Innovation Strategies for a New System of Workforce Development and Lifelong Learning

The Challenge of Today and the Vision for Tomorrow

By the Council for Adult and Experiential Learning (CAEL)
for Innovation Network for Communities (INC)

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CAEL
The Council For Adult & Experiential Learning

Innovation Network for Communities (INC) is a national non-profit organization that has been formed to spread scalable innovations that transform the performance of community systems. One system it is working to transform through social innovation is the workforce development field, which includes activities related to adult and lifelong learning.

The Council for Adult and Experiential Learning (CAEL) is a 34 year old national non-profit organization which creates and manages effective learning strategies for working adults through partnerships with employers, higher education, government, and labor. CAEL is recognized for its experience in designing and implementing programs that address skill shortages, help workers improve their employability, and remove barriers to lifelong learning. CAEL is also committed to examining new strategies and public policies that make learning opportunities more accessible to adults, particularly low wage workers.

In 2007, INC asked CAEL to be a strategic partner in the development of a "sector innovation hub" in workforce development. This hub would serve as the "applied R&D environment" for the workforce development field. In the first stage of this partnership, CAEL has conducted a scan of innovations that currently exist in workforce development and lifelong learning. This report presents an overview of the scan, along with our reflections on key innovation families or subgroups, and initial focus areas for an innovation strategy for workforce development and lifelong learning.

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Background: The Demand for Skills and the Landscape for Skill Development

In the May 2, 2008 *New York Times*, David Brooks observes that the changes and churning in our economy are not being driven by globalization as much as they are by "the skills revolution." Like the alarm sounded by Thomas Friedman in *The World is Flat* (2005) and by the New Commission on the Skills of the American Workforce in *Tough Choices, Tough Times* (2007), Brooks writes that if we are to thrive in this more demanding cognitive age, "people are compelled to become better at absorbing, processing and combining information."

There is widespread agreement among policymakers, researchers and economists that in order for our regions, states and the nation to compete in the new global economy, our workers need to be educated, highly skilled, and ready to learn and adapt to the changing world around us. Such a workforce will enable greater innovation, higher quality, and the ability to respond quickly to a changing world. The cost of inaction on this would be great – and not just for business and industry. In the Educational Testing Service's report, *America's Perfect Storm: Three Forces Changing our Nation's Future*, the authors examine economic trends and conclude that, "if our society's overall levels of learning and skills are not increased and the existing gaps are not narrowed, there is little chance that economic opportunities will improve among key segments of our population" (Kirsch et al 2007).

Against this backdrop, we are seeing an alarming trend of slowing educational achievement. The percentage of the workforce with a college degree was on the rise for several decades, but that trend has slowed dramatically in recent years. Meanwhile, the percentage of workers with less than a high school diploma is on the rise (National Center for Public Policy and Higher Education 2005). CAEL's recent report, *Adult Learning in Focus: National and State-by-State Data* (published in partnership with the National Center for Higher Education Management systems) showcases another aspect of the problem: in 35 states, more than 60 percent of the population does not have an associate's degree or higher (CAEL and NCHEMS 2008).

There are also diversity and equity issues. In its 2005 *Policy Alert*, the National Center for Public Policy and Higher Education points out that the percentage of African-Americans and Latinos with bachelor's degrees has not grown as fast as it has for whites or Asian-Americans – in other words, the educational gap between racial and ethnic groups is widening.

Holding our K-12 system accountable for helping students meet minimum levels of proficiency is one strategy for addressing the problem, but the K-12 system has limited ability to solve the problem in the near term. Bureau of Labor Statistics data show that about two-thirds of our

2020 workforce is already working, beyond the reach of our K-12 system (Aspen Institute 2007).

> **our workers need to be educated, highly skilled, and ready to learn and adapt to the changing world around us**

Further, as the CAEL/NCHEMS report noted, 32 out of 50 states cannot catch up to the educational attainment levels of the best performing countries internationally by relying solely on strategies related to traditional-aged students—even if students in those states graduate from high school at the rate of the best performing state, even if high school students enter college at the rate of the best performing state, even if these students graduate from college at the level of the best performing state, and even if educated immigrants continue to enter the U.S. at the levels of the recent past (CAEL and NCHEMS 2008). Educating adults must be part of the solution.

All of the above points are commonly cited by practitioners to argue for more attention and funding for workforce development and lifelong learning. Equally important, however, is what has been learned by organizations like CAEL from our direct experiences working with employers, adult learners, colleges, universities, labor unions and government on workforce development and lifelong learning initiatives.

Changing Needs and the Lack of a System to Address Them

The changes in skill needs and the challenges to meeting those needs are perhaps best understood in the context of the working world more generally.

A few decades ago, an individual could receive a high school education and progress relatively smoothly into the working world. There was also a social contract in which the employer would be responsible for healthcare and pension benefits, and a person could reasonably expect to have that job until retirement. This may be a relatively nostalgic view of the past that does not reflect the reality of every worker, particularly workers of color or new immigrants. In addition, we cannot claim that such

conditions were always the case but rather the result of the long-term efforts of labor advocates in the late 19th and early 20th Centuries. But the fact remains that this kind of social contract did exist for many at one time, yet now is relatively hard to find.

There are many causes for the change –for example, the weakening of organized labor, the globalization of the economy, and the rise of technology that has had an impact on most jobs. But what we are left with is the simultaneous rise in the need for high level skills and the disappearance of the employer safety net. There is no longer a guarantee that the job you have today will be the same as the job you have tomorrow. Individual workers need to find ways to gain greater skills and knowledge in order to remain employable, and they are largely responsible for seeking out and paying for education and training *on their own*.

