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What's the big idea?

very state wants a strong economy. But today, perhaps the most significant barrier to economic growth is workforce preparedness. The siloed, disjointed workforce development ecosystem hasn't been able to keep up with a changing economy, helping contribute to a critical skills gap. One way to boost skills is to overcome the isolation of the participants in the workforce development ecosystem.

What's different about this approach?

A step to success is not yet another upskilling program, but to cultivate a collective vision of the workforce development ecosystem *as an ecosystem*. State policymakers should deploy tools that enhance the way different participants work together; these participants include educators, employers, and those committed to workforce upskilling. Instead of focusing solely on helping one individual at a time, strengthening workforce development as an ecosystem can provide enhanced economic opportunity for much of the population and drive economic growth.

The skills gap and the workforce development ecosystem

Here's the problem in a nutshell: Many businesses struggle to find the skilled workers they need, while at the same time, many individuals are seeing their abilities go untapped. Nearly 75% of employers across the globe are unable to find skilled workers—the highest rate in more than a decade. At the same time, 46% of Americans

consider themselves to be underemployed or working in a job that does not fully use their education, experience, or training.²

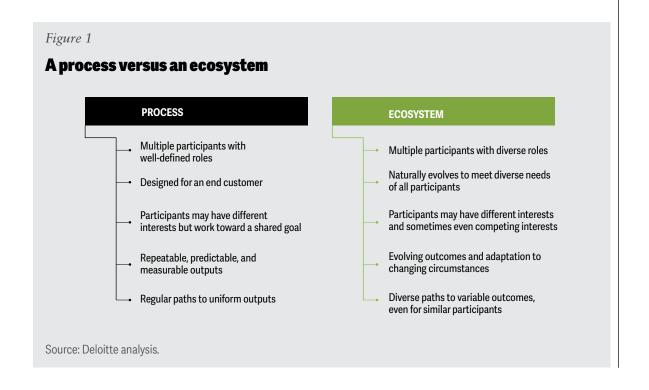
Companies often can't find the right workers, and workers can't find good jobs. The traditional measures of the economy, such as the unemployment rate, miss this paradoxical aspect of the current economy. As never before, it is *skills* that determine success or failure—for individuals, companies, and regional economies. Skills fuel the engine of economic growth.³



Improving the workforce development ecosystem can deliver the skills needed for economic growth

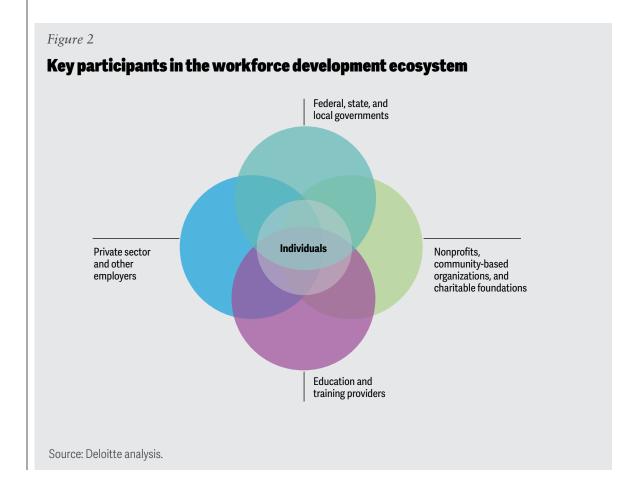
he term *ecosystem* has become something of a buzzword. But in the case of workforce development, it fits. The way workforce development occurs has the hallmarks of a true ecosystem (figure 1).

People often speak about the workforce development ecosystem while their mental model continues to see it as a process. A *process* is designed, engineered, and managed. It is linear and addresses problems to be solved. It is routine, fixed, static, and usually has a primary goal and a measurable output. It may be reasonable to expect the outputs of a process to be uniform—as when a factory pumps out millions of nearly identical widgets.



