

Generative Power: Compounding Your Organization's Knowledge in the Age of AI

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When Jon Gertner was researching the history of Bell Labs, he noticed something peculiar about the building. The corridors connecting different departments were long and unavoidable. If you were a physicist and wanted lunch, you had to walk past the engineers. The mathematicians shared common spaces with the materials scientists. This was not accidental. The leaders of Bell Labs understood something that most organizations still have not: the most valuable creative work happens at the intersection of people who know different things deeply, and the primary task of organizational design is to make those intersections possible.

Most organizations today are trying to solve the same problem with far less elegance. The skills and judgment that matter most in knowledge work are tacit—they live in individuals and in the way teams think together, and they rarely appear in job titles, performance reviews, or talent management systems. Seeing who really holds what expertise, connecting those people to the right problems, and rewarding the contributions that matter most have historically been too costly to do well.

AI changes this. For the first time, the behavioral traces of creative knowledge work—what gets solved, whose outputs others build on, who gets called when something genuinely hard needs thinking through—can be analyzed continuously and at scale. The Bell Labs corridor can now span an entire organization. But AI also introduces a risk that most leaders are not tracking: the same tools that surface and connect human creative capability can, if deployed without deliberate design, quietly erode it. Managing both sides of this dynamic is the challenge this paper addresses.

The Risk No One Is Measuring

Research is consistent that AI assistance raises individual creative output. People produce more, and often better, when they have AI support. What the research also shows—less discussed, more consequential—is that AI assistance tends to narrow what a population collectively produces. When many people use the same AI system for similar tasks, their outputs converge. The diversity of approaches and perspectives that feeds genuinely valuable creative work erodes, even as average quality rises.

The deeper problem is what AI does to capability over time. AI can act as a cognitive prosthetic—extending what a person can do while building their underlying capability through genuine engagement. The medical resident who uses AI to generate differential diagnoses, then works through those diagnoses and follows up to understand where the AI was right and wrong, is becoming a better clinician through the interaction. The same resident who accepts the most plausible diagnosis without that engagement is producing identical outputs while her clinical judgment quietly degrades.

The difference has nothing to do with which tools are used. It is entirely about how the interaction is structured. Without deliberate design, the economic default is substitution: immediate output is maximized when AI does the cognitive work. Output metrics look healthy throughout the depletion process. The capability damage is invisible until it is significant and expensive to reverse.

Generative Power: A New Source of Competitive Advantage

As AI commoditizes general human capital—the analytical, technical, and communicative skills that any organization can now access through the same tools—the competitive advantage that endures is the creative capability built through the specific interactions, practices, and accumulated experience of a particular organization. We call this Generative Power: the organizational capacity to compound human creative capability through structured interaction with AI. It is the human-side counterpart to the machine-side learning power that governs how AI systems themselves improve over time.

Generative Power is not a stock that you possess. It is a capacity that you develop through deliberate investment in how AI-mediated creative interactions are designed and governed. Two organizations with identical AI tools can have radically different Generative Power trajectories because the interaction design—whether AI is used as a prosthetic or a substitute—differs between them. That design difference compounds over time into a capability gap that cannot be closed simply by buying better tools.

Generative Power has four dimensions, each requiring active development and governance.

Depth is the level of domain expertise in the capability pool. Deep expertise allows practitioners to recognize what AI outputs are actually significant and what possibilities they open. Depth builds through genuine engagement with hard problems over time. It depletes through substitutive AI use—often invisibly, often while output metrics still look strong.

Velocity is the speed at which insight circulates—how quickly a good idea becomes available to enrich the next person’s work. AI can dramatically increase Velocity by surfacing expertise and making skills portable across the organization. But Velocity without Depth is a fast-turning loop with nothing valuable on it.

Variety is the diversity of perspectives, domains, and ways of framing problems in the capability pool. Most valuable new ideas combine elements from domains that don’t normally interact. Variety is what makes those combinations possible. It is also the dimension that unmanaged AI most directly threatens, pulling individual outputs toward the center of the same training distribution until the pool looks diverse but produces convergent work.

Trajectory is the governing dimension: whether your AI-mediated interactions are developing or depleting the creative capability of the people involved. Positive Trajectory means each cycle leaves people more capable than before. It is the dimension organizations are least likely to measure and most likely to get wrong by default, because standard metrics capture what interactions produce, not what they do to the people producing.

The four dimensions multiply rather than add. An organization with high Depth and Variety but slow Velocity has potential that does not compound. All three are irrelevant if Trajectory is negative. The system is bounded by its weakest dimension, which means developing the weakest produces more return than investing further in the strongest.

The Creativity Stack: How to Build Generative Power

Building Generative Power requires an operational architecture that develops all four dimensions systematically. We call this the Creativity Stack. Six layers—Detection, Representation, Recombination, Amplification, Attribution, and Directionality—each develop one or more dimensions and create the conditions the others require.

