Talent Pipeline Management® (TPM)

ACADEMY CURRICULUM

TALENT PIPELINE MANAGEMENT ACADEMY

Orientation
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Unit 0.1

Welcome

Welcome to the U.S. Chamber of Commerce Foundation's TPM Academy® curriculum. This introduction is designed to familiarize you with the Talent Pipeline Management (TPM) initiative and to orient you toward the curriculum that you are about to explore.

TPM® started in 2014 as an effort to mobilize the business community to close the skills gap by applying lessons learned from supply chain management to education and workforce partnerships. If employers play an expanded leadership role as "end-customers" of a talent supply chain, they will be more effective at determining their most critical workforce needs, communicating those needs to trusted partners, and managing and improving performance.

Since 2014, the Chamber Foundation has co-developed and field-tested a set of strategies that, when implemented together, make for an end-to-end talent management approach. These strategies are intended to address what has been the missing piece—or weakest link—in many public-private partnerships, namely effective and sustained employer engagement and leadership. What these strategies provide is a systematic framework for how employers can engage in collective action regarding common workforce needs, better organize and share data related to those needs, and proactively engage talent-sourcing providers to build high-performing internal and external talent pipelines that get a measurable return on investment for learners and employers.

This need to enhance the employer's role in public-private partnerships has resulted in the creation of the TPM Academy, for which this curriculum was created. The Chamber Foundation considers this a living document, updated based on lessons learned from the field and contributions made by TPM practitioners. As the TPM movement grows, so will the resources available to the network. While this curriculum provides a structured framework and guide, it is also meant to be customized based on each community's unique needs and challenges.

The curriculum is composed of a TPM orientation and six strategies. The orientation is designed to familiarize you with what TPM is—and is not—and provides a self-assessment to determine whether the TPM approach is the right fit for your organization and community. The assessment can also determine your readiness to implement a TPM Academy to build employer capacity to execute TPM in your community.

In addition, the assessment explores options for where to start when building talent pipelines to address current and future needs. Options include starting with upskilling initiatives that better prepare current workers for success in new, emerging, or changing job roles and for career advancement. These upskilling initiatives would focus first on building the internal side of the talent pipeline, including career advancement for current workers to fill the most critical job openings. Another option is to start with a focus on improving the number and quality of new hires coming from education and training partners. This would focus on the external side of the talent pipeline.

No matter where you choose to start, TPM encourages you to gather data and make decisions based on that data. The resulting end-to-end talent pipelines can include both internal upskilling and external new hire strategies. Much more than a curriculum, the TPM Academy is also supported by a national network of peer practitioners and a set of web tools that are designed to facilitate implementation of the six strategies regardless of where you decide to start when building talent pipelines.

Should you not have an existing employer-led collaborative in place, Strategy 1 starts with identifying one or more challenges and focus areas and from there guides you through organizing and launching one or more collaboratives of your own.

Next, Strategies 2–4 provide a systematic process for employers to gather and share their workforce data in a format that can facilitate new career pathway partnerships or improve existing ones. Strategies 5–6 are designed to help employer-led collaboratives put their data to work by co-designing internal and/or external talent pipelines and continually improving them with trusted provider partners.

Whether you decide to forge your own path and make use of the TPM Academy curriculum as a complementary resource, are participating in the Chamber Foundation's TPM Academy, or are interested in launching a TPM Academy for your region, state, or industry, the TPM network stands ready to learn and evolve with you.

Are you ready to join the movement? If so, we hope you enjoy exploring the TPM Academy curriculum!

TPM: An End-to-End Talent Solution

TPM is a way of thinking, an orientation toward employer-led education and workforce partnerships in which employers are much more than advisors or beneficiaries. Instead, they are end-customers of talent supply chains. This does not mean employers are the only customers that matter, nor does it mean schools are factories or learners are widgets. What TPM provides is a systematic framework for how employers can engage effectively in producing information, facilitating partnerships, managing performance, and improving outcomes in career pathways. TPM can be pursued on its own as a new initiative or can provide a set of strategies, practices, and implementation supports designed to enhance the employer role in an existing partnership network.

What makes TPM unique is that it is an end-to-end talent management process that gives employers a framework, or playbook, for how to get organized so they can be better partners to education and training providers, but in a way that addresses the missing piece in many partnerships, namely employer return on investment. The TPM process itself is composed of six strategies that, when implemented together, provide a talent supply chain approach. The strategies are designed to build on each other and support employers in developing a more sophisticated data- and performance-driven approach to education and workforce partnerships that results in a positive return on investment for employers and learners.

See Table 1: TPM Academy Curriculum for a list of the strategies, what each strategy seeks to accomplish, and the estimated amount of time to implement each strategy. The curriculum is designed to support even new employer collaboratives in implementing the orientation and six strategies in one year or less. As you move through implementation, each strategy provides opportunities to demonstrate real and tangible progress to participating employers, even as you wait to measure their return on investment.

Table 1: TPM Academy Curriculum

	Chapter	Learning Outcomes	Estimated Time to Implement
Get Organized	TPM Orientation	Assess if TPM is a good fit and introduce the approach to your community	6 months
	Strategy 1: Organize Employer Collaboratives	Organize employers to address a skills gap for critical jobs and where to start	
Do Your Homework	Strategy 2: Engage in Demand Planning	Project the number of jobs needed across companies	3 months
	Strategy 3: Communicate Competency and Credential Requirements	Create a shared language for communicating hiring requirements	
	Strategy 4: Analyze Talent Flows	Identify current and future sources of talent	
Implement Solutions and Improve	Strategy 5: Build Talent Supply Chains	Designate preferred providers of talent and build internal and/or external talent pipelines	3 months
	Strategy 6: Continuous Improvement	Manage performance and engage in continuous improvement	

See Figure 1 for a closer look at the order in which you pursue each of the strategies. Take notice of how Strategies 2, 3, and 4 are recommended to execute together so your collaborative is producing all of the information necessary to make decisions (as part of Strategy 5) about which talent pipeline solution is a best fit for them.

Figure 1: TPM Basic Flow Chart

GET ORGANIZED

ORIENTATION

STRATEGY 1

GET THE FACTS STRAIGHT

STRATEGY 2

STRATEGY 4

STRATEGY 3

IMPLEMENT

STRATEGY 5

IMPROVE

STRATEGY 6

See Figure 2: TPM Advanced Flow Chart for a comprehensive view of the order in which you pursue each strategy and the key decision points you are asked to make as you progress through the framework. This flow chart also shows when you need to go back to collect more data based on the decisions your collaborative is making. For example, if your collaborative chooses to pursue an internal talent pipeline solution, then you may need to revisit Strategies 2, 3, and 4 to backfill those positions you are upskilling.

Figure 2: TPM Advanced Flow Chart

Do you have a talent sourcing challenge and partners ready to organize?

IF NO... Begin to explore other options. TPM may not be a good fit for you.

NOT SURE? Take the TPM self-assessment and organize a TPM orientation or workshop.

YES

STRATEGY 1
Organize Employer Collaboratives

TAKE ACTION Develop a plan for staffing and financing your collaborative and engage stakeholders

Have you determined the focus of your collaborative and secured buy-in?

KEY QUESTIONS Is there a shared need and do you have the capacity, willingness, ROI, and urgency in addressing that need?

YES

STRATEGY 2
Engage in Demand Planning

STRATEGY 3
Communicate Competency & Credential Requirements

STRATEGY 4
Analyze Talent Flows

STRATEGY 5
Build Talent Supply Chains

Will we build an internal or external talent pipeline, or both?

Do we need to backfill any positions as a result of upskilling?

YES

INTERNAL ← **BOTH** → **EXTERNAL**

YES/NO

TAKE ACTION: Identify preferred providers, build talent supply chains, collect performance data, and manage ROI

Based on data collected, can we improve performance?

NO → Continue collecting data and update talent pipeline partners

YES

STRATEGY 6
Continuous Improvement

NO

Have you seen improved performance or an increase in ROI?

YES → Scale solutions and continue collecting data and update talent pipeline partners

TPM Action Plan

INPUTS	• Employer leadership and participation • TPM framework	• TPM web tools • State and local stakeholders and resources

ACTIVITIES	1. Organize collaboratives 2. Engage in demand planning 3. Communicate competency and credential requirements	4. Analyze talent flows 5. Build talent supply chains 6. Continuous improvement

OUTPUTS	• Launch of new or improvement of existing employer collaboratives • Number and performance of internal and/or external talent pipelines	• New data on workforce projections; in-demand competencies and credentials; and analysis of existing or potential talent flows

EMPLOYER OUTCOMES & ROI	• Reduced number of unfilled job openings and increased number of qualified job candidates • Reduced onboarding and upgrading costs	• Improved career advancement and increased retention • Increased employee diversity and opportunity

SHARED VALUE CREATION	• Improved career guidance and job placement • Improved career advancement and employment stability	• Increased job placement rate for education and training partners • Improved graduate earnings and loan repayment rates

The TPM Action Plan can be used to help TPM practitioners track activities and progress. There is an action plan associated with each of the six strategies, which can be found after a strategy's learning objectives. Those participating in the TPM Academy can use the TPM web tool to store their data and share their progress via their online Action Plan.

Key TPM Terms and Definitions

In this section you will find a list of key terms and definitions frequently used in TPM. Because TPM is a paradigm shift in how we understand employer leadership in education and workforce partnerships, we use language in new and creative ways to describe how TPM is different. This initial list of terms will enhance your understanding of the TPM process and movement. The Appendix includes a longer and more complete glossary of TPM terms.

For those who are newer to workforce development, reading through the Chamber Foundation's *Managing the Talent Pipeline* white paper and *Building the Talent Pipeline* implementation guide is a helpful first step in familiarizing yourself with TPM and a talent supply chain approach. As you progress through the TPM Academy curriculum, you will dig deeper into the concepts and terms presented in those resources. For more seasoned workforce professionals, a review of TPM's principal concepts and terms can be useful in distinguishing it from other workforce development approaches.

Talent Pipeline Management (TPM)
An end-to-end talent management approach that is implemented by employers to source and develop talent for jobs critical to their competitiveness and growth. TPM is built on three principles and a six-strategy process (see Table 1: TPM Academy Curriculum) for building high-performing education and workforce partnerships that deliver a measurable return on investment for employers and learners:

- Employers Drive Value Creation—Employers play a new leadership role as end customers in closing the skills gap for jobs most critical to their competitiveness.
- Employers Organize and Manage Pipelines—Employers organize and manage flexible and responsive talent pipelines in partnership with other employers and their preferred education and training providers.
- Employer Measures and Incentives Drive Performance—Employers work collaboratively with one another to develop measures and incentives designed to reinforce and improve performance across all partners.

TPM as a Supply Chain Solution
TPM draws on the insights, strategies, and tools of supply chain management. Talent pipelines can best be seen as talent supply chains in which employers, working through employer collaboratives, play the role of end customers in a series of customer-supplier relationships with preferred providers (see Figure 3: TPM as a Supply Chain Approach).

Figure 3: TPM as a Supply Chain Approach
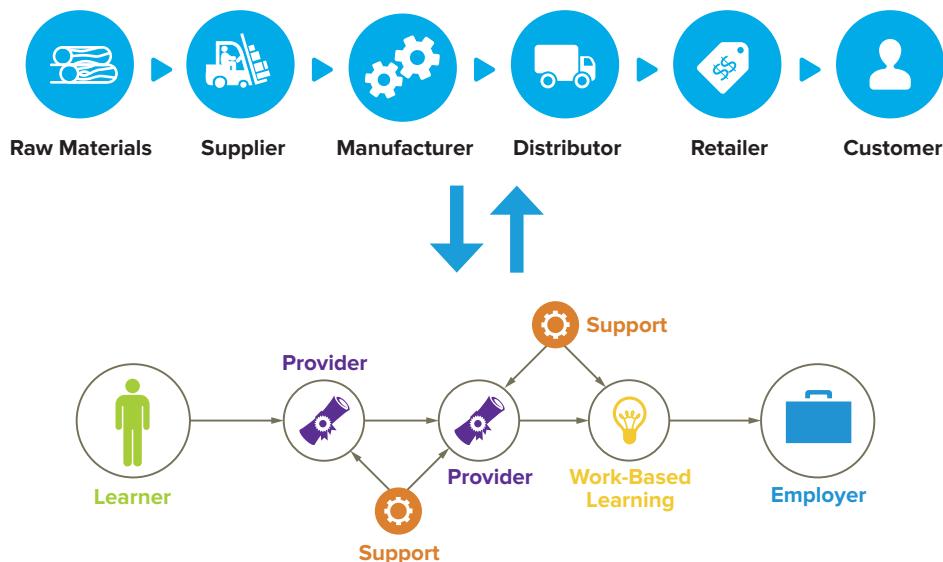
Comprehensive End-to-End Talent Pipelines

TPM promotes a comprehensive approach to building talent pipelines based on a value stream map. The value stream map (Figure 4) includes the internal side of the talent pipeline—the upskilling of current employees—as well as the external side of the pipeline—involving new hires. Internal and external pipelines should be coordinated so that no matter where you start your TPM process you have an end-to-end approach for new hires and upskilled workers.

Figure 4: Value Stream Map

Upskilling Current Employees

We define upskilling as adding to the skills of current employees of collaborative members to prepare them for success in:

- **New, Emerging, and Changing Job Roles** due to changing technologies and changes in how work is organized and carried out within companies and across their industries. This may involve the retraining of workers who must transition to new jobs because their current jobs are transforming.
- **Career Pathways** providing career advancement opportunities within and outside their companies.

Students and Workers as Learners
Learners are those individuals, who can include both students and workers, receiving education and training services.

Employers as End-Customers
Employers must take on the role of end-customers in the talent supply chain and must actively orchestrate and manage their talent pipelines to meet as well as possible their workforce needs and to create shared value for providers, learners, and employers.

Employers Form Collaboratives
Employer collaboratives are partnerships organized by employers so that they may address shared workforce needs, such as critical jobs or functions within their respective industry, with management support provided through a new or existing employer-led organization.

Education and Workforce Partners as Providers
Providers are any public or private organization that delivers education and workforce training, or any other type of talent services, to employers, learners, and job-seekers. These services include career guidance, education, training, recruiting, and job placement. Providers can be public employment agencies, private employment and staffing agencies, high schools, community colleges, universities, proprietary schools, or community-based nonprofit organizations.

Employers Designate Preferred Providers
In the TPM process, employers organize and manage flexible and responsive talent pipelines in partnership with their designated preferred providers, which are identified as primary sources of talent and talent services for critical jobs within an industry or company. Preferred providers could provide services for both upskilling current workers and the recruitment and preparation of new hires. Providers are designated by employers based on their proven capabilities and performance, or because they meet the employer's criteria to be a new provider of talent or talent services.

How Is TPM Different?

TPM is unique in many respects and can help activate consistent and reliable employer leadership in many types of public-private partnerships. Not all employer leadership and engagement strategies are the same. TPM uses a very specific approach and orientation toward partnerships that achieves a markedly different result; namely, it unlocks employer leadership in ways that produce an employer return on investment. Further, it is designed to sustain employer participation based on the measurable value and results it produces for participating employers.

But that is not all that makes TPM different. Below are a number of things that differentiate TPM from other partnership models and frameworks.

Built on Industry Best Practices: TPM activates employer leadership by speaking their language. Supply chain management is something employers know well and operates as a metaphor, providing a set of guiding principles, practices, and implementation tools that already have business buy-in.

Authentically Employer Led: Many initiatives and partnerships tend to engage employers as advisors without them playing a clear end-customer role. Seldom do employers lead these partnerships, but instead are often convened by other partners or intermediaries seeking to address employer workforce needs on their behalf. TPM is authentically employer led from day one—by employers, for employers—based on their ability to organize themselves and work through a process of producing and using data to make decisions that address their most critical and pressing talent needs.

Generates More Granular and Actionable Data on Employer Demand: Employers work through a systematic process to produce, aggregate, and harmonize data based on the workforce needs of the employers that make up a collaborative. There are data that any education and training provider are looking for to align curriculum, credentialing, assessment, and career services as part of a learning pathway. In TPM, education and training providers get granular data about workforce needs straight from the source.

Provides a Structured Process for Collective Action and Decision Making: TPM is a way of thinking, a framework, and a structured process that employers can follow to produce actionable data that get results. TPM follows a streamlined process of data production and decision making designed to produce high-performing career pathways that achieve a return on investment for learners and employers.

Engages the Full Spectrum of Talent Sourcing Partners: TPM does not assume key roles for any type of talent sourcing partner. What matters is employers engaged in TPM have organized the right mix of talent sourcing providers that can meet their most pressing talent needs. This includes both internal and external talent pipeline partners, or both. In TPM, employers have a choice in whom they work with when building internal and external talent pipelines, including what role those partners play (e.g., career preparation) and whom they work with (e.g., community colleges). TPM does not lock employers into any one type of partner or talent-sourcing solution, but instead gives them choice.

Creates Shared Value, Competitiveness, and Accountability: While TPM may be authentically employer led, it is a process that produces shared value, competitiveness, and accountability with preferred and trusted talent sourcing providers as well as learners. In TPM, as in supply chains, all partners are responsible for managing time, quality, and cost in delivering a career pathway that produces a return on investment for learners and employers. TPM is a team sport.

Focused on Employer Return on Investment: It cannot be stated enough: The number one differentiator for TPM is ability to produce a measurable employer return on investment that keeps employers engaged. Employer return on investment has often been the missing piece in public-private partnerships. Employer return on investment is not a replacement for supply-side inputs and outputs like program enrollment or completion, or even job placement and earnings. However, none of those metrics address the key drivers of cost for employers, such as the inefficiency and costs associated with having unfilled jobs. TPM unlocks a new value proposition for employer partners in many types of education and workforce partnerships.

Unit 0.4

Is TPM Right for You?

Perhaps you are an employer thinking through strategies and solutions for filling your most critical jobs or upskilling current workers. Or maybe you are a business association that is trying to help your employer members address their most critical workforce needs. Maybe you are an education and training provider seeking better alignment opportunities with employers to ensure your learners get better employment outcomes and upward mobility opportunities. Up to now, you have learned about what TPM is, but is it the right fit for your workforce needs?

It cannot be stressed enough that TPM is not the solution for every education or workforce challenge or problem. It is a focused approach, designed to guide employers through a process to produce a specific set of data that will be used to make decisions resulting in a talent supply chain. It is one of many approaches that exist for organizing employers in public-private partnerships, and it is more of a scalpel than a broadsword when it comes to its implementation.

What follows is some general guidance on whether TPM is the right tool for your specific challenge or opportunity.

Yes, TPM may be a good fit for you if you are an employer or employer collaborative looking to do the following:

- Address a workforce need quickly and need a talent pipeline solution that can produce a skilled workforce in two years or less.
- Address a workforce need, but one that requires additional training and development with longer lead times that may require more than two but generally fewer than four years.
- Build upskill pathways for front-line, existing workers to promote them to target jobs.

Yes, TPM may be a good fit for you if you are an education, workforce, or economic development partner looking to do the following:

- Repurpose employer engagement that has largely been advisory in nature, but for which you now want employers to play an end-customer role in a talent supply chain partnership.
- Gain better insight into the jobs, competencies, skills, demonstrations, and credentials that are most in demand among the employers with which you are seeking to align.
- Better align your programming to produce more streamlined, employer-led career pathways that yield measurable results for learners and employers.
- Demonstrate value to employers based on the return-on-investment metrics that are most important to them.

No, TPM is probably not a good fit for you if you are an employer or employer collaborative looking to do the following:

- Address a short-term need that does not require a longer-term solution.
- Find available talent today that does not require any additional education, training, or credentialing before or after initial hiring.
- Improve how you partner with education and training providers to enhance only one part or aspect of training and development, such as an internship program or career guidance.
- Better understand labor market trends or leverage data for strategic planning, but not for action.

No, TPM is probably not a good fit for you if you are an education, workforce, or economic development partner looking to do the following:

- Leverage the TPM process to support advisory board functions, but not change the employer's role.
- Sell or promote a particular program, credential, or solution to employers.
- Engage employers to standardize their jobs and adopt the same skills and credentialing requirements.

If based on the questions above you think that TPM is good fit for your workforce challenges, we recommend proceeding forward with a self-assessment to determine how ready you and your partners are to adopt TPM as a framework or to organize and launch a TPM Academy.

Unit 0.5

Self-Assessment and Entry Points to Implement TPM

If TPM seems like a good fit for your education, training, or workforce needs, we encourage you to assess your level of readiness to implement TPM as a framework. In general, there are three entry points: (1) getting to know TPM, (2) securing buy-in to adopt TPM as a framework and begin exploring options for where to start when building talent pipelines, and (3) organizing and launching a TPM Academy. Below you will find guidance, resources, and recommendations to help you determine how to advance your understanding of TPM and move toward full implementation.

