investors can benchmark a firm's resources against those of its competitors.

Poor commercial excellence practices and an account management approach that lacks discipline are other areas that investors can address with systematic AEC approaches; excessively customized information technology investments are another.

Each AEC company is different, and investors should approach every possible opportunity with their eyes wide open. They should also be prepared to launch a systematic review of operational practices in order to identify ways to facilitate their improvement.

4. Purposeful, realistic growth: Set priorities and strategize accordingly

When their clients ask for specific services, many AEC firms enhance revenues by taking on projects that are outside their core capabilities or acquire adjacent services outside their traditional focus.

Furthermore, because many AEC companies have decentralized operations, without a systematic review of how capital, labor and management time could be more optimally deployed, their offices or business lines may grow opportunistically and independently from one another. Indeed, while taking an entrepreneurial approach to growth can ensure that firms are responsive to both market and customer needs, doing so can lead to a lack of focus or missed opportunities.

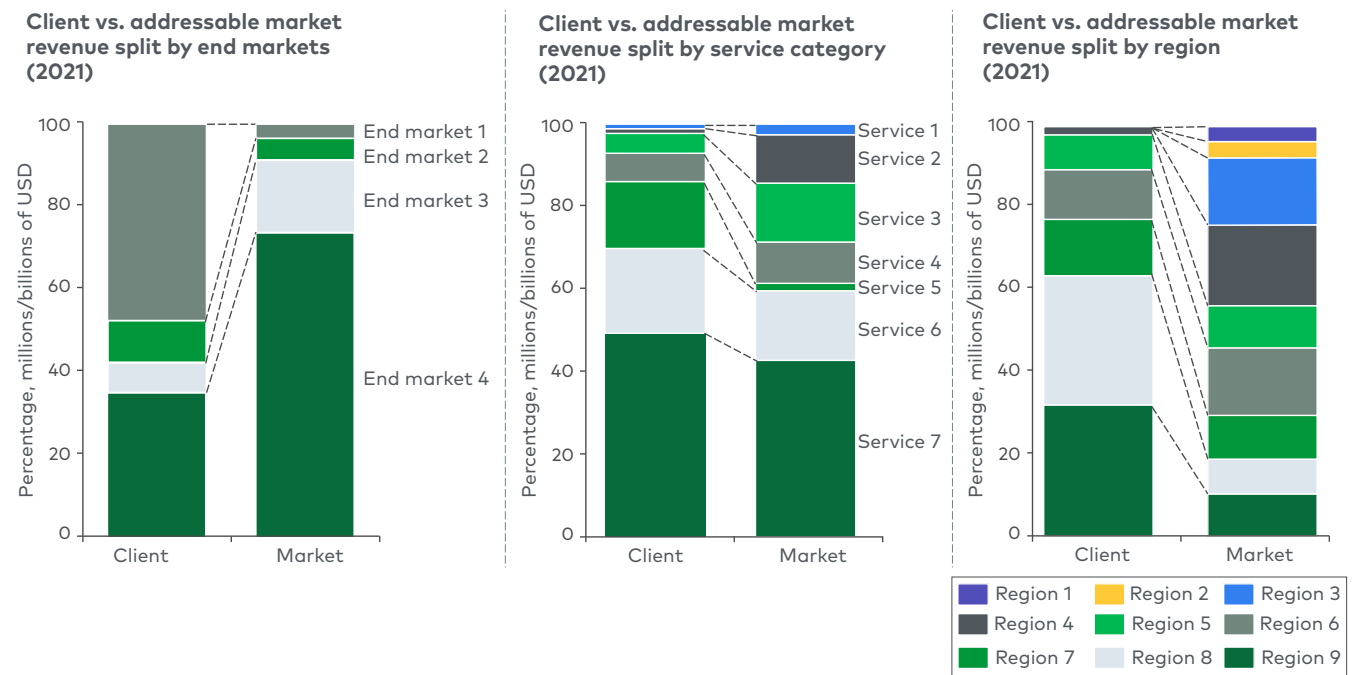
To solve for these issues, AEC companies need to set priorities based on market fundamentals (e.g., opportunity size, margin profile, growth rate) and their ability to leverage their existing talent and resources.