It is a very big change that the individual now needs to direct attention to the development and marketability of the *self* rather than that of an *organization*. Individuals have essentially become their own enterprises. (This new reality is playing out along generational lines, as employers are increasingly finding that younger employees are more focused on what they can learn and how they can develop new skills, while also showing less loyalty to employers than older workers do.)

One of the biggest challenges, however, is that when all of these changes began to evolve, ***a workforce development system did not exist*** to assist individual learners or their employers. There were training organizations, there were colleges and universities, and there was a publicly-run system focused on helping the unemployed find jobs. But there were and continue to

be gaps in the system – or, when viewing this as part of the larger labor market, market failures in the order of information asymmetry, poor supply-demand feedback loops, and high transaction costs. There were few strong connections between K-12 education, postsecondary education, and the workplace. The "siloed" funding streams for each of these parts of the whole contributed to a perpetuation of this separateness. Getting the education needed for a job, for a career, for advancement, or for maintaining employability required – and often still requires – the ability to navigate a disjointed array of options and opportunities.

> *individual workers needing to gain greater skills are largely responsible for seeking out and paying for education and training on their own*

There have been efforts since the 1970s to develop a better, more comprehensive, and seamless system for workforce development, but these have largely been a series of piecemeal attempts to improve services in a particular location, meet some targeted employer needs, and remove barriers facing working adults in certain locations who want to pursue education and training. As "system transforming" as the Workforce Investment Act was meant to be, inadequate funding prevented it from creating the comprehensive system that is needed. We still see significant gaps: employers are not getting what they need from educational institutions, individual workers do not know what options are available to them or how to get started, there are great inequalities in educational achievement between whites and disadvantaged minorities, and smooth transitions from K-12 – or from adult basic education – to postsecondary learning or to the workplace tend to happen in spite of the system rather than because of it. Activity in this field tends to be mediated by institutions rather than by individuals or their employers. Innovations, when they do happen, are local and rarely taken to scale.

Because of this current lack of a workforce development system, the idea of system transformation through the support and scaling up of social innovations not only has great appeal, but it is also critically needed. At a time when we are facing a "skills revolution" we can no longer tolerate the inefficiencies in this workforce development marketplace.

A Vision for A New System

The workforce development arena appears to have all the key elements of a successful system. There are a multitude of suppliers providing education and training, in ways and at times that are convenient enough so that working adults might pursue learning opportunities. In addition, the word is out – workers seem to know how valuable education is for succeeding in the workplace and advancing to higher paying opportunities, and most employers also seem to know how important education and training is. We have licensing bodies, accrediting agencies, online degree programs, skill and knowledge assessment tools, job profiling tools, and the ability to forecast future needs. So what exactly is the problem? Why do these individual components not add up to a working, seamless, robust system?

In CAEL's view, the current system is lacking in several key elements that would help make all of the existing components work better together:

- Readily available knowledge about what kinds of skills and workers that employers want and need, both today and in the future

- A better understanding of what specific skills and competencies are needed by specific workers – where those workers need to develop in order to do their current jobs better as well as climbing the ladder to new opportunities

- A system for linking that information together and communicating among the various components, including a career and education advising system for workers

- A flexible system for documenting a wide range of learning achievements, knowledge, and competencies that is recognized by all industry sectors, and linked to specific jobs in a way that makes clear how skill development can lead from one job to another, even across sectors

- Strategies to streamline the learning process and reach goals faster

- The money to make it all happen

What is missing is the connective tissue between and among all of the various parts of the system.

For a good example of what we are talking about, it is probably not useful to turn to other social sectors. Rather, one of the best models for what we are talking about has been created by a private sector employer: IBM.

IBM has conceived of and developed a remarkable internal system for managing the education and training of its workforce. The basic description of the system is that each employee has a profile of what skills and competencies he or she has and which are needed to meet very specific career goals, and specific learning opportunities to meet those goals are steered to each individual employee. After completing each project, the employee's profile is updated with the new skills and experience that was gained on that project, as well as the new understanding of what that employee needs to focus on in terms of future skill development. These profiles are made available to managers who may be looking for a certain skill set for new or existing projects. In addition, if an employee needs assistance on a project, there are online resources for them to consult as well as referrals to other employees with the skill sets to provide information, guidance and coaching. These referrals happen on a global scale, throughout the entire IBM internal network.

At IBM, formal learning is available, but it is supplemented by podcasts, virtual reality and other simulated work-based learning – high tech delivery systems with which this employee population is very comfortable. Finally, it deserves mentioning that IBM is not just working on providing the right kind of learning opportunities for current employees. It also works with colleges and universities to design IT degree programs to meet the specific needs of information technology employers, thus having an impact on the preparedness of the incoming IT workforce. And on the other end of the age spectrum,

IBM has designed programs to help its mature workforce – most with high levels of science and math expertise – make transitions to encore careers in teaching, thus helping to bolster K-12 effectiveness in preparing students for high demand STEM fields.

Replicating the IBM model may not be exactly what we need to produce for a workforce development "system" for the open market. But what IBM has created is a workforce development system that works well, both for IBM the employer and the individual worker. There are systems for communicating skill and learning needs, both to meet corporate goals and to meet the individual's own career needs. There are resources available to meet specific needs, and the system is flexible, allowing individual employees to veer off into different career trajectories just by building on their existing skill set in a strategic way. In addition, the delivery of learning opportunities is customized to the specific needs of the population, continuously adapting to new innovations in the market as well as to different employee learning styles. And finally, there are subsystems for addressing the needs of the incoming as well as the outgoing workforce in a very efficient, closed-system kind of approach.

The challenge will be to find ways to replicate the successes of IBM-type systems on a larger scale and in a way that will address the education and training needs of all workers, particularly those with the lowest skills and the greatest barriers to learning.