Getting to Know TPM

Most people who find their way to TPM have heard something about it or talent supply chains, and are interested in learning more. If this sounds like you, then the best place to start is by familiarizing yourself with TPM by accessing some of the resources that are already available to you. This includes accessing our signature report and publications; website and videos; and other resources such as slides decks, recorded webinars, and one-page handouts that describe TPM at an introductory level. Each of these resources takes only a small time commitment to access and review. Some of the many resources available to you are listed in detail in the following section and are accessible online at www.TheTalentSupplyChain.org. After reviewing some or all of these resources, we encourage you to move on to the next step of securing buy-in for TPM as a framework.

TPM Support Resources

PUBLICATIONS

1 **Managing the Talent Pipeline:** A New Approach to Closing the Skills Gap (2014) — For those new to the concept of talent supply chains, this white paper conceptually lays out the TPM approach for how employers can close the skills gap by leveraging best practices from supply chain management.

2 **Building the Talent Pipeline:** An Implementation Guide (2015) — For those familiar with talent supply chains who are considering a TPM project, this resource provides a baseline understanding of the strategies.

WEBSITE

3 **TPM Strategy Videos:** This series of short videos on TPM includes, but is not limited to, (1) an overview of the TPM approach, (2) testimonials from TPM practitioners, and (3) overviews of each of the strategies and the signature TPM web tool.

4 **TPM Web Tool:** This software tool is designed to (1) provide a web presence for your employer collaborative, (2) automate much of the data collection described in the TPM Academy curriculum, (3) generate visualization tools to support your collaborative meetings, (4) provide access to a resource library with implementation supports, and (5) connect and share with peers from across the country. Note: the TPM web tool is currently available to only those participating in a TPM Academy.

5 **Presentation Slide Decks:** These generic TPM presentation slides and visuals can be customized to support a variety of meetings.

6 **Case Studies:** These short stories and blogs give voice to the experience of companies and TPM practitioners. Let us tell your story.

7 **Events:** Via the website, the Chamber Foundation will provide notifications of upcoming TPM-related conferences and events.

Once you have familiarized yourself with TPM and are still interested in learning more, we recommend that you contact the Chamber Foundation team to arrange a phone call or meeting.

Contact information for the Chamber Foundation team can be found on the website, or you can reach out to workforce@uschamber.com. In addition to setting up a meeting, our team will be happy to facilitate an introduction to a TPM peer in another city or state who has experience with socializing and implementing TPM. TPM is more than a curriculum or initiative, it is a movement made up of peers and practitioners learning together.

Should your interest continue, the next step is to arrange for a TPM presentation either via a webinar or at an in-person meeting, conference, or event that you are hosting in your community or with your peers.

You can also have TPM represented on a panel where the discussion is focused on enhancing or improving career pathways or employer engagement. This high-level introductory presentation can often build interest and excitement regarding learning more and holding a more focused, deep-dive conversation on whether this process is a good fit for your community and employer partners.

The Chamber Foundation team or a TPM practitioner will gladly make the trip and provide a presentation to interested stakeholders. All you need do is ask. Now that the TPM network is growing, it can be impactful to have a peer present his or her first-hand experiences with TPM, particularly if his or her community has faced a similar workforce challenge or has the same industry or critical job focus.

Securing Buy-In for TPM as a Framework and Exploring Options for Where to Start

Getting to know TPM and galvanizing interest among key partners in your community for implementing the TPM approach is a critical starting place. However, we strongly encourage you not to rush into implementation, but instead build on the momentum you have achieved toward laying a solid foundation for the successful adoption for TPM as a framework for your community.

If you have an interest in TPM and are looking to bring it to your community and employer partnerships, the first step is to educate your partners on what TPM is and, importantly, what it is not. This is best accomplished by first presenting on TPM at an existing conference to educate a broad community of stakeholders, including employers who might wish to participate in and tap into the unique benefits TPM brings.

Next, you should organize a larger, more focused meeting or workshop on the TPM process. This should be a half-day event designed to explore whether the community should adopt the approach and which employers and organizations are best suited to implement it first while others learn from their experience.

Participants in this meeting should include employers representing a wide variety of priority industry sectors, chambers of commerce, sector-based business associations, and economic development organizations that make up the demand side. Participants should also include staff from workforce boards, education and workforce agencies, and public policy leaders, such as mayors or other elected officials. Representatives from K–12 and postsecondary educational institutions and other training providers should also be included, in addition to members of existing public-private partnerships or collective action initiatives. It can help establish the initiative's credibility to have an executive from the host organization send the invitation to meeting participants.

TPM has many unique benefits and can transform employer leadership in a wide variety of education and workforce partnerships. However, it should not be sold as a "silver bullet" or a solution for every workforce problem, nor should it be seen as necessarily replacing efforts that are already underway. Expectations should be managed upfront, emphasizing that TPM is a value-add to efforts already underway, not a wholesale replacement. Many people in the community might perceive TPM as duplicative or no different from what some partners or intermediaries are already doing.

The meeting also provides a forum to answer questions and build a broad coalition of support for how to best leverage the TPM process as either a new initiative or as a value-add to existing activities.

The meeting or workshop should be organized to cover a range of topics and ensure there is time to reach your ultimate objective, which is securing buy-in and support for piloting the TPM process with select employers that are willing to be the first adopters. To help you prepare for the meeting, there are a number of resources available both in this chapter as well as on TheTalentSupplyChain.org including real-world examples, which are often the best resources for educating a broad community of stakeholders.

Exploring Options for Where to Start When Building Talent Pipelines

A topic that should be covered in your meeting or workshop is that employer collaboratives have many options in deciding where to start when building their talent pipelines. They have the option of starting at any point along the end-to-end talent pipeline. They could start with upskilling current workers, improving how newly hired workers are onboarded, or how they work with their partners to provide better career exploration and pre-employment training to get more qualified job applicants.

As we will cover in Strategy 1, employer collaboratives should start to explore the question of where to start based on the following considerations.

Shared Pain Points: Talent Management Challenges. What are the shared pain points and talent management strategies they want to address together? TPM is designed to address a wide variety of pain points and challenges, including, but not limited to:

- Unfilled Job Openings: Employers are not able to fill critical job openings with qualified talent in the time frames needed to meet business needs.

- Onboarding, Training, and Upgrading Costs: Employers have to increase spending to onboard recent hires, as well as train and upgrade existing workers.

- Career Advancement, Turnover, and Retention: Employers are struggling to retain talent and/or are not able to provide career advancement opportunities for current employees to fill critical job openings, resulting in workers leaving the company and/or the industry.

- Increasing Diversity and Opportunity: Employers are not able to increase the diversity of employees and applicants, expand economic opportunity, and promote equity.

Some of these pain points and challenges may require more initial attention on upskilling current workers and improving internal pipelines while others may require more focus on improving external pipelines. For example, retail employers may want to improve career progressions and reskill existing workers to improve retention, or a group of manufacturers may use upskilling to facilitate skill attainment and career advancement through an apprenticeship program. Another group of employers may want to focus on increasing diversity by sourcing from underutilized external talent providers.

Capacity and Willingness to Work Together. Where do employers have the highest level of capacity and willingness to work together? Do we have the capacity and willingness to work together on upskilling challenges? Or with talent sourcing providers on improving external pipelines? Or both?

Potential Impacts and Urgency in Getting Results. Where can we have the largest impacts? If we have immediate and pressing needs, where can we produce the greatest impact in the shortest period of time?

But Always Emphasizing the Need for Making the Final Decision Based on Data

In presenting these options, it is important to emphasize that employer collaboratives should make some initial decisions and then continuously reevaluate these decisions based on data. Strategies 2, 3, and 4 are focused on getting the facts straight before making the final decision on where to start building talent supply chains in Strategy 5.

For example, the employer collaborative may consider two pain points—one focusing on increasing the number of qualified applicants and another on upskilling workers. After reviewing their job projections data collected during Strategy 2, the collaborative members decide that they do not have sufficient projected job openings to focus first on increasing the number of qualified job applicants. Instead, they decide to prioritize upskilling.

Another example is where a similar collaborative going through Strategy 3 discovers that they have sufficient agreement on the most important changes in competency hiring requirements to start with upskilling current workers. Yet another collaborative engaging in Strategy 4 decides that they have untapped talent sourcing options that could have immediate impacts on improving the number of qualified applicants.

And Underscoring the Need for a Comprehensive End-to-End Approach Regardless of Where You Start

In reviewing these options, it is important to always remind employers and community partners that the TPM framework provides a comprehensive end-to-end approach for building both internal and external talent pipelines. And, it is important to make sure that wherever you start, you are always taking actions consistent with this comprehensive pipeline methodology.

For example, if you start with upskilling and expanding career pathways for current entry-level workers, then you want to make sure that these entry-level jobs can be easily back-filled with qualified new hires from existing or new talent sourcing partners.

If you focus on new hires, you want to make sure that existing employees have the opportunity to meet the same skill and credentialing requirements that are included for new hires. In most cases, employers will need to eventually incorporate both upskilling and new hire strategies to be successful in the long run.

Outline & Objectives for a TPM Workshop or Meeting

In addition to exploring where a collaborative may start when building talent pipelines, there are key components to include in a TPM workshop or meeting. The first half of the meeting or workshop should include a general presentation of the TPM movement and process. It should provide a forum to answer any questions about TPM and give examples of where TPM has been implemented successfully. It should also provide ample time for employers and key business associations to articulate what they believe are the key workforce challenges, where they see TPM potentially adding value, and what they believe has and has not worked in prior initiatives in which they have participated.

The second half of the meeting or workshop should focus on identifying where to potentially start (see previous section that presents how to gather information and facilitate early onset conversations with employers) and how to secure buy-in from key stakeholders who will be tasked with implementing the TPM pilot. Economic development and labor market experts should be provided an opportunity to present data on where they believe the biggest opportunities are in terms of addressing the skills gap in priority industries that are critical for the state or local economy. This information can be supplemented by any recently commissioned research or reports from business associations or economic and workforce development organizations.

Once these presentations are complete, participating employers should be provided the first opportunity to react. They should (1) confirm that the sectors and skills gaps identified in the presentations are indeed the correct ones on which to focus, (2) identify employer champions and secure sufficient buy-in from a number of employers to pilot the TPM process, and (3) identify which organization will take the lead on organizing employers and implementing the TPM process.

COMMON QUESTIONS THAT EMPLOYERS MAY POSE IN A MEETING

1. How is TPM different from other partnerships in which we have participated?
2. How does TPM address concerns about sharing proprietary data or compromising our competitive advantage?
3. What types of benefits do employers receive from participating in the process?
4. Where should we start? Are there advantages to focusing on upskilling current employees vs. sourcing new hires? Should we do both?
5. When should we expect to see results?

Next, an opportunity should be given for education, workforce, and economic development stakeholders to provide feedback on whether they see this process as adding value to their efforts to improve on their employer partnerships in the priority industry sectors identified.

To support this discussion, we recommend using the chart found in Figure 5: Example of Public Partner Roles and Benefits in Talent Pipeline Management, which identifies the unique ways state and public agencies can contribute to TPM as well as benefit from it.

COMMON QUESTIONS THAT EDUCATION, WORKFORCE, AND ECONOMIC DEVELOPMENT STAKEHOLDERS MAY POSE IN A MEETING

1. Why are we not included in the initial meetings of the employer collaborative?
2. Where do we fit in the process and when should we expect to be engaged?
3. How exactly do we benefit?

The meeting should conclude with reiterating what the group agreed to do and how participants plan to leverage TPM, including which organization is taking the lead to coordinate stakeholders.

The organization that takes the lead should document clear next steps and disseminate them to the group. These next steps should include how the host organization will continue to enlist broader community and employer support. Should you be interested in leveraging TPM as a framework and plan to forge your own path, we encourage you to make use of the TPM resources. If you are a member of a TPM Academy cohort, you are ready to proceed to Strategy 1. Or, if you believe a TPM Academy is the vehicle that will move your workforce development initiatives forward, go to the next step of organizing and launching a TPM Academy.

Draft Agenda for TPM Workshop

     I.   Welcome and Introductions
     II.   Overview of the Agenda
     III.   What is TPM?
     IV.   Employer Reactions
          a.   What questions do you have about TPM?
          b.   What are the key workforce challenges faced by your industry?
          c.   What has worked and what has not in prior or existing initiatives?
          d.   Where should we start when improving our talent pipelines?
          e.   Can TPM add value?
     V.   Stakeholder Reactions
          a.   What questions do you have about TPM?
          b.   Do you have any concerns?
          c.   What has worked and what has not when it comes to employer engagement in prior or existing initiatives?
          d.   Can TPM add value?
     VI.   Next Steps
          a.   Which organization will lead?
          b.   How can we enlist and maintain community and employer support?
          c.   Do we want to organize and launch a TPM Academy?
          d.   When will the next meeting occur?
     VII.   Adjourn

Launching TPM in Kentucky Case Study
Creating a Process for Buy-In

This case study presents an approach taken by TPM practitioners to socialize the TPM approach in communities.

The Workforce Center at the Kentucky Chamber of Commerce faced two challenges when it decided to implement TPM statewide:

1. How would it convince employers and other stakeholders to support this new workforce effort?

2. How would it persuade business leaders to participate in a multi-employer collaborative?

To raise awareness about the TPM process, the Workforce Center team participated in a series of local informational meetings across the state. Team leadership contacted local chambers to see if they would sponsor a meeting for employers and other community stakeholders interested in workforce development.

Many local chambers were anxious to drive change in these efforts. But sometimes the best champions were leaders of workforce investment boards, economic development groups, or even local chapters of the Society for Human Resource Management. In each case, the Workforce Center team worked with the local chamber to identify the community's workforce development leaders, which included, but were not limited to, employers, educators, workforce investment boards, and public policy experts. The Workforce Center provided sponsors with invitations, marketing materials, and draft press releases to promote the event.

Over four months, the Workforce Center led more than 40 meetings around the state, each lasting one to two hours. Each meeting was kicked off using national and state data to show that the talent shortages required a different approach. The Workforce Center outlined TPM's six strategies, described the state chamber's plan for rolling out the process, and explained how Kentucky companies could become more active participants in creating streamlined transitions from education to employment. The Workforce Center expected tough questions and anticipated skeptics would be in attendance at some of the events. They came to meetings prepared.

The Workforce Center kept track of attendance and those who expressed interest in getting engaged in TPM. As a result of these meetings, the Workforce Center had a comprehensive list of employers for potential collaboratives and supportive suppliers, as well as insight into existing collaboratives with which to partner.

In many cases, the Workforce Center followed up the community events by traveling to meet one-on-one with employers to learn more about their workforce problems and to get their agreement to attend a collaborative meeting. The TPM buy-in process also included convening smaller meetings of employers to begin forming collaboratives. For example, groups in healthcare and construction were started before the series of local meetings finished.

The Workforce Center came away with the understanding that the TPM Orientation is the most challenging step because earning trust and building relationships takes time. Gaining buy-in for the TPM process proved so critical because any backfiring on the TPM Orientation will make it unlikely that partners will implement the remainder of the TPM process. Kentucky now has at least 21 employer collaboratives at work.

After reviewing the exercise, discuss the following:

1 What essential steps did the Kentucky Chamber's Workforce Center take in socializing a TPM approach for addressing skills gaps and building employer-led career pathways?

2 What questions would you anticipate from skeptics or critics and how would you prepare?

3 How can you apply insights from the Kentucky TPM rollout process to your own situation?

Figure 5: Example of Public Partner Roles and Benefits in Talent Pipeline Management

State and Public Partners	Roles	Benefits	Related TPM Strategy
Governors' Offices	- Coordinate state agency leadership to support implementation of TPM - Support launch of TPM in partnership with employer collaborative leads - Help articulate the benefits of TPM to state and local/regional organizations	- Close the skills gap in critical sectors - Provide career pathways for learners and upskill opportunities for existing workers - Improve employer leadership in education and workforce systems - Leverage employer investment - Activate performance-based partnerships	- TPM Orientation Workshop - Strategy 1
Economic Development Organizations	- Provide research and data on critical growth sectors to identify highest priorities for employer collaboratives - Engage local/regional economic development organizations in establishing collaboratives - Target grants and incentives to performance-based, employer-led partnerships	- Leverage employer collaboratives for business development, expansion, and retention efforts - Improve collaboration between employers and local and regional economic development organizations	- TPM Orientation Workshop - Strategy 1
Labor and Workforce Agencies and Partners	- Provide research and data on critical growth sectors and projected new and replacement job openings in these sectors and related skill requirements - Update eligible training provider lists and career guidance tools based on talent flows and employer-designated preferred providers - Provide analysis on talent inflows and outflows from preferred providers - Target grants and incentives to performance-based, employer-led partnerships that support internal and external talent pipelines - Engage in continuous improvement efforts with employer partners	- Create access to more granular labor market information on how employers (1) define their most critical jobs, (2) project job openings, and (3) describe hiring requirements (including required and preferred credentials) - Create better career pathway mapping from employer collaboratives, including internal pipelines and career advancement opportunities - Improve access to work-based learning opportunities and on-the-job training - Improve employer metrics and ROI information with preferred providers - Improve performance on federal and state program metrics	- TPM Orientation Workshop - Strategy 1 - Strategy 2 - Strategy 3 - Strategy 4 - Strategy 5 - Strategy 6
Education Agencies and Partners	- Align curriculum to meet employer competency and credential requirements - Coordinate feeder institutions and programs to build performance-based career pathways to targeted sectors and employer collaboratives - Align career guidance, work-based learning, and job placement services - Provide data on program enrollments and completers to support talent flow analysis - Engage in continuous improvement efforts with employer partners	- Establish more granular and actionable information on employer demand and skill and credentialing requirements - Improve feedback on partnership performance and how employers benefit - Establish better information on talent inflows and outflows among institutions, programs, and employers - Give priority access to employer-provided incentives, such as work-based learning placements - Improve job placement, employment outcomes, and career advancement opportunities for learners - Eliminate barriers for program enrollment	- TPM Orientation Workshop - Strategy 2 - Strategy 3 - Strategy 4 - Strategy 5 - Strategy 6

This chart demonstrates how coordination among critical stakeholders can enhance a TPM project through transparency about activities and intended outcomes. Roles will vary for each TPM project based on factors such as which organization is leading the TPM effort, what existing initiatives are taking place, which organizations are involved, and the employer collaborative members' ability and willingness to collect and share information with partners, to name a few.

Organizing and Launching a TPM Academy

Having successfully built momentum in your community, you are now ready to organize and launch a TPM Academy in partnership with the Chamber Foundation, should you decide an Academy will help move your workforce efforts forward. The Chamber Foundation can provide the TPM Branding Guidelines to help you navigate how to classify your TPM Academy.* Below are the recommended next steps to follow after successfully completing a TPM workshop and securing buy-in from key stakeholders:

Identify a Coordinator and Fundraise: At the workshop or meeting, one or more coordinating organizations should have been identified. An organization must now take the lead in organizing a TPM Academy in partnership with the Chamber Foundation team. This organization should then work with the Chamber Foundation to identify fundraising opportunities to support the launch of a TPM Academy and address any short-term capacity needs for supporting the initial collaboratives. These collaboratives can be newly formed or build off of an existing partnership.

Consult Other TPM Partners in the Network and Learn from Their Experience: At the same time that the lead coordinating organization is fundraising, it should engage other coordinators through the TPM network to learn from its expertise. This can include advice on how to recruit participants and supporters, manage relationships and expectations with public partners, fundraise, manage communications, and stage the TPM Academy's implementation. Several TPM Academy coordinators participate in regular calls with their peers to learn from one another's approaches and experiences as they continue to oversee implementation activities and orchestrate new TPM Academies.

Continue to Build Support with Public Partners: As coordinators organize their first TPM Academy, it is important that they continue to engage and serve as points of contact for public partners and government agencies. These partners will remain interested in the work that employers are preparing to undertake and will need to be kept in the loop on progress made and how they can assist or support, and when. TPM Academies are commonly launched with the support and backing of public-sector partners, which helps build credibility for the coordinating organization and the TPM Academy.

Determine Where to Start and Recruit TPM Academy Participants: Coordinators will need to establish a process for recruiting participants for the TPM Academy. This includes determining potential focus areas and where to start, as well as the right size, balance, and composition of the TPM Academy. If organizing a TPM Academy, they are usually attended by 20–30 individuals

*A TPM Academy is facilitated by the U.S. Chamber of Commerce Foundation in partnership with designated leaders from the TPM network who have first-hand experience executing TPM projects. If you are not recognized as a TPM Academy faculty member, training of the curriculum is not recognized by the Chamber Foundation.

representing as many organizations. Some coordinators have instituted a formal application process for prospective participants to screen for partner willingness, readiness, and capacity to implement the TPM approach. Use the TPM Coordinator Toolkit for a comprehensive overview of how to prepare for a successful Academy.