An ecosystem is different. It is a naturally occurring set of related activities. It may have multiple participants with different goals, varied relationships, feedback loops, and constant evolution. An ecosystem has no start or finish. Ecosystems are *shaped*, not managed, and difficult to document or measure. An ecosystem is *alive*.

The workforce development ecosystem can play a pivotal role in strengthening the skilled worker pipeline. In its current state, however, the workforce development ecosystem is a complex web of multiple participants that sometimes play several roles (figure 2). The system is fragmented and often unable to keep pace with changing needs.



A process can be evaluated on how well it fulfills its mission—for example, does the factory efficiently produce widgets? But a successful *ecosystem* isn't as easily measured. We may intuitively know that a vibrant meadow or a rainforest is more fruitful than a desert or a frozen tundra. Ecologists can use tools that help further a healthy ecosystem, such as introducing a new species or building a dam. Similarly, policymakers can shape the workforce development ecosystem through tools such as training programs, innovation hubs, or apprenticeship programs.

The ABCs of a thriving ecosystem include:

- Adaptation: When circumstances change, healthy ecosystems show adaptive innovation. Some feedback loops, including some painful ones, spread information and prompt evolutionary changes and shift behaviors. In the workforce development ecosystem, innovation might involve new approaches replacing outdated ones—a shift to what works. This need for adaptation applies not only to individuals but also to organizations, regions, and entire industries.
- Biodiversity: In nature, biodiversity refers to a scenario where a wide variety of plants and animals are successful. Similarly, biodiversity in the workforce development ecosystem means a range of participants playing various roles, all gaining access to what they need to thrive. It cannot be considered broad and diverse only if individuals with college degrees are succeeding.
- Connectedness: The participants in a thriving ecosystem interact with one another, taking on important roles and benefiting from the interactions. A change to one participant may also impact others. The people and organizations filling different roles in the workforce development ecosystem benefit from close connections or languish in isolation.

The current workforce development ecosystem is working very well, but only in certain small pockets. Individuals with degrees, for example, are generally doing well for themselves and for those who hire them. But overall, the ecosystem isn't functioning as well as most people would like, as too many subpopulations are struggling. Many individuals who lack degrees but have very valuable skills are facing financial hardship.⁴ At the same time, many businesses are unable to find the skilled workers they need, limiting overall economic growth.

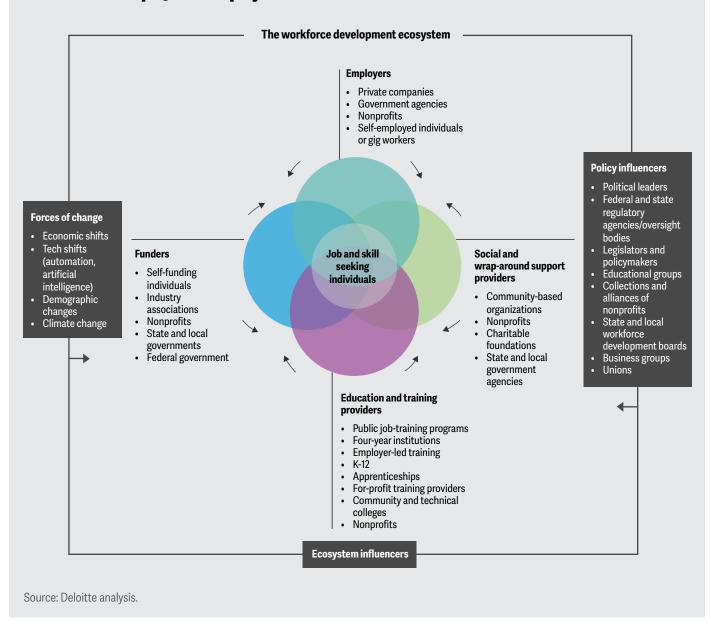
What might be the main problem with the current workforce development ecosystem? In a word: *isolation*. For example, there may be an unhealthy separation between those who educate and train individuals and those who hire them. There are gaps between government agencies that fund various training programs and those being trained.⁵ And many individuals have unrecognized, underutilized talents that may not be appreciated because they can't successfully connect with employers. Too often, the ecosystem participants may operate in silos depending on their roles. Business groups gather to discuss business, policymakers talk to other policymakers, and educators gather with educators. Instead of gathering new insights from those with different perspectives, these groups often reinforce their existing viewpoints.

