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## ABSTRACT

Skill supply chains apply a chain strategy to human resources to make the labor market more efficient. They link the multiple skill levels in a given labor market within a network of recruitment pathways for employers and advancement pathways for workers. Skill supply chains are based on employers' actual skill needs and on the principle that employers' need for labor pulls low-income individuals up from low-wage jobs through the advancement and recruitment pathways created by the supply chain. Local chambers of commerce, industry associations, and other employer organizations can play a pivotal role in the functioning of skill supply chains. Employer organizations themselves benefit from skill supply chains a variety of ways. A national review of knowledge supply chains, job ladders, tiered employment, and similar programs identified the following principles for consideration when planning skill supply chains: (1) employer organizations are important as intermediaries; (2) skill supply chains respond to employer skill needs; (3) effective skill supply chains depend on identification and documentation of transferable skills; (4) the more tiers a skill supply chain has, the more effective it is; and (5) partnerships are critical. Thirty-one specific guidelines regarding planning, developing, operating, and assessing skill supply chains are presented. (MN)

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*M. Miller*

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

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Workforce Innovation Networks

## EMPLOYER-LED ORGANIZATIONS AND SKILL SUPPLY CHAINS: LINKING WORKER ADVANCEMENT WITH THE SKILL NEEDS OF EMPLOYERS

By Jack Mills and Heath Prince, Jobs for the Future

*Employers consistently rank recruiting and retaining a qualified workforce as two of their top priorities. At the same time, poorly skilled workers struggle to find avenues out of occupations that hold little opportunity for advancement, and into those that will pay a family-sustaining wage and offer better upward mobility. Skill Supply Chains meet both employers' needs for a workforce with the right skills and low-wage, low-skilled workers' needs for advancement opportunities.*

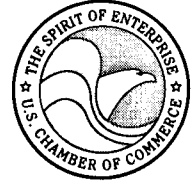
*Skill Supply Chains link the multiple skill levels in a given labor market within a network of recruitment pathways for employers and advancement pathways for workers. Employers' need for labor pulls low-income individuals up from low-wage jobs through the advancement and recruitment pathways created by the supply chain.*

Skill Supply Chains can help solve recruitment problems, reduce turnover, and increase productivity. They have the potential to provide employees with the skills employers need. By doing so, they make it possible for employers to capitalize on skills acquired at lower levels of employment or through training that targets a business's particular skill requirements.

This Issue Brief introduces employer organizations and their potential partners to the benefits of developing and utilizing Skill Supply Chains. It also reviews key elements and processes involved in creating Skill Supply Chains.

Skill Supply Chains apply a supply chain strategy to human resources in order to make

the labor market more efficient. They are developed and operated by employer organizations, or organizations they designate. Skill Supply Chains focus on occupations that have large numbers of vacancies and that require different levels of similar skills. They meet the needs of one or more employers who want to fill vacancies in those occupations. To do so, they typically engage providers of recruitment, screening, job training, education, and support services. Skill Supply Chains leverage skills learned on the job, and use education and training to fill skill gaps. As participants move up to positions with higher skill requirements, the skill supply chain quickly makes participants available who are able to fill the resulting vacancies.



ISSUE BRIEF

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### SKILL SUPPLY CHAINS

Skill Supply Chains rely on employer information regarding skill needs to link multiple occupations across a labor market. Skill Supply Chain coordinators form these links by identifying the skills acquired at one level of employment and matching them with the skills required at a higher or complementary level of employment. The coordinators match workers with employer vacancies, as well as with the support, education, and training services needed to ensure that the match succeeds. A Skill Supply Chain provides employers with new and more reliable sources of skilled labor, and it serves as a road map that helps workers navigate through and up a labor market.

Skill Supply Chains benefit employees, who get jobs at higher skill levels, and employers, whose jobs have lower skill requirements. Participating employers offering higher wages

in skilled positions benefit from a Skill Supply Chain by getting better access to employees in occupations that require lower levels of similar skills and pay lower wages. And occupations requiring fewer skills and paying lower wages become more attractive to workers when viewed within the context of a Skill Supply Chain that transforms "dead-end" jobs—jobs to be avoided or left as soon as possible—into stepping stones to better ones. This benefits employers at lower skill levels by improving worker retention and recruitment.

For workers, a Skill Supply Chain creates a network of employers cooperating around training and hiring practices. This network provides multiple avenues out of low-skill, low-wage jobs and into family-sustaining, skilled occupations.

Skill Supply Chains are based on employers' actual skill needs, positioning employer

### Skill Supply Chains at Work

At the orientation for her new hires, a retail employer in one Skill Supply Chain describes the advancement opportunities within the firm, the skills required to succeed in those positions, and the assistance that store managers will provide with regard to acquiring skills for those who are interested in advancing in the retail industry. In addition, the employer explains to the new hires that succeeding in their current job will also make them eligible for advancement into jobs with other firms in the skill supply chain.

By communicating early on that there are advancement possibilities, either within the firm or in others, the employer improves retention, productivity, and quality among his or her workforce. In addition, because workers know the entry-level retail job is a rung on a career ladder, the retailer attracts more and better candidates for its entry-level openings.

Turnover and attendance are better, too, due to employees' desire to advance, human resource policies designed to increase retention and skill development, and the availability of support services.

When the retailer has vacancies in higher-skill positions, it is able to select from a larger group of employees with the

required skills. Motivated by the opportunity for advancement, employees learn more on the job. Also, more employees gain skills in training programs.