Recent Trends

CAEL has observed a number of trends in workforce development – particularly from our work with employers. Some of these trends are helping to move us toward our goal of a well-functioning system.

- **Work-Based Learning.** There is a growing understanding of the importance of work-based learning – the learning that takes place while on the job. Human Resources professionals have long known that most of the skills needed for doing a particular job well come not from a classroom but from the experience of doing the job. There are now efforts to take advantage of this learning opportunity and build it into training programs through apprenticeships and internships. One field where this is gaining traction is healthcare, where innovative

uses of apprenticeships and structured on-the-job learning are helping to meet key skill and workforce needs.

- **Measuring Impact, or ROI.** The concept of measuring the return-on-investment in learning (ROI) is a relatively new development in the workforce development arena, but as more companies are facing both skill needs and pressure to cut costs, there is a growing recognition that companies need to get something in return. There is more discussion of tuition assistance, for example, as an "investment" rather than an employee benefit. However, for company leadership to see it as an investment, there also needs to be a clear return to the bottom line. A great deal of progress is being made by Chief Learning Officers and others to define new ways to measure the ROI of learning, but there is still a long way to go. For example, most companies still have no information about the cost of turnover of their lower-skilled positions. Knowing the true financial impact of turnover could lead to a greater willingness to invest in retention strategies that may include education and training.

- **Customized Degree Programs**. Related to the ROI issue is the fact that a growing number of companies are forming partnerships with educational institutions to develop customized degree programs delivered onsite. These are companies that are focused on getting a high return on their education dollar, and helping to shape the content of a bachelor's degree or MBA to best suit the needs of the company is one way they are hoping to get the most out of their investment.

- **Globalization of Education.** In the past, it was common for companies to transfer U.S. employees to overseas offices to do the work in other countries.

In those cases, tuition benefits would most often be used for distance learning or online degree programs offered by U.S. colleges and universities. Now the trend is for U.S. companies to hire more indigenous workers, and more of these companies are allowing those workers to use their tuition benefits locally. Perhaps related to this is the recent phenomenon of U.S. colleges and universities beginning to offer programs in other countries like China (ex: Fort Hays State University).

- **Responding to Demographic Pressures.** The response of employers to the growing diversity of the workforce has been somewhat underwhelming. One demographic trend may succeed in capturing the attention of employers where other trends have largely failed. This trend is the aging of the workforce. There is growing attention to older workers and the fact that our economy will need them to remain in the workforce longer. At the same time, there is also a new understanding of how the younger generation differs in its views of work and
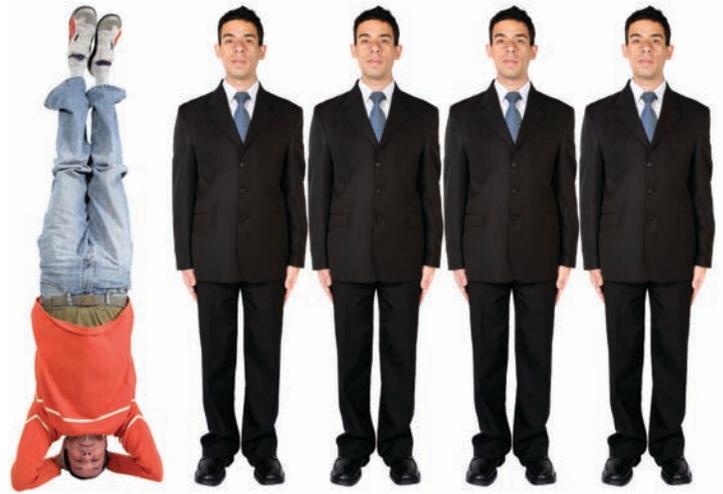
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employment. These two issues related to worker age groups may require employers to rethink employee education and training, career progression/paths, and how work is structured. These changes may benefit other demographic groups (e.g. minorities, parents of small children, etc.) as well.

- **Impact of Technology.** Technology is one important driver for change in the workforce and in skill needs. But technology is also part of the solution, as witnessed by many of the technology-based innovations that have transformed training (e.g., online learning, virtual reality-based instruction, etc.). A number of exciting innovations have been created with the use of these new technologies, and we expect more to come. However, it is clear that the innovation is not the technology itself, but rather

how it is used in combination with other practices and strategies that helps to leverage real systemic changes.

- **Comprehensive Pipeline Strategies.** Workforce development practitioners have typically identified themselves as being focused on either youth or adults. Some practitioners who are focused on "disadvantaged" populations work with both age groups, but most programs are specifically for one or the other group (this is likely due to the fact that federal funding streams for these groups are in separate funding "silos"). Employers, however, are concerned about the entire "pipeline" for workforce development – how new entrants make the transition to employment, how incumbent workers are trained, and how experienced workers can transfer their knowledge before retirement. There is a recognition that the solution for our skill needs will not come from focusing on one segment of the workforce development system, but rather on ensuring that all segments are thriving and working together in a seamless way.

The Innovation Hypothesis

The range of new trends and strategies that have emerged in recent years is encouraging. However, the pace of change is slow and the impact of even the best ideas and strategies has been on a very small scale. The workforce development arena is in need of a different kind of infusion – of energy, resources, and ideas – that can be transformative in a way that we have only experienced a handful of times in the past, for example, with innovations such as online learning programs or the G.I. Bill. We are in need of new strategies that, when taken to scale, create ripples of change in terms of how this arena operates. The result we strive for is a complete transformation of this arena into an efficient and effective system for workforce development. In fact, there are several forces that are beginning to drive innovation in new and exciting ways. They include:

- A growing understanding that a skilled workforce is critical to our nation's economic future (per Thomas Friedman's *The World is Flat*) that is driving much of the public sector interest in workforce learning and development

- Critical shortages – and projected shortages – in high skill positions (e.g., nursing/healthcare, engineers,

utility workers), creating incentives for employers within key industries to work together on workforce development strategies

- Technology advancements such as online learning and podcasts which are dramatically changing how learning can be offered and managed, while also helping to focus attention on accelerating the learning and degree-earning process

- A growing emphasis on what is learned rather than how long a student sits in a class – this is what is helping to support interest in prior learning assessment, Advanced Placement exams, career readiness certificates, accelerated education programs, competency-based degree programs, online learning, and apprenticeship and internship programs (and other work-based learning).

