

Education

Dynamic Universities: Strategic Leadership for Higher Education's Turbulent Future

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Long-term institutional vitality depends on structured sensing, disciplined resource reallocation, and intentional organizational transformation.

American higher education stands at an inflection point. The confluence of declining state support, rising costs, global competition, technological disruption, and eroding public confidence has created what military planners would call a VUCA environment—volatile, uncertain, complex, and ambiguous. In *Dynamic Universities*, we argue that navigating this environment demands something universities have historically lacked: strategic, entrepreneurial leadership grounded in a coherent management framework.

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The numbers tell a stark story. State appropriations, which accounted for 46 percent of public university revenues in 1980-81, had fallen to approximately 17 percent by 2020-21. The total cost of attending a four-year public university has risen 163 percent since 1980. Meanwhile, a March 2023 Wall Street Journal survey found that 56 percent of Americans believe a college degree is not worth the time or money—a decline from a decade earlier when 53 percent were confident in higher education’s value.

The COVID-19 pandemic served as both stress test and accelerator. More than 1,100 US colleges and universities shuttered classrooms within weeks of the first American death from the virus. Enrollments fell to their lowest level since 2008. The Standard & Poor’s rating service lowered its outlook for more than a quarter of the institutions it rates. As Brian Rosenberg, former president of Macalester College, observed: “If one were to invent a crisis uniquely and diabolically designed to undermine the foundations of traditional colleges and universities, it might look very much like the current global pandemic.”

Yet universities also demonstrated their essential value during the crisis. Researchers at scores of institutions turned their attention to understanding the novel coronavirus. Johns Hopkins became a critical resource for policymakers and the public through its Coronavirus Research Center. Research by scientists at the University of Pennsylvania laid the groundwork for the first COVID-19 vaccines. The pandemic underscored both the vital importance of great research universities and the many challenges facing their leaders.

Our thesis is straightforward: Universities in the United States and elsewhere have generally not been well managed, and given present challenges, improved leadership and better management is essential. This does not mean universities should be managed exactly like businesses—but they remain unique institutions facing strong competition, and they suffer when they neglect contemporary management concepts and practices. We offer the dynamic capabilities framework as a strategic tool to help campus leaders recognize opportunities, set priorities, execute wisely, and conduct the necessary transformations.

The Dynamic Capabilities Framework

Dynamic capabilities, first outlined by Teece and Pisano in 1994 and developed more fully by Teece, Pisano, and Shuen in a 1997 article in the strategic management journal, represent an organization's capacity to sense and shape opportunities and threats, seize those opportunities, and maintain competitiveness through enhancing, combining, protecting, and reconfiguring tangible and intangible assets. The framework was originally developed to explain how Silicon Valley companies succeed and continue to prosper under conditions of technological uncertainty. Today, universities face similar uncertainty—not only technological, but financial, demographic, and political.

The critical distinction is between “ordinary” capabilities and “dynamic” capabilities. Ordinary capabilities enable an organization to perform current activities efficiently—what economists call “technical fitness.” Dynamic capabilities, by contrast, enable an organization to change what it does and how it does it—what we call “evolutionary fitness.” In times of stability, ordinary capabilities may suffice. In times of turbulence, dynamic capabilities determine survival.

Consider the problem of declining enrollments. An ordinary approach might cut classes, compete on price through lower tuition or increased discounting, and reduce costs to balance budgets. Getting more efficient can happen quickly, and certain elements may be necessary, but efficiency alone is not sustainable. A race to the bottom is not the answer.

A dynamic capabilities perspective requires understanding why enrollment is falling and addressing underlying causes. This might mean introducing new programs in areas of high student demand, ensuring those programs align with existing institutional strengths, and orchestrating resources through faculty committees, admissions staff, marketing departments, and financial planners. Leaders must take a systems-level approach, identifying critical internal and external interdependencies. As the Royal Society of Arts advises: “Think like a system, act like an entrepreneur.”

The dynamic capabilities framework comprises three clusters of activities:

Sensing involves scanning the environment to detect emerging opportunities and threats before they become obvious. This requires what Karl Weick called “sensemaking”—the ability to interpret weak signals and construct meaning from ambiguous information. Universities with strong sensing capabilities monitor technological developments, demographic shifts, policy changes, and competitive moves. They maintain networks that extend beyond campus boundaries and cultivate the intellectual humility to recognize when established assumptions no longer hold.

Seizing involves mobilizing resources to address opportunities and threats once they are identified. This requires strategic decision-making, business model innovation, and asset orchestration. Universities with strong seizing capabilities can move quickly from recognition to action. They have governance structures that enable timely decisions, cultures that embrace calculated risk, and leaders who can build coalitions across diverse stakeholders.