Prepare Your TPM Academy Participants: At an informational meeting, participants will likely want to know what is expected of them prior to committing to the TPM Academy. Sharing TPM resources and documents with future TPM Academy participants will help communicate in advance what is expected of them and the employers they hope to organize.

Organize Your TPM Academy Launch: Some coordinators choose to organize a launch event that features a reception and attendance from community leaders and local media partners. Often, launch events immediately precede or follow the first TPM Academy meeting. Coordinators will want to organize and implement a media and communications strategy prior to and during the launch event to maximize their ability to reach a wide audience. This is also a great opportunity to celebrate the pioneer organizations, employers, and funders that have taken a chance to be part of something new and exciting.

New Collaboratives Start with Strategy 1: Once launched, TPM Academy participants will need to determine whether they are launching a new employer collaborative or if they are leveraging TPM with an existing collaborative. For those that are starting anew, it is helpful to begin with Strategy 1 of the TPM curriculum to learn how to organize, staff, and finance an employer-led collaborative built specifically for implementing and sustaining talent supply chain solutions.

Existing Collaboratives Start with Strategies 2–6: TPM Academy participants starting with an existing employer collaborative have the option to accelerate their curriculum and move directly to Strategies 2–6. However, many existing collaboratives can benefit from learning about the TPM approach for organizing, staffing, and financing an employer-led collaborative, which can unlock unique benefits as well as position the collaborative for sustainability based on its delivery of a return on investment to employers. Strategy 1 is also important for helping employer collaboratives decide where to start.

Welcome to the TPM Family!

Should you successfully move through the TPM self-assessment and participate in or launch a TPM Academy, we would like to welcome you to the TPM family! Whether a practitioner, coordinator or participant, you are now part of a growing, employer-led movement to build high-performing career pathways. We look forward to supporting your leadership and we hope to learn from your experience. Do not be frustrated by setbacks or failures. They are lessons that will improve the TPM movement and network. And do not be shy about sharing your success.

Welcome and best of luck!

Acknowledgments

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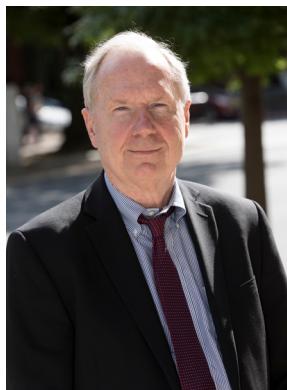
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TPM *Academy* ®

TALENT PIPELINE MANAGEMENT ACADEMY
Strategy 1: Organize Employer Collaboratives

Strategy 1
Table of Contents

Introduction

States and communities across the country are organizing public-private partnerships to engage employers in addressing critical workforce needs. Many of these efforts have been launched by elected officials, government agencies, employer organizations, and education institutions. In recent years, there has been a growing consensus that these initiatives must be **demand driven**—focused on skilled jobs where there are, or will be, significant job openings with high earning potential.

However, even demand-driven initiatives vary widely in their level of employer engagement and the roles employers play when they are involved. As a result, demand driven does not always equal employer led. The U.S. Chamber of Commerce Foundation's Talent Pipeline Management® (TPM) initiative is an employer-led approach that organizes the business community into **employer collaboratives** to address its most critical workforce needs using **talent supply chain** strategies and practices.

Strategy 1 shows why and how you will plan and implement an employer collaborative. To do this, it does the following:

- Makes clear why employer collaboratives are a different approach to building demand-driven public-private partnerships
- Shows how to identify the most promising opportunities for establishing these collaboratives and where to start when building talent pipelines
- Defines options for organizing and managing these employer groups
- Provides guidance on how to engage employers and key stakeholders in starting your first collaborative and gain their buy-in

Strategy 1 Learning Objectives

1   Identify the key features and benefits of employer collaboratives and how they are different from other approaches.

2   Determine the focus of an employer collaborative and explore where to start when building internal and external talent pipelines.

3   Organize and finance an employer collaborative.

4   Engage employers and key stakeholders in establishing an employer collaborative.

Strategy 1 Action Plan

	1.2 Determining the Focus of a Collaborative and Where to Start	1.3 Organizing and Financing a Collaborative	1.4 Engaging Partners and Planning Initial Collaborative Meetings	TPM Web Tool
ACTIVITIES Actions taken to achieve desired outcomes	• Identify potential focus areas/pain points • Evaluate employer capacity and willingness to work together • Evaluate potential impacts and urgency in getting results	• Determine whether to build on existing or start new collaboratives • Identify host organization(s) for each collaborative • Update geographic scope if needed • Determine financing approach, staffing plan, and preliminary budget	• Develop the value proposition • Engage employers and communicate with partners • Set expectations (data collection, building the supply chain, measuring success, sharing results)	• Create identity for collaborative • Develop sustainability plan for member engagement
MILESTONES Progress points marking significant development	• Identify pain point: critical business functions and jobs, talent management challenges, geographic area for establishing a collaborative • Assess employer capacity/willingness to work together	• Agreement on host organizations, geography, financing approach, staffing plan, and preliminary budget	• An effective elevator pitch to employers interested in joining the collaborative • Agreement on strategy for engaging education/training providers and other stakeholders	• Agreement on brand and website for tools to identify and manage collaborative • Send web tool invitation
OUTPUTS Achievements resulting from actions	• Number of identified focus areas and where to start	• Number of identified host organizations and focus areas, percentage established and active • Number and percentage of employer collaboratives funded at least in part by employers • Degree of employer "skin in the game" relative to potential ROI and compared to costs associated with pain point	Number and percentage of: • Employers contacted that joined and remained active • Providers and other stakeholders who support the collaborative	• Number and percentage of employers joining the collaborative who accepted TPM web tool invitation

*Unit 1.1: Employer Collaboratives – Why They Are Needed and What Makes Them Different covers educational information and therefore is not included in the Strategy 1 Action Plan. However, this resource is meant to serve as a guide and is not an exhaustive list of all the activities, milestones, and outputs your collaborative can achieve.

Key TPM Terms and Definitions

Here are the concepts that are most critical for understanding and executing Strategy 1. These terms appear in the order in which they are listed below and are highlighted in green throughout the chapter.

Demand Driven
A focus on skilled jobs that are in demand, based on labor market information.

Employer Collaborative
A partnership organized by employers, for employers to collectively address shared workforce needs. The collaborative is bolstered by management support provided through a new or existing employer-led organization of the collaborative members' choice. Employer collaboratives are different from most public-private partnerships in that they are organized and managed to maximize responsiveness to employers as end-customers and to deliver an employer return on investment.

Talent Supply Chain
An end-to-end talent management process made up of employers as end-customers and education and workforce partners as providers, with each playing key roles in adding value to the development of talent. Talent supply chains can be developed by individual employers or by multiple employers acting together as employer collaboratives.

Talent
Individuals who have the skills and credentials that drive competitive advantage within a company and industry.

End-Customers
Employers that are developing and implementing a talent supply chain to address a workforce need that results in a measurable return on investment.

Provider
The role education and training partners play in providing services designed to deliver talent for employer end-customers in a talent supply chain.

Shared Pain Point
A common area of need across employers that have come together to form an employer collaborative. Shared pain points should provide the starting point for defining the focus of an employer collaborative.

Business Function
The type of business or economic activity that is critical in making products or providing services at one or more establishments (see **Establishment** definition). It may or may not be defined as a primary activity for purposes of North American Industry Classification System (NAICS) coding of business establishments, and it may be carried out by one or more occupations. Examples include logistics planning, warehousing, machining, engineering, and nursing.

Establishment
A single physical location (e.g., plant, office) of a company that may have multiple locations or facilities. Establishments carry out business or economic activities as typically defined under NAICS. More detailed examples of business or economic activities include industrial machinery manufacturing, computer systems design and related services, and specialty surgery and primary care.

Host Organization
The organization that houses and provides the staff and management support for one or more employer collaboratives. Host organizations are different from traditional intermediaries in that they are business member organizations (e.g., chambers of commerce, industry sector-based associations) or economic development organizations dedicated to business growth and competitiveness and are chosen or affirmed by the employer members to manage and staff employer collaboratives.

Occupation
The type of job or job family that is typically used to classify workers into occupational categories based on the Standard Occupational Classification system (commonly referred to as SOC code) or another classification system. Employers use a variety of job titles that can be crosswalked to one or more occupations. Examples include registered nurse, machinist, and engineer.

Industry
The type of primary business or economic activity carried out in a business establishment as typically defined under NAICS. Examples of major industry categories include manufacturing, healthcare, and information technology.

Upskilling
Adding to the skills of current employees of collaborative members to prepare them for success in:

- **New, Emerging, and Changing Job Roles** due to changing technologies and changes in how work is organized and carried out within companies and across their industries. This may involve the retraining of workers who must transition to new jobs because their current jobs are transforming.
- **Career Pathways** providing career advancement opportunities within and outside their companies.

Secondary Labor Market Information
Information and analysis about the level of workforce demand by industry generated through reviewing labor market information reports (e.g., state occupational projections) or through aggregating job posting data (e.g., real-time labor market information).

Primary Labor Market Information
Labor market information provided directly by employers and other participants in labor markets (e.g., workers). TPM uses primary labor market information from employers in a collaborative regarding their level of workforce demand.

Value Proposition
The unique value and benefits achieved for key stakeholders based on following the TPM process.

Bottom-Line Measure
The talent-related performance measures that have the most direct and highest impact on the overall profitability and performance of the business.

Shared Value
The value that is created for employers, education and training providers, and the learners they serve—as well as society in general—when employers play an expanded leadership role as end-customers of talent supply chains.

Unit 1.1

Employer Collaboratives – Why They Are Needed and What Makes Them Different

State and local demand-driven approaches place a high priority on engaging employers in public-private partnerships to address workforce needs. Many of these public-private partnerships bring employers to the table in an advisory role along with other community stakeholders. Neutral intermediary organizations usually manage these partnerships rather than organizations chosen by employers. Employers participate in these partnerships for many reasons. Some hope to improve access to qualified **talent** whereas others participate as corporate citizens hoping to help their communities.

In contrast, employer collaboratives are organized by employers, for employers to address a core business need in sourcing talent, and are financed in part by employers themselves. Rather than employers coming to the table as one of many stakeholders, they instead come to the table as **end-customers** ready to manage a talent supply chain. In other words, employer collaboratives help employer members play an expanded leadership role in education and workforce partnerships.

What Employer Collaboratives Do

Employer collaboratives play a critical role for employers and the larger public-private partnerships with which they engage. Employer collaboratives do the following:

- **Organize Demand Data and Share with Partners**
  Collaboratives organize employer data on their most critical workforce needs and share this information with preferred and trusted **providers** by forecasting the level of demand (Strategy 2), communicating hiring requirements (Strategy 3), and mapping internal and external pipelines with existing and potential talent sourcing providers (Strategy 4).

- **Manage Talent Supply Chains and Improve Performance**
  Collaboratives also organize and incent data-driven internal and external talent supply chains with preferred providers (Strategy 5) and improve the partnership based on performance data collected by talent supply chain partners, including employers (Strategy 6).

Why Are They Needed?

Employers can accomplish more by working together than they can working alone in addressing their most critical workforce needs. Collaboratives provide the following benefits for employers:

- **Focus on the Most Critical Needs and Pain Points**
  Collaboratives can focus on employers' most pressing shared needs that are important to their competitiveness—called **shared pain points**—including critical **business functions** and jobs and specific sourcing problems such as recruitment of new hires, onboarding, career advancement, retention, and increasing diversity.

- **Stronger Brand Recognition**
  Employers can improve their individual business' visibility to providers and learners regardless of their size.

- **Clearer Communication**
  Employers can speak in one voice and better communicate their job projections and talent needs—including competency and credential requirements—with trusted providers and current employees interested in career advancement opportunities.

- **Shared Expertise**
  Employers can learn and improve together to engage in more effective talent supply chain practices.

- **Improved Leverage for Getting Results**
  Employers working together are more likely to get better responsiveness from providers the collaborative hopes to engage with. There is strength in numbers.

- **Added Value for Small Employers**
  Small employers commonly do not have the internal resources or leverage to get the same results as larger employers. Collaboratives provide the needed capacity and leverage to get similar results for small businesses

Education and training providers need employer collaboratives because they do the following:

- **Determine Demand**
  Collaboratives provide a systematic approach and process for determining the most critical jobs and organizing their demand data so they can be shared productively with partners.

- **Engage Employers**
  Collaboratives solve the most common problem of employer engagement because employers:

  - Make the decision to organize and participate in a collaborative to meet their most critical workforce needs;

  - Have major "skin in the game" to stay engaged because they are the primary funders of the collaborative; and

  - Have more buy-in and will share sensitive information about their workforce needs through a **host organization**, either of their choice or where they are already engaging one another, in which they have decision-making authority to ensure there is an employer return on investment.

Why Are They Different?

There are distinctions and benefits of employer collaboratives compared with other public-private partnerships. See Table 1.1: Comparing Public-Private Partnerships with Employer Collaboratives, for a side-by-side comparison of how employers engage differently in a TPM employer collaborative.

Table 1.1: Comparing Public-Private Partnerships with Employer Collaboratives

Feature	Public-Private Partnerships	Employer Collaboratives	Benefits of Employer Collaboratives
Employer Objectives	- Corporate social responsibility - Corporate citizenship - Address skill needs	- Address skill needs	Collaboratives provide more meaningful employer engagement and focus on solving member talent needs.
Members	- Businesses - Business and industry associations - Labor unions - Education - Government - Nonprofit organizations	- Businesses - Business and industry associations	Employer members can speak more openly about their needs and which providers can best address their needs.
Governance	- Multi-stakeholder board with business representation, but playing a largely advisory role	- Business member board or committee making all strategic decisions	Employers control key decision making within the collaborative.
Functions	- Strategic planning - Labor market research - Advocacy - Develop and manage public-private initiatives	- Determine critical shared workforce needs - Jointly communicate hiring needs and requirements - Broker workforce solutions with providers - Collaborate on upskilling opportunities - Measure performance and give incentives to providers	Employers focus only on those "value-adding" activities that directly address their talent needs and solve their talent shortages.
Finance	- Government grants - Foundation grants - Business donations - Shared and leveraged public funding	- Business member dues - Business donations - Seed funding from government, foundations, and business associations	Employer members have "skin in the game" and will focus on those activities that provide a return on investment.
Management Support	- Government agency - Neutral third-party intermediary	- Business-led organizations chosen by collaborative members	Staff works for and is directly responsive to employer members.

Vermilion Advantage Case Study

The example below illustrates a real world example of how an employer collaborative can be created, organized, and funded.

In 2002, the Vermilion County Economic Development Corp. and the Danville Chamber of Commerce merged into Vermilion Advantage—an employer-led, membership-based nonprofit organization. The mission of Vermilion Advantage is to "serve as a partner in growth and enhancement of the general welfare, prosperity and overall economy of Vermilion County, its people, and business." Vermilion County is located in East Central Illinois along the Illinois/Indiana border. Danville is the county seat.

Vermilion Advantage was established during a time of growing concerns about economic development, the need for a competitive workforce, and the failure of previous efforts to address this need. In advancing its workforce agenda, Vermilion Advantage started a manufacturing employer network to address the needs of manufacturers that expressed the most concerns about a competitive workforce. After the success of this working group, Vermilion Advantage created four employer networks very similar in function to employer collaboratives in (1) manufacturing, (2) logistics, (3) healthcare, and (4) technology and services. Employers can join one or more of these networks based on what critical business functions they carry out within the county.

In joining one or more of these employer collaboratives, employers pay a membership fee to cover the staff time required to support the core activities of the collaborative, including an annual demand planning survey for projecting job openings, which is shared with providers in the community to improve responsiveness to employer needs. Members agree to complete the demand planning survey and actively support the collaborative in carrying out its initiatives. Members can make additional donations of time and resources to support these initiatives. Staff provided by Vermilion Advantage support these employer collaboratives.

After reviewing the exercise, discuss the following:

1 Using Table 1.1, identify the key features that make Vermilion Advantage an example of an employer collaborative.

2 Identify at least one existing public-private partnership in your community and describe how it is similar to or different from the employer collaborative organized by Vermilion Advantage.

Unit 1.2

Determining the Focus of a Collaborative and Where to Start

Now that you understand what employer collaboratives are, why they are different from public-private partnerships, and the potential value they can provide employers in your community, we will start to develop an action plan for developing an employer collaborative.

One of the first steps in organizing an employer collaborative is defining an area of focus. The focus of the collaborative should be (1) a shared pain point on which its members' competitiveness depends (2) on which employer members have the capacity and willingness to address, (3) with an evaluation of the urgency and potential impacts for results. It is important to understand what components make up a pain point, and then do your homework to determine which ones are the most important to address along with the other considerations when determining an area of focus; we present the material in this unit as such.

Determining the Focus:
Critical Dimensions of Shared Pain Points

The identity of an employer collaborative is based on the shared pain point it seeks to address. A focus area or shared pain point has three critical dimensions:

1 **Critical Business Functions and Jobs**
Employers can define their pain points in many ways, such as in terms of business functions inside their companies (e.g., warehousing, nursing, precision machining, welding, customer service) or by specific job titles and occupational categories (e.g., machinist, registered nurse).

In some cases, these business functions and **occupations** are within one major **industry**. In other cases, they are spread across multiple industries, as is the case in information technology jobs (e.g., software development, network administration).

2 **Talent Management Challenges**
Employers can experience many different types of pain in finding, hiring, training, retaining, and **upskilling** workers for these critical business functions and jobs. Talent management challenges provide the basis for determining employer return on investment and are critical to sustaining employer engagement. These challenges can be expressed in many different ways, such as the following:

- **Unfilled Job Openings**
  Employers are not able to fill critical job openings with qualified talent in the time frames needed to meet business needs.

- **Onboarding, Training, and Upgrading Costs**
  Employers have to increase spending to onboard recent hires, as well as train and upgrade existing workers.

- **Career Advancement, Turnover, and Retention**
  Employers are struggling to retain talent and/or are not able to
  provide career advancement opportunities for current employees to
  fill critical job openings, resulting in workers leaving the company and/
  or the industry.

- **Increasing Diversity and Opportunity**
  Employers are not able to increase the diversity of employees and
  applicants, expand economic opportunity, and promote equity.

3 **Geographic Area for Establishing a Collaborative**
Finally, geography is an important consideration. Some employers have access
to available talent but struggle with sourcing qualified talent that they can retain.
Other employers simply do not have enough available talent within the geographic
area from which they are accustomed to sourcing talent.

Many employers have a mixed approach in which they search for talent within
different geographic areas depending on the job they are trying to fill.

For example, the geographic areas for finding machinists may be different from
those for finding engineers, and some larger companies might have larger
geographic areas for recruiting than smaller companies.

There needs to be some initial agreement on the geographic location you are
starting with and this should be based on the location of the employers that will
form a collaborative. In TPM, you should always revisit geography based on new
data and information that affirms the talent sourcing networks employers use—or
plan to use—and what that means for the geography they cover.

1. Determine Which Shared Pain Points Are the Most Important to Address

Now that you have an understanding of how to determine critical pain points for employer collaborative members, it is important to do your homework to discover where employers are feeling the most pain. You can start by compiling information from two major types of sources: (1) strategic plans and studies that analyze **secondary labor market information** derived from a variety of public and private sources, including state occupational projections; and (2) employer demand planning surveys, interviews, and other **primary labor market information** sources collected directly from employers.

The most powerful and important information for determining priorities comes directly from employers because they provide the most direct and trustworthy information. When using strategic plans and studies based on secondary labor market information, it is necessary to confirm this information with a representative sample of employers, especially employers that may be called on to take leadership roles in establishing a collaborative.

For example, you may review strategic plans and reports developed in cooperation with employers and determine that many of these reports have identified three or four key sectors, such as healthcare, manufacturing, and information technology, along with critical jobs, such as nurses, machining technicians, and software developers. You may have talked directly with some leading employers in these sectors and found that they identified the same critical jobs. If secondary labor market information is used, it is critical that it is vetted and validated by employers that are considering forming or participating in a collaborative.

An important lesson to keep in mind when reviewing data is that bigger gaps or a larger number of job openings does not necessarily equal the most critical jobs that a collaborative should focus on and apply TPM toward. In fact, many jobs may have a larger number of openings, but play a less critical role when it comes to business competitiveness. For example, these jobs may not require much education, training, or credentialing and are easy to find qualified applicants for, and high turnover in these jobs may not prove to be a pain point. What matters most is the criticality of the jobs, not the number of openings. Sometimes they match up, but many times they do not. What is most important is that you work with your collaborative to make this determination.