Employees who are not promoted stay productive, knowing that the retailer will reward their skills and productivity by recommending them to other firms with advancement opportunities.

As a result, other employers offering higher-skill, higher-paying jobs within the skill supply chain benefit from their ability to select from a pool of applicants who have proven their work-readiness and skill attainment on the job, in other occupations within the skill supply chain, or through training targeted to employer skill requirements.

Skill Supply Chains link diverse occupations in a labor market by aligning the skills acquired at one level of employment with the skills required at another, higher level of employment—and by incorporating local education, training, and support services to assist in acquiring those skills. Employers benefit from a wider, more highly skilled labor pool. Workers benefit from expanded avenues for advancement and a more transparent labor market.

organizations to play a central role in their development. Potential Skill Supply Chain partners include employer organizations, individual employers, and support service providers, as well as community colleges and training vendors that provide education and training needed for advancement to higher levels of skill and employment. Labor unions can help manage Skill Supply Chains or serve as training providers. Skill Supply Chains leverage the core competencies of each of the partners to address regional workforce development needs more efficiently.

An employer organization can "size" a Skill Supply Chain to fit the needs of its members and the resources available locally. By starting simply and building upon successful results, an employer organization can increase its expertise at managing Skill Supply Chains while generating credibility and resources among potential partners. For instance, the Holyoke Chamber of Commerce (see box) has built a Skill Supply Chain in the paper-manufacturing and paper-conversion industries. It began by meeting a real need of several companies: to train applicants for an occupation common to participating firms. It has since grown to meet the need for employees in occupations at several levels.

Employer organizations with greater resources can develop Skill Supply Chains that meet a wider range of employer needs. Self-assessment and planning steps described in *Jobs for the Future's Skill Supply Chain Guide*<sup>1</sup> make it possible to determine the right level of complexity and scale.

**EMPLOYER ORGANIZATIONS AND SKILL SUPPLY CHAINS**

Local Chambers of Commerce, industry associations, and other employer organizations can play a pivotal role in the functioning

of Skill Supply Chains. These employer groups can use their preferred relationships with their members to serve as brokers among all of the potential Skill Supply Chain partners.

The creation of a of Skill Supply Chain leverages an employer organization's core competencies regarding workforce development in several ways:

**Skill Supply Chains FAQ**

*What challenges do Skill Supply Chains address?*

Employers consistently rank the difficulties of finding and retaining a qualified workforce as among their top human resources concerns, due to workforce demographics, rapidly changing skill requirements, and the hot economy of the 1990s, which further exacerbated labor and skills shortages. For many firms, tight labor markets have increased the costs of labor turnover and reduced growth projections. Meanwhile, employers that hire from non-traditional labor pools find that many of their entry-level workers face barriers to keeping a job and developing their work skills.

Moreover, the traditional methods for workers to develop careers have diminished in importance: to remain competitive, employers have shed many of the ancillary occupations that they had used as a "proving ground" for new workers. Internal career ladders that extend down to entry-level workers are largely gone, replaced by a contingent labor force that performs specific tasks unrelated to a firm's core functions. In many cases, occupations that once offered potential for skill development and advancement are now performed by specialized, service-sector firms, eliminating the connection between the entry level and opportunities for advancement. Skill Supply Chains provide an alternative to these traditional methods for workers to develop skills and careers.

*What are the benefits for employers at the lower tier of Skill Supply Chains?*

Employers with lower-tier jobs benefit from a Skill Supply Chain by reduced turnover, increased opportunity to draw from better-qualified pools of job-seekers, and improved motivation and productivity from their employees. The Skill Supply Chain transforms their jobs into entry points into a workforce development system that offers opportunities to build skills and advance. Workers who tend to avoid these occupations because of their limited advancement potential come to view lower-level work as steps on career paths that extend within and across firms, industries, and sectors in the local economy. Recruitment, screening, and referral services are designed to assist lower-tiered employers to draw from a wider pool of more motivated and qualified applicants. Because advancement in a Skill Supply Chain largely depends upon skill development and the recommendations of employers, the level of worker commitment to a job increases, thereby increasing worker retention and productivity.

<sup>1</sup>The *Skill Supply Chain Guide*, a practical manual for designing, building and operating Skill Supply Chains, will be available at [www.jff.org](http://www.jff.org) in the summer of 2001.

- Member companies are more likely to trust, respond to, and share proprietary information with the staff of an employer organization that already gathers proprietary information from its members, undertakes activities connected to their businesses, and ultimately depends upon members to stay in business. Skill Supply Chains require employers to identify shared workforce training needs. Many employer organizations have the legitimacy, relationships, and working systems in place to do so.

- When an employer organization's members trust it as a source of information and services, this provides an excellent channel to market a Skill Supply Chain model, bring members together as customers, and support their participation in the Skill Supply Chain.
- Because an employer organization often brokers services, and sometimes provides them, it is likely to be able to do so in regard to Skill Supply Chains. Alternately, it is likely to be able to judge whether another organization has the expertise, effective management, efficient operation, and commitment to quality results required to broker and provide workforce development services.
- Because an employer organization represents its members, it has clout. Employer organizations can influence workforce development services and the overall workforce development system to be more responsive to employers.