We believe that the time is right for advancing an innovation agenda as we are seeing an increase in the political will to support workforce development in this volatile economic climate, as well as some promising innovations that are emerging.

Innovation and Performance Measures

INC has defined "innovation" as something that is much more than just a good idea or a best practice. An innovation should meet most or all of the following criteria:

- **Systems transformation potential** – The ability to replace a significant function of an existing community system, or contribute to the creation of a new system that does not currently exist.

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[1] INC believes that large performance improvements should be dramatic, for example, a 40-50% increase in certain metrics.

- **Significant performance improvements** – Innovations that achieve large improvements in the performance outcomes of a community system[1] and reductions in the cost of outcomes.

- **Financially sustainable** – An economic model that is sustainable (meaning that it is based on a predictable flow of revenue from customers or stakeholders that value its outputs), and generates margins allowing capitalization of ongoing investment in growth and innovation. The business models are most likely market-driven ones, but public or philanthropic funds could be involved as innovation-risk capital or as customer revenues.

- **Scalable** – Innovations that are not context-dependent and can be expanded to other places using a common set of core operating systems (Innovation Network for Communities, 2007).

The second criterion, performance improvements, is an important one to define for workforce development. As we begin to identify existing innovations, as well as innovations that we would like to see developed and taken to scale, we need to be specific about what we want the innovations to achieve, and what impact the innovations should have on learners, employers and regions.

The following are the kinds of changes we would want new innovations in workforce development to achieve on a very broad scale. We believe that success means making significant progress in one or more of these metrics within 5 to 10 years, depending on the type of innovation.

1. **Improve individual skills and employability** – the innovation should help to develop the specific skills needed to guarantee an individual's long term employability and value in the labor market while also empowering individuals to improve their work lives. This category of innovations includes strategies to improve general skills and employability as well as career advancement and progression. This may also have a social justice component in that the skill development/career progression may lead to an improvement in earnings for the individual. This is particularly important when we consider the current educational achievement gaps between whites and disadvantaged minorities.

Specific measures will vary, depending upon the scope and intent of the innovation. Ideally, we would expect that training for specific jobs and careers would eventually lead to a degree or credential of some kind, in order for the individual worker to build up equity, or currency, in the labor market. Some examples of measures could be:

- Increasing the percentage of adults in a given target population with a degree or certificate (e.g. African-American males in STEM-related fields, or others with an historic disadvantage in terms of credentialing). Depending upon the innovation, this could be for a high school diploma or equivalent, postsecondary degrees (associate's or bachelor's), industry certifications, career readiness certificates, etc.

- Reaching higher completion rates for target groups in training programs for high demand occupations/career pathways.

- Reaching higher job placement rates for target groups in training programs for high demand occupations/career pathways. This assumes that the entry level job has the following characteristics:

  ° pays at least self-sufficiency wages

  ° provides opportunities for additional on-the-job or formal education to help workers advance to higher paying jobs within two years of initial placement

2. **Remove barriers** – the innovation should remove barriers and improve access to lifelong learning. Barriers include those that are situational (personal finances, time, family responsibilities, etc.), attitudinal (fear of school, lack of self-confidence, etc.), and institutional (lack of courses available after work hours, rigid semester systems, barriers between non-credit

and credit side of the institution, etc.) Some of the strategies to remove these barriers for individuals include offering career and educational advising, which help individuals take steps to address their educational and life barriers. Others include offering more onsite and online courses, and providing evidence to employers of the return they will get on their educational investment. Sample measures could include:

• Increasing voluntary employer investment in tuition assistance programs, especially for lower-income workers; this helps to remove the financial barrier to learning (the increased investment should be accompanied by a corresponding increase in the use of tuition assistance programs especially by target populations).

• A significant increase in the percent of individuals who successfully transition from corporate training, adult education, or GED programs to for-credit postsecondary education programs.

• A significant increase in the percentage of students over age 25 with no prior college experience who enroll in postsecondary programs.

• A significant increase in completion/graduation rates in postsecondary education on the part of adults with some prior college but no certificate or degree.

• Increasing the availability of (and also the enrollment in) basic skill, GED and ESL instruction offerings in terms of number of slots available and offered onsite (at the workplace, or in community centers).

3. **Improve access** – innovations may also address the barriers and access issues facing traditionally underserved populations, particularly low income and racial/ethnic minorities (especially African-American and Latino), which have resulted in significant achievement gaps. Examples of success measures would be:

• Significantly increasing the number of African-Americans and Latinos (or other underserved groups) over age 25 with degrees or certificates.

• Increasing the number of low income adults enrolled in degree or certificate programs (or adult basic education, or GED programs).

• Improving the persistence of low income and minority adult students (i.e., reduced dropout rates).