When reviewing reports or talking directly to employers as you consider business functions and jobs for your focus area, it is important to answer the following questions:

- Which business functions or capabilities are most critical for business success?

- Which jobs drive those capabilities and carry out the most critical work?

- Do vacancies in these jobs significantly impact the success of your business?

- Do these jobs require prior training and credentials that would take significant time to acquire?

- Do these jobs provide strong career opportunities that would attract qualified applicants?

- Are these jobs hard to fill, or is competition for these jobs significant?

- Do these critical jobs have constantly changing skills requirements that require continuous upskilling to remain competitive?

- Are these critical jobs undergoing major changes in credential requirements that will require upskilling and credentialing for current workers?

- Can we do a better job in filling critical jobs by upskilling current employees and providing stronger career pathway opportunities from entry-level jobs?

- Is there a need to tap into new sources for these jobs (e.g., increase diversity)?

- Do we need to expand the geographic reach of our talent sourcing efforts?

After working through these discovery questions, it is possible that while employer collaborative members share similar pain points, some may want to focus on upskilling current employees and others may want to focus on new hires based on which ones are more important.

2. Evaluate Employer Capacity and Willingness to Work Together

Another part of the work in defining possible focus areas for employer collaboratives is determining whether employers have the capacity and willingness to address these shared pain points within the needed geographic area.

The following are important considerations when organizing a collaborative:

1 Employer leadership and engagement in existing partnerships and initiatives

2 The presence of one or more business champions that can bring employers together

3 Business and industry associations or economic development organizations that have a proven capacity and track record when it comes to engaging employers

4 The ability for business and industry association and economic development organizations to work together at the geographic level needed to address employer needs. For example, can local organizations work at the regional level that best encompasses the recruiting market for critical jobs?

3. Evaluate Potential Impacts and Urgency in Getting Results

Another part of the work in defining possible focus areas for employer collaboratives is evaluating where they are most likely to have the largest impacts in getting results. And, depending on the urgency of the need, where they can get the greatest value or return on investment in the shortest period of time.

There may be shared pain points that are important to employer collaboratives where employers determine they have a relatively high or low probability of success in achieving results. Some of these results may take a long period of time whereas others can be achieved in much shorter time periods. Depending on the level and urgency of need, some collaboratives may choose pain points with lower potential impacts if they can bring about these impacts right away, rather than prioritize pain points with larger impacts that can only be achieved over long time periods. They also could choose to start with low-impact and short-term pain points and then move to pain points with larger, but longer-term impacts.

See Table 1.2: Example Chart for Determining the Focus of a Collaborative designed to help host organizations prioritize where to launch employer collaboratives.

Table 1.2: Example Chart for Determining the Focus of a Collaborative

Business Functions and Jobs	Talent Management Challenges	Initial Geographic Area for Collaborative	Shared Need: High (H) Low (L)	Capacity/ Willingness: High (H) Low (L)	Potential ROI Impact: High (H) Low (L)	Urgency to Address Need: High (H) Low (L)
Machining, CNC Machinist	Cost of a hire	3-county region	H	L	H	H
Retail Management, Retail Store Manager	Career advancement and retention	Metro area	H	H	L	H
Nursing, Registered Nurse	Unfilled jobs and insufficient diversity	State	L	H	H	L
Logistics Management, Warehouse Manager	Low retention	7-county rural region	H	H	H	H
Network Administration, Network Manager	High onboarding and training costs	County	L	L	L	H

After identifying the most important shared pain points to address and assessing where there is capacity and willingness to work together, you have successfully determined the focus of your collaborative and can move on to organizing and financing it.

Determining the Focus of a Collaborative Exercise

The example below demonstrates how a collaborative can share and use information necessary to determine the initial focus for moving forward.

After learning about TPM, a group of manufacturers in a three-county region agreed to implement TPM. They formed an employer collaborative staffed by the local chamber of commerce to address their most critical workforce needs and shared pain points.

The collaborative, after bringing its members together, determined that CNC machining, maintenance, engineering, and welding are their most critical business functions that have shared pain points to address. For CNC machining, the employers voiced their difficulty in recruiting qualified new hires. In addition, they recently experienced mixed results when promoting current machine operators. There remains interest across the collaborative to explore a solution given that CNC machining is a critical business function, however, it is unclear at this time just how urgent of a need this is across the collaborative.

For maintenance, several collaborative members project increased automation that will require more advanced skills and new work roles in the future. To everyone's knowledge, the collaborative members have no prior history working together on maintenance.

For engineers, there is widespread concern that there is a wave of impending retirements, but it is still anticipated to be several years out. Current efforts to recruit qualified engineers has been sufficient, however, the anticipated level of retirements will vastly exceed past attempts to fill engineering vacancies.

Lastly, hiring and retaining qualified welders is a severe and urgent problem for all collaborative members. There is prior history working on welding programs that was done through a grant awarded to a local community college for a short-term, non-credit training and certificate program that produced welders in a few months. However, the quality of hires varied widely and the grant closed years ago, resulting in the program closing as well. The collaborative stressed that if something is not done about the welder shortage—and soon—then business growth will suffer.

Given the information shared, the collaborative must now make a decision about the initial focus of the collaborative for moving forward. The collaborative members tasked the chamber staff to compile the information and feedback and make a recommendation on where to start.

After reviewing the exercise, discuss the following:

1 Based on the information provided, complete the table below to the best of your ability.

Business Functions/ Jobs	Talent Management Challenges	Initial Geographic Area for Collaborative	Shared Need: High (H) Low (L)	Capacity/ Willingness: High (H) Low (L)	Potential ROI Impact: High (H) Low (L)	Urgency to Address Need: High (H) Low (L)

2 What additional information do you need from employers to complete the table?

3 As the lead staff for the employer collaborative, which business function and pain point would you recommend to focus on? Explain why.

4 Do we have enough information to determine where to start? Explain your answer.

Unit 1.3

Organizing and Financing a Collaborative

There are many ways to organize employer collaboratives after the decision about focus areas has been made. These different approaches involve at least four key decisions:

1 Do we start new employer collaboratives or strengthen existing ones?

2 How do you determine the proper size and geographic scope of an employer collaborative?

3 How will we provide the management support necessary to make the collaborative successful while ensuring employer leadership and control?

4 How will we finance the collaborative and provide the employer ROI necessary to ensure sufficient employer commitment? Where will we get the seed funding for staffing and other in-kind contributions to get started?

Starting Anew or Building on Existing Initiatives

Starting a new collaborative is hard work and runs the same risks of any new business startup. It also is open to criticism that you are reinventing the wheel and should build on existing partnerships. Organizing a collaborative using the TPM approach also has advantages, including enhancing employer leadership and ownership in closing a skills gap.

Building on existing initiatives also has risks, especially if those initiatives are based on broader stakeholder partnerships in which employers are one among many stakeholders and do not participate to address their own specific talent needs. Making the decision on whether to build on existing efforts or start anew requires a careful review of the pros and cons of each approach.

In many cases, employers will choose host organizations such as chambers of commerce, industry associations, and economic development agencies that already have existing initiatives involving many stakeholders, including education and training providers such as universities, colleges, and workforce agencies. These initiatives are often based on public-private partnership models that have all stakeholders at the table in all meetings, and do not provide the opportunity for employers to meet separately in order to set their own priorities and address any issues in working together.

In these instances, TPM still provides a framework through which employers can work together to produce actionable data on shared workforce needs while improving existing career pathway partnerships.

Existing initiatives can provide the needed space for employers to establish a collaborative by forming employer committees, task forces, or work groups. These employer-only committees provide the space and opportunity for businesses to organize themselves, set priorities, and clarify their role within the larger partnership, especially when it comes to providing more granular labor market information that is specific to their company's workforce needs. Organizing employers in this way also provides a mechanism for employers to enhance their career pathway partnerships using a talent supply chain approach that addresses employer ROI.

Whether launching a new employer collaborative or building off of an existing public-private partnership, the TPM approach is a useful tool for expanding the employer role in education and workforce partnerships.

Determining the Proper Size of an Employer Collaborative

When exploring the creation of a collaborative, employers and their host organizations will face the question of how many employers should be part of a collaborative to give it the best chance of being successful. There is no simple answer to this question, and a bigger collaborative does not always mean a better collaborative. The group should be as big as it needs to be in order for it to deliver a sufficient **value proposition** and positive ROI to its employer members. The group should also be sufficiently large to ensure that data shared in the aggregate cannot be traced back to an individual company.

In general, employers and their host organization should make sure that they have a core set of members who can provide the necessary leverage for education and training providers to respond to their shared needs. In some cases, this requires a few "champion" employers that have the visibility and size to create this leverage. In other cases, it requires a larger set of employers that represent the majority of job opportunities within an industry or set of occupations.

The most important decision is how to involve a set of champion employers that have the ability to establish a collaborative and recruit additional employers over time as needed.

Determining the Geographic Scope of an Employer Collaborative

Employer collaboratives are not necessarily bound by traditional geographic boundaries. The scope of a collaborative is determined by its membership and the geographic area that members use for sourcing talent and engaging with preferred education and training providers. Most collaboratives pick a geographic area to start with, but can make changes based on new information and data collected, or when new employers join the collaborative that may be outside of the initial target geography.

A collaborative may also choose to confine its membership and activities to a defined area, such as a county. However, many collaboratives start by organizing based on the other employer partners with which they wish to work. They also may want to define their geographic scope based on the information they collect as part of back mapping their existing talent flows (described in Strategy 4) and from where they plan to source talent in the future (demonstrated in Strategy 5).

Some collaboratives seek to roll their work into a statewide effort, often done with the support of state agencies and other stakeholders. When organized this way, an agreed-on statewide host organization can coordinate the work of multiple collaboratives and subgroups, some sharing similar focus areas (e.g., manufacturing) but with different

employer members to account for different regional needs and solutions. This broader, statewide structure allows collaboratives to combine efforts when needed and share data more easily while retaining their independence when it comes to making decisions about their focus and preferred talent supply chain solutions.

Managing an Employer Collaborative

Collaboratives can be managed through a variety of structures. They can be established as separate nonprofit organizations managed by an existing host organization, such as a chamber of commerce or economic development organization, of which employers are members and already work together. They can also be governed by a board or employer committee that may already exist through the host organization.

In most cases, employer collaboratives are best started through the support of a host organization that can provide project management and staff support (see Figure 1.1: Example of an Employer Collaborative Structure). A host organization can staff one or multiple employer collaboratives that are organized based on the pain point they are addressing and the composition of their membership.

Figure 1.1: Example of an Employer Collaborative Structure

Host Organization (e.g., chambers, economic development agencies)			
Employer Collaboratives	Manufacturing	Energy	Healthcare
Employer Members			
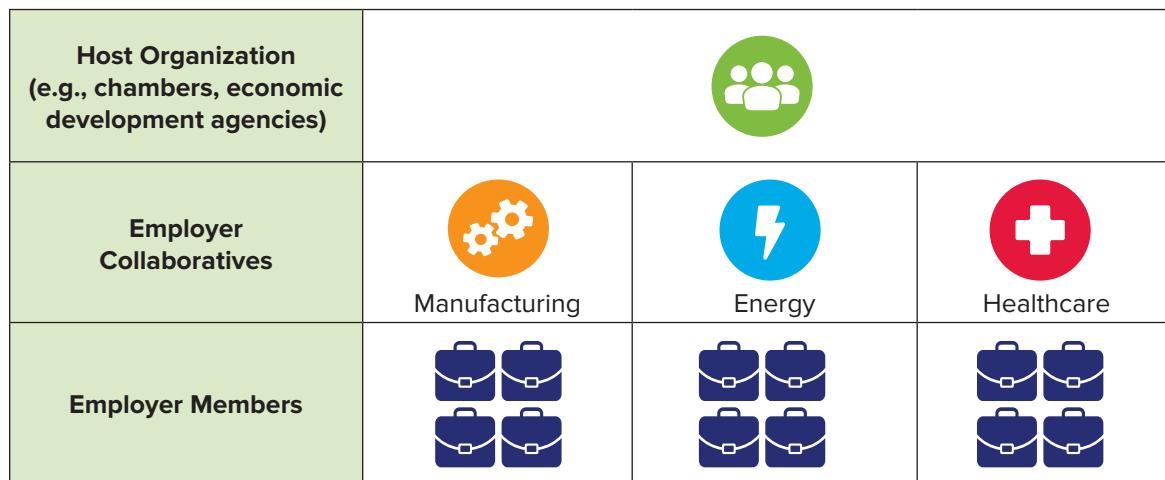
In some cases, employers might want to affiliate with multiple host organizations based on the type of collaboratives they are forming and the pain points they are addressing. The most common employer collaboratives are based on employers' industry sector and focus on jobs that are fairly unique to that sector—for example, nurses in healthcare and machinists in manufacturing. However, this is not the only way to organize. In fact, some employers form collaboratives based on a job that cuts across multiple industry sectors, such as network administrators, which are needed in a multitude of industries.

Yet another way of organizing is through an actual supply chain. Larger original equipment manufacturer companies, the end-customer in traditional supply chain relationships, sometimes recruit from their own suppliers, creating a number of talent management challenges along the way. Supply chain partners can collectively address their talent needs by working as a team to develop and source talent much like they do when developing products or delivering services.

These are just a few examples of how employers can get organized. It is not how you organize that matters. Instead, what matters is that employers buy in to working together to address a shared pain point. That forms the identity and scope of the collaborative.

Developing a Host Organization Timeline, Budget, and Staffing Plan

Early on in the creation of a new collaborative, host organizations should develop a preliminary budget and staffing plan to ensure they have the necessary leadership commitment and staff resources to complete this work. While each collaborative must proceed at its own pace, it is important to demonstrate consistent progress to your employer members.

Once the employer collaborative has gained experience in moving through the process for the first time, it will be able to expedite each stage of the process and reduce the time taken to update its information and execute each strategy. Host organizations should be able to launch new collaboratives more easily as they gain experience.

Whether you are starting your first collaborative as a new initiative or building from an existing one that may be part of a public-private partnership, the selected host organization should provide the necessary staff time with or without seed funding to lay the initial groundwork. The biggest up-front cost and commitment is time, which typically poses the biggest hurdle for a collaborative to have a successful launch. It is very important for host organizations to budget for the amount of time that a staff member will need to commit in order to facilitate a new collaborative from start to finish.

This staffing support should be sufficient to do the following:

- Conduct outreach with employers and engage stakeholders.
- Determine whether employers have sufficient shared needs, willingness, and capacity to work together and whether there is sufficient impact in the time required to address the need.
- Define an initial focus area that could be addressed and begin to explore where to start.
- Get buy-in to implement one or more of the subsequent strategies to demonstrate value (Strategy 2, 3, 4).

If you are using a percentage of time of an existing staff member, then we recommend no less than 25%, but preferably 50%, of their time be dedicated to the collaborative.

Some host organizations choose to create a new, full-time position that is dedicated to the TPM process. This provides greater flexibility in working with multiple collaboratives with the added benefit of having a point of contact who can advocate for and expand talent supply chain solutions with other partners, while also representing your partners and affiliates outside of the state or region.

Some host organizations find it useful to offset the cost of having a staff member facilitate a collaborative by raising funds from local sources that are interested in providing seed funds for new collaboratives. This can result in having the full cost of a staff member covered for the first year, or it could be a cost sharing arrangement between a philanthropic source and the host organization.

The goal is to demonstrate enough value and return on investment within the first year to make the case for employer members to sustain the work of the collaborative through membership dues and other types of employer investments.

Figure 1.2: Sample Host Organization Staffing Plan for Organizing a Collaborative is a sample budget for a host organization measured in terms of staff time committed to organizing an employer collaborative.

Figure 1.2: Sample Host Organization Staffing Plan for Organizing a Collaborative

Organizing Activity	Staff Time
Collaborative Planning and Material Development. Using available labor market information, develop supporting materials for organizing a collaborative with a defined focus area or pain point, critical jobs, talent management challenges, geographic scope, and where to start. Develop a list of potential employer members, especially employer champions that could lead and host the first meetings, and consult with stakeholders on the proposed approach.	64 hours
Employer Outreach. Recruit employer champions and pitch potential participants to attend one or more initial meetings, where they will explore forming a collaborative as part of a new or existing initiative.	120 hours
First Collaborative Meeting. Plan and conduct the first meeting on the focus of the collaborative and gain buy-in and support to participate in the TPM process.	32 hours
Second Collaborative Meeting: Data Collection. Plan and conduct the second meeting, where you will begin implementing Strategies 2–4.	40 hours
Conduct TPM Surveys. Develop, pilot test, and administer the TPM surveys using the implementation tools made available to you and develop presentation materials for future meetings.	80 hours
Third Collaborative Meeting: Review Survey Results, Assess Progress, and Discuss Next Steps. Hold a follow-up meeting to review the results of the survey, determine if sufficient progress has been made, then reaffirm member commitment to proceed with the remaining strategies.	32 hours

Financing an Employer Collaborative:
The Importance of Return on Investment

Whether you are starting a new collaborative or building on existing initiatives, the most important decision is the selection of the pain points that will provide the most immediate results and returns on employer investments. This provides the incentive for short-term and long-term employer financing of collaboratives.

Employer collaboratives are unique in that they are financed at least in part by membership fees and other types of employer contributions. There are many different options for employer financing, including membership dues, contributions for specific initiatives, and foundation donations.

An employer collaborative might require seed funding to get started, which can come from funding sources other than employers, such as government. However, if seed funding is needed from an alternative source, this may influence the degree of employer leadership and commitment, and, ultimately, control. If employers have little skin in the game, the likelihood of their long-term engagement is doubtful.

Seed money might be needed to start an employer collaborative, but the host organization should focus mainly on employer financing and start from the premise that employers will be the major funders of the collaborative over the years to the extent that they receive a positive ROI. This could be done on a gradual basis; the employer collaborative could identify small wins as it moves through the TPM process to demonstrate value and then, if successful, have employers finance the collaborative once a measurable ROI has been achieved.

Eventually, employer collaboratives should be designed so that employer membership dues and other investments result in equal or greater bottom-line benefits by addressing their most visible and costly pain points, such as unfilled job openings; onboarding, training, and upgrading costs; career advancement, turnover, and retention; and increasing diversity and opportunity.

This requires a discussion with employers and human resource professionals on how best to calculate the costs that companies incur from these pain points. Many of these costs will be rough estimates that employers decide are reasonable based on industry benchmarks or their own experiences. It may also be helpful to have employers calculate the amount of time they spend as part of other initiatives, including public-private partnerships. In almost all cases, even rough estimates will show that collaborative membership dues and other investments will have high returns if the collaborative is successful in addressing major pain points.

For example, a group of manufacturers that have agreed to work together in a collaborative could try to calculate their average cost of filling job vacancies. Based on their industry standard for measuring the cost of a hire and the opportunity cost of having a position unfilled, they might conclude that, on average, it costs each company $8,000 to fill a position, including recruitment, onboarding, and training expenses. In addition, they spend an average $3,000 per position on staffing agency expenses. What is more, the average cost of a position going unfilled for several months is estimated to be approximately $19,000 in lost productivity. Last, each company spends, on average, $2,500 per position filled in support of career fairs and mentorships with local education programs.

Adding together these numbers provides a quantifiable value proposition to companies about addressing a pain point, which in this example comes to $32,500 per hire. This baseline cost can later be used to determine each company's ROI based on working together in an employer collaborative to manage the talent pipeline. ROI calculations are covered in Strategy 6. Employer collaboratives should emphasize this ROI focus in explaining their value propositions to employers (see Unit 1.4). And, as addressed further in Strategy 6, employer collaboratives should regularly measure and report ROI in ways that show employers they are better off working together and that their membership dues, time, and other investments pay off in improved performance on **bottom-line measures** tied to their agreed-on pain points.

In summary, the benefits attained by participating in an employer collaborative should always exceed the employer's commitment and the baseline cost from when it started.

How Existing Partnerships Are Organized in Your Community Exercise

Using your own community's experiences, identify one or more initiatives or organizations that have engaged employers in addressing critical skill needs. Identify how each is financed and managed. Also, indicate whether the initiative or organization would benefit from starting a new employer collaborative or building on an existing partnership. Include the pros and cons of the approach you indicated and present your analysis to your group.

If you are building on an existing partnership, how will you create the necessary space for an employer collaborative within that partnership?

Existing Initiative/ Organization	Who hosts it and how is it managed?	How is it financed?	Integrate TPM into the partnership or start a new collaborative? Why?
1.			
2.			
3.			