### Skill Supply Chains FAQ

#### *What are the benefits for employers at higher tiers of a Skill Supply Chain?*

As workers advance through the Skill Supply Chain, each successive job adds to their skills and readiness for higher levels of work. Built around employers' skill requirements, the Skill Supply Chain aligns skill development on and off the job with those requirements, and it provides a work-centered vetting mechanism to employers with vacancies. This mechanism can reduce employer risk in the hiring process, reduce turnover, and increase overall productivity.

#### *How are skills identified and developed?*

Employer requirements establish standards for foundational skills. Workers develop these general skills, which are essential to success in entry-level occupations, with the assistance of education providers and Skill Supply Chain partners, such as local one-stops and community-based organizations.

Beyond foundational skills, skill development is also designed to meet skill needs expressed by participating employers. Skill Supply Chain partners help employers identify these skills, which are developed by a range of education and training providers.

#### *How do employers hold on to top people?*

Companies can become "employers of choice" among their top people by building on their relationships with them. Strategies to retain the most productive workers are personal and focused—identifying them, and responding to their motivations with promotions, development plans, higher pay, bonuses, or better benefits. While Skill Supply Chains create structures that facilitate advancement throughout the labor market, companies using "employer of choice" strategies take advantage of their employer/employee relationships and the opportunity to act proactively.

Skill Supply Chains may also help create a retention culture. Overall retention may improve as workers recognize that advancement opportunities are available through the Skill Supply Chain—and that these opportunities depend on a person's continuing employment, meeting skill requirements, and achieving performance expectations.

Employer organizations themselves benefit from Skill Supply Chains in a variety of ways:

- Successful Skill Supply Chains can financially benefit an employer organization's members by lowering turnover and recruitment costs. As a result of these public relations benefits, revenue from members may increase and member satisfaction may improve.
- Skill Supply Chains can help employer organizations leverage resources of value to members, such as public-sector workforce development funds.
- Skill Supply Chains frequently create forums in which employer organizations can form new relationships with employers and workforce development service providers.
- Successful Skill Supply Chains have a long-term effect on the local business environment that can position the employer organization for growth.



### Skill Supply Chain Best Practices

Jobs for the Future has conducted a national review of knowledge supply chains, career ladders, job ladders, tiered employment, and similar programs, resulting in several recommendations for planning, developing, and operating Skill Supply Chains.

*Employer organizations are important as intermediaries.*

Employer organizations can play the leading role in forming the requisite partnerships for Skill Supply Chains. As intermediaries between their employer members and the broader labor market, employer organizations can aggregate and clarify employers' demands for skills, influence employers to increase their activity regarding workforce development for low-wage workers, reduce the risks and costs of that increased activity, and broker for services on behalf of employer members. In the context of a Skill Supply Chain, these services can come from various places: community-based organizations, training providers, and the public sector.

*Skill Supply Chains respond employer skill needs.*

Whether directly led by employers, or simply designed to be highly responsive to the needs of employers, the activities of a Skill Supply Chain should be driven by skill needs of the local labor market, as expressed by participating employers. As partners in a Skill Supply Chain model, employers are well positioned to shape its activities to meet their skill needs. In many cases, this involves participating in curriculum development, adjusting HR practices to accommodate Skill Supply Chains, and entering into hiring agreements that support Skill Supply Chain operations.

*Effective Skill Supply Chains depend upon the identification and documentation of transferable skills.*

Transferable skills make it possible for workers to move from one company to another, within or across industries and economic sectors. The ability to advance and

recruit workers within a Skill Supply Chain is predicated on the fact that certain skill sets are valued in occupations included in the Skill Supply Chain. Both employers and workers

### Skill Supply Chains FAQ

#### *Who operates the program?*

Determining who operates a Skill Supply Chain is a key early step. Skill Supply Chains can be operated by any organization with the reputation, capacity, and relationships to bring together partners that meet the needs of employers and individuals seeking better jobs. Employer organizations leverage their employer memberships, as well as their relationships with the rest of the workforce development system, to lead or operate successful Skill Supply Chains.

Employer organizations can also identify other entities to operate Skill Supply Chains. For instance, community colleges with a strong sense of the skill and labor needs of local employers can operate Skill Supply Chains. Community-based organizations that have the confidence of the business community also operate Skill Supply Chains.

#### *Who funds program development?*

Funding for Skill Supply Chains can come from a variety of sources. Some are funded by public workforce development and training sources. For example, the Wisconsin Regional Training Partnership used state and federal training funds as seed money to build partnerships between the public, private, and non-profit sectors to unite the employment and training needs of workers and communities with the workforce needs of employers. Others leverage state funds for pre-employment training, tuition assistance, and workforce development program redesign by providing in-kind contributions from community colleges. Shoreline Community College, in collaboration with six other Puget Sound Community or technical colleges has developed career ladders in four occupational clusters: manufacturing, customer relations, health services and information technology. Each career ladder pathway features a commitment of jobs by employers for qualified participants, 12 weeks of pre-employment training, customized to employer needs, the opportunity for paid, on-the-job work experience, the opportunity for continued career training, and continuing career counseling. Some Skill Supply Chains are funded through pooled training resources from participating firms. Trade associations have contributed to funding the development of Skill Supply Chains that are specific to a given industry. As Skill Supply Chains develop into a recognized and valued tool for labor sourcing, program operators may be able to price their services and charge fees. The Holyoke Chamber of Commerce in Holyoke, MA has led efforts to build a cross-firm Skill Supply Chain in the paper manufacturing and conversion industries. It began with one occupational tier, and has expanded to encompass several tiers. The Chamber has led the development of a consortium of paper manufacturers and paper converters, who have collaborated around developing a common curriculum for the Machine Operators' position.

benefit when the acquisition of sets of transferable skills are documented by portable credentials, skills certificates, or academic degrees. This documentation signals to the labor market that the skills have value.