The isolation of the various "islands" of participants can work against the ABCs of a successful ecosystem. Because they are isolated, educators and training organizations may be *slow to adapt* their programs in a way that works better for both individuals and employers. And isolation can work against connectedness, as the barriers that separate various groups work against the flow of people and information.

In addition to strengthening connections, it is important to align, if necessary, the incentives of participants to naturally promote more desired behaviors (figure 3).⁶

Figure 3

A thriving and connected workforce ecosystem in which each player has distinct (and sometimes multiple) roles to play



Five strategies to consider to help state and local officials promote a thriving ecosystem

1. Connect ecosystem participants

Coordination between ecosystem participants will be important for the system to function effectively. At times, key participants such as employers, government workforce programs, education and training providers, nonprofits, and communities might not be working in sync or lack an optimum level of connection. Important information can be "trapped" in one part of the ecosystem and may not be available to other participants. Some strategies to consider to boost coordination include:

- Acting as a convener to bring ecosystem participants together and ensure that the skills that employers seek are the focus of education and training efforts.
- Supporting efforts between educational institutions, nonprofits, and companies to provide personalized training courses that match the upskilling needs of specific groups and meet the demands of employers.
- Partnering with colleges and universities to implement lifelong learning approaches, allowing individuals to attend school as needed to keep skills current.
- Working with companies and educational institutions to facilitate apprenticeship programs that provide training for working adults earning a degree or industry-recognized credential.

Strategy in action

South Carolina apprenticeship program

Through its Apprenticeship Carolina™ program, the state of South Carolina offers a tax credit of US\$1,000

per apprentice to employers that sponsor apprentices and provides access to program consultants who can help them set up a recognized apprenticeship program. As of November 2021, South Carolina had over 36,940 apprentices and more than 1,177 participating companies.⁷

University of Memphis Research Foundation (URMF) Ventures

The University of Memphis established a fundraising and donor call center for St. Jude Children's Research Hospital in 2016, which led to the establishment of UMRF Ventures. This for-profit company partners with local firms and offers University of Memphis students part-time employment.⁸ In 2017, UMRF Ventures secured FedEx as its first client and opened a call center on campus that provided technical support to FedEx employees.⁹ Since its inception, over 750 students have been employed, and a total of US\$7 million has been paid in student wages.¹⁰

Volkswagen Academy, Chattanooga

In 2011, Volkswagen partnered with Chattanooga State Community College and other entities to launch a dual-training apprenticeship program.¹¹ The program was updated in 2018¹² and now offers a two-year Robotronics Technology Expert apprenticeship that provides hands-on paid training, combining academics and technical knowledge, for absorption into the plant workforce at Chattanooga.¹³

San Jacinto College Apprenticeship Program, Texas San Jacinto College has had apprenticeship programs

"Our current workforce ecosystem is really built on waiting for people to show up at the community college, to show up at a federally funded one-stop. But lots of folks who have been left behind in our economy are not in a position to think about doing something new. They are heads down, trying to figure out how they are going to feed their families."

—Ridge Schuyler, dean of community self-sufficiency programs, Piedmont Virginia Community College with Dow Chemical since 2015, aligning courses for a career in petrochemicals. The program combines part-time coursework with on-the-job training, and Dow Chemical covers the cost of tuition, books, and salaries for registered students.¹⁴

2. Focus on vulnerable populations

One of the most important roles of a workforce development ecosystem is advancing the futures of at-risk populations. This could help expand the pool of potential workers. This approach acknowledges that everyone has different needs, circumstances, and starting points, and thus will likely have different career journeys and goals.