Unit 1.4

Engaging Partners and Planning Initial Collaborative Meetings

As you prepare to establish your first collaborative or integrate TPM into an existing public-private partnership, you should also be mindful that, while TPM provides a structured process for organizing collaboratives and executing the strategies, it usually requires some adaptation to your local circumstances and needs. While we encourage you not to stray too far from the process since each of the strategies are aligned and build on one another, each collaborative needs to ultimately make TPM work for them. As you become more adept at explaining TPM to your partners and plan for your initial meeting, keep in mind that what is provided in the curriculum is a model approach that you can adapt and customize as needed.

Developing the Employer Value Proposition and Elevator Pitch

The first step in establishing a collaborative is reaching out to employers to encourage them to host or attend the first meeting to explore the concept. During this first step it is also important to engage key stakeholders to brief them about your efforts.

In reaching out to employers, you should develop a short three- to five-minute presentation or "elevator pitch" that presents the value proposition to employers and addresses some of their major concerns. Figure 1.3: Employer Elevator Pitch Template and Sample Language and Figure 1.4: Talking to Education and Training Providers provide sample language to use with potential employer collaborative members and education and training providers, respectively, and will provide a helpful starting point. Despite the many benefits of employer collaboratives, most employers have never worked together in this way and may have a number of questions or concerns. Three of the most common concerns are the following:

- **Are We Better Off Working Together?**
  It is likely that many employers will worry that other employers, in some cases their direct competitors, will benefit more than they will by working together. Some may think larger employers will benefit more and that larger employers' needs will more likely be catered to because of their size.

- **Will We Be Sharing Proprietary Information?**
  Many employers will worry that they will have to share proprietary information about their businesses and their critical jobs. They will want to know who they will share this information with and whether they can trust partners to maintain and protect their confidential information.

- **Are There Business Collaboration Risks?**
  Some employers will want to know whether they can work together under a formal collaborative without any legal risks.

The following are examples of how to address the aforementioned employer concerns:

- **Shared Value Across the Talent Supply Chain**
  TPM is a team sport, and the approach promotes **shared value** across the talent supply chain so that all employer members benefit from a wider talent pool from which to get talent, not just larger employers that are engaged in TPM.

- **Collaborate Effectively for Social Good**
  Employers join forces not only to solve a mutual talent shortage, but also to deliver a public good and a better pathway to opportunity for learners.

- **Host Organizations Protect Proprietary Information**
  Employer collaboratives protect proprietary information by ensuring that employer members report their information to the host organization, which shares only aggregated information with other members so that employer privacy is protected. In particular, a consistent concern relates to the sharing of wage, salary, or benefit information; neither the TPM process nor its associated tools are intended to be used in connection with a survey of this type of data. Stating this upfront with your partners can alleviate hesitation.

- **Host Organizations Protect Members from Collaboration Risks**
  Employer collaboratives protect individual employers from antitrust regulations by sharing data in the aggregate such that individual company data cannot be extrapolated. To ensure anonymity, host organizations should form the collaborative with enough companies to guard against the risk of inadvertently sharing individual company data (e.g., five or more companies).

In establishing employer collaboratives, it is important to develop a value proposition for employers that not only addresses these concerns but also does the following:

- Generates passion and commitment for addressing their major needs or pain points (e.g., unfilled job openings; onboarding, training, and upgrading costs; career advancement, turnover, and retention; and increasing diversity and opportunity) in ways that will advance their leadership standing and brand among other businesses and their communities

- Conveys how an employer collaborative will help them address these pain points better than working alone, even if they have different needs than other employers

Speak to their pain point first and how solutions may involve upskilling and/or new hire strategies.
Employers—like you—in our area continue to express problems with finding qualified workers for jobs that are critical for your company to grow and remain competitive, such as nurses, machinists, welders, industrial maintenance technicians, and software developers. We also recognize there are often costly problems with onboarding and unwanted turnover, as well as upgrading the skills and credentials of existing workers. Employers are also interested in investing in their front-line workforce for career advancement and the diversity of their workforce.

Acknowledge what they are doing now with you and others; use this time to thank them.
I know you and other employers have tried a lot of different ways to address your needs and have partnered in many of our local initiatives. And you serve on a number of advisory groups. We greatly appreciate the leadership roles you are playing.

Suggest the idea to start a new effort or strengthen the employer's role in an existing initiative.
The Chamber Foundation is promoting a new employer-led approach—called Talent Pipeline Management (TPM)—in which employers work together more directly to address common workforce needs.

We were selected to participate in a TPM Academy recently and we can use this approach to (1) start a new employer-led initiative to address your needs, or (2) strengthen the leadership role of employers in an existing initiative.

Explain potential benefits to employers (i.e., what is in it for them).
We think this employer-led approach has clear benefits for you and other employers in our area because you can accomplish more together than alone. In particular, we can do the following:

- Raise the brand and image of your industry.
- Communicate your needs with one voice to all partners in the community.
- Generate greater leverage in creating a better pipeline, both internal and external, that can address the needs of all employers.

Explain what they would have to do to get these benefits.
If closing the skills gap is a priority for your company, then we encourage you to work with us on this approach, which will require you and other employers to agree to form an employer collaborative. As an employer collaborative we will do the following:

- Identify and communicate hiring needs for critical jobs.
- Work with other employers, partners, and stakeholders to address these needs.

Explain where to start.
The Chamber Foundation recommends that employers start by agreeing to respond to a survey to confirm that they have common hiring needs and then discuss whether to work together to address them.

Figure 1.3, continued

Emphasize Chamber Foundation support.
The Chamber Foundation will support our efforts, including providing a web tool that allows us to organize and manage a collaborative and connect to other collaboratives within our state and throughout the country.

Address their concerns about working with other employers.
We know that some employers worry about sharing confidential information, especially with other employers. The Chamber Foundation has developed a process and set of tools to help us ensure that only aggregated information is shared among employers in the collaborative.

Get agreement to attend first meeting.
Would you be willing to attend a meeting we are hosting with employers in your industry to discuss this new approach and how to get started?

Engaging Stakeholders

Another important activity in organizing a collaborative is maintaining open communication with key stakeholders, especially education and training providers that might not fully understand why they are not included in the employer meetings or how they will be kept engaged in the conversations going forward. Figure 1.4 provides some ideas on how to talk with education and training providers and communicate the shared value of employers coming together first.

Figure 1.4: Talking to Education and Training Providers

> **Use the Chamber Foundation's TPM initiative to start the conversation.**
> Like others, we have been looking for new ways to get employers engaged in our workforce initiatives. The Chamber Foundation is promoting a new employer-led approach called Talent Pipeline Management (TPM) in which employers work together more directly with partners in addressing employer needs. We can use this approach to (1) start a new employer-led initiative to address your needs, or (2) strengthen the employer leadership role in an existing initiative.
>
> **Directly address why employers need to work together, separately from other partners.**
> The Chamber Foundation advises that employers work together as a collaborative and spend time together in separate meetings from education and training providers so that employers can get on the same page and play a more effective leadership role.
>
> This is necessary because employers are not always willing to speak openly in meetings with education and training providers, and they also need to get comfortable collaborating, even with competitors. Employers will be better partners with you if they can first agree to work together and speak with a common voice about their shared workforce needs.
>
> **Emphasize that education and training providers will be engaged later.**
> Establishing employer collaboratives is just the first step and starts with employers "doing their homework" together so that they can more clearly communicate their shared talent needs with providers like you.
>
> Employers need a space to gather and share their information and discuss their talent needs much like education and training providers often have separate meetings to discuss their most pressing issues.
>
> Once employers are working together and communicating in a shared voice, we will bring education and training providers into the process to jointly develop solutions to meet those needs. For now, the employer collaborative can provide

Figure 1.4, continued

a clear work plan for education and training providers that says when and how they will be updated on progress and findings from the early stages of forming a collaborative, and how and when they will be engaged in implementing and improving talent pipelines.

Reinforce that collaboratives can be used to launch a new initiative or be part of existing ones.
The Chamber Foundation encourages communities to adjust this approach to meet their needs. We can either start a new initiative led by an employer collaborative or start one as part of our existing efforts. For example, the collaboratives can be inserted as an employer subcommittee or working group under an existing sector initiative.

Getting Your TPM Pitch Right Exercise

Some TPM Academies build into their first in-person meeting an opportunity for Academy participants to practice their TPM pitch. This includes communicating the TPM value proposition and process to a wide variety of audiences, including employers you hope to recruit to your collaborative as well as stakeholders that want to know how and when they can be involved.

There is no one way to design your pitch exercise, and previous TPM Academies have been creative in both developing the various scenarios and making this a contest or competition, in some cases with prizes. Something to consider if organizing a pitch competition is when over the course of facilitation to host it. Doing so early on will help participants understand what they know and, importantly, what they don't know, while hosting it later on will help more immersed participants refine their talking points. Both options have value and both should be fun!

Most TPM Academies sort the participants into teams of five to work through a variety of scenarios, with each participant having at least one opportunity to take the lead. This allows each participant to speak but to also listen to his or her peers describe much of the same content, but in a different scenario. Pitches should be delivered within two to five minutes.

You can also organize your pitch competition with real outside stakeholders or by having participants or host organization staff role-play the scenarios. Some have found value in bringing in real outside stakeholders to play themselves because it can make the experience all the more real.

Last, you can organize the pitches so that someone is addressing a straightforward case, or you can provide additional guidance to the person receiving the pitch—the employer, public official, provider, or news reporter in the examples below—that the person delivering the pitch is unaware of (e.g., their emotional disposition, skepticism, or misinformation). This can also test how well the pitch giver is capable of thinking on his or her feet and adapting based on unforeseen conditions.

Possible scenarios to consider for your pitch competition include the following:

1. Gaining the support of an employer champion who you hope can recruit other companies and kick off an employer collaborative
2. Recruiting a new employer to the collaborative who is wary of signing up for yet another initiative
3. Explaining TPM to a mayor or public official whom you bumped into in a hallway or elevator
4. Explaining TPM to a provider that is curious about what you are up to and why it wasn't invited to the first collaborative meeting
5. Explaining TPM to a news reporter who is interviewing you for a radio spot

Planning the Initial Meetings to Establish a Collaborative

After conducting the employer outreach and stakeholder engagement, the objectives of the first in-person meeting with employers should be to do the following:

- Show employers why they need to establish a collaborative and the benefits it can provide. (Use a TPM case study to showcase potential outcomes.)

- Share the results of the baseline analysis that used primary and secondary labor market information and discuss their implications for defining an initial focus area.

- Agree to an initial focus area and pain points, including critical business functions and jobs, talent management challenges, geographic scope, and where to start.

- Discuss how the employer collaborative will connect with existing initiatives, including public-private partnerships, of which members may be a part.

- Address when and how education and training providers will be brought into the process.

- Set expectations of what will be required from the employer collaborative members in the near term. (See Figure 1.5: Example Employer Commitment Form to Participate in Talent Pipeline Management for an example employer commitment letter form.)

- Discuss how the collaborative will be staffed and supported by the host organization for an initial startup period while employers decide whether to continue and provide financial support.

The first meeting should be hosted by one of the employer champions or the host organization and should include only committed or prospective employers as well as staff from the host organization. It is important to include company decision makers who will signal their support to their staff who will be asked to participate in future collaborative meetings and produce data.

These decision makers could include human resource professionals and front-line hiring managers. In fact, some employers would benefit from bringing a team to the early meetings so that everyone is "in the know" and will respond to information requests in a more timely manner. The most senior decision maker should not leave the first meeting without designating a chief point of contact for the company moving forward or without establishing a process for how and when he or she will designate a point of contact.

It will be up to you to determine the number of initial meetings it will take to get the right mix of employer partners committed to implementing TPM. This guidance is intended

to help prepare you for your first in-person meeting, but you may choose to split the agenda into two or more meetings, or even substitute a conference call or webinar for some meetings.

Participating as a member in an employer collaborative can require more meaningful engagement than in public-private partnerships, oftentimes resulting in increased staff attention and time. Most of the responsibility will fall to the host organization but will also require commitment from the employers. Host organizations may choose to provide advanced notice of the entire end-to-end process so that employers understand what will be asked of them by participating in a collaborative.

What is most important is that you secure their commitment to the process and ensure they understand what is expected of them as you move into the "do your homework" phase, which requires that all participating employers contribute to the data gathering and decision making that follows.

Figure 1.5: Example Employer Commitment Form to Participate in Talent Pipeline Management

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What is Expected of Employers Engaging in TPM?

Getting Started

To get an understanding of the opportunities for collaboration, you will receive an email with the following questions:

1. Which business functions or capabilities are most critical for business success?

2. Which jobs drive those capabilities and carry out the most critical work?

3. Do vacancies in these jobs significantly impact the success of your business?

4. Do these jobs require prior training and credentials that would take significant time to acquire?

5. Do these jobs provide strong career opportunities that would attract qualified applicants?

6. Are these jobs hard to fill, or is competition for these jobs significant?

7. Do these critical jobs have constantly changing skills requirements that require continuous upskilling to remain competitive?

8. Are these critical jobs undergoing major changes in credentialing requirements that will require upskilling and credentialing for current workers?

9. Can we do a better job in filling critical jobs by upskilling current employees and providing stronger career pathway opportunities from entry-level jobs?

10. Is there a need to tap into new sources for these jobs (e.g., increase diversity)?

11. Do we need to expand the geographic reach of our talent sourcing efforts?

At Our Next Meeting

Responses will be compiled before our next meeting, and together we will review the data, discuss the data, and set priorities for our next phase of the project, which is to apply the TPM framework in ways that address our shared pain points for our most critical jobs.

Figure 1.5, continued

Getting Our Facts Straight

Following our review, you will be asked to complete two or more surveys as we move forward. Your responses to any and all surveys will be kept confidential. We will make them available to the group only in the aggregate and we will not share them with any outside stakeholders without prior consent from members of the collaborative.

The first survey will focus on projecting demand for the key jobs that we identify as priorities. You will need someone within your organization who can help forecast your demand over a two- to three-year period. This person should have input from leadership, finance, and strategy staff who can assist in identifying (1) upcoming projects, (2) estimated employee turnover, (3) anticipated retirements, (4) other factors that could affect demand, and (5) entry-level workforce needs versus those of experienced workers.

The second survey will focus on the specific competencies, skills, and credentials needed to fill our target jobs. For this you will need access to job descriptions and perhaps a subject matter expert who can tell you what is truly important and what is optional. This survey will also inquire about requirements in the hiring process, such as a criminal record check, a physical exam, degrees or credentials, drug screening, and physical requirements.

Upon completing those surveys, we will begin to look at the sources from which you have found qualified talent, both internal and external, that you have been able to retain and evaluate the capacity of those sources to meet your projected demand. This looks at actual data on recent hires and upskilled workers, which means you or someone in your company will need access to personnel records for this step.

Building the Supply Chain

Armed with this information, our collaborative will facilitate relationships with preferred and trusted talent providers with which we will share the information we have collected for the purposes of co-designing a performance-based talent supply chain, including both internal and external talent pipelines. To gain the most benefit, your organization will need to contribute toward engaging our talent supply chain providers (e.g., community colleges, K–12 schools, community-based nonprofits, upskilling partners) to build a talent pipeline that meets our shared needs. This includes the following:

1. Co-designing a career pathway and/or upskilling opportunity

2. Aligning curriculum, demonstrations, and credentialing to employer hiring requirements

3. Integrating work-based learning and on-the-job training experiences

4. Donating equipment

5. Contributing toward career guidance

Figure 1.5, continued

Last, we will need to share data on how our agreed-on pain points are being addressed based on the performance of our preferred and trusted talent providers.

Estimated Time Commitment
The complete process should take less than a year; it requires a commitment from your company to participate in at least six meetings to complete the end-to-end talent management process.

Measuring Success and Sustaining Progress
While we will check in along the way to ensure the collaborative is reaching milestones and demonstrating value, at the end of the day we will be able to show a return on investment based on the metrics that we agreed on at the beginning of this process.

Should our efforts prove successful, we will discuss as a team how to continue the work of the collaborative—including how it will be financed—and how to use the data we are collecting to improve the performance of our talent supply chain.

Planning for Your First Collaborative Meeting Exercise

After reviewing the example staffing plan in Figure 1.2 and the commitment form in Figure 1.5, discuss the following:

1 As the host organization, which employer champions do you need to get buy-in from in order to get started? What do you ask of them?

2 What level of commitment is your host organization willing to make in terms of committing staff time to the collaborative? For the first year, do you need additional funding or capacity to carry out some or all of the TPM process?

3 What resources and materials (e.g., labor market information, past employer survey results, membership feedback) do you need to be prepared for the first meeting?

4 Are there any other costs that you anticipate will need to be accounted for? If so, how do you plan for them to be covered?

Ready for Next Steps?

Before you move to the next strategy, make sure you have achieved the learning objectives necessary to move forward. When you go back to your community, ensure you will be able to execute the following activities:

- Explain the key features and benefits of employer collaboratives and why they are a different way to engage employers.

- Determine where you will start when exploring the initial focus for a collaborative.

- Determine whether you will build on an existing partnership or start a new collaborative, and how you will manage and finance it.

- Determine how you will engage employers and key stakeholders for organizing the collaborative.

- Use the Strategy 1 Action Plan at the beginning of the chapter to determine your next steps and track your progress.

- For those using the TPM web tool, develop an employer collaborative profile and employer member profiles to help manage and promote your work.

NOTES

TALENT PIPELINE MANAGEMENT ACADEMY
Strategy 2: Engage in Demand Planning

Strategy 2
Table of Contents

Introduction

We have previously discussed how states and communities around the country are implementing demand-driven workforce initiatives that focus on jobs with large and growing numbers of openings. Many of these initiatives start by identifying a targeted list of high-demand jobs. The most common approach for arriving at this list is engaging employers and other partners in a planning process that relies heavily on existing government **projections** of job openings within a state or region.

More recently, these projections have been enhanced by including information captured from job board postings and company websites, otherwise known as **real-time labor market information (LMI)**. In this planning process, employers as well as business and industry associations are routinely asked to assist in identifying targeted jobs by providing feedback on this information.

This approach to identifying workforce needs is a useful start, but when developing practical solutions, it has shown real limitations. That's why Talent Pipeline Management® (TPM) goes further by engaging employers in developing their own projections of future openings for **critical jobs** they have targeted.

The purpose of Strategy 2 is to prepare you to engage your employer collaborative members in **demand planning**—a process to project future openings for your collaborative's most critical jobs, regardless of whether they are filled by upskilling current employees or hiring new employees. In TPM®, the first task of an employer collaborative is to ensure the group has actionable data that will allow it to create value for members through talent supply chain solutions.

This process has the added benefit of generating projections that might be useful to other community stakeholders interested in improving labor market projections by comparing demand planning results with data from government occupational projections and real-time LMI.

Strategy 2 Learning Objectives

1 Define the role of demand planning in managing the talent pipeline.

2 Compare the strengths and weaknesses of different approaches for projecting demand.

3 Conduct a demand planning process for critical jobs.

4 Communicate demand planning projections.

Strategy 2 Action Plan

	2.3 Using State and Real-Time LMI in Selecting Critical Jobs for Demand Planning	2.4 The TPM Demand Planning Process	2.5 Reporting Demand Planning Results	TPM Web Tool
ACTIVITIES Actions taken to achieve desired outcomes	• Analyze occupational projections using state and real-time LMI data	• Select critical jobs • Determine time period for analysis • Agree on business assumptions underlying workforce estimates • Select survey template and schedule survey delivery • Prepare collaborative members to participate in survey	• Organize survey data and identify best template for reporting results • Identify action items and key decision points for collaborative members when reviewing results • Determine which stakeholders (beyond collaborative) will see results and when • Organize report review meeting	• Select survey template and schedule survey delivery • Organize survey data and identify best template for reporting results
MILESTONES Progress points marking significant development		• List of critical jobs included in demand planning survey with time period, assumptions for estimates, job levels, and other details • Design and approval of survey instrument(s) • Completion of survey delivery • Survey responses collected	• Demand planning reports developed and presented • Constructive feedback provided • Focus of collaborative refined	• Design survey • Completion of survey delivery • Demand planning reports developed and presented
OUTPUTS Achievements resulting from actions		• Number and percentage of collaborative members completing demand planning survey(s)	Number and percentage of: • Collaborative members validating survey results • Collaborative members agreeing to participate in Strategy 3 hiring requirements survey • Collaborative members participating in the process that would consider demand planning again in a year	• Number and percentage of collaborative members completing the demand planning survey(s)

*Unit 2.1: The Role of Demand Planning in TPM and Unit 2.2: State Occupational Projections and Real-Time LMI cover educational information and therefore are not included in the Strategy 2 Action Plan. However, this resource is meant to serve as a guide and not an exhaustive list of all the activities, milestones, and outputs your collaborative can achieve.