*A Skill Supply Chain is more effective the more tiers it has.*

Supply chains are more successful when they cover multiple skill levels. To meet the needs of a Skill Supply Chain's dual customers—employers and workers—the Skill

Supply Chain will need to provide avenues for advancement beyond entry-level positions. This Issue Brief focuses on Skill Supply Chains that link occupations ranging from "entry-level" occupations to those that require Associates degrees.

*Partnerships are critical.*

Successful Skill Supply Chains often employ a range of resources to meet the needs of their dual customers. To accomplish this, even the simplest Skill Supply Chains contain a coordinating entity that manages the movement of workers through the chain, as well as meets the demand for labor as expressed by employers in the chain—and employers who are willing to work with the coordinating entity to employ and advance workers. More elaborate Skill Supply Chains can involve the coordinating entity, employers, labor union, community-based organizations, public-sector agencies, funders, and training providers.

#### **Variations Among Leading Skill Supply Chains**

Beyond the elements that Skill Supply Chains have in common (see Design Principles, below), they vary in several important ways:

- The numbers of occupations and occupational tiers they include;
- The number of individual career pathways they utilize;
- The numbers of employers and industry sectors they address;
- The source of individuals beginning participation in the Skill Supply Chain;
- The extent to which employers modify human resource practices;
- The range of workforce development services: recruitment/screening, education/training, and support services; and
- The organization responsible for operating the Skill Supply Chain.

Most important, Skill Supply Chains differ in kind: they range from those that focus on advancement within a single firm, to those

### **Skill Supply Chains FAQ**

#### *What types of agreements are employers expected to enter into?*

Agreements between employers and Skill Supply Chain operators vary with the type and degree of complexity of the program. In one simple model of a Skill Supply Chain, the program operator manages a wide array of tasks—from recruiting workers, to identifying skills and training resources, to placing, tracking, and assisting workers with advancement. In this model, the program operator's relationship with the employer is similar to that between a placement firm and an employer, with the employer agreeing to fill a vacancy with a worker referred by the program operator. Partnerships—with support-service, training, and education providers—that serve this type of skill supply chain are typically casual, rarely relying on explicit agreements beyond those between the program operator and the hiring employer.

In more complex Skill Supply Chains, employers play a key role in design, development, and implementation. In some cases, employers combine their efforts in skills training consortia: curricula and skills are developed for positions shared by the participating employers. More elaborate Skill Supply Chains can involve the coordinating entity, employers, labor unions, community-based organizations (that can provide recruiting, screening, and support services), public-sector agencies, funders, and training providers.

In these complex Skill Supply Chains, agreements exist not only between employers and program operators but also among employers regarding hiring and promotion and between program operators and service providers. Agreements between employers and program operators address such issues as the rights and responsibilities of Skill Supply Chain partners, information sharing about skill requirements and skill attainment, and the content and schedule of required training, education, and work experience.

#### *How are support services designed to meet employer and employee needs?*

Providers can target services to support key Skill Supply Chain activities, such as recruitment and screening training work, in order to make these activities work better and more easily for both workers and employers. Support services (e.g., childcare, transportation, and mentoring services) also benefit from the input provided by employers in the Skill Supply Chain.

that focus on advancement among multiple firms within a single industry, to those that cross industries within a single sector, to those that advance workers across multiple sectors of a local labor market.

### **Single-Firm Skill Supply Chains**

Single-firm Skill Supply Chains, often referred to as internal career ladders, have been on the decline in recent decades. As firms have sought to create more flexible workforces, they have shed ancillary occupations and focused on their core competencies.

Some businesses have benefited from strengthening their internal career ladders, however. Often through labor-management cooperation, these firms have developed the skills of their entry-level staff, creating candidates qualified for higher-skill vacancies within the firm. These firms target a number of entry-level occupations, develop training curricula for advancement into occupations requiring higher-level skills, and collaborate with training providers and staff to help ensure that vacancies can be filled through internal promotion. In this relatively simple Skill Supply Chain, key partners include management, worker representatives, and training and support services providers. Essential to such an arrangement is the firm's commitment to it, either through a union-negotiated contract or as a stated human resources policy.

### **Single-Industry Skill Supply Chains**

Some Skill Supply Chains train workers to fill similar occupations in multiple firms in a single industry. These Skill Supply Chains connect a pool of workers trained for relatively skilled, entry-level occupations in participating firms. Participating firms often contribute and aggregate their training funds, and they also collaborate to develop curricula that prepare workers for essentially similar occupations in any of the firms. More sophisticated versions of this type of Skill Supply Chain target not only entry-level workers but also incumbent workers and transitional workers.

As in some single-firm Skill Supply Chains, Skill Supply Chains that operate across firms within a single industry may be aided by strong labor-management cooperation. The agreements that emerge from their cooperation serve as indicators of the importance to both employers and workers of Skill Supply Chains in these industries.

Key participants in the single-industry Skill Supply Chains are firms, worker representatives, employer intermediary organizations, and training and support service providers. As in the single-firm Skill Supply Chains, agreements among firms regarding hiring and training practices are typically very important, as are agreements between firms and other partners.