Disadvantaged or at-risk populations cover a broad spectrum, from the formerly incarcerated and those with substance abuse issues to those who simply faced some temporary setbacks or may suffer from a lack of opportunity. In some cases, the goal may be an entry-level job, in others it may be a step up the ladder to better pay. A thriving workforce development ecosystem can help enable individuals with a broad spectrum of abilities to find an appropriate path to achieving long-term success. Strategies to consider while promoting this include:

- Tailoring programs for disadvantaged groups who
 often face unique workplace challenges, such as
 the formerly incarcerated and those facing housing
 instability. Such programs can customize upskilling
 support strategies to meet the specific needs of each
 population.
- Mobilizing nonprofits and companies to support coordinated training of low-wage workers to move them into higher-wage jobs over time.
- Expanding broadband access to cover both rural and urban demographics across more income levels.

Engaging employers and community-based organizations to provide post-employment support in areas such as transportation, child care, and other non-skills-based assistance, especially for those transitioning from public assistance to self-sufficiency.

Strategy in action

Back to Work Rhode Island

Through a public-private collaboration called Back to Work Rhode Island, the state of Rhode Island provides targeted skills training and support services to displaced workers, ushering them into growing sectors such as health care and information technology.¹⁵

EARN Maryland

EARN Maryland funds training programs for in-demand job skills based on employer proposals and encourages mobility "for Maryland's most hard-to-serve jobseekers through job-readiness training."¹⁶ By February 2020, of the approximately 4,500 individuals who completed EARN Maryland training for entry-level jobs, more than 84% secured employment.¹⁷

Network2Work, Virginia

Network2Work collaborates with local employers to identify job needs and accordingly works with community and neighborhood leaders to identify individuals from predominantly lower-income families who may have transferrable skills to meet those needs. Network2Work then connects those individuals (43% of whom are single parents) to job training programs at Piedmont Virginia Community College (PVCC). The organization also provides additional resources such as child care, transportation, legal assistance, health care, and more to ensure success in their new roles.

Of the job seekers who enrolled in Network2Work through PVCC over the past two years, 74% found jobs within six months of enrollment. On average, program graduates more than doubled their income, with an average wage gain of 109%.¹⁸

JOB AND SKILL SEEKERS HAVE UNIQUE CHALLENGES AND JOURNEYS

Case scenario 1: Kelly's journey

Kelly is a 20-year-old single parent who dropped out of college when she became pregnant. She currently lives with her older sister, receives food assistance, and works part time as a warehouse worker to help support her family. She is looking to upskill and transition to a better-paying career.

As Kelly starts on her path forward, she has questions:

- What type of training is available?
- What are the costs?
- What is the success rate?

Kelly searches the web for job training in her area but finds a dizzying array of for-profit, nonprofit, and government sites. Nothing seems to fit her needs, and she lacks both the time and the resources to navigate a maze of eligibility requirements. Kelly doesn't know where to start. Discouraged, she gives up for a time.

Ecosystem insight #1: Even if there are programs that could help, the individual needs to find them.

Eventually, Kelly's manager at work nominates her for a certification program in logistics that

her employer offers in partnership with a training provider. The training could qualify Kelly for a better-paying job; however, she realizes that without support such as child care, she may not be able to take advantage of the training or work full time if the job was offered.

Ecosystem insight #2: Some individuals may need "wrap-around" supports to take advantage of training ortake a job with greater responsibility.

For example, Kelly's company may be able to provide or identify child care assistance so that she can access the training.

Case scenario 2: Karl's journey

Karl is a 40-year-old man who was recently released from prison. He is a high school graduate and prefers working with his hands. Karl has a strong work ethic, but his work experience is limited, and he has struggled with substance abuse in the past. With his criminal record, Karl is worried he won't find a decent job.

As Karl starts his job search, he has questions:

- What types of jobs could he realistically get?
- Is there any training that would be suitable for a manual laborer?