Key TPM Terms and Definitions

Here are the concepts that are most critical for understanding and executing Strategy 2. These terms appear in the order in which they are listed below and are highlighted in red throughout the chapter.

Projections
In the context of TPM, projections are quantitative estimates of future employment by industry and occupation. Projections can be short- or long-term, which are defined differently depending on the originating source making the projections.

Labor Market Information
Quantitative or qualitative data related to employment and workforce trends in national, state, regional, and local labor markets.

Real-Time Labor Market Information
Aggregated job openings and skills data generated by using web technologies to capture and analyze job postings from job boards and websites. Real-time LMI also includes supply-side analysis using resumes and job board worker profiles.

Critical Job
A job that has been selected by the employer or employer collaborative to focus its attention on, whether an entry-level job or an advanced job for internal talent sourcing.

Demand Planning
The process of developing annual or short-term projections of job openings based on a set of assumptions and a time period chosen by an employer collaborative.

State Occupational Projections
State government projections of short-term (e.g., two-year) and long-term (e.g., 10-year) job openings resulting from new jobs and replacement of existing jobs. State occupational projections are based on government-defined occupational classifications and are produced at the state and sub-state levels.

Survey
Employer collaboratives conduct two types of surveys:

1 **The Needs Assessment Survey** addresses employer projections of job openings through demand planning (as presented here in Strategy 2) and competency, credential, and other hiring requirements (Strategy 3).

2 **The Talent Flow Analysis Survey** identifies the actual specific sources of talent from providers (also called back mapping) and supplies the basis for linkages with other data for more comprehensive talent flow analysis to analyze the capacity of providers to supply needed talent (outlined in Strategy 4). For example, this survey might show that a company's welders consistently come from a particular community college program, or that most of its recent engineering hires graduated from a university in a neighboring state.

Backfilling

To fill a position or job that has recently or will become open due to an existing worker having changed roles in the company/industry or advanced in their career.

Feeder Job

A job—usually entry-level—that is being sourced internally to fill an opening for a critical job.

Unit 2.1

The Role of Demand Planning in TPM

One of the most important functions of employer collaboratives as end-customers in the talent supply chain is to clearly communicate the projected number of job openings in critical jobs. The TPM approach to demand planning builds on the lessons learned from supply chain management.

In supply chain management, end-customers constantly communicate four key pieces of information:

1 **Quantity:** How much of a product or service do I need?

2 **Location:** Where do I need it?

3 **Time:** When do I need it?

4 **Quality:** What requirements make these products or services fit for their intended use?

Suppliers always want to know this information as far in advance as possible, so they can have time to plan and allocate resources to meet their customers' demands. However, in a constantly changing business environment, this is not always possible. One major lesson from supply chain management is that long-term **projections** are usually not feasible and might even be misleading. Instead, end-customers should focus on dynamic, short-term projections that are updated constantly, while working closely with suppliers to shorten their lead times—the time it takes to make and deliver a product or service.

Another major lesson is that end-customers must make some assumptions about the future business environment, even in producing short-term projections. It is important for the end-customer to be clear on these assumptions and to specify which projections fit which scenario based on which assumptions. This same process can be applied to managing demand for talent.

Employer collaboratives play a critical end-customer role in constantly communicating to their key partners their projected demand—and the assumptions underlying that demand—for talent for their most critical jobs.

Similar to supply chain management, employer collaboratives must communicate the following:

1 **Quantity:** How many job openings must we fill?

2 **Location:** Where will these job openings be available?

3 **Time:** When do we need these job openings to be filled?

4 **Quality:** What are the hiring requirements for filling these jobs?

Employers need to be fully engaged so they take ownership in developing projections that can be used for working internally as well as with external suppliers in addressing critical needs. *Building this ownership and trust is critical*. In supply chain management, end-customer projections are considered proprietary and are communicated with partners only under strict guidelines to make sure they are not shared with competitors.

The demand planning process addresses these concerns. Employer collaboratives gather information from their members through their own demand planning process. In so doing, they provide all the proper assurances that individual employer responses will not be shared with other employers and that any information shared with outside partners or stakeholders will be in the aggregate in order to protect information deemed to be proprietary.

Unit 2.2

State Occupational Projections and Real-Time LMI

The TPM approach to demand planning is an alternative and complementary source of projected job openings data. It is best developed and used in the context of other data sources, especially **state occupational projections** and real-time LMI.

State Occupational Projections

The Employment and Training Administration, U.S. Department of Labor, in collaboration with the Bureau of Labor Statistics (BLS), provides grants to states to produce short-term (two-year) and long-term (10-year) industry and occupational projections.

Occupational projections address major occupations based on the Standard Occupational Classification (SOC) system. Employers use a variety of job titles that can be crosswalked to one or more of these occupations. These projections are based on guidelines and assumptions established through BLS and its state partners. Occupational projections are usually presented to the public in standard reports that convey current employment levels for each occupation and projected job openings related to growth—new positions added—and replacement openings related to refilling existing positions (see Table 2.1: State Occupational Projections Example).[1]

State occupational projections are free to the public and normally made available on the websites of state workforce agencies. They are also widely referenced in state and regional plans, studies, and reports, including those used in Strategy 1 to explore potential focus areas.

Table 2.1: State Occupational Projections Example

Standard Occupational Classification (SOC)		Emp.	Employment Change 2008–2018		Average Annual Job Openings Due To		
Code	Title	2008	Number	Percent	Growth	Replacements	Total
Technology and Information Services							
15-1031	Computer Software Engineers, Applications	17,421	4,271	24.52	427	147	574
15-1099	Computer Specialists, All Other	17,182	1,053	6.13	105	370	475
15-1021	Computer Programmers	23,914	-2,018	-8.44	0	450	450
15-1061	Database Administrators	4,906	665	13.55	67	82	149
17-2072	Electronics Engineers	4,146	283	6.83	28	95	123
17-2071	Electrical Engineers	5,033	38	0.76	4	116	120

Source: Illinois Pathways SOC projections for IT occupations.

[1] For more information, see "State Employment Projections Program" by the LMI Institute through the Center for Regional Economic Competitiveness.

Real-Time LMI

Real-time LMI emerged in recent years thanks to the increased availability of online job postings and the increased sophistication of web protocols and search algorithms to capture and compile these data. Real-time LMI data providers scan thousands of job boards and websites daily to gather the most recent job posting data available. However, these data are limited to those job openings that are posted on job boards and websites.

Real-time LMI data providers usually produce reports that combine similar jobs and provide number counts of job openings by occupation in ways that can be crosswalked to government occupational classification systems (see Table 2.2: Real-Time LMI Report Example).

These reports are not free and are usually purchased from the provider and made available by government agencies, universities and colleges, and state and regional planning initiatives.

Real-time LMI providers include Burning Glass, Economic Modeling Specialists International (EMSI)/Career Builder, Geographic Solutions, Monster, and WANTED Analytics. Many of these providers, such as EMSI, combine government, real-time LMI, and other data sources to produce their own projections for public and private customers.[2]

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[2] For more information, see "Real-Time Labor Market Information" by the LMI Institute through the Center for Regional Economic Competitiveness.

Table 2.2: Real-Time LMI Report Example (Mean Postings in Number of Days)

	Occupation	Count, Employers	Count, Overall	Mean Posting Duration, Employers	Mean Posting Duration, Overall
1	Software Developer/Engineer	2,763	50,003	45	34
2	Cyber/Information Security Engineer Analyst	1,181	13,606	45	36
3	IT Project Manager	757	13,684	39	31
4	Systems Analyst	716	11,492	42	33
5	Network/Systems Administrator	685	13,803	42	31
6	Computer Systems Engineer/Architect	630	11,179	43	35
7	Network Engineer/Architect	577	9,242	40	31
8	Database Administrator	471	9,230	45	34
9	Computer Support Specialist	469	7,605	40	29
10	Data Mining Analyst	354	3,892	46	38
11	Business Intelligence Analyst	319	4,612	38	32
12	Network/Systems Support Specialist	312	5,153	40	34
13	Business Intelligence Architect/ Developer	305	6,315	43	31
14	Software QA Engineer/Tester	269	5,143	41	32
15	Web Developer	261	4,912	45	31
16	Geographer/GIS Specialist	188	1,187	40	30
17	Data Warehousing Specialist	184	2,237	39	39

Source: Adapted from Elevate Virginia Burning Glass Presentation for IT employer collaborative.

Unit 2.3

Using State and Real-Time LMI Data in Selecting Critical Jobs for Demand Planning

State and real-time LMI data play important roles in the TPM process. They are best used to help determine the focus area of a collaborative as secondary labor market information resources, as described in Strategy 1, and to finalize the critical jobs that will be included in the TPM demand planning process.

State occupational projections provide a useful government perspective on occupational trends and call attention to occupations likely to have significant job openings. Real-time LMI is useful in validating these projections and providing more recent information on job postings. However, employers participating in a collaborative should make final decisions on the critical jobs that will be included in their demand planning process.

Employers should also use the job or occupational titles that are widely used in their own job descriptions and postings and not strictly rely on job taxonomies that have been developed by government or other outside organizations.

Two important questions should be addressed before collaboratives engage in demand planning:

1 Why is demand planning necessary when data are readily available on projected job openings?

2 Why will there be differences between demand planning projections and data from other sources?

Why Is Demand Planning Needed?

It is important to recognize that state occupational projections and real-time LMI can provide useful information for finalizing the selection of critical jobs for demand planning. Employers in the collaborative, however, must decide which jobs are most critical to their economic competitiveness and growth and are also most difficult to fill. Often, jobs with the highest number of openings will not be the most important jobs for employers to address.

In reality, state occupational projections and real-time LMI do not provide the customized and granular information needed for specific groups of employers to develop and manage their talent pipelines. Getting this type of information requires an employer-led demand planning process.

Why Will Job Opening Information Be Different?

To understand why there can be significant differences between demand planning projections and other sources of job forecasting data, we must unpack key characteristics of state occupational projections and real-time LMI (see Table 2.3: Comparing LMI with Demand Planning for a summary).

Limitations of State Occupational Projections

- **Job Definitions May Not Match**
  Employer collaboratives may be addressing critical jobs that do not match closely with government-defined occupations. Sometimes employer-defined jobs involve one or more government occupations that have to be combined to make comparisons.

- **Employer Staffing Patterns Are Generalized**
  Government occupational projections are based on assumptions about the average job mix (called staffing patterns) within a business establishment sharing the same North American Industry Classification System (commonly referred to as NAICS) code. For example, government surveys might estimate that, on average, 50% of all jobs within a hospital are registered nurses, but a specific hospital in the collaborative might use a coordinated care model that involves a higher percentage of nurses.

- **Definitions of Replacement Needs and Turnover Rates**
  Government projections define replacement needs only when a worker leaves the labor market altogether, whether because of retirement or other factors. Employers define replacement needs based on their estimated turnover rates, which could vary by employer and might result in higher estimates of job openings related to replacement needs.

- **Employer Growth Rates Are Generalized**
  Government projections assume an average growth rate for employers within a specific industry. However, employers may serve different markets and be more competitive when compared with other employers and have growth rates that are significantly lower or higher than the average.

- **Economic Assumptions Ignore Regional or Industry-Specific Factors**
  Government projections make basic assumptions about overall economic growth and the growth of different industries that might not reflect the changing economic environment of a state, region, or members of an employer collaborative.

- **Forecasting Time Periods Are Not Useful for Short-Term Needs**
  Employer collaboratives focus on annual short-term projections for periods of two years or less, which may be different from the time periods addressed in government projections.

Real-Time LMI

- **Employer Projections Differ from Actual Openings and Jobs Filled**
  Employer projections of job openings are different from actual job openings, including the possibility that a job posting has been filled and is not yet removed from a job board.

- **Data Do Not Cover All Industries or Types of Jobs**
  While real-time LMI can reflect major trends in employer hiring on any given day, it does not accurately represent some industries and types of jobs, particularly those at the sub-baccalaureate level.[3]

- **Employers Use Job Ads Inconsistently**
  Companies also vary in how and when they use job ads. For example, many employers first seek internal candidates, leverage referral networks, and recruit at job fairs. Others are required to post job ads to job boards as a condition of doing business with the government. Some employers use one job ad to fill multiple openings. Still others post job ads with the anticipation of future openings contingent upon a certain scenario playing out, such as securing a new contract.

- **LMI Reports Combine Occupation Titles**
  Employers may use different job titles and job groupings than those reported by real-time LMI providers. This is because real-time LMI reports scrape a large number of job boards and use data analytics to aggregate similar occupation titles and requirements in order to create summary reports.

Table 2.3 summarizes the differences between state projections, real-time LMI, and demand planning.

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[3] Georgetown University Center on Education and the Workforce, Understanding Online Job Ads Data: A Technical Report (Washington, D.C.: Georgetown CEW, April 2014).

Table 2.3: Summary Comparing State Projections and Real-Time LMI Data with Demand Planning

Feature	State Occupational Projections	Real-Time LMI	Demand Planning
Objective	To determine which occupations are growing—or declining—in the short term and long term and whether growth or decline is a result of employment demand, technological changes, or occupational separation	To assist workforce planning by providing information on current projected demand based on actual job postings by companies	To determine a more precise level of demand across employer collaborative members to assist in building a talent supply chain
Data Source	Federally administered state employer surveys for current occupation employment; U.S. BLS for technological change and occupation separations; state industry employment projections (2-year and 10-year) based on historic industry trend data	Job postings scraped from job boards or company websites	Direct from employer collaborative members based on agreed-on key assumptions
Time Period Covered	2- or 10-year projections based on recent trends	Current, based on active online job postings	Short term, determined by the business collaborative members based on business cycles and talent development lead times
Targeted Jobs	More than 800 detailed occupations defined by SOC	Jobs aggregated from open job board websites and online job ads posted by companies; coverage uneven across occupations and industries	Jobs selected by employer collaborative members; coverage uneven across occupations and industries
Key Assumptions	Average projected growth of occupations is a result of occupation separations, technological change, and historic industry trends	Online job postings represent employer demand based on current worker recruiting strategies	Employers are capable of accurately producing, sharing, and making adjustments to their projections for new and replacement positions

Labor Market Information Exercise

The purpose of this exercise is to enhance your ability to work with LMI and state occupational projections to focus your employer collaborative on jobs most relevant to the group's critical business functions.

An employer collaborative in the information technology sector has decided to focus on the business function of software development. As the collaborative gets ready to undertake demand planning as its first major task, it wants to understand what the current LMI says about its focus area in the region initially chosen by the collaborative. Primarily, it wants to verify that it chose correctly and that it is choosing the job titles that are the most relevant to this business function.

The host organization pulls together publicly available state occupational projections and runs a report using an existing contract with a real-time LMI vendor. The results are shown in Tables A and B.

After reviewing the exercise, discuss the following:

1 In reviewing the state occupational projections, identify the occupations with the highest and lowest growth rates.

2 After reviewing the real-time LMI report, what new information do you have about the demand for jobs related to software development? How is this information similar to or different from state occupational data?

3 Using what you learned from Unit 2.3, what conclusions can you, as the host organization managing the information technology collaborative, draw about the focus of the collaborative? What are the limitations of both approaches? What questions remain?

4 Identify two or more ways that the demand planning process may answer some of your questions and provide different or complementary data.

Table A: State Occupational Projections for Software Development

Standard Occupation Code (SOC)	Employment 2016	Employment Change 2016–2026	Employment Change %	Growth (New Positions)	Replacement Positions	Total
15-1132 Software Developers, Applications	55,000	7,500	13%	750	200	950
15-1133 Software Developers, Systems Software	32,000	550	1%	6	340	346
15-1199.01 Software Quality Assurance Engineers and Testers	3,900	1,000	25%	100	110	210
15-1131 Computer Programmers	14,000	-975	-6%	0	230	230
15-1134 Web Developers	17,000	1,200	7%	120	150	270

Table B: Real-Time LMI Report for Software Development

Occupation	Job Postings by Selected Employers*	Overall Postings	Mean Posting Duration for Target Employers (In Number of Days)	Mean Posting Duration Overall (In Number of Days)
Software Developer/ Engineer	2,476	13,500	55	35
Software QA Engineer/ Tester	1,200	1,900	60	50
IT Project Manager	750	8,500	33	30
Systems Analyst	687	6,900	40	32
Computer Systems Engineer/Architect	550	7,680	30	33
Network/Systems Administrator	250	11,000	25	25
Computer Support Analyst	875	13,000	45	30

*Based on the contract with the real-time LMI vendor, select companies—denoted here as selected employers—were included in scraping job profiles and therefore not all available job postings were included in the report.

Unit 2.4

The TPM Demand Planning Process

Government projections and real-time LMI provide a baseline of information to help employers get started—namely by helping employers determine their focus. But employer collaboratives can improve the information available to their members by generating more customized and granular projections of demand for the jobs on which they are focused. If your employer members are going to realize a measurable return on investment, this requires that they produce information specific to their needs, including more authentic and reliable demand projections.

As described in Strategy 1, your first collaborative meeting should determine the focus of the collaborative, including the most critical jobs that require a talent pipeline solution. Once a focus has been agreed on, you will introduce the **needs assessment survey** process as a first critical step in organizing your supply chain approach. The needs assessment survey encompasses both demand planning, as described here, and hiring requirements, which will be reviewed in detail in Strategy 3. These can be pursued separately or together, and the pros and cons of both approaches will be addressed in Strategy 3. In conducting your second meeting on the demand planning component of the survey process, the collaborative should follow an agenda that addresses at least five major steps.

1. Select critical jobs.
2. Determine the time period of projected talent needs.
3. Agree on business assumptions underlying workforce estimates.
4. Commit to a survey template and schedule.
5. Prepare collaborative members to participate in the survey.

1. Select Critical Jobs

In designing a data collection process for demand planning, leaders of the collaborative need to make three important decisions about where they will focus the survey.

1. Do we include all or some of the critical jobs on which the collaborative is focused in the demand planning survey?

   Some considerations include the following:

   - The need to get to a more focused and practical list from which to work
   - The relative importance of jobs compared with each other
   - Lead times and which jobs take more time to prepare qualified workers
   - Current problems in filling critical jobs and lack of supply
   - Rapid changes in competency and credential requirements

2. Do we combine some jobs into larger occupations that share many of the same work responsibilities and hiring requirements to address them in the first survey?

   Look for chances to combine and merge jobs that share a common set of work activities, such as different types of software developers. This is an opportunity to consolidate and simplify the number of business functions, jobs, and occupations to be addressed in the survey.

   Host organizations can request that their employer collaborative members submit their job descriptions, profiles, and job postings for review. This step can greatly simplify the survey process and promote a more common language in communicating demand along with competency and credential requirements. The TPM web tool enables this feature.

3. Do employer members want to establish levels for the critical jobs included in the survey?

   Employer members should be encouraged to do this if there are large numbers of job openings at different levels and these levels have different competencies, credentials, and other hiring requirements, including work experience. They also should consider doing this if entry-level jobs are entry points for career advancement to higher-level jobs; if this is the case, those jobs will need to be **backfilled**.

   Employer collaboratives are encouraged to focus initially on their most critical jobs but also consider feeder jobs in future demand planning when they begin to explore potential upskilling strategies for their existing workers in Strategy 5. A **feeder job** is a job—usually entry-level—that is being sourced internally to fill an opening for a higher-level or more advanced job or position. Employers should be encouraged to do this if critical positions are often filled by existing employees in related lower-level jobs such as retail managers coming from the ranks of retail sales associates or software developers coming from the ranks of software help desk positions. They should also be encouraged to do this if they are implementing new career pathway initiatives that will increase the number of existing employees being promoted to targeted critical jobs. Feeder jobs will be identified for future consideration in Strategy 4.

   In the process of refining which jobs will be included in the first demand planning survey, it is always essential to remind employers that the TPM survey process does not collect salary information. This protects employers from any legal risks in working together to address common talent needs.

2. Determine the Time Period of Projected Talent Needs

Government projections are usually for a period of 10 years or more, but *employer collaborative demand planning surveys should be conducted annually, if possible, and with projections for much shorter periods of time* (e.g., a two-year period). Employer collaboratives may choose periods between one and five years for a variety of reasons:

- Projections within this range can be tied to a business planning cycle.
- Business assumptions and strategic drivers can be identified for these periods.
- These time periods fit within talent development lead times.

Your collaborative should select a time period that gives providers as much lead time as necessary in developing qualified candidates without having to project too far into the future, which is difficult to do with accuracy. We recommend proposing two years as a starting point.