There are several strategies that companies should consider on the path to purposeful growth. Starting with a grounded understanding of market positioning is essential. AEC firms need to systematically analyze their performance across end markets, service lines and geographies,⁷ which will make clear where they are underweighted or overweighted compared to the overall market. They will then have to evaluate these factors against other considerations, such as the firm's margins, growth and capabilities in each of those areas.

When taken together, this information will facilitate informed decision-making around where to invest for optimal expansion (see Figure 4).

Figure 4

Overview of client vs. addressable market revenue splits



Adjust/address priority to focus on taking account of margin, growth and client's capabilities in each segment

Source: Management data; L.E.K. research and analysis

Cross-selling offers significant benefits to AEC firms, but they need to be realistic as to what they can achieve with such an approach. For example, cross-selling generally requires transferring a relationship between buying entities, so where local relationships are highly prized and decision-making can be decentralized (e.g., land development), this may be harder to achieve without an on-the-ground, local relationship already in place.

To successfully implement cross-selling, AEC firms need to start by systematically assessing the potential for doing so, identifying where there is complementary capacity and expertise and where there are complementary relationships. They then need to consider dis-synergy, cross-sell and win-rate dynamics, as well as the implications of executing on identified opportunities (see Figure 5).

Figure 5
Synergy/dis-synergy opportunities analysis approach

	Dis-synergy	Cross-sell	Win rate	Capacity considerations
Rationale	First, identify overlapping areas where potential dis-synergies occur and evaluate the impact	Next, look at unique services/expertise from each party and relationship introduction to evaluate cross-sell potential	Then, assess win-rate record of each asset and where each can improve win rates on existing business	Finally, contemplate the trade-offs inherent in both cross-sell and win-rate plays
Assessment factors	Price pressures Cannibalization	Cross-sell rate Per-customer spend	Win-rate improvement Business mix	Mix shift Ability to serve multiple demands

Source: Management data; L.E.K. research and analysis

They also need to assess the cost of growth and expansion. A firm built on high levels of expertise and branding/reputation, for example, may have the potential to grow relatively efficiently. Meanwhile, for a firm with local, municipal-based relationships, acquiring new relationships may require it to incur a related cost.

Generally speaking, small municipal customers prefer to work with local suppliers, incumbents have advantages when it comes to decision-making processes, and competitors that focus on these markets spend considerable resources on penetrating them and staying "top of mind."

Investors can help AEC firms take a clear, disciplined approach to growth, including when it comes to assessing what can be realistically achieved from cross-selling and the marginal costs of service, end market and/or geographic expansion.

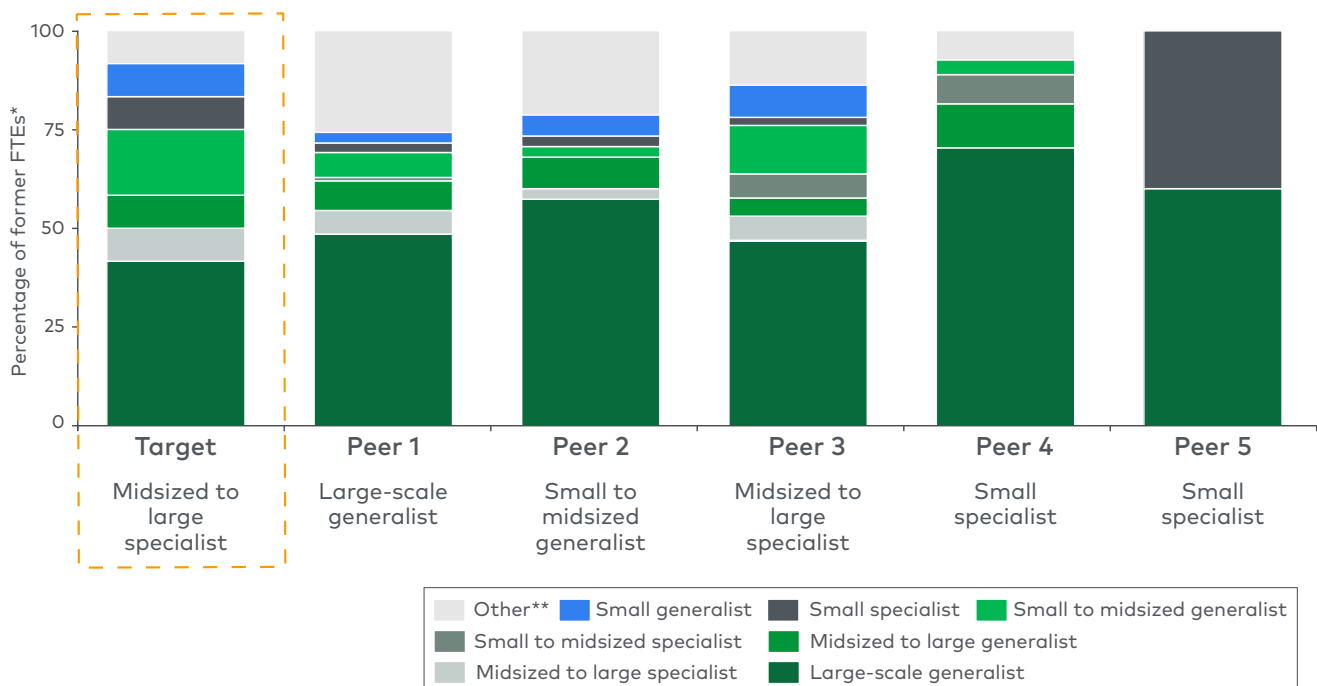
5. Talent pipeline: Go the extra mile to recruit and retain