Transforming involves the continuous renewal of organizational structures, cultures, and capabilities. This is perhaps the most challenging cluster because it requires changing the very foundations on which the institution operates. Universities with strong transforming capabilities can reconfigure their resource base, shed obsolete programs and structures, and build new competencies even when doing so threatens established interests.

Berkeley and Stanford: A Tale of Two Universities

The contrasting trajectories of Stanford University and the University of California, Berkeley, illustrate how dynamic capabilities shape institutional outcomes. Both are world-class research universities located in the San Francisco Bay Area. Both have produced Nobel laureates, pioneering research, and influential graduates. Yet their approaches to entrepreneurship, industry engagement, and strategic leadership while now converging were markedly different in the past, with significant consequences.

Stanford's transformation from a regional school to a global powerhouse owes much to the entrepreneurial vision of Frederick Terman, who served as dean of engineering and later provost. Terman recognized that Stanford's future depended on building "steeples of excellence"—concentrating resources in areas where the university could achieve world-class distinction rather than spreading them thinly across all fields. He actively cultivated relationships with industry, encouraged faculty to consult with local companies, and supported the early pioneers of what became Silicon Valley.

The creation of Stanford Industrial Park (now Stanford Research Park) in 1951 exemplified this approach. By leasing university land to technology companies, Stanford created a physical infrastructure for university-industry collaboration while generating revenue to support academic programs. The Honors Cooperative Program, launched in the early 1950s, allowed employees of local companies to pursue graduate education part-time, with their employers matching tuition fees. These additional funds were made available to departments to hire additional faculty, strengthening Stanford's teaching mission while deepening its ties to regional industry.

Stanford's Office of Technology Licensing, established in 1970 under Niels Reimers, formalized the process of identifying commercially promising research and helping faculty capture value from their discoveries. The licensing of the Cohen-Boyer recombinant DNA patents—which earned Stanford and UC San Francisco \$255 million by the time the patents expired—demonstrated the potential of this approach and helped launch the modern biotechnology industry.

Berkeley, by contrast, has historically been more ambivalent about industry engagement. As a public institution dependent on state appropriations, Berkeley faced different incentive structures and governance constraints. Faculty culture emphasized basic research and skepticism toward commercial entanglements. The university's complex governance structure, with multiple layers of oversight and shared decision-making, made rapid strategic action difficult.

This is not to say Berkeley lacked entrepreneurial faculty or important commercial contributions. Joseph Harris, a Berkeley political science professor, invented the Votomatic punch-card voting machine in the early 1960s, generating considerable licensing revenue.

Berkeley researchers have made foundational contributions to fields from nuclear physics to computer science. But the institution as a whole was slower to embrace entrepreneurship as a strategic priority.

More recently, Berkeley has moved to strengthen its entrepreneurial capabilities. The SkyDeck accelerator, launched in 2012, provides workspace, mentorship, and seed funding to startups founded by Berkeley students, faculty, and alumni. The Haas School of Business has expanded its entrepreneurship curriculum. The university has worked to streamline technology transfer processes and build stronger connections with Silicon Valley investors and entrepreneurs.

Yet Berkeley continues to face challenges that Stanford does not. State funding, which once provided 50 percent of Berkeley's revenue, now contributes only about 14 percent—making Berkeley, as many observe, almost like a private university but without the governance flexibility or endowment resources that private status would provide. The university must satisfy multiple masters: state legislators, the UC system administration, faculty senates, student governments, and diverse external constituencies. Building consensus for strategic change requires navigating this complex landscape.

The Berkeley-Stanford comparison illustrates a broader point: Dynamic capabilities are not simply about having talented people or valuable resources. They depend on organizational structures, governance arrangements, cultural norms, and leadership practices that enable institutions to sense, seize, and transform. Stanford's advantages in these dimensions have compounded over decades, creating a self-reinforcing cycle of entrepreneurial success. Berkeley's challenges, while not insurmountable, require deliberate effort to address.

Digital Technology: Threat and Opportunity

The rise of digital technology presents both existential threats and transformative opportunities for universities. The emergence of massive open online courses (MOOCs) in the early 2010s prompted widespread predictions that traditional universities would be

“disrupted” by low-cost online alternatives. Those predictions proved premature—but the underlying forces they identified have not disappeared.

Universities with strong sensing capabilities recognized early that digital technology would reshape higher education. MIT’s OpenCourseWare initiative, launched in 2001, made course materials freely available online—not as a revenue-generating strategy but as a way to extend MIT’s educational mission and learn about online learning. This sensing orientation positioned MIT to respond effectively when MOOCs emerged a decade later.