Detection surfaces the creative capability the organization holds but cannot see. Every organization has people whose most valuable contributions are invisible to any formal system—the analyst whose reframings get adopted without attribution, the engineer who has developed rare intuition about a class of problem. AI can read the behavioral traces of that expertise and create a map of who knows what across the whole organization. Google’s 20% time policy worked as an informal Detection mechanism: it revealed what engineers cared about beyond their assigned roles, surfacing the latent capability that produced Gmail, Google News, and AdSense. When 20% time was eliminated under commercial pressure, Google lost that visibility without fully understanding what it had given up.

Representation makes detected capability portable. Representation distills tacit skill into artifacts—methods, heuristics, analytical frameworks—that can travel across the organization. McKinsey’s knowledge management initiative in the 1990s invested heavily in Representation without the rest of the Stack.

Recombination connects complementary people to specific creative problems at scale. AI-enabled Recombination assembles the small temporary group whose combined expertise fits a specific challenge, then dissolves it when the work is done. The transistor required the combination of theoretical physics, experimental skill, and materials science—none of which could have produced it alone. Bell Labs made that combination possible through building design; the Creativity Stack makes it achievable across an entire organization, continuously, through AI-enabled organizational perception.

Amplification extends each person’s creative range through two opposed phases. First, AI generates options and framings the person would not have reached alone. Then the candidate work is pressure-tested against adversarial perspectives before commitment. Pixar’s Braintrust operates on this principle: experienced directors review works-in-progress with rigorous honesty in a session where no one has authority over the director being reviewed. Their power comes from the quality of their critique, not from hierarchy. The critical design choice is whether humans genuinely engage with AI-generated options or merely select from them. Engagement builds judgment. Selection from a menu does not.

Attribution makes contribution visible and rewards it directly. Without Attribution, the generative loop collapses: people stop contributing because contribution carries no recognition. But Attribution has a threshold. Past a certain point, being scored and measured extinguishes the intrinsic motivation—curiosity, craft, the pleasure of solving hard problems—that produces the most valuable creative work. Attribution must confer recognition and standing, not function as a leaderboard.

Directionality is the governing layer. It tracks the diversity of creative outputs as a managed metric and intervenes when outputs converge—rotating perspectives in adversarial review, introducing viewpoints from outside the current mode. And it governs Trajectory by ensuring that AI-mediated

interactions develop rather than deplete the people who engage in them. These two objectives can conflict. Directionality must hold both simultaneously.

Why the Default Trajectory Is Negative

Toyota's kaizen system illustrates what a full Stack looks like in practice: workers detect problems, represent them through the kaizen card, receive genuine recognition, and remain actively engaged with improving the work. When Western manufacturers copied the visible tools—kanban cards and quality circles—without the underlying culture of engagement and recognition, the systems consistently failed. The tools without the governance produced nothing. This is the pattern that AI deployment is now repeating at scale.

Organizations adopt AI tools and watch output metrics rise. What they are not measuring is whether the people generating those outputs are becoming more capable or less. The divergence is invisible until it is significant—and by that point, the capacity to rebuild the lost expertise has itself declined. An organization that has allowed domain expertise to atrophy cannot easily rebuild it, because the cognitive foundation needed to make sense of advanced training has weakened alongside the expertise it would rebuild. Recovery is substantially harder than prevention.

Choices That Determine Trajectory

The difference between organizations that build Generative Power and those that deplete it comes down to a few design choices. None emerge from market incentives alone.

Design for engagement, not approval. AI-assisted creative tasks should require humans to genuinely evaluate, question, and restructure AI outputs—not review and approve them. The same AI tool produces prosthetic or substitutive interaction depending on whether the workflow requires thinking or only clicking. This is a workflow design decision, not a policy statement.

Measure Trajectory alongside output. Add periodic assessments of unassisted performance—tasks conducted without AI access, calibrated to role and level—to track whether human capability is developing or becoming dependent on AI. If unassisted performance is flat while AI-assisted performance rises, the organization is in the depletion trajectory. Report this gap to senior leadership alongside standard performance metrics.

Govern Variety as a managed metric. Track the diversity of your organization's creative outputs over time. Rising output volume alongside converging output style is the homogenization warning. When this pattern appears, intervene: rotate the perspectives used in creative review, deliberately commission work from the edges of the current distribution.

The Compounding Advantage

Bell Labs produced the transistor by designing an organization where the right capabilities could collide. The corridors and shared spaces were governance mechanisms—deliberate choices about how creative work was structured and rewarded. The Creativity Stack makes those same choices achievable at the scale of a modern organization, using AI to do what Bell Labs did with architecture.

As AI becomes more capable, it commoditizes general human skills faster than organizations can track. The capabilities that endure—that cannot be purchased, recruited, or imitated—are those

built through the specific interactions, practices, and accumulated experience of a particular organization over time. That is Generative Power. It compounds through each well-designed creative cycle. It depletes through each substitutive one.

The organizations that build Generative Power now will compound toward capabilities that competitors cannot replicate, because those capabilities are built into the specific history of how particular people have learned to work together with AI. That is what durable competitive advantage looks like in an era when everything else can be accessed through the same tools.

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