### **Sector-Based Skill Supply Chains**

Sector-based Skill Supply Chains target specific occupations or sets of occupations in a particular sector of the economy, then develop skills-training courses designed to prepare entry-level workers for employment in those occupations. Rather than focussing solely on meeting employer demands for skilled labor, many sector-based Skill Supply Chains seek to create system-wide change in a labor market by addressing both its demand and supply sides.

#### **Cape Cod Hospital, Hyannis, Massachusetts**

Entering its twentieth year of operation, this career ladder program offers professional-level classes for union members in non-professional occupations, such as housekeeper or dietary assistant. It was created through an agreement between SEIU Local 767 and management at Cape Cod Hospital.

#### **Holyoke Chamber of Commerce, Holyoke, Massachusetts**

The Holyoke Chamber of Commerce has led efforts to build a cross-firm Skill Supply Chain in the paper-manufacturing and paper-conversion industries. It began with one occupational tier and has expanded to encompass several tiers. The Chamber has led the development of a consortium of paper manufacturers and paper converters, who have collaborated around developing a common curriculum for the Machine Operators' position.



Sector-based programs often satisfy demand-side concerns by providing technical assistance to firms, linking firms to new markets, assisting firms in establishing skills standards for an industry, and encouraging firms to adopt model human resource practices. Through these demand-side activities, sector-based programs utilize their industry contacts to create employment opportunities and “job ladders” for workers in low-skill, entry-level positions.

Sector-based Skill Supply Chains also satisfy supply-side concerns. Most sector-based Skill Supply Chains rely heavily on customized training programs that are specific to the occupations or industry sectors on which they focus. In addition, most sector-based Skill Supply Chains provide some degree of pre-employment train-

ing in basic work skills. One-Stop Career Centers, community-based organizations, community colleges, and increasingly unions, are providing this pre-employment training. Some of these supply chains have been created to permit a high range of mobility among occupations within an industry sector. These Skill Supply Chains utilize skills certificates that are generally recognized and accepted by participating employers, facilitating worker advancement to higher levels of employment.

Key participants in sector-based Skill Supply Chains are employers, training and support-service providers, worker representatives, and intermediary organizations that intervene in the labor market on behalf of both workers and employers. Agreements under sector-based Skill Supply Chains are typically among employers, intermediaries, and training providers, and deal with worker placement and customized training curricula.

#### **Jobs With a Future, Dane County, Wisconsin**

The Jobs With a Future project consists of partnerships focused on workforce skill and training issues in three industries: manufacturing, health care, and finance and insurance. This project was initiated in 1996, when the Dane County Executive reconstituted the Dane County Economic Summit Council, a blue-ribbon commission of representatives from the public, private, and non-profit sectors, including leaders from the business community. As part of its mission, the Summit Council wanted to make higher-paid, higher-skill jobs a reality for all Dane County residents. The council retained the Center on Wisconsin Strategy to analyze the labor market, help design a better integrated system of labor market administration, and develop the industry partnerships. Workers are trained for various levels of employment and, once they have earned the requisite credentials, are hired by participating employers.

#### **Memphis Area Chamber of Commerce, Memphis, Tennessee**

The Memphis Area Chamber of Commerce has convened employers who developed a three-tier Skill Supply Chain:

- “Tier 1” employees at several call centers have entry-level jobs, requiring few skills and work experience.
- Several call centers refer “Tier 1” employees to FedEx, which places them into Tier 2 jobs—jobs requiring some work experience and a demonstration of work-readiness skills.
- From these Tier 2 occupations, FedEx provides training for Tier 3 jobs—those requiring advanced skills and a strong work history.

#### **Cross-Sector Skill Supply Chains**

At a certain level of employment and skill development, Skill Supply Chain models can cross industry sectors. These models recognize that basic work-readiness skills are valued across industry sectors, and that worker transfer across these sectors benefits both participating employers and workers seeking to gain skills and increase their income as they advance in the labor market. As workers advance beyond the initial tiers in the supply chain, however, cross-sector mobility diminishes as the skills required for further advancement become more specialized to given industries. Since cross-sector Skill Supply Chains often focus on entry-level employment, a referral source for new workers is essential. These referral sources can be public agencies, job-training programs, and school-to-work programs, to name a few. Also essential to this model is an organizing entity responsible for placing workers in vacancies in participating firms, monitoring workers advancement up the Skill Supply Chain, and recruiting new workers and firms.

### DESIGNING SKILL SUPPLY CHAINS THAT ARE EMPLOYER ORGANIZATION-LED

Each of the variations on a Skill Supply Chain model has at its core the complementary goals of creating a more transparent labor market—one in which job seekers can easily identify the skill needs of employers at various levels—and a workforce development system that is more sensitive to the skill needs of employers. By accomplishing these goals, such models are “win-win”—for employers and for workers seeking to advance in the labor market. In addition to these broader, outcome-oriented similarities, each model has at its center an organizing entity that is responsible for managing the flow of information regarding employer skill needs and the community’s ability to meet those needs.

#### Employer Organizations In Leadership Roles

Employer organizations are well positioned to serve as the organizing entity for a Skill Supply Chain. For example, local chambers of commerce and affiliates of trade associations can serve as linchpins by:

- Convening employers;
- Defining and articulating their skill needs; and
- Brokering the services of community training and support service providers to meet their workforce needs.