4. **Help businesses succeed** – the innovation should help businesses compete in their industry by helping to meet skill needs. This includes strategies to address current and future skill shortages, fill high demand occupations, improve productivity, and address other business metrics (e.g., retention, recruitment, morale, performance, sales, etc.). The success measures for this will vary significantly depending on the intent of the innovation, and the measures will also vary according to the needs of the specific industry sectors. However, we would envision success measures such as the following:

• In healthcare, preliminary success could be measured by a reduction of the vacancy rates for key high skill jobs such as nurses and rad techs, a reduction in the turnover rate, or a reduction in the time a job stays vacant. (Ultimately, these vacancy rates need to be eliminated completely.)

• In the utilities industry, measures could include a better balance between the projected number of retirees in high skilled positions and the number of workers currently in apprenticeship programs training for those jobs.

• In industries like telecommunications and healthcare, a significant improvement in employee retention.

5. **Help regions succeed** – the innovation should help regions and labor markets attract new business, meet existing business' workforce and skill needs, and contribute to the lowering of social service costs. Measures could include:

• Attraction of more new businesses to the region.

• Reducing high skill job vacancies in the region.

6. **Create new efficiencies** – the innovation might improve efficiencies and reduce the cost to deliver workforce development and adult learning services and programs. Sample measures might be:

• A reduction in the cost of providing career and educational advising services.

• A reduction in the cost of the intermediary function due to greater efficiencies and economies of scale, the ability to replicate successful models rather than design from scratch, and the use of data showing the impact of learning programs to reduce the "sales" cycle with employers and industry players.

- A reduction in the time-to-degree for adult learners due to accelerated programs, the use of Prior Learning Assessment strategies, and/or interventions designed to improve adult persistence.

- Evidence of returns on the educational investment for both the worker (in terms of increased pay and potential career advancement) and the employer (in terms of productivity, reduced turnover, reduced vacancy rates, etc.).

Defining the Families of Innovation for Workforce Development

In our scan of the workforce development field, five "families" or "subgroups" of innovation emerged:

1. Financing
2. Credentials and Assessment
3. Navigation
4. Linkages
5. Delivery of Instruction

Each subgroup is focused on a different aspect of what is needed for a well-functioning workforce development *system*.

Financing

Formal learning is hardly ever provided for free, and structured work-based learning also has significant costs to design and deliver learning and support activities. Some of the innovations that currently exist or are being piloted help provide financial resources to pay for lifelong learning and workforce development. Sample innovations (some of which are currently in their infancy):

- **Regional funding consortia.** Leading foundations have recently joined forces at the regional level with public sector funders and other local players to strategically plan investments in workforce development (the national funders in this effort include the Ford Foundation, the Annie E. Casey Foundation, the Hitachi Foundation, the Weinberg Foundation, the Knight Foundation and the US Department of Labor). The goal is to eliminate duplication and waste in funding of workforce development, while also leveraging new investments from private and public sources. While part of this strategy is to raise overall investment in workforce development and create efficiencies in grant making, this innovation also has

the potential to lead to unprecedented system integration and linkages among various players in workforce development.

- **Lifelong Learning Accounts.** LiLAs^{SM} operate like a 401(k) for adult education and training, where individual contributions to a learning account are matched by employer contributions and possibly third parties (e.g. tax credits, low income matches, etc.) CAEL has piloted this model in several locations. States and regions are designing their own models, as are some employers (e.g. IBM and BJC Healthcare). Last year saw the introduction of federal legislation for a national LiLA demonstration using tax credits, and more recently a new, universal LiLA bill has been introduced. The impact of this innovation would be an increase in the number of individuals with the resources to fund learning and training for employability. With LiLAs^{SM}, the funding is leveraged from individuals, employers and potentially the public sector or other third party.

- **Employer-funded tuition assistance programs.** Employer-funded education and training is an evolved innovation. Initially, this kind of financial assistance was offered primarily to management-level employees or to employees who included it as a collectively bargained employment benefit. Over time, more employers began to see tuition assistance as a recruitment strategy for high demand positions (e.g., nursing) and for employees at all levels of an organization. This innovation has provided millions of workers access to financial assistance for their own education and potential career advancement. In recent years, employers have recognized the many bottom-line returns from employee tuition

"investments," and there have been more and more efforts to quantify those returns. These efforts are helping to grow the amount of funds that are available and are causing some leading companies to offer pre-paid, or voucher-based tuition assistance which allows the employee to enroll without having to pay at the time of registration. Eduventures (2006) has estimated that U.S. employers currently provide more than $20 billion annually in tuition assistance to their employees for their own professional and personal development, above and beyond the standard employer training budget.

- **Adoption of higher education finance structures.** Some non-profit organizations have sought and received permission to charge student tuition for their education and training programs. The purpose of creating this new structure is ostensibly to qualify for new sources of public sector financing (e.g. Pell Grants) that helps to defray the cost of tuition for their clients. One organization that has tried this model is Focus: HOPE (Colborn 2005).

- **Fee for service revenues.** Finally, many organizations are expanding their business model beyond foundation grants and government contracts. They are charging fees for their services (e.g., placement fees, retention fees or employer service contracts) or establishing a membership system where employers pay regular dues to be part of the training and placement network. While this typically does not cover the full cost of training, it does provide a new source of unrestricted revenue that can support new program development.

Credentials and Assessment

Another set of innovations aims to provide portable documentation of an individual's skills and abilities. One CAEL staff member has called credentials the "new currency" in the labor market – more than ever, credentials are needed to "trade up" to a higher-skill, higher-paying job in a career ladder, as well as just to get a foot in the door with some employers, even at the entry level. In a closed system, like at IBM, credentials for moving up an internal career ladder may not always be needed if employees can prove their skills to supervisors in other ways. In a larger market-based system, credentials can be a proxy for that kind of familiarity with one employee's skills and knowledge.