How can he do better than a minimum-wage job?

Ecosystem insight #1: Some disadvantaged populations have significant, specific barriers to employment.

Karl lacks basic computer skills and isn't likely to search for information online. Fortunately, the Department of Corrections hosts an information center about reentry that includes a hands-on apprenticeship program in car repair through a partnership between a local community college and several auto repair shops. Karl got lucky—but sometimes the biggest challenge is finding the right training.

Ecosystem insight #2: Some people need assistance beyond just skills and job training

Karl's biggest risk going forward may well be his struggle with substance abuse. In addition to job training, some form of addiction assistance from the state's human service agency or a nonprofit may be key to Karl's long-term job success.

3. Model behavior as an employer

State and local governments can lead by example as employers and model behaviors that the larger workforce development ecosystem can emulate. Consider:

- Investing in the training and upskilling of the state workforce to encourage employees' upward mobility and increase their earning potential, and act as a model for other employers
- Revisiting state hiring practices and processes to become more accessible to disadvantaged populations

- Reevaluating degree requirements for state positions that may not truly demand it (figure 4)
- Adopting flexible work arrangements such as remote or hybrid work to break down geographic barriers for certain jobs
- Modernizing and tailoring employee benefit packages to align with what is important to the workforce—for example, child care, wellness stipends, and learning and development



Strategy in action

Skills-based hiring

In Pennsylvania, the new governor Josh Shapiro's first executive order was to eliminate the requirement of a four-year degree for 65,000 positions in state government. This step made 92% of state government jobs accessible to anyone with "the relevant work experience and skills-based training, regardless of their educational attainment." Maryland Governor, Larry Hogan, and Utah Governor, Spencer Cox, made similar efforts recently when they removed degree requirements for several jobs. ¹⁹ With state and local governments often being some of the largest employers in a state, changes like these can have a significant impact and help set the tone for broader change in the labor market and workforce.

Indiana's State Earn and Learn (SEAL) program: Training information technology (IT) talent from nontraditional backgrounds

The SEAL program in Indiana provides opportunities for work-based learning, where participants work in IT roles and learn while on the job.

According to Jon Rogers, Indiana's director of strategic workforce planning, since 2020, Indiana's Office of Technology (IOT) has "used SEAL as a work-based learning approach to recruit folks from diverse backgrounds, both socioeconomic and professional, and then reskill them into IT." The program has attracted individuals with varied backgrounds, including cooks, truck drivers, factory workers, mail carriers, teachers, and grocery store employees. So far, IOT has hired almost 50 associates from the program.²⁰

4. Adopt policies that promote workforce development and enable economic development

Policy tools, including legislation, can encourage desirable behaviors among participants that can help to advance overall workforce development goals. Examples to consider include:

- Introducing certification and other non-degree credentials to promote the participation of traditionally ignored populations in the workforce. Treatment of such certificate programs as equivalent to regular degree programs can help build alternative credentials and help increase the talent pool.
- Recognizing businesses investing in their own workforces by providing additional financial support for training entry-level workers, such as tax credits for each apprentice sponsored or incentives (wage subsidies, training money, etc.) for upskilling incumbent workers.²¹
- Providing incentives that encourage upskilling, such as a 401(k) account for upskilling, or monetary or nonmonetary rewards for learning a new skill.
- Streamlining occupational licensing requirements to help make it easier for workers to practice certain occupations in different states. (Imagine a military family where one spouse is required to move and the other is an attorney or cosmetologist.) This could have a widespread impact, given that one in four American jobs requires an occupational license.²²

Strategy in action

Universal License Recognition (ULR)

Today, 20 states across the United States have enacted ULR to simplify occupational licensing.²³ This can make it easier for qualified, out-of-state applicants already holding a valid license in another state to get to work more quickly and prevent redundant training, testing, and delays. ULR aims to provide a faster pathway to get skilled workers into the workforce (figure 4).²⁴