AEC is fundamentally a people business. But while investors recognize this, many often frame it in terms of key people risk.

Key employees often leave – even good firms have departures – and this is not necessarily a bad thing so long as there is a clear value proposition and defined pipeline for new talent to arrive, for some talent to be retained and, when talent departs, for that talent to be replaced.

AEC companies can assess where they are both sourcing and losing talent compared to competitors through the use of external benchmarking (see Figure 6).

Figure 6
FTE outflow by archetypes



*Only considered movement to companies where a minimum of two FTEs have moved out
 **Other includes nonarchitecture firms such as firms in education, healthcare, construction, engineering and real estate
 Note: FTE=full-time equivalent
 Source: LinkedIn (as on April 26, 2024); L.E.K. research and analysis

In order to assess the degree to which an AEC company is vulnerable to acquihire risk, investors also need to understand its structure of reporting and client relationship ownership. That requires asking two crucial questions:

1. Does the firm have a systematic value proposition that is recognized and appreciated by both its employees and the marketplace? A large firm's value proposition may be that it affords more career choices and opportunities to move to different locations; for example, a state-based firm could market itself as a place to develop specialist, end-market expertise in engineering or life sciences and attract more generalist talent from across the region.

2. Are client relationships institutionally owned or individually owned? We recently worked with a client to examine a target where entrepreneurial new principals/partners in the firm were building new accounts that they owned. We also looked at the followership of less senior staff within the firm, which makes the target's resources vulnerable as potential acquihires.

To enhance the talent pipeline, investors would need to plan for recruitment and/or retention actions beyond the company's fundamental value proposition and reporting structures.

Top engineering firms use a combination of compensation, workstream ownership and company stability/future runway to attract new talent. Junior talent can be enticed by the ability to grow and develop, which attracts them to midsized or smaller firms, but junior talent who prefer to work on larger projects will be enticed by mega firms (e.g., large, diversified companies such as AECOM). Recruiting senior talent, on the other hand, starts with determining why they're unhappy with their current company and crafting a solution that would make them happy elsewhere (e.g., higher compensation, company equity).

When it comes to retention, the fact that it is difficult for high-performing talent to start their own businesses due to existing structural barriers (e.g., institutional architectural relationships with customers, lack of name recognition) bodes well for AEC firms. That said, engineers and architects want to control workstreams and provide value to projects; employees without workstream ownership or recognition for their hard work will ultimately look to leave.

The goal should be to keep employees utilized on projects while still providing a stable work-life balance. Higher utilization rates can also lead to higher employee bonuses, increasing employee satisfaction. But AEC firms with long hours/unstable work-life balance experience higher attrition rates than those that keep employees utilized but at a more reasonable level.