The innovations in this area are new ways for individuals to earn credentials, as well as new kinds of credentials that allow for greater mobility across different sectors. Current innovations include the following:

- **New credentials that validate skills across sectors.** So many credentials are needed for very specific types of jobs, and they are often highly customized to the needs of a particular industry sector. Today, however, the needs of industries and sectors frequently change (see the discussion of changing telecommunications directions, above) and so a movement to a more flexible sort of credentialing system that can validate important skills common for jobs in various industries is an innovation.

An important step taken in that direction is the Competency Model Clearinghouse that is offered by the U.S. Department of Labor's Employment and Training Administration as part of the CareerOneStop tools (see http://www.careeronestop.org/CompetencyModel/). This clearinghouse provides competency models for a wide range of occupations in high growth industries. A competency, according to the Clearinghouse's website, is "the capability to apply or use a set of related knowledge, skills and abilities required to successfully perform" work functions or tasks in a defined work setting. Competency models help to specify what level of knowledge, skills and abilities are required for success in the workplace, along with measurement criteria for assessing competency attainment. The Clearinghouse currently provides competency model information for several industries, developed in conjunction with important industry leaders such as the National Association of Manufacturers, the National Council for Advanced Manufacturing, the Financial Services Roundtable, the National Retail Federation, the American Hotel and Lodging Association, the American Hotel and Lodging Association, and the Center for Energy Workforce Development.

The newly developed National Career Readiness Certificate™ (NCRC) meanwhile, is an attempt to provide a credential to certify the preparedness of workers on the lower end of the skill spectrum, for for entry level employment across all industries. The innovation that is currently underway in several states and regions is the dissemination and take up of this credential by employers, training providers, and workforce development practitioners. The NCRC is based on ACT's WorkKeys® job skills assessment system. Individuals who score at certain levels on three WorkKeys assessments—Applied Mathematics, Reading for Information, and Locating Information—will qualify for a certificate. Making this certificate available in a region can help economic development efforts by demonstrating that the region has a pool of skilled workers, driving the kind of training that is provided to workers, and matching skill level requirements with employer needs. Because the certificate validates that an individual has certain essential skills important across a range of jobs, employers, job seekers, economic developers, and educators can use the certificate as a common language to improve the quality of the workforce. The skill levels are meaningful to both educators and employers. http://www.act.org/certificate/index.html

- **Prior Learning Assessment (PLA) strategies.** Over the past 35 years, hundreds of postsecondary education institutions have developed systems to award college credit for what people learn outside the classroom through corporate training, work experience, civic activity, independent study, and even high school classes. Through a process called Prior Learning Assessment (PLA) advocated by CAEL, colleges and universities evaluate and award credit for this learning when they determine it to be similar in content, depth, and breadth to what they consider college-level learning. PLA is an umbrella term that includes methods such as:

  ◦ **Experiential Learning Assessments**, also known as individualized student portfolios or interviews

  ◦ **Evaluation of Local Training**, which includes program evaluations conducted by individual colleges of non-collegiate instructional programs that award credit to those who achieve recognized proficiencies

  ◦ **ACE Credit Recommendation Service**, which evaluates formal instructional programs offered by non-collegiate agencies, both civilian employers and the military, for college credit and then publishes them in the ACE Guides

  ◦ **Challenge Exams**, which are local tests developed by some colleges to verify learning achievement

  ◦ **AP Exams**, a series of tests developed by the College Board initially for AP High School courses – 34 exams in 19 subject areas

  ◦ **CLEP Exams**, tests of basic entry-level college material offered by the College Board through its College Level Examination Program (CLEP)

  ◦ **Excelsior College Examination Program** (formerly Regents College Exams or ACT/PEP Exams), offered by Excelsior College, NY

  ◦ DANTES **Subject Standardized Tests (DSST) Program**, conducted by the Chauncey Group International, a division of Thomson Prometric — tests of basic entry-level college material through 37 exams

What is innovative about these methods is that they allow for the learning to be recognized, regardless of how it is acquired. This creates efficiency in the system as individuals need not take classes that cover material they already know, saving both money and time.

- **External Degrees/Aggregation of Credits.** Another innovation is colleges and universities allowing students to complete their degrees by taking classes or gaining learning outside of the institution granting the degree. These students may study at classes unconnected with the university, independently, or through distance learning. They may obtain the degree by passing examinations once they have reached the required standard, or by having successfully completed a program put together from various courses or modules. These external degree programs allow students flexibility in where and how they take classes, as well as the ability to customize their degree with course content that may not be available at a single institution.

- **Colleges Without Walls.** Colleges without walls are higher education institutions that offer their degree programs in an open entry, open exit

format so that working adults can step in and step out of learning as their schedules and finances permit. Most colleges without walls now offer their programs and courses through online delivery. Rio Salado College in Arizona is a model college without walls and has developed extensive collaborations with business and industry, healthcare organizations and four year colleges that have resulted in successful transitions for its students.

Navigation

Until the system becomes better structured, some innovations are needed to help individuals and employers navigate the system and understand what opportunities exist. Individuals need more assistance and information to develop career and learning plans. It may be difficult to show the direct link between these kinds of strategies (taken to scale) and improved performance measures for our new system. However, we know from our own work how valuable this kind of assistance is for making the right kinds of decisions and learning investments. We envision a resource that could provide a wealth of information on learning opportunities in workforce development – through a "wiki" or other kind of Internet-based innovation – that could transform how people learn about opportunities and make decisions about career/educational planning.

- **Individual career and educational advising.** Currently, there are many efforts that have been established to help individuals identify personal and systemic barriers to learning, and to help identify individual career goals and how to achieve them (e.g., uArmy's online advising, Louisiana's ePortal, CAEL's advisor network, Texas's OSCAR http://www.ioscar. org/tx/ and CAREERS www.texascareers.edu). At this time, career and educational advising is labor intensive and costly, but of tremendous value to the student. It will reach the status of an innovation when an operational system is available that is able to deliver advising in a more efficient way that is also sustainable at a large scale.

