MCX

Member Communication Experience

Eight Future-Proofing Business Strategies

Written by: Sarah Jones, AEC Section Writer, Design & Make with Autodesk

The Industrial Revolution took 80 years. The Digital Revolution took 46 years. Today, the speed of artificial intelligence (AI) computing power doubles every three months. Take this unprecedented pace of technology and add financial shocks, supply-chain disruptions, natural disasters, cyber threats, and a pandemic into the mix, and you have a perfect storm of business disruption.

What will it take for architecture, engineering, and construction (AEC) firms to adapt, survive, and even thrive in the face of accelerating change and in unfamiliar territory? Success starts with digital maturity.

When surveyed for the 2023 State of Design & Make global report, AEC leaders shared the most pressing drivers of change shaping their business decisions. Not surprisingly, digital transformation topped the list, with 79% of respondents stating that the future growth of their company will depend on digital tools.

Fortunately for AEC firms, the "architect way" of problem-solving — taking both the top-level view and zooming in on the details that support success — is an advantage when navigating volatile times.

But what if you reframed volatility as an opportunity for the prepared? That's the perspective of Jonathan Brill, a futurist who advises start-ups, the Fortune 50, and the United States Secret Service on ways to understand and take advantage of an increasingly uncertain world.

In his book, Rogue Waves: Future-Proof Your Business to

Survive and Profit From Radical Change, Brill describes how technological, social, and economic trends can be like "rogue waves" that develop in the ocean when individually manageable waves of disruption collide, creating overwhelming walls of water that can sink even the largest ships in seconds.

These rogue waves are hitting businesses harder, faster, and more often — but with the right processes in place, you can consistently turn these moments of radical change to your advantage.

Approach New Challenges Like an Architect

"As technology reshapes industries, your architectural training is an untapped superpower," Brill says. "Your ability to zoom out and zoom in is desperately needed."

While AI absorbs data, "architects uniquely synthesize complexity and render insights into human-centric solutions," he says. "As machines take over discrete tasks, this contextual thinking becomes even more valuable."

The key, Brill adds, is to find new applications for your core strengths instead of trying to change architecture's essence. "Use your systems thinking to derive insights and translate vision into reality and extend your profession into new domains," he says.

He urges leaders to expand their architectural mindset beyond traditional building design. "Pilot services that apply your spatial and coordination skills in new markets," he says. "Create experiences blending physical and digital. Help organizations of all kinds adapt."

The accelerating pace of change rewards those who grasp new connections and implications. "You already have this superpower," Brill says. "Augment it with technology; then, offer it at scale as a coveted service. Architecture has a moment to expand its relevance by leveraging its native strengths. The future belongs to those who understand the whole system, then incrementally improve it."

Cultivate the ABCs: Awareness, Behavior, Culture

Firms need to be thinking systematically — not just about what's there, but what's missing. In his book, Brill outlines his ABCs that will help firms thrive in uncertainty:

» **Awareness.** Vigilantly scan the horizon for clues: emerging innovations, economic and societal shifts that could collide. Continually monitor your environment to reveal blind spots.

» **Behaviors.** Nimbly act on early signals; invest in skills to spot changes early and quickly capitalize on them. Incorporate experimentation and management rigor into all processes.

» **Culture.** Instill a culture of curiosity, experimentation, and learning from failure. Flatten hierarchies so insights can emerge from anywhere.

That culture piece is critical: Firms must become comfortable with ambiguity and make decisions when there might not be enough data available. This calls for thinking systemically, leveraging help, being open to unexpected connections, and taking the time to know what's missing.

"As managers, we're conditioned to patch problems," Brill says. "Also probe root causes and systemic gaps. Invest time to comprehend what's missing in your environment and organization. Deploy the ABCs to spot weak signals and place strategic bets."

Get Ahead of the Technology Curve

Technologies like generative design and AI are revolutionizing client expectations. As service providers, AEC firms need to look even further into the future to stay ahead of the tech curve.

This means hiring for that future world now. "There's this perpetual mismatch between the skills employees have and those needed for the future," Brill says. "If customer expectations change but you haven't trained people, updated processes, or revamped structures, it's an existential threat."

Generative-AI technologies are disruptive to nearly every business process, so firms need to upskill promising staff through hands-on training in emerging technologies. "Have your newly upskilled people design 'train-the-trainer' programs and update workflows and offerings, but pilot AI services in low-risk environments first before implementing them in key projects," Brill says. "That's how you add value without overextending capabilities."

Be Open to "Flattening" Your Organization

The workforce has evolved more in the past three years than it had in the previous 25 years, and more than 90% agreed that upskilling is important. As a result, companies are hiring employees who lack the skills needed for their positions and plan to train them on the job.

When it comes to embracing transformative technologies like

virtual reality (VR), the metaverse, and AI, timing is everything. "If you're too late, you get no value," Brill says. "But if you're too early, you often get negative value. You've got to get in that 'Goldilocks' zone. You aren't going to get there by having a whole bunch of people in their fifties talk about their experience of technology in the past. It's so different now, and the way you integrate technology in five years is going to be so dramatically different that you need to get young people into the senior-level conversations, talking about what they're doing, showing what's possible.