The bottom line is that it is critical to understand the talent pipeline, value proposition and advantages/gaps versus competitive solutions and to offset utilization with career opportunities and work-life balance.

6. AI position: Lead or follow, but create a related organizational model

AEC companies and investors both need to determine how they will take a position on AI.

AI helps construction companies automate tasks, optimize scheduling, better address risks and enhance decision-making – including by identifying opportunities that optimize decision-making efficiency. But too often businesses focus on AI solely as an efficiency play, take an overly cautious approach or pursue disconnected experiments without a cohesive strategy. This leads to missed opportunities to create real value. We call this the AI Delta – the gap between transformative opportunity and unrealized potential.

That said, there are numerous ways AI can support a cohesive plan that helps return maximum value to the customer, including:

- **Automate tasks:** AI can help speed activities involved in urban planning and generative design processes.
- **Optimize scheduling:** AI provides construction companies with valuable insights and predictive capabilities (e.g., identifying or optimizing predictive maintenance schedules).
- **Better address risks:** AI can be used to verify that designs and construction execution are consistent with local regulations and building codes. AI tools can also be utilized to analyze the vast amount of digital monitoring data that is generated on construction sites. For example, AI-powered cameras and sensors can monitor construction sites in real time to identify potential safety hazards, such as equipment malfunctions or workers in unsafe zones.

- **Identify efficiency opportunities:** AI algorithms can analyze historical material costs, labor rates, equipment expenses and project timelines to provide more accurate estimates for future projects, reducing overall costs.

AEC companies need to determine what will provide them the most value related to AI.⁸ Their decision will depend on the pace of evolution and adoption of AI in AEC overall, as well as the degree to which they compete when it comes to their level of innovation, their risk tolerance and the availability of resources.

An example of leading would be AECOM developing an in-house AI platform to predict construction delays based on real-time data from construction projects. Conversely, an example of following would be utilizing prebuilt AI building information modeling (BIM) tools in areas such as space planning and energy modeling in major BIM software platforms. AEC companies need to determine both what their greatest priorities are and what capabilities they need to build.

Equally important for AEC companies, especially those that have relatively decentralized organizational structures, is the need to determine an appropriate organizational model. Larger companies need to choose among those that include a decentralized digital and analytics (D&A) organization, where D&A experts are embedded and integrated into the organization; an independent D&A organization, where the organization stands apart from the rest of the company and is driven by a focused mission and set of priorities; an orchestrator model, where dedicated D&A subteams serve individual functional needs; and an integrated model, where the D&A team is cross-functional.

Companies that fully explore AI's potential don't just stop at performance improvement; they also understand how AI helps pull value levers by both enhancing competitive advantage and unlocking new growth opportunities.

A notable opportunity

A confluence of factors in the U.S. AEC industry makes it a ripe opportunity for investors. But it requires potential investors to consider a host of factors — half a dozen of which should be put at the top of their priority list.

For more information, please **contact us**.

Endnotes

¹California Department of Transportation.

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About the Authors



Paul Bromfield

Paul Bromfield is a Managing Director and Partner at L.E.K. Consulting, focused on the building & construction and industrial distribution sectors within the firm's Industrials practice. Paul has more than 20 years of experience, with a strong record of helping companies across the value chain accelerate growth, including service innovation, multichannel strategy and M&A.



Amar Gujral

Amar Gujral is a Managing Director and Partner as well as Head of L.E.K.'s Houston office. Amar works with clients on growth strategy, new product commercialization and M&A transaction support. He supports energy and investor clients in areas that include power, renewables, energy transition, oilfield services and downstream fuels. Amar is a founding member of the firm's Sustainability Centre of Excellence.



Tim O'Neil

Tim O'Neil is a Managing Director and Partner in L.E.K. Consulting's Chicago office and a member of the Building & Construction practice. Tim advises clients on growth strategy, pricing strategy and M&A projects related to building products and construction services.



Sarah Horton

Sarah Horton is a Principal in L.E.K. Consulting's Chicago office and focuses her time in the building & construction industry. Sarah helps clients answer key growth strategy questions, assess their business model/go-to-market approach, and provides M&A transaction advisory.



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