- **Skill matching/forecasting programs.** There are currently in development software programs and databases that are designed to match the skills available in a given labor market with the current and forecasted labor market needs. This innovation, if successful, will provide regions with a tool to help them prepare for the full range of future workforce needs systematically. Examples include: WITS (developed for WIRED), EMSI http://www. economicmodeling.com/, WIN Strategic Compass http://www.w-win.com/, and EmployOn http://www. employon.com/about_overview.asp.

Linkages

Another set of strategies or innovations are those that have been developed to create new linkages between otherwise disparate parts of the system. These typically require an intermediary of some sort – an intermediary can be a non-profit, a public sector agency or workforce investment board (WIB), a labor union, an economic development group, a community college, etc. (Intermediaries are an innovation themselves because they have helped to "create" a new marketplace for workforce development – however, their true value has been hard to measure, and currently they add considerably to the cost.) The high school pipeline model and career ladder/pathway model (described below) are successful and innovative because of the way they have drawn best practice elements from various parts of the system and put them together as part of a coherent new "operating system." Typically the work of an intermediary is best utilized within specific sectors and/or focused on the needs of a specific regional labor market.

- **Career Ladder/Career Pathways Programs.** The "chunking" of degree and credential programs into smaller modules supports the development of "career ladder" or "career pathways programs. As defined by the Workforce Strategy Center (2002), career ladder programs "focus on high-demand, well-paying employment sectors, such as manufacturing, healthcare or information technology, and have incorporated into one seamless system all the steps—skills training, work experience and upgrade training—needed to prepare a worker for employment in the field and advancement in a career." A good career ladder/pathway program will be able to show learners what their various options are for advancing to higher level jobs as they earn

more credentials and gain more work experience. These programs typically require the services of a workforce intermediary to work with the employer to identify or develop the career pathway, link the pathway to degrees or certificates, work with institutions to break those degrees or certificates into smaller modules, and incorporating work-based learning (such as apprenticeship programs, internships, and other models) that introduces and applies new learning in a work setting. Linkages may also need to be created with state licensing boards, credentialing bodies, departments of labor, and groups that place low skilled workers and provide them with supportive services.

• **Bridge Programs.** Workers who are very low-skilled are disadvantaged in the labor market. In addition, they often lack the prerequisite qualifications needed to start at the entry level of a career ladder program. Bridge programs are an innovation that provides targeted remedial training that is specifically designed to develop the skills and knowledge needed for low-skilled individuals to qualify for training programs in high demand industries. These programs can include other innovative approaches such as peer support groups, intensive case management, and other social supports that disadvantaged populations may need in order to be successful. The goal is for the students in these programs to then advance into career ladder/ career pathways programs. This innovation expands the potential labor pool for employers in tight labor markets, while giving disadvantaged workers the opportunity to broaden their own opportunities.

• **High School Pipeline Programs.** These programs recruit and retain talent through educating high school students about an industry, providing applied math and science classes that showcase the uses of these subjects in specific industries, supporting them through internships and career fairs, and then hiring them and supporting their continuing education through employer-funded tuition assistance programs.

Delivery of Instruction

Finally, an important family of innovations is focused on how learning opportunities are delivered, in ways that help to remove barriers of time and place.

• **Online learning/degrees.** Few innovations have had as much impact on workforce development and lifelong learning as online learning. Individual learners now have the ability to take courses at any time and any place, which helps to address barriers such as lack of time, lack of childcare, lack of transportation, and so on. Practitioners have been integrating online modules and courses in a variety of ways, including industry-based degree programs (such as CAEL's NACTEL http://www.nactel.org/, and EPCE http://www.epceonline.org). Providers have been experimenting with different ways to share development costs, which is helping to create a more efficient marketplace for online learning (see the League for Innovation in the Community College's Project Sail, http://www.league.org/league/projects/sail/index.htm), and there have also been important advancements in systems for ensuring the quality of instruction in online learning. Examples of quality frameworks are offered by the Sloan-C Consortium, the Western Cooperative for Educational Telecommunications, American Distance Education Association, the National Education Association (NEA)/Blackboard, and the Southern Regional Education Board.

• **Employer-based degrees.** Many individual employers are working hand-in-hand with colleges and universities to design customized degree programs for their company. This ensures that graduates have precisely the skills and knowledge that the company has identified as strategically important, and it ensures consistency in what the employees are learning. In addition, these programs usually are offered on-site at the company, which helps to save employees commuting time. With time being one of the main barriers to adult learning, the availability of instruction at the workplace is a significant benefit and motivator.

• **Accelerated learning.** With time a significant barrier for most adults who want to pursue education and training, additional innovation is needed to reduce the time required for education/degree programs. There has been a lot of work in K-12 on "acceleration strategies" such as dual enrollment, Advanced Placement exams, etc. However, in the adult learning world, the term "acceleration" typically refers to programs that are structured in a way so that students take less time to earn credits, certificates or degrees than in conventional programs. Accelerated courses can be presented in fewer contact hours (e.g., twenty hours rather than forty) and for a shorter duration (e.g., five weeks rather than sixteen weeks). They often are in condensed formats that include weekend and evening classes and workplace programs (Wlodkowski, 2003). These programs have been particularly successful for business-related courses for adults (e.g. Executive MBAs), but the format has also been applied to high demand degree and credential programs such as electrical power technology and nuclear power technology programs offered on-line by Bismarck State College.