"We're going to be increasingly asking people at the junior levels of the organization to make decisions that would typically require more senior executive judgment," Brill continues, adding that up-leveling teams to innovate on behalf of leaders requires cultivating big-picture awareness, competency, and aligned interests. He recommends incorporating rotational programs and bringing in specialist gig workers to expose high-potential talent to new ways of working.

Set a Range of Allowable Risk

Creating a culture of experimentation means incentivizing smart failure, encouraging smart experiments versus safe success, and rewarding employees who deliver quality experiments versus reliable results.

But innovation isn't just about risk-taking; it's about risk management. Give range to acceptable risk (Brill calls this "risk bands"), where results that fall in that range are allowable, even if an idea fails. "Say, 'Take this much risk, but no more and no less,'" he says. "Without a bottom limit, you don't fully empower people. You also want to share guardrails, not step-by-step instructions. This encourages learning and avoids micromanagement.

"In our increasingly competitive environment, it will become harder to differentiate your firm unless you incentivize smart experiments over safe success," Brill continues. "While this way of thinking used to make less sense, modern tools like VR and generative design enable rapid prototyping and iteration at low cost. This allows for experimentation with novel concepts; it also limits hazards that used to frequently occur."

Design Innovation Processes With the ROGUE Method

Brill says applying radical innovation as a reliable strategy comes down to a process he calls the "ROGUE Method":

» **R**eality-test assumptions: "Our understanding of markets, technologies, and other forces is often dated or inaccurate."

» **O**bserve the system: "Take the time to understand what caused the current situation and what will create emerging shifts."

» **G**enerate the range of possible futures: "Consider what could be, instead of what you want."

» **U**ncouple threats and opportunities: "Drive the most-desirable outcomes and avoid the least-desirable outcomes by timing, sequencing, and hedging your investments."

» **E**xperiment in portfolios: "Test a range of competing approaches at a small scale to find the best options before making irrecoverable investments.

"When you experiment, consider whether you are taking the right approach," Brill says. "Will you incrementally improve one product or pursue a portfolio of solutions? Car companies have iteratively improved the automobile for 100 years. In contrast, biopharmas invest in portfolios of molecules with calculated risks across time horizons. Car companies always need to be successful, but biopharmas aren't dependent on one success or even one combination of successes. This lets them achieve the right result at the right time no matter which individual experiment works."

Seize AI Opportunities Across Your Organization

With AI services like ChatGPT and no-code tools like CoPilot making AI accessible to everyone, the key is to identify the best opportunities across all skill levels and put systems in place that bring the most opportunities across your organization— pursuing "quick hits" now while building strategies for the long term.

Currently, AI is performant, not competent, meaning that AI systems can excel at specific tasks but lack the broader contextual understanding and reasoning that humans possess. "In the next 24 months, there's a good possibility we'll start to see some of those gaps filled as multi-agent systems enable one AI that is smart about one type of task or data to work with AIs that have other competencies," Brill says. "As that happens, we may suddenly find ourselves in a radically different world. Junior people in your organization will find new ways to offload mundane chores, like code compliance and detailing electrical outlets. At the same time, they will have access to shortcuts and virtual coaches that can help them."

In the meantime, firms need to improve their decision-making when it comes to more complex tasks that AI is not yet capable of doing for itself.

Tap the Potential of High-Value Data

With the massive volume of information generated through project information, communications, sensors, and other technologies, AEC firms are sitting on mountains of valuable data. As firms move into a world where curating that data gets easier, it's time to build systems that realize its value.

"Architects' systems thinking skills are tailor-made for deriving insights from complexity," Brill says. "You can build systems to translate this 'data exhaust' into enhanced offerings."

Companies that use data to improve designs, optimize workflows, and provide predictive analytics to clients will uncover new revenue opportunities. "Treat your firm's data as a strategic asset waiting to be harnessed," he says. "However, approach data proactively, layering in governance and ethics from the start. Implement privacy by design, and be transparent in how data is used. Regulation will eventually catch up."

Disruptions and downturns are inevitable. As AEC firms move toward digital maturity, embracing radical thinking, cultivating a culture of innovation, and approaching resiliency as a growth strategy will lead to greater agility, creating better experiences for customers, and employees and charting a course for success in an unpredictable world. 🖋

About the Author

Sarah Jones is an AEC section writer for Design & Make with Autodesk.

About the Article

Republished from Design & Make. Design & Make with Autodesk publishes thought leadership to inspire leaders in architecture, construction, manufacturing, engineering, and design. From greener buildings to smarter products to mesmerizing blockbusters, Autodesk software helps their customers to design and make a better world for all.

Any views and opinions expressed in this article may or may not reflect the views and opinions of the Construction Management Association of America (CMAA). By publishing this piece, CMAA is not expressing endorsement of the individual, the article, or their association, organization, or company.