3. Agree on Business Assumptions Underlying Workforce Estimates

Collaboratives must decide on the assumptions that are agreed on by employers providing their projections of job openings. Sample assumptions an employer collaborative might consider include the following:

- Expected changes in national, state, or regional economic growth
- Whether customer demand will remain at projected levels
- Anticipated changes in policy and the regulatory environment
- Impacts of technology changes

Another consideration is the assumptions made about specific types of job openings. Employer collaboratives must decide whether job openings should be only full-time jobs, part time jobs, or full-time job equivalents. They also should decide whether job openings represent only full-year jobs, seasonal jobs, or both. They must decide whether to include temporary or contract work in these numbers. Collaboratives also have the option to include openings for work-based learning opportunities, such as internships and apprenticeships.

Negotiating assumptions about the business outlook and specific job types to study is not a simple task for those facilitating the collaborative's decision-making process. Employers are likely to overlook many of the necessary assumptions underlying their workforce estimates. The group's facilitators must be prepared to guide members through a consensus-building process to make sure there is shared agreement about the assumptions underlying the final demand planning data.

One place to start is to emphasize the need for all members to use the same assumptions in developing their projections, such as anticipated growth. It is also helpful to discuss what factors matter most in developing their projections; for each factor, host organizations can encourage employers to agree on relevant assumptions. If there is no clear agreement on changes in these factors, one option is to encourage employers to assume no major changes from current conditions.

4. Commit to a Survey Template and Schedule

The next step in implementing a demand planning process is deciding on the template to be used to administer the survey. This requires decisions on whether to ask for job-opening projections only for new positions, or also for openings when replacements are needed due to expected turnover (i.e., when people leave for new jobs, or when they leave the labor force due to retirement). In most cases, employers will want to include both because each is important and may require different strategies.

Decisions must also be made on whether to anticipate openings for a critical job at different levels. If job experience is important to your collaborative, you can ask for projected job openings for each job at the (1) entry level, (2) mid-level, and (3) senior level. This decision is very important because entry-level and mid- to senior-level jobs involve different work responsibilities and different competency requirements. They also usually have different hiring requirements, such as the number of years of work experience. Failure to specify different levels could result in the undersupply or oversupply of entry-level versus senior-level applicants. It is important for those collaboratives that decide to differentiate level of critical jobs to discuss as a collaborative what characterizes each level so that each collaborative member is accurately reporting their needs.

When employer collaboratives focus on upskilling strategies, another decision in future demand planning is whether to include feeder jobs in your survey. Collaboratives pursuing upskilling initiatives may want to backfill those jobs where workers are originating from. For example, if a collaborative was focusing on CNC machinists, they may decide to fill most or all of these jobs internally. The internal feeder job for entry-level CNC machinists could be machine operators, which would need to be backfilled as workers are upskilled into targeted critical jobs.

In addition, employer collaboratives can decide to ask other questions that help them manage talent pipelines. For example, they can ask employer members to project work-based learning opportunities such as internship openings. They can also ask for baseline data by requesting actual job openings over a baseline period that matches your projection period (e.g., two years). This will help a collaborative later determine whether its forecasting is accurate or in need of adjustments.

One Survey or Two?
One other decision that shapes survey content is whether to combine the two surveys that are part of the TPM process—the demand planning and hiring requirements (outlined in Strategy 3) surveys, which together are called the needs assessment survey. The alternative is to conduct separate surveys.

In general, employer collaboratives should conduct separate surveys in the following circumstances:

- **Multiple Focus Areas and Targeted Jobs**: The employer collaborative has more than one focus area or business function with many different jobs and levels, and wants to use demand planning to help narrow its focus.

- **Employer Commitment and Experience**: The collaborative does not have sufficient commitment from some employers to complete a longer and more complex survey, and needs first to do something quick and simple to build experience and trust among employers.

In contrast, employer collaboratives can conduct combined surveys when they are focused on one or two clearly defined business functions and have sufficient employer commitment to conduct a longer and more complex needs assessment survey. They can also conduct combined surveys in subsequent years when updating their job projections and hiring requirements.

Setting the Schedule
Finally, employer collaboratives also need to determine the schedule that will be followed, including when the demand planning survey will be sent out and when it will be completed. A date should also be set to review the aggregate results. Once employers see that the survey clearly adds value for them, a schedule can be set to make the data collection an annual process.

5. Prepare Collaborative Members to Participate in the Survey

For employers to respond effectively to a demand planning survey, they may need a primer on how best to organize their expected job needs in the appropriate time frame. One important lesson learned from supply chain management is that it is a team sport—that is, key stakeholders must collaborate across boundaries to improve the workings of a supply chain.

This applies within the company, as well as across a network of suppliers and customers. For a firm to organize the demand planning information needed for the survey, it may take several internal conversations and some consensus building.

Logically, you might think that job forecasting information should be supplied through the company's human resources department. However, the best results will often come from a conversation among human resources, hiring managers, and other critical functions in the company (e.g., finance).

Thus, collaborative leaders should review the need for employers to engage their internal hiring managers and other key decision makers in developing and validating projections for each selected business function and related jobs covered in the survey.

In most cases, the final estimates should rest with the hiring manager—the person who has been authorized to fill positions and who has the final say on hiring requirements—because he or she has the best understanding of actual hiring needs. This comprehensive approach to company survey responses has the added benefit of educating more stakeholders within the company about the mission of the employer collaborative, which helps ensure their buy-in and support.

Here are four additional ways to fully engage collaborative members in completing the survey:

- Review the TPM web tool (or whichever medium the host organization will use) and show examples of how the survey can be completed and submitted.

- Show examples of how the TPM web tool will aggregate and report results to protect the confidentiality of employers. Also, emphasize why the TPM process should not be used to collect salary information to protect members from any legal risks of working together to address their common talent needs.

- Show examples of what could be shared with outside stakeholders, including education and training providers, and emphasize that the collaborative will choose how the results will be shared. Collaboratives can retain this information until they have completed subsequent strategies or make this information immediately available to outside stakeholders and education providers as it becomes available.

- Summarize the decisions made by the collaborative about the design of the demand planning survey and confirm the date of the next meeting to review the results.

Unit 2.5

Reporting Demand Planning Results

After your collaborative members have successfully responded to a customized demand planning survey to project their level of need for new and replacement positions for critical jobs, the next step is creating and organizing reports and sharing the findings.

Organizing Demand Planning Reports

Creating and organizing reports is an important responsibility of the host organization. Given the private nature of the data employers are sharing, this information is best revealed only in its aggregate form, in which no specific employer data are shared. Collaborative members will decide when and how results will be communicated to external partners.

The simplest way to organize this information is by business function and job, with total numbers for new and replacement positions. If you have designed your demand planning survey to capture projections by level (e.g., entry level), you can provide more detailed information that can help in building your internal and external talent supply chain. Looking ahead, decisions made in Strategy 5 around the pursuit of upskilling strategies to meet your talent pipeline needs may require you to do additional demand planning. Specifically this would target related entry-level jobs that are feeder jobs to these critical jobs that may also grow and require backfilling. Examples of how to display new and replacement positions and by level are shown below.

Table A: Example by Total New and Replacement Positions

Job	New	Replacement	Total
CNC Machinists	65	100	165
Welders	70	90	160

Table B: Example of New and Replacement Positions by Level

Job	New	Replacement	Total
CNC Machinists	65	100	165
Entry Level	30	87	117
Mid-Level	25	10	35
Senior Level	10	3	13
Welders	70	90	160
Entry Level	50	65	115
Mid-Level	20	25	45
Senior Level	0	0	0
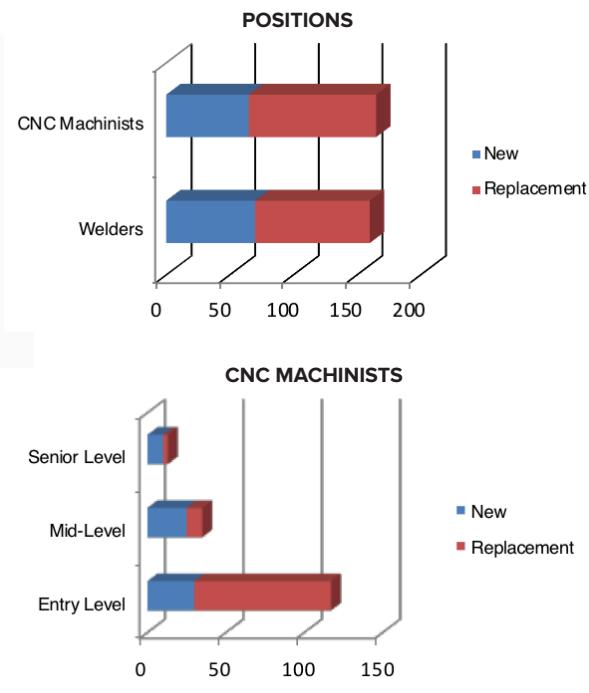
Sharing Aggregate Findings

After creating demand planning reports with the results of the survey, employer collaboratives must decide how they will use the data and with whom they will share the reports. When sharing with collaborative member companies, the data should be used to (1) verify that the focus of the collaborative is the right one; (2) if possible, further narrow the collaborative's focus using the new data; (3) share results with your own employees; and (4) inform providers and other stakeholders in the community or select key education and workforce partners. In Strategy 3, we will expand on the topic of sharing report findings with different stakeholders.

As noted earlier, sharing aggregate findings should build on the agreement that was made, or the understanding that was established with employer members, in terms of who should see the data and when.

Exercise 2

Demand Planning Report Exercise

This exercise demonstrates how employer collaborative members can walk through the five-step demand planning process to make a final determination on where to focus their attention.

We return to the information technology employer collaborative that is focusing on software development as a shared pain point. After kicking off the collaborative, the host organization reviewed existing state occupational projections and real-time LMI. Satisfied with what the data revealed in terms of where it should focus its efforts, the collaborative decided to move forward with the following jobs: (1) software application developers; (2) software quality assurance testers; and (3) network administrators.

Next, the collaborative decided to forecast the level of demand for these jobs across its companies within a two-year period. It also decided to make the following assumptions: (1) above-average business growth based on steady growth to date; (2) new contracts would be secured; and (3) limited changes in the regulatory environment. The collaborative decided to start by reporting total new and replacement full-time equivalent jobs including temporary and contract hires, and to revisit its approach in a year to see if it should make changes to the key jobs on which it is focused.

The collaborative plans to use the initial demand planning results to clarify its focus and to share findings with a local college and workforce board that has been actively seeking better employer data. After the host organization administered the survey, it reported back the following results:

Job	New	Replacement	Total
Software Application Developer	125	95	220
Software Quality Assurance Tester	45	25	70
Network Administrator	85	30	115

New   Replacement
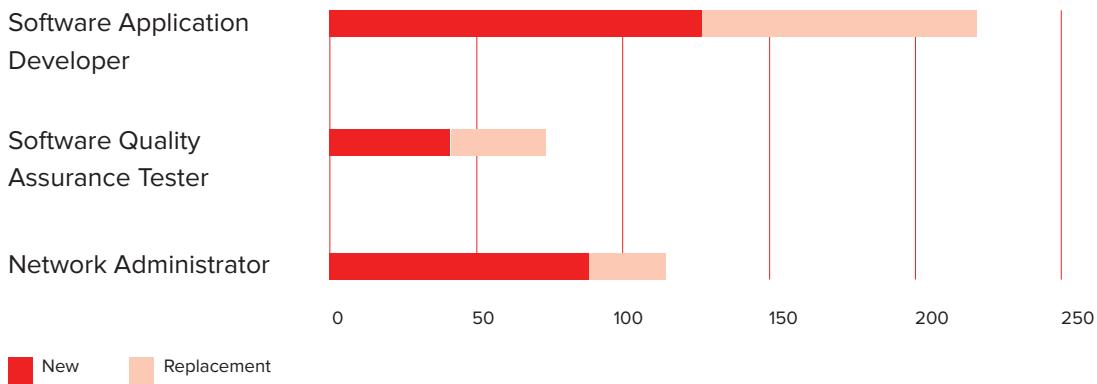
After reviewing the exercise, discuss the following:

1   Based on the results, would you make any changes to the collaborative's focus?

2   Identify two or more ways in which the survey results could change based on the assumptions that were included in the demand planning survey design process.

3   Over time, what are some ways that the employer collaborative can expand on or improve the data it collects?

Ready for Next Steps?

Before you move to the next strategy, make sure you have achieved the learning objectives necessary to move forward. When you go back to your community, ensure you will be able to execute the following activities:

- Explain the role of demand planning in TPM.

- Understand the key differences between state occupational projections, real-time LMI, and demand planning.

- Identify which jobs—and at what level—to start with in your collaborative.

- Select the schedule and key assumptions that will be factored into your projections.

- Use the Strategy 2 Action Plan at the beginning of the chapter to determine your next steps and track your progress.

- For those using the TPM web tool, design and distribute an employer demand planning survey to determine projected openings for critical jobs, and use the tool to report results to your employer collaborative.

NOTES

TALENT PIPELINE MANAGEMENT ACADEMY
Strategy 3: Communicate Competency & Credential Requirements

Strategy 3
Table of Contents

Introduction

Strategy 2 addressed the quantity, location, and timing of talent needs. Mitigating critical skill shortages also requires a focus on quality, which means addressing the **competency**, **credential**, and other **hiring requirements** for these critical jobs. This is the purpose of Strategy 3.

How employers accurately communicate their hiring requirements has important implications for how successful they are in managing their talent pipelines. Setting hiring requirements that are too low will increase costs to employers by requiring more on-the-job training and increasing turnover costs. Setting requirements that are too high will have the unintended consequence of excluding otherwise qualified candidates and potentially reducing the available talent pool, and imposing higher education and training costs on prospective workers. Both can result in positions going unfilled for long periods of time with potentially high onboarding and turnover costs.

Talent Pipeline Management® (TPM) treats communicating competency and credential requirements as a separate strategy for the purposes of the curriculum given its importance and complexity, but *it is best to think of the outcomes of this strategy as part of the combined process by which employer collaboratives communicate their combined need for talent and the hiring requirements for filling that need.*

As mentioned in Strategy 2, a key decision for employer collaboratives is whether they conduct (1) two separate surveys, with one focused on demand planning for job opening projections, followed by another focused on hiring requirements; or (2) a combined demand planning and hiring requirements survey, which we call the needs assessment. We will discuss the pros and cons of each choice after we review the essentials of communicating competency and credential requirements.

Strategy 3 Learning Objectives

1 Explain the role of communicating competency and credential requirements in TPM®.

2 Recognize different ways employers can communicate hiring requirements.

3 Develop a shared language for communicating competency and credential requirements with an employer collaborative.

4 Combine and share the results of demand planning and communicating competency and credential requirements, as outlined in Strategies 2 and 3.

Strategy 3 Action Plan

	3.2 Identifying Hiring Requirements	3.3 Reporting Hiring Requirements Results	TPM Web Tool
ACTIVITIES Actions taken to achieve desired outcomes	• Establish common language in describing work tasks, knowledge, skills, and tools and technologies • Develop agreement on most critical competency requirements • Agree on common (or most critical) credential requirements (and distinguish if they are required or preferred) • Agree to level of work experience to include • Assess the frequency in which the skills or competencies are applied on the job • Identify other requirements that collaborative members agree are important • Consider mapping and aligning hiring requirements by job level and for feeder jobs • Select survey template and schedule survey delivery • Prepare collaborative members to participate in survey	• Organize survey data and identify best template for reporting results • Identify action items and key decision points for collaborative members when reviewing results • Determine which stakeholders (beyond collaborative) will see results and when • Organize meeting to review results	• Select survey template and schedule survey delivery • Organize survey data and identify best template for reporting results
MILESTONES Progress points marking significant development	• Consensus on business functions, jobs, levels for critical positions • Design and approval of hiring requirements survey instrument • Completion of survey delivery • Survey responses collected	• Hiring requirements reports developed and presented • Constructive feedback provided • Focus of collaborative refined	• Design survey • Completion of survey delivery • Hiring requirements reports developed and presented
OUTPUTS Achievements resulting from actions	• Number and percentage of collaborative members completing hiring requirements survey(s)	Number and percentage of: • Collaborative members validating survey results • Collaborative members participating in the process that would consider doing hiring requirements survey again in a year • Collaborative members agreeing to participate in Strategy 4 talent flow analysis survey	• Number and percentage of collaborative members completing the hiring requirements survey(s)

*Unit 3.1: The Role of Communicating Competency and Credential Requirements in TPM covers educational information and therefore is not included in the Strategy 3 Action Plan. However, this resource is meant to serve as a guide and not an exhaustive list of all the activities, milestones, and outputs your collaborative can achieve.

Key TPM Terms and Definitions

Here are the concepts that are most critical for understanding and executing Strategy 3. These terms appear in the order in which they are listed below and are highlighted in purple throughout the chapter.

Competency
What someone should know or be able to do in a particular job as demonstrated through tasks performed; tools and technologies used; and knowledge, skills, and abilities applied. In Strategy 5, we will discuss learning outcomes, which are similar to competencies but are more commonly associated with curricula.

Credentials
Documents attesting to qualifications and the attainment of competencies, usually in the form of education degrees and certificates, industry and professional certifications, badges, and licenses.

Hiring Requirements
The competencies, credentials, work experience, and other characteristics (e.g., ability to pass a drug test) used for making hiring decisions for one or more jobs related to a business function. Hiring requirements can be preferred or required.

Skills
Capabilities to apply knowledge and perform work tasks.

Work Tasks
Work performed in carrying out job roles, functions, and responsibilities.

Knowledge
What a person should understand in terms of facts, theories, principles, concepts, and procedures related to general or specific domains, including disciplines and professions.

Tools and Technologies
Essential technologies used to perform work tasks and skills, including software and equipment.

Employability Skills
Essential workplace skills needed to be successful in any job, including what are commonly referred to as "soft skills," such as problem solving, critical thinking, communication, and teamwork.

Unit 3.1

The Role of Communicating Competency and Credential Requirements in TPM

Clearly communicating hiring requirements for their most critical job openings is one of the most important challenges facing employer collaboratives. TPM focuses major attention on clearly specifying competency and credential requirements through a shared language so employers within the collaborative can understand how their needs are both similar and different. This ability to communicate differences in a clear and consistent manner will enable talent providers to better customize and meet the needs of all employers instead of aiming for an average fit.

Employers have choices in how they communicate their hiring requirements. Many employers have historically relied on education credentials as a proxy for **skills**, but in today's economy, employers are becoming increasingly sophisticated in how they communicate their hiring requirements in order to better source talent.

In TPM, employers should communicate their hiring requirements for critical jobs by minimally addressing competencies, credentials, work experience, and other hiring requirements (e.g., security clearance, citizenship). TPM also focuses major attention on how employers can more clearly communicate which qualifications are required, and which are preferred for critical jobs.

Communicating competency and credential requirements as well as other hiring requirements is critical in TPM because it helps employers and potential employees do the following:

- **Get the Right Applicants**: Communicating competency and credential requirements clearly signals requirements to get the most qualified candidates to apply in a way that does not drive up screening costs or deter qualified candidates from applying.

- **Hire the Right People**: Communicating competency and credential requirements improves the capacity of employers to screen and hire the right people who can be quickly and reliably onboarded, trained, and retained.

In setting hiring requirements, employers should consider their implications for achieving return on investment in managing their pipelines. Setting requirements that are lower than what is necessary for successful onboarding and work performance may result in increased hiring costs, lower productivity, and lower retention.

In contrast, setting requirements that are higher than necessary may result in a reduced pool of qualified talent and higher costs in developing talent in the pipeline. This also may result in lower retention rates due to higher expectations among workers meeting these higher requirements.

Given these implications, the best approach is for hiring managers to conduct a detailed analysis of job requirements and the characteristics of top performers in these jobs who have been successfully retained and use this analysis to establish validated hiring requirements.

TPM encourages employers to use the Strategy 3 survey process for sharing and compiling validated hiring requirements in a common language based on shared competency and credential frameworks, taxonomies, and other resources.[1] This common language is necessary to identify both similarities and differences in hiring requirements and opportunities for aligning and harmonizing these requirements over time—its importance cannot be understated, and the Strategy 3 process provides the vehicle for rich dialogue for employers to have with one another on how to improve their signaling.

It is worth reiterating that by identifying the commonalities and differences of employer requirements, this process does not require that employers come to complete agreement on which competencies are tied to their critical jobs.

Instead, it is more important that employers clearly communicate employer similarities and differences to education and training providers. This survey process using the common language then can be used by employers to constantly update job descriptions and online job postings.

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[1] Andrew Reamer, Robert Sheets, and Jason Tyszko, Clearer Signals: Building an Employer-Led Job Registry for Talent Pipeline Management (Washington, D.C.: U.S. Chamber of Commerce Foundation, 2017).

Analyzing Job Descriptions Exercise

The exercise below illustrates how differently employers signal hiring requirements for critical jobs and calls into question how employers can unintentionally narrow their candidate pool.