As trusted intermediaries, employer organizations can solicit proprietary information regarding skill needs and hiring practices from their employer members. They can use this information to match the skill requirements of firms with the skills acquired by workers in other member firms or through education and training programs. Depending on their capacity, employer organizations can take on activities that range from serving in a coordinating role only, to providing some services, to managing the operation of the Skill Supply Chain.

### Design Principles and Guidelines for Measuring the Effectiveness of Skill Supply Chains

Certain essential elements will be common to most employer organization-led Skill Supply Chains. These characteristics stem from the nature of the employer organizations’ relationships with their employer members and distinguish this type of Skill Supply Chain from those that operate without employer organization leadership.

#### Shoreline Community College, Seattle, Washington

Shoreline Community College has created Skill Supply Chains to meet the needs of a wide range of employers. TANF recipients and other low-income individuals can enroll in college programs that include access to these chains. Several of the programs (such as manufacturing and health) are sector-specific, while others (information technology and customer service) are occupational in focus and serve employers in a variety of sectors. Shoreline’s Information Tech Career Pathway begins with Pre-Employment Training that prepares new workers for entry-level work. From there, workers receive Data Technician Training, General Office Training, or Microsoft Office Applications Training that allows them to move into a variety of occupations across several sectors. Beyond these initial rungs in Shoreline’s Career Pathway, workers can receive training for occupations that require higher skills and offer increased pay and improved advancement opportunities.

#### EDSI, Philadelphia, Pennsylvania

Greater Philadelphia Works, the city’s Welfare-to-Work program, employs a “Tiered Employment” model, developed and administered by Educational Data Systems, Inc. This Skill Supply Chain is designed to advance workers from entry-level occupations that require little skill and pay low wages into positions with employers requiring greater skill levels and paying higher wages.

Key elements of the tiered employment model include:

- Negotiating a defined set of expectations among a group of employers regarding setting a standard for hiring and promoting entry-level workers;
- Creating a “new employee protocol” that communicates advancement opportunities and expectations to participants;
- Training staff on how to counsel participants regarding opportunities offered by the tiered employment model; and
- Establishing internal controls to track the progress of participants through higher tiers of employment within prescribed timeframes.

Skill Supply Chains that are led by employer organizations generally conform to the following specific design principles:

**Design Principle: Skill Supply Chains leverage an employer organization's relationship with member employers**

**Guideline: An employer organization provides leadership.** Given the importance of incorporating employers' skill specifications and demand for skilled labor in the design of Skill Supply Chains, it is essential that employer organizations provide leadership and oversight of Skill Supply Chain development and operation. At minimum, this role for employer organizations means supervising the Skill Supply Chain partnership and its overall operations.

**Guideline: An employer organization either itself manages or selects a credible organization to manage the Skill Supply Chain and facilitate the relationships among its partners.** The level of involvement that an employer organization may want to take on should be determined by a self-assessment of its own capacity for managing the Skill Supply Chain. In some cases, it may be necessary or preferable to contract or partner with an organization that has responsibility for the day-to-day operations of the Skill Supply Chain.

**Guideline: An employer organization leverages its relationship with its members to engage them in Skill Supply Chain development and operation.** It compiles, analyzes and reports upon employers' skill needs without revealing proprietary information. Additionally, it brings about employers' agreements to participate in the Skill Supply Chain.

**Guideline: An employer organization leads partners in either collaborating on delivering services or integrating service delivery.** Agreements must be crafted on the support services and training needs that will be met by the Skill Supply Chain. This is the case when developing a simple Skill Supply Chain with few partners or a complex Skill Supply Chain involving partners from a variety a community-

based organizations, public agencies, employers, community colleges, or unions. In their role as intermediaries between employers and labor markets, employer organizations are uniquely situated to ensure that the services and training offered by the Skill Supply Chain are best suited to meet employer demand.

**Design Principle: Skill Supply Chains promote the business community as the central determinant of required skills and training, and build upon existing relationships among firms and providers of workforce development services**

**Guideline: The Skill Supply Chain is employer-driven and responsive to employer workforce development needs in regard to quality, cycle time, capacity, ease of use, and cost.** To gain and sustain employers as its customers, a Skill Supply Chain should represent a cost-effective method for meeting employers workforce needs, with specific attention paid to quality, cycle time, ease of use, and cost.

**Guideline: Skills are developed to meet employer-defined specifications.** The emphasis that is placed on meeting specific skill standards, as defined by participating employers, represents both the primary advantage and the primary objective of a Skill Supply Chain. This requires employers to identify their skill needs. It also requires employer organizations, as trusted intermediaries between their employer members, to compile skill needs without revealing proprietary information.

**Design Principle: Skill Supply Chains demonstrate clear pathways—entry-level, to intermediate level, to professional—through a network of member employers.**

**Guideline: Competency outcomes are identified and certified.** General agreement among Skill Supply Chain partners should be reached regarding the achievement of specific competencies required for advancement.

**Guideline:** *Strategies and systems are effective in promoting retention and advancement, making it possible for those who begin with few skills to move up.* From a workers perspective, a Skill Supply Chain should be an alternate route into and up through a labor market. As such, the Skill Supply Chain should be designed in such a manner as to build progressively upon the skills and competencies acquired at each level of employment. This will require the managing organization to be equally concerned with workers new to the Skill Supply Chain and incumbent workers seeking advancement.