Return to Earn, New Jersey

New Jersey's Return to Earn initiative encourages individuals to return to work and helps small businesses train and hire them. Employers are eligible to receive wage reimbursements of up to US\$10,000, and full-time workers who are employed by businesses with 100 or fewer employees receive a bonus payment of US\$500 with their first paycheck.²⁵

5. Measure, monitor, and anticipate ecosystem gaps proactively

Monitoring the vital signals of the workforce development ecosystem can help policymakers predict looming shortages of certain skills or other challenges—and allow them to proactively boost certain activities. The workforce development ecosystem is not stagnant, with the nature and type of jobs changing in response to market innovators and disruptors such as technology, environmental shifts, and the COVID-19 pandemic. To become more responsive, consider gathering continuous data about the ecosystem by:

- Measuring outcome-oriented success indicators to inform future funding choices based on evidence of positive impact on factors such as wages, employment rates, retention and advancement rates, and program benefits to costs. Such evidence-based monitoring could help to determine whether workforce decisions are guided through credible parameters and are forward-looking.
- Identifying and anticipating future skill gaps and issues to help avert potential gaps between skill demand and supply. This may require employers, trainers, funders, and academic institutions to reassess their workforce models and requirements to encompass future needs as well.
- Using data systems and artificial intelligence (AI) to advise job seekers on which skills to pursue based on demand and their current skillset. As job seekers embark upon their reskilling and upskilling journeys, new AI capabilities can open up new and surprising avenues to explore.

"We have a system which allows us to do longitudinal studies and track individuals — without invading their privacy. That is going to put us in a position to know in the long haul if A, we're actually placing people and B, are we placing them in positions that provide a livable wage?"

—Ken Evans, vice chair, Nevada Workforce Development Board

- Removing information barriers so that more skillor job-seeking individuals are aware of available resources. By increasing ease of access, ecosystem participants create a level playing field so no one is at a disadvantage.
- Sharing information on how effective training and other skill programs have been for workforce development. Some of the outcome information collected as part of the Workforce Innovation and Opportunity Act²⁶ program could be helpful if it was shared more effectively with participants, while greater transparency on outcomes could be used to improve the efficacy of future training programs.

Strategy in action

Markle Foundation's Skillful Initiative

Launched in Colorado in 2016, the Markle Foundation's Skillful Initiative is a collaborative effort between

businesses, the state government, and local partners that help job seekers learn what skills are in demand and find relevant training(s).²⁷ The initiative expanded to Indiana in 2018, bringing investment, training, tools, and innovative methods to augment local workforce development efforts.²⁸ The initiative also created the Skillful State Network, through which 20 governors connect with policymakers from their states to transform their labor markets through skills-based methods.²⁹

STEM Starter Academy (SSA) program, Massachusetts

In collaboration with 15 community colleges, the Massachusetts Department of Higher Education runs the SSA program designed to enroll, train, retain, and graduate science, technology, engineering, and mathematics (STEM) degree students. The program has helped students gain advanced employment opportunities or transfer to university programs.³⁰ SSA served nearly 31,000 students, and 64% of participants achieved positive outcomes in 2020.³¹



apid technological advancements and various societal trends are shifting the economic landscape. To help keep up with these changes, workforces should continually evolve and workers should continually develop new skills. Too often, however, isolated silos in government, business, academia, and the training ecosystem are slow to adapt—creating a skills gap. States that figure out how to promote interconnections could have a competitive advantage in a future that increasingly depends on a skilled workforce—and that means cultivating the workforce development ecosystem.

Unlike a process, an ecosystem cannot be managed; it can only be shaped and guided toward desirable outcomes. A thriving workforce development ecosystem is characterized by the *ABCs: adaptability, biodiversity*, and *connectedness*.

The five strategies described in this paper can help enhance the workforce development ecosystem, promoting workforce success for a broad range of workers and expanding the pool of skilled workers that the modern economy calls for.

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ethinking the workforce development ecosystem: Grow the economy by bridging the skills

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