Supporting and Advancing Innovation: The Innovation Hub Concept

One of INC's core hypotheses is that the process of social innovation can be accelerated by the development of "innovation hubs" that concentrate on the identification, design, development and incubation of innovations within a specific community system sector like workforce development. These "hubs" would be charged with innovation scanning, assessment and due diligence, development of innovations, talent recruitment, deal development and capital raising.

Given our vision of a well-functioning workforce development system, along with our scan of what currently exists in terms of innovation families that are moving us toward that goal, we have outlined two broad categories of innovations that an Innovation Hub might use for its agenda. One "sub-hub" would be focused on innovations that are place-based and that require the unique connective skills of "workforce intermediaries." The other "sub-hub" would include innovations that are either national in scope or that are constrained by an area or system other than a region.

Workforce Intermediary Activities Sub-hub (Regional Focus)

This hub would be focused on innovations that require the unique connective skills of "workforce intermediaries" in a regional community. The hub would focus on innovations such as:

• Career ladders and bridge programs for different industry sectors (Linkage)

• High school pipeline initiatives (Linkage)

• Development and distribution of new forms of credentials that can be applied across industry sectors (e.g. NCRC) (Credentials and Assessment)

• Capacity building of intermediaries (expose current players to a more entrepreneurial way of thinking, placing value on system disruption – e.g., change the talent pool within workforce development) (Linkage)

• Programs targeting mature workers (Navigation)

Broader Applications Sub-Hub

There are also several innovations that are important to success in workforce development that are not constrained by a specific region nor do they require the unique contribution of workforce intermediaries. These include:

• Replication/broader availability of educational providers that allow the aggregation of credentials,

or external degrees – hub activities would be focused on multi-state areas or specific states (Credentials and Assessment)

• Scalable and sustainable social support systems (that include education and career advising) (Navigation)

• Navigation systems for skill matching/forecasting that could have applicability nationwide (Navigation)

• New systems for applying Prior Learning Assessment strategies. This could include creating centers that provide PLA for a consortium of educational providers, as well as new applications of PLA in the workplace and other environments outside of formal higher education. (Credentials and Assessment)

• Regional Talent Scorecard that could provide a scorecard for individual regions to gauge how they are doing at meeting the talent needs of their business community, and serve as a motivator for changes, improvements, and adaptation of innovative approaches. This would allow regions, and employers considering relocation there, to compare themselves with other regions. (Credentials and Assessment)

• Corporate certification for employers that invest in high performance workforce development strategies, similar to the approach of the Malcolm Baldrige standards (Credentials and Assessment)

• Application of accelerated learning to a broader range of degree and credential programs (Credentials and Assessment)

• Exploration of innovations that could serve "free agents," workers who are fully engaged in paid labor but are not employees receiving full benefits (e.g., independent contractors, the self-employed, part-time workers, etc.)

Potential Partners

From conversations with CAEL staff and INC leaders, we have concluded that potential partners in an innovation hub for workforce development would need to have several of the following characteristics:

• **Creativity and Entrepreneurship.** The organization/individual would show evidence of creative thinking and innovation development. They would have shown in their own work that they have the ability

to nurture several projects from inception through design and implementation, and these projects should be ones that test the existing boundaries of the field in some important way. In other words, there must be a "track record" in implementing innovations.

• **Diverse Funding, With an Eye Toward Sustainability.** The organization is not dependent upon a limited number of funders, but rather has a more complex funding mix that comes from different sectors: federal, state, local, corporate/fee for service. Ideally, they do not act in a way that presumes that existing third-party resources will be around forever. For that reason, they have developed business plans that are designed to move segments of their organization toward self-sufficiency.

• **Well-Connected Board.** The organization has an impressive governing board giving them important connections to corporations, foundations, strategists, financial experts, and others that can open doors for future growth and impact.

• **Clear Direction.** The organization has a clear sense of where it is headed, and its "umbrella vision" is ambitious and broad-reaching.

• **Sense of Abundance.** The organization has a "sense of abundance" rather than a "scarcity mentality." In other words, the organization is of the mind that innovation helps to create more resources for the field overall – and does not feel threatened by a potential innovation that it does not own.

• **Clear Commitment to the End User, Rather Than Existing Institutions or Systems.** A sector hub partner must be an entity that has shown a commitment to changes that help individual adult workers and/or their employers, with no vested interest in existing higher education institutions or workforce development systems. This partner must show a high tolerance for disruption in the status quo, even if this means the end of certain institutions or ways of doing business. This does not mean, however, that organizations which do help such institutions need be disqualified from consideration. There are many organizations who do understand innovation, are committed to aiding the end user, but have a solid track record in helping institutions and systems serve the end users better.

An innovation hub might also consist of members that are not leaders of workforce organizations but that are academics, advisers or thought leaders with some specific knowledge or understanding of innovations in this area.

When designing the hub, there should be an effort to ensure that there is a broad range of perspectives among the members of the hub. In particular, there should be interest in the group of members for serving disadvantaged populations as well as the working poor and lower-to-moderate income workers.

Next Steps

CAEL and INC have intended this paper to be the start of a national conversation about innovation in workforce development and lifelong learning. With feedback from key leaders in the fields of workforce development and lifelong learning, we will be able to refine our ideas and clarify the direction for the Innovation Network. We further hope to begin working with a subgroup of these leaders in 2008 on the details of our proposed "Innovation Network for Talent Development Systems."

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Vision

Lifelong Learning is within reach for every adult.

Mission Statement

CAEL removes barriers to lifelong learning for adults, identifies and disseminates innovative and effective practices and delivers services that touch the lives of adults. To realize our vision, we work with all of the stakeholders in lifelong learning including educational institutions, employers, labor organizations, government and communities.

CAEL
The Council For Adult & Experiential Learning