**Guideline:** *Training and support services are provided that are appropriate to the population served.* The Skill Supply Chains proposed here serve dual clients in the labor market: employers and low-skilled, low-wage workers. Many of the workers who will benefit from Skill Supply Chains will come to the job with a variety of barriers to job retention and advancement. The training and support services offered as part of the Skill Supply Chain should meet the needs of a working population that may require significant assistance with transportation, child care, and "soft skills" training, to name a few needs.

**Design Principle:** *Skill Supply Chains provide pathways or structures for employers to "grow" or find workers that meet their business needs.*

**Guideline:** *Occupations with a range of skill levels are part of the Skill Supply Chain.* A Skill Supply Chain most effectively serves both its customers by providing links in a wide range of occupations and skill levels. Employers will benefit from wider access to workers in industries and occupations not normally considered for recruitment. Workers will benefit from the avenues out of the traditional "dead-end" jobs provided by Skill Supply Chain links to higher-paying occupations in a range of industries.

## CREATING A SKILL SUPPLY CHAIN: STAGES OF DEVELOPMENT

A region's needs and the capacity of its employer organization and others it partners with will be key determinants of the way it develops its Skill Supply Chain model. Initiatives should be developed that produce the clearest benefits for the employers, employees, and job seekers who participate in the Skill Supply Chain. A primary goal should be achieving high-quality implementation in a timeframe that meets expectations, based on the resources that are likely to be available. Approaches can be developmental, starting simply and adding components as resources and interest allow.

Three stages of development sketch a standard process for creating and operating Skill Supply Chains that match qualified workers with high-demand occupations.

- Assessment and planning;
- Partnership building and program development; and
- Operation and sustainability/expansion.

Usually, assessment and planning begin the process. However, depending on the degree of employer organization involvement in local workforce development activities, it may be appropriate to start at a stage other than assessment and planning.

### Assessment and Planning

**Assess your organization's capacity and willingness to undertake the development and leadership of a Skill Supply Chain.** Can the organization play a role in Skill Supply Chain development? What core competencies and experience in workforce development can it build upon? Are resources available, or can they be raised? Will the organization's leadership support the initiative?

**Identify target industries and occupations for inclusion in the Skill Supply Chain.** Which occupations will be easiest to build into Skill Supply Chains, given the regional economy

and labor market? What skills, and for which occupations, are most in demand skill and will continue to be in demand for the foreseeable future? Among these, which occupations require similar skills, moving from less well-developed skills to more well-developed skills?

**Assess employer demand for an alternative method of getting trained workers.** Do local employers need an alternative source of qualified employees? How well does the workforce development system meet their labor needs?

**Assess your community's ability to support a Skill Supply Chain.** Are there adequate training, education, and pre- and post-employment support service providers to meet the needs of Skill Supply Chain participants? Do the providers have a demand-driven approach, or are they interested in adopting one? Do they want to become more effective and efficient? How will education and training services that build skills in the occupations that compose the Skill Supply Chain be developed, if these services don't already exist? What portable credentials, especially those based on industry standards, can program operators use to measure the skills developed through education/training? What support services do individuals need in order to participate in any recruitment/screening activities that may be part of the Skill Supply Chain, to work successfully in Skill Supply Chain occupations, and to learn effectively in education/training.

**Identify lead employers in target industries and determine their willingness to assist with the development of a Skill Supply Chain.** Which employers are interested in participating initially? These may be companies with the most pressing needs, or ones whose business model is to benefit from gaining first-mover advantage. Is it possible to build a Skill Supply Chain based on the occupations of their employees? Is it possible or necessary to build more than one Skill Supply Chain? Which employers are more likely to participate after the program has a track record of successful

operation and has gained the advantage of the learning that an early follower derives?

**Identify sources of potential financial support for the Skill Supply Chain, including public funds, private contributions, fees-for-service, and foundation options.** Are public funds available to support training, education, placement, and post-employment support functions? Are local charitable foundations or philanthropic organizations willing to support the Skill Supply Chain initiative? What is the appetite among local employers for fee-for-service training and placement programs?

**Identify goals for the Skill Supply Chain.** Do the occupations it is important to address fit within one Skill Supply Chain or more than one? That is, do the occupations all require the development of similar skills, or do differing groups of occupations require the development of different skill sets? To what extent do occupations potentially forming the Skill Supply Chain build the skills and provide the credentials necessary to prepare employees to be candidates for each succeeding occupational tier? Can articulated steps in skill acquisition and occupations that meet the needs of the Skill Supply Chain's dual customers be identified? Would restructuring occupations to build needed skills be in employers and workers interest? How many Skill Supply Chains do you want to develop at first? In the long run?

### **Partnership Building And Program Development**

**Begin by gaining the support of lead employers.** Identify a core group of employers that would be willing to engage in the Skill Supply Chain development process.

**Expand the core group to include a wider range of employers in the targeted industries.** Approach employers in targeted industries and industry sectors to recruit them to Skill Supply Chain participation. What skills are easily identified as common, entry-level skills across a range of occupations?



**Identify skill requirements at multiple stages of employment—from entry-level to occupations requiring an Associate's Degree or an advanced certificate—among targeted industries and employers.** Solicit input from participating employers on skill specifications for multiple tiers of employment. Solicit assistance from partnering employers, community colleges, and training providers with developing curricula to meet skills specifications.