Georgia Tech demonstrated strong seizing capabilities with its Online Master of Science in Computer Science (OMSCS), launched in 2014 in partnership with Udacity and AT&T. By offering a rigorous, accredited master’s degree for less than \$7,000—a fraction of the cost of comparable on-campus programs—Georgia Tech reached students who could never have attended in person. The program now enrolls more than 10,000 students, making it one of the largest computer science programs in the world.

Arizona State University under President Michael Crow exemplifies transforming capabilities applied to digital education. Crow has systematically reimagined ASU’s mission, structure, and operations to serve a broader and more diverse student population. ASU’s online programs now enroll more than 65,000 students. The university has partnered with Starbucks to offer tuition-free degrees to company employees. It has experimented with adaptive learning technologies, competency-based credentials, and other innovations that challenge traditional assumptions about how higher education should work.

The emergence of artificial intelligence, including large language models and generative AI, promises further disruption. Universities that develop strong dynamic capabilities now will be better positioned to navigate whatever technological changes lie ahead.

Free Speech and Institutional Mission

Perhaps no issue has generated more controversy on American campuses than debates over free speech, academic freedom, and the boundaries of acceptable discourse. The Trump administration’s 2025 actions against Harvard and Columbia—freezing federal

research funds over allegations of antisemitism and inadequate responses to campus protests—represent the most dramatic government intervention in university affairs in decades. But the underlying tensions have been building for years.

We argue that defending free speech and academic freedom is not merely a matter of principle but a strategic imperative. The university's *raison d'être* is to be a place for free, open, and reasoned discussion. When that mission is compromised—whether by external political pressure or internal ideological conformity—the institution's fundamental value proposition erodes.

Dynamic capabilities are essential to defending this mission. Sensing capabilities help university leaders recognize emerging threats before they become crises—whether those threats come from government officials, activist groups, or internal factions. Seizing capabilities enable rapid and effective responses when controversies arise. Transforming capabilities allow institutions to rebuild cultures of open inquiry when they have been damaged.

The University of Chicago's 2014 statement on free expression provides a model. The statement affirms that the university's "fundamental commitment is to the principle that debate or deliberation may not be suppressed because the ideas put forth are thought by some or even by most members of the University community to be offensive, unwise, immoral, or wrong-headed." More than 100 institutions have since adopted similar statements. But statements alone are insufficient; they must be backed by consistent enforcement and cultural reinforcement.

Leadership for the Twenty-First Century

What skills do university leaders need to develop and exercise dynamic capabilities? Drawing on research by Paul Schoemaker and colleagues, we identify six essential leadership skills:

Anticipate: The ability to detect ambiguous threats and opportunities on the periphery of the organization's awareness. This requires scanning broadly, building diverse networks, and maintaining intellectual curiosity about developments that may seem distant from

immediate concerns.

Challenge: The ability to question prevailing assumptions, including one's own. This requires intellectual honesty, tolerance for dissent, and willingness to consider evidence that contradicts established beliefs.

Interpret: The ability to synthesize diverse and often conflicting information into coherent understanding. This requires pattern recognition, tolerance for ambiguity, and the wisdom to know when to act on incomplete information.

Decide: The ability to make timely decisions despite uncertainty. This requires balancing deliberation with action, accepting that some decisions will prove wrong, and maintaining the flexibility to correct course.

Align: The ability to build coalitions among stakeholders with diverse interests. This requires political skill, emotional intelligence, and the capacity to articulate a compelling vision that transcends parochial concerns.

Learn (and Transform): The ability to extract lessons from experience and apply them to future challenges. This requires systematic reflection, honest assessment of failures, and willingness to change established practices when evidence warrants.

These skills map directly onto the dynamic capabilities framework. Anticipate, challenge, and interpret support sensing. Decide and align support seizing. Learn and transform support the transforming cluster.

Conclusion: Evolutionary Fitness for an Uncertain Future

Universities have survived for centuries by adapting to changing circumstances while preserving their core missions of research, teaching, and service. The challenges they face today—financial, competitive, technological, and political—are formidable but not unprecedented. What is required is leadership equal to the moment.

We offer the dynamic capabilities framework as a practical tool for campus leaders and trustees. It provides a conceptual lens for understanding critical issues and a useful guide for prioritizing competing demands. Most importantly, it focuses attention on evolutionary fitness—the capacity to adapt and shape the environment—rather than mere operational efficiency.

The era of flush budgets, soaring enrollments, and unchallenged international dominance is over. Universities that cling to business as usual will find themselves increasingly marginalized. Those that develop strong dynamic capabilities—the ability to sense emerging opportunities and threats, seize them through decisive action, and transform themselves when circumstances require—will not merely survive but thrive.

If university leaders ever had a quiet life, it is no more. The dynamic capabilities framework offers a way forward for those willing to embrace the challenge of strategic, entrepreneurial leadership.



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