**Expand the group of partners to include providers of training, education, and employment support services.** What partners can provide the education, training, and support services necessary to build the Skill Supply Chains? Identify the missing services and then recruit providers to the Skill Supply Chain.

**Establish roles and responsibilities for all partners.** What organization should manage and staff the development and operation of the Skill Supply Chain initiative?

**Identify trainers and funding sources for training workers to meet the specified skill requirements.** Where will individuals come from to fill the skill needs of the occupations in the Skill Supply Chain? Will they come from companies that have poor opportunities for promotion, high turnover, and large numbers of employees with low skills and little work experience? From recruitment/screening agencies (such as One-Stops, staffing firms, workforce development service providers, or TANF agencies)? From providers of education and training? Or from all of these sources? Is funding for training available on the job, or within the community?

**Establish hiring agreements among employers to facilitate hiring and promotion within the Skill Supply Chain.** Which employers will agree to sign a Memorandum of Agreement or Understanding to demonstrate commitment to the Skill Supply Chain? Which employers will agree to fill job vacancies with workers participating in the Skill Supply Chain? Which employers will agree to common criteria for promoting Skill Supply Chain workers?

**Establish how worker career paths will be monitored.** Who among the Skill Supply Chain partners will be responsible for tracking the progress of participants and ensuring that support services are provided throughout their advancement?

**Incorporate a continuous improvement process in the Skill Supply Chain.** Develop a process and assign responsibility for incorporating adjustments and improvements into the Skill Supply Chain.

**Develop a marketing strategy.** Prepare a strategy for keeping potential partners and funders informed of successes.

#### **Operation, Sustainability, and Expansion**

**Match new workers with appropriate training providers or partnering employers.** How will entry-level vacancies identified by partnering employers be filled with Skill Supply Chain workers? Will pre-employment training be required?

**Match entry-level workers with training providers or partnering employers who have vacancies at higher levels of employment.** Are vacancies in occupations requiring more advanced skills being filled by entry-level workers from elsewhere in the Skill Supply Chain? Are employers with vacancies in skilled positions recruiting from within the Skill Supply Chain?

**Match skilled incumbent workers with training providers or partnering employers who have vacancies in complementary or higher levels of employment.** Does the Skill Supply Chain provide access to adequate training and education services for skilled incumbent workers who wish to move into higher paying positions?

**Monitor placements.** Are Skill Supply Chain participants receiving available retention and advancement services? Are participants proactively utilizing the Skill Supply Chain for their career advancement? Are participating employers satisfied with those workers hired through the Skill Supply Chain?

## A BETTER LABOR MARKET

Once in operation, the Skill Supply Chain makes a local labor market function better and makes it easier to understand, for employers as well as workers. Employers improve their access to workers in other occupations who may be developing skills that are in high demand. Workers view low-skill, low-wage jobs as entry points into a workforce development system that provides opportunities to increase their skill levels and advance their careers. Employer organizations and their partners in the Skill Supply Chain meet their customers needs more effectively.

The chief challenge is to size a Skill Supply Chain to fit the community's niche, needs, and resources. The initial focus of a new Skill Supply Chain should be on developing a quality service for employers and participants. From small-scale successes, the focus can advance to expansion, incorporating these lessons on planning, marketing, fundraising, and partnership building. The result will be a system that is more responsive to employers—and that gives workers clear pathways for advancement through the labor market.



The primary objective of Workforce Innovation Networks (WINs) is to bridge the gap between employer demand for a skilled workforce and worker demand for marketable skills. To meet this objective, WINs builds the capacity of employer organizations to represent employers' interests regarding workforce development, to act as a workforce development resource for businesses, and to broker relationships among their membership, trainers, educators, and community partners. WINs not only increases the capacity of employer organizations to serve their members; it also provides low-skill and low-wage workers with wider opportunities for stable, well-paying jobs.

WINs is a partnership of Jobs for the Future, the National Association of Manufacturers, Center for Workforce Success, and the U.S. Chamber of Commerce's Center for Workforce Preparation, with funding from the Ford Foundation and the Annie E. Casey Foundation.

## RESOURCES

The following resources provide useful information on both the theoretical and practical concerns with linking occupation and employers in a Skill Supply Chain.

Dresser, Laura and Joel Rogers. December 1997. *Rebuilding Job Access and Career Advancement Systems in the New Economy*. Madison, WI: Center on Wisconsin Strategy Briefing Paper.

Bosworth, Brian. March 2000. *Working Together on Worker Training*. Workforce Innovation Networks Issue Brief, Boston, MA: Jobs for the Future.

Gershwin, Mary. October 2000. *From Stakeholders to Partners: Organizing Community Partnerships for Workforce Development*; Workforce Innovation Networks Issue Brief, Boston, MA: Jobs for the Future.

Fitzgerald, Joan and Virginia Carlson. June 2000. "Ladders to a Better Life," *The American Prospect*, Vol. 11 Special Issue on Making Work Pay.

Newman, Katherine S. 1999. *No Shame in My Game: The Working Poor in the Inner City*. New York, NY: Alfred A. Knopf and the Russell Sage Foundation.

National Alliance of Business, Work America. May 1998. "Knowledge Supply Chain: Managing K-80 Learning;" *The Business Force on Workforce Development*, Vol. 15, Issue 5.

Wisconsin Department of Workforce Development. April 1999. *High Performance Partnerships: Winning Solutions for Employers and Workers*. Madison, WI: Wisconsin Department of Workforce Development.



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