On the following page are two examples of job requirements for software developers—one generic and the other by level. The requirements are typical of what you might find when looking at a job description or online job posting and are consistent with what you might find in a labor market report highlighting job requirements.

Review the requirements for each job and compare and contrast them. After reviewing the exercise, discuss the following:

1 Highlight some of the competency and credential requirements for each of the positions and describe ways in which they can be improved or communicated more clearly.

2 Based on the way the job hiring requirements are written, explain how an unqualified candidate may think they are qualified or be referred by a provider that offers job placement services.

3 Identify how the hiring requirements may inadvertently reduce applications from otherwise qualified candidates.

Requirements	Description 1: Software Developer	Description 2: Software Developer, Senior Level
Key Job Functions and Responsibilities	- Develop new systems and maintain operational programs and procedures. - Lead transformational initiatives, such as use of agile practices and migration to future software architectures, and establish project standards and processes. - Work with stakeholders and product owners to define software requirements. - Design, develop, and maintain code that meets requirements, is high quality, and performs efficiently and effectively to provide a great customer experience. - Incorporate standards and best practices, including performance, security, usability, and maintainability. - Troubleshoot development, deployment, and production problems across multiple environments and operating platforms.	- Analyze user needs and software requirements to determine feasibility of design within time and cost constraints. - Confer with systems analysts, engineers, programmers, and others to design systems and to obtain information on project limitations, capabilities, performance requirements, and interfaces. - Design, develop, and modify software systems, using scientific analysis and mathematical models to predict and measure outcomes and consequences of design. - Develop and direct software system testing and validation procedures, programming, and documentation. - Modify existing software to correct errors, allow it to adapt to new hardware, or improve its performance. - Perform or oversee revision, repair, or expansion of existing programs to increase operating efficiency or adapt to new requirements. - Participate in an agile team to deliver the full life cycle, including requirements, architecture, design, development, testing, and deployment. - Write, analyze, review, and rewrite programs using a workflow chart and diagram and applying knowledge of computer capabilities, subject matter, and symbolic logic. - Write, update, and maintain computer programs or software packages to handle specific jobs, such as tracking inventory, storing or retrieving data, or controlling other equipment.
Skills	- Ability to quickly learn new concepts and software - Self-motivated and a team player - Strong communication skills, both written and oral - Strong problem-solving skills	- Critical thinking and complex problem solving - Teamwork and interpersonal skills - Effective communication skills - Project management
Technologies		- Operating Systems: Linux and OS X - Software: C, C#, C++, and SQL
Credentials	- Preferred: Bachelor's degree, preferably in computer science, computer engineering, software engineering, or a related discipline	- Required: Bachelor's degree, preferably in computer science, computer engineering, software engineering, or related discipline
Work Experience	- Preferred: At least two years	- Preferred: At least five years
Other	- Required: U.S. citizenship	- Required: U.S. citizenship - Required: Ability to obtain and maintain a government security clearance

Unit 3.2

Identifying Hiring Requirements

Identifying and, especially, communicating hiring requirements is a complex task, but one that is critical to the TPM process and worthwhile for the collaborative members. Collaboratives can experience greater leverage than individual employers as they communicate their talent needs to their provider partners. Collaborative members also benefit from the shared expertise of their peers to be able to articulate why these requirements are essential to their business.

The first major decision in identifying hiring requirements is whether it will be done at the business function level or for one or more jobs or jobs families (i.e., occupations). In most cases, it is best to identify hiring requirements at the business function level (e.g., machining, welding, software development), which will involve one or more common job titles used by employers in the collaborative.

In forming a collaborative—and as part of a demand planning survey—employers may focus on one or more job titles, possibly organized by occupation (e.g., by Standard Occupational Classification, or SOC, codes) within a business function. This could be because the employer collaborative's focus is separate occupations. However, the collaborative's focus might be different job titles but essentially the same job with many of the same hiring requirements.

For example, a collaborative may find its members call software developers by different titles, but the role the developers play is essentially the same. Organizing hiring requirements at the business function level has the added benefit of simplifying the process since one survey will cover multiple job titles, as opposed to identifying hiring requirements for two or more jobs.

Competency, Credential, and Other Hiring Requirements

One of the most difficult decisions to make is how best to communicate competency requirements. Employers have many different approaches for communicating this information, which usually involves a combination of (1) **work tasks** reflecting the major job functions and responsibilities, (2) **knowledge** and skills, and (3) adeptness with **tools and technologies**.

Minimally, a job description should communicate the most important work tasks—what a person should be able to do on the job—and the essential **employability skills**. Collaboratives can then decide to add more requirements over time and decide how to manage the delicate balance between capturing all essential information and making the hiring requirements survey too complex to capture and communicate this information.

In compiling competency requirements, employers must establish a common language in describing work tasks, knowledge, skills, and tools and technologies. They should work from previously established lists of requirements prepared by other employers, business and industry associations, or other trusted sources. Some of these sources might have been identified when establishing a focus area in Strategy 1. For those who have access to the TPM web tool, the site's Library provides access to some of the most widely used resources.

However, it is not just the competencies that matter, but also the preferred demonstration of the competency. In addition to articulating in-demand skills and competencies, TPM provides employers a process in which they can more effectively signal preferred demonstrations or assessments of that skill or competency to preferred and trusted talent sourcing providers.

It is important to keep in mind that even though employers may describe a skill the same way, they do not always mean the same thing. Context matters and differentiates the skills in one setting versus another. This is a common challenge with soft skills, for which "ability to manage time effectively" can mean entirely different things in the context of an information technology-related job versus a manufacturing and healthcare job. These distinctions are important so that TPM can help employers better signal to learners how to optimize their career readiness. Indicating preferred demonstrations and assessments allows for clarity in interpretation of stated skill sets.

Another important decision is how to list credential requirements and how to make sure you are capturing whether these credentials are required or preferred. "Required" means that a job candidate would be disqualified if he or she did not possess the credential at the point of hire. "Preferred" refers to a credential that enhances the competitiveness of the job candidate but is not used to qualify or disqualify an applicant.

Next, work experience can be defined in multiple ways, starting with number of years of professional experience in the workforce. Employers can request information related to time spent on projects, in a work-based learning experience, such as an apprenticeship program.

Employers also communicate other hiring requirements that can vary depending on the industry and job. Many of these requirements can be used to qualify or disqualify a potential candidate. Some of the most common requirements set by employers include citizenship status, drug-free status, security clearances, language skills, and references.

Hiring Requirements by Level, Importance, and Frequency

Employer collaboratives also face a major decision in how they communicate the level and importance of hiring requirements. Similar to what was covered in Strategy 2 on demand planning, employer collaboratives can set different requirements based on the level of the position they are planning to fill. This can be broken down by (1) entry level, (2) mid-level, and (3) senior level. For example, a collaborative can set different competency and credential requirements for different levels, even though they are addressing the same business function. Of course, collaboratives can defer on requesting information by level if this is deemed to be unnecessary or too advanced for getting started.

In addition, employer collaboratives can decide how to communicate the relative importance of different requirements. This can help further delineate how much weight different employers place on a particular requirement, which can be useful in determining how essential the requirement is for the purpose of building a talent pipeline. This is a very important decision, because employer collaboratives should clearly communicate priorities in their hiring requirements. The most common format is using a five-point scale ranging from "not important" to "very important," though this can be simplified even further.

To aid companies in determining the importance of a skill, they can also assess the frequency in which the skills or competencies are applied on the job. This is an important piece of information that can be ascertained through a job analysis and can help employers sort which skills are more or less important based on how often they are used in relation to how critical they are for the performance of the job.

Figure 3.1: Sample Survey Template includes a survey template of competency, credential, and other hiring requirements. This survey template was developed by TPM partners in Northern Virginia that formed an information technology collaborative with a focus on software development as a critical business function.[2]

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[2] Elevate Virginia Project Team. NoVA Talent Pipeline Management® Initiative Survey (excerpt). Oct 2015.

Figure 3.1 Sample Survey Template

Elevate Virginia Project Team, NOVA Talent Pipeline Management
Initiative Survey (excerpts), October 2015

ele**V**te
Skills for Jobs and Business Growth

Please rate the following tasks for **Computer Programmers I Software Developers** in terms of importance, with 1 being very important and 5 being not important at all.

	Entry-Level	Mid-Level	Senior Level
Analyze user needs and software requirements to determine feasibility of design within time and cost constraints.	☐	☐	☐
Confer with systems analysts, engineers, programmers, and others to design system and obtain information on project limitations and capabilities, performance requirements, and interfaces.	☐	☐	☐
Design, develop, and modify software systems, using scientific analysis and mathematical models to predict and measure outcome and consequences of design.	☐	☐	☐
Develop and direct software system testing and validation procedures, programming, and documentation.	☐	☐	☐
Modify existing software to correct errors, allow it to adapt to new hardware, or to improve its performance.	☐	☐	☐
Conduct trial runs of programs and software applications to be sure they will produce the desired information and that the instructions are correct.	☐	☐	☐
Correct errors by making appropriate changes and rechecking the program to ensure that the desired results are produced.	☐	☐	☐
Perform or direct revision, repair, or expansion of existing programs to increase operating efficiency or adapt to new requirements.	☐	☐	☐
Write, analyze, review, and rewrite programs, using workflow chart and diagram, and applying knowledge of computer capabilities, subject matter, and symbolic logic.	☐	☐	☐
Write, update, and maintain computer programs or software packages to handle specific jobs such as tracking inventory, storing or retrieving data, or controlling other equipment.	☐	☐	☐

How many years of experience are typically required for this position, **Computer Programmer I Software Developer**?

	0-3	3-5	5-7	7-10	10+
Entry Level	○	○	○	○	○
Mid Level	○	○	○	○	○
Senior Level	○	○	○	○	○

Please indicate your preferred industry sector experience, if any, for **Computer Programmer I Software Developer**?

	Commercial	Government Defense	Government Civilian
Entry Level	☐	☐	☐
Mid Level	☐	☐	☐
Senior Level	☐	☐	☐

Please select the typical compliance screening or security clearance required for the position of **Computer Programmer I Software Developer**?

	Entry Level	Mid Level	Senior Level
Confidential Clearance	☐	☐	☐
Secret Clearance	☐	☐	☐
Top Secret Clearance	☐	☐	☐
Sensitive Compartmented Information Clearance	☐	☐	☐
Criminal Background	☐	☐	☐
Work Status Verification	☐	☐	☐
Credit History	☐	☐	☐
Polygraph	☐	☐	☐
Q Clearance	☐	☐	☐
Other	☐	☐	☐

[ ]

Computer Programmer I Software Developer: Technical Competency—Development Method

	Entry Level	Mid Level	Senior Level
Scrum	☐	☐	☐
Agile	☐	☐	☐
Waterfall	☐	☐	☐
Other	☐	☐	☐

[ ]

Computer Programmer I Software Developer: Technical Competency—Operating Systems

	Entry Level	Mid Level	Senior Level
LINUX	☐	☐	☐
UNIX	☐	☐	☐
OS X	☐	☐	☐
Microsoft	☐	☐	☐
Other	☐	☐	☐

[ ]

Computer Programmer I Software Developer: Technical Competency—Programming Language

	Entry Level	Mid Level	Senior Level
C	☐	☐	☐
C#	☐	☐	☐
C++	☐	☐	☐
SQL	☐	☐	☐
HTML5	☐	☐	☐
HTML	☐	☐	☐
Java	☐	☐	☐
Matlab	☐	☐	☐
JavaScript	☐	☐	☐
Python	☐	☐	☐
XML	☐	☐	☐
Ruby	☐	☐	☐
Swift	☐	☐	☐
jQuery	☐	☐	☐
R	☐	☐	☐
Other	☐	☐	☐

Computer Programmer I Software Developer: Technical Competency—Database Management Systems

	Entry Level	Mid Level	Senior Level
MongoDB	☐	☐	☐
NoSQL	☐	☐	☐
Oracle	☐	☐	☐
PostgreSQL	☐	☐	☐
MSSQL	☐	☐	☐
MySQL	☐	☐	☐
Other	☐	☐	☐

Computer Programmer I Software Developer: Technical Competency—Other

	Entry Level	Mid Level	Senior Level
Apache Hadoop	☐	☐	☐
Apache Webserver	☐	☐	☐
JBoss (Wildfly)	☐	☐	☐
Sharepoint	☐	☐	☐
Wordpress	☐	☐	☐
Other	☐	☐	☐

Please rate the following Professional Business Skills for **Computer Programmers I Software Developers** at each level, with 1 being very important and 5 being not important at all.

	Entry-Level	Mid-Level	Senior Level
Critical Thinking	☐	☐	☐
Complex Problem Solving	☐	☐	☐
Teamwork and Interpersonal Skills	☐	☐	☐
Effective Communication in the Workplace	☐	☐	☐
Project Management	☐	☐	☐

Please indicate the typical minimum level of education required for the position of **Computer Programmer I Software Developer**

	Entry Level	Mid Level	Senior Level
High School Diploma	☐	☐	☐
Associates Degree	☐	☐	☐
Bachelor's Degree	☐	☐	☐
Master's Degree	☐	☐	☐
Advanced Degree	☐	☐	☐

Please describe any **REQUIRED** industry certifications or industry-recognized credentials not previously mentioned for **Computer Programmers I Software Developers** and indicate the experience level (entry, mid, senior) for which they are most relevant.

Please share any **PREFERRED** industry certifications or industry-recognized credentials not previously mentioned for **Computer Programmers I Software Developers** and indicate the experience level (entry, mid, senior) for which they are most relevant.

Source: Elevate Virginia Project Team, NOVA Talent Pipeline Management Initiative Survey (excerpts), October 2015

Identifying Changing Competency and Credential Requirements

As employers define their competency and credential requirements, they can identify major changes in hiring requirements that may require the upskilling of existing employees in those jobs. This could provide important information as collaboratives consider upskilling strategies in Strategy 5.

Major changes in competency requirements may be due to the addition of new job responsibilities or growing importance of existing ones, changing technical skill requirements because of new technologies or new work processes, or the addition and/or changes in foundational employability skills. For example, manufacturing companies may add significant industrial maintenance responsibilities to production workers because of growing automation. Healthcare employers may move to coordinated care approaches that expand the roles of nurses by requiring additional leadership and teamwork skills.

Major changes in credential requirements may be due to changing industry and government regulatory requirements or changes in talent recruitment strategies. One example is growing requirements for BSN nurses and the need to provide opportunities for ASN nurses to attain the higher credential. Another is changing requirements for industry and professional certifications.

Mapping and Aligning Hiring Requirements by Job Level and for Feeder Jobs

If employers are defining levels of critical jobs and related entry-level feeder jobs, they should make sure that they use comparable lists of competency, credential, work experience, and other hiring requirements. Employers should map and align these requirements so they consistently communicate both similarities and differences for each level and job, including frequency and importance of specific hiring requirements. They also should communicate a potential career pathway showing a progression from lower-level competencies, credential, and work experience requirements from a feeder job to an entry-level job for a more advanced position, which will be further discussed in Strategy 5. Table 3.1 presents an example for pipefitting from colleagues at the Greater Houston Partnership and their work with UpSkill Houston's petrochemical employer collaborative.[3]

[3] PetrochemWorks Steering Team, a collaboration of East Harris County Manufacturers Association and Associated Builders and Contractors of Greater Houston. PetroChemWorks.com.

Table 3.1 Sample Competency Map by Skill Set: Pipefitting

PIPEFITTER HELPER		
ENTRY LEVEL	**MID LEVEL**	**TOP LEVEL**
OJT: 6 Months—1 Year	OJT: 1 Year—2 Years	OJT: Until ready for independent work confirmed by site
Practice safety awareness	Apply basic pipefitting trade math	Apply advanced pipefitting trade math
Identify basic tools	Read and interpret a tape measure	Complete proper valve installation
Practice safe housekeeping	Perform proper oxyfuel cutting	Read, interpret, and describe a plan of work from a basic ISO
Apply basic construction math	Identify common fittings	Reference the graves bluebook to complete a piping system layout
	Identify basic components of an ISO	Install and connect a proper flange assembly
	Identify and use basic pipefitting hand and power tools	Identify common components of pipe/vessel trim (pipe to gauges)
	Perform proper grinding and beveling of pipe	
	Cut, ream, and thread pipe	
CRAFT PROFESSIONAL (JOURNEYMAN)—INDUSTRIAL PIPEFITTER		
ENTRY LEVEL	**MID LEVEL**	**TOP LEVEL**
Perform proper hydro testing	Select and install proper pipe supports	Fabricate and/or install a pipe spool
Lay out and fabricate screw (threaded) pipe	Describe and/or demonstrate installation of underground pipe	Describe and/or demonstrate proper planning for measuring, cutting, and installation of large bore piping
Complete proper fit up for socket weld pipe	Explain OD and ID and its impact on layout, calculation, and fabrication	Identify exotic piping materials, proper handling, and impact on field erection
Properly install and connect pipe/vessel trim	Bolting specialist	Perform pre-alignment (pipe stress to pumps)
Perform advanced ISO interpretation (develop and direct work plan)		Develop a field ISO
Perform basic pipe rigging (bull rigging)		Perform a material takeoff
Complete proper fit up for butt weld pipe		Qualified senior bolting specialist
Complete field erection/installation of pipe		
Flange makeup knowledge		
Field verify pipe spool dimensions		

Disclaimer: The Competency Map above is intended as a guide to confirm skill sets and to support career progression. This is not a training model. It does not cover every task a craftsman would perform at a specific level and should not be used as a training plan. The Competency Map shows overall knowledge and/or proficiency necessary to perform at a designated level. All helpers and journeyman are expected to practice high-quality craftsmanship. All experienced craft professionals are expected to guide and mentor lessor experienced helpers. All are expected to work with safety as the most important principle. All are expected to display high performance work behaviors: attendance, punctuality, teamwork, safety, and quality.

Where to Start: Reviewing Job Descriptions and TPM Resources

Employer collaborative staff should begin building the Strategy 3 component of the needs assessment survey by compiling the existing job descriptions and online job postings from employer members to identify similarities and differences in the definition of positions within the chosen business function. The TPM web tool enables users to upload job descriptions for this purpose.

Then, the collaborative staff should explore TPM resources that could be used to establish a common language for describing hiring requirements.

Deciding Whether to Conduct Separate or Combined Surveys

The needs assessment survey encompasses the surveys described in Strategy 2 (demand planning) and Strategy 3 (hiring requirements). Employer collaboratives must decide whether to conduct separate or combined surveys and how to design and carry out the survey(s).

In general, employer collaboratives should conduct separate surveys in the following circumstances:

- **Multiple Focus Areas and Targeted Jobs**: The employer collaborative has more than one focus area or business function, or many different targeted jobs and levels of these jobs, and wants to use demand planning to help narrow its focus.

- **Employer Commitment and Experience**: The collaborative does not have sufficient commitment from some employers to complete a longer and more complex survey and needs the collaborative to do something quick and simple to build experience and trust among employers.

In contrast, employer collaboratives should conduct combined surveys when they are focused on one or two clearly defined business functions and have sufficient employer commitment to conduct a longer and more complex needs assessment survey. Moving forward, they should conduct combined surveys when they do additional rounds of surveys to update projections and hiring requirements.

Building the Agenda for Your Survey Meeting

As described in Strategies 1 and 2, your first collaborative meeting should determine the focus of the collaborative. You will then introduce the needs assessment survey as a way to start the talent supply chain process. In conducting your meeting on the Strategy 3 component of the survey process, the collaborative should follow an agenda that addresses the following:

1   Select critical business functions, jobs, and levels.

2   Select the survey template and schedule.

3   Prepare your employer collaborative members for the survey.

1. Select Critical Business Functions, Jobs, and Levels

- Confirm the critical business function(s) and determine which will be addressed in the first survey involving hiring requirements.

- Review the common competency, credential, and other hiring requirements that were provided in any job descriptions and online job postings that employers have shared with one another. Employer collaborative members can also review hiring requirements used by other TPM collaboratives along with competency and credential taxonomies and frameworks found on the TPM web tool.

- Share the proposed survey draft with collaborative members based on the analysis of job information and TPM resources.

- Ask employer members to determine if they want to use job levels based on the demand planning survey results.

- Encourage employer collaborative members to seek data on different job levels if there are large numbers of job openings at different levels and these levels have different competency, credential, and hiring requirements, including work experience.

- Review the consequences of establishing hiring requirements that are too high or too low for the actual requirements at different levels.

- After the review, propose how to develop a final draft list of competency, credential, and other hiring requirements to be used in the survey for one or more levels.

2. Select the Survey Template and Schedule

- Review examples of the survey template that will be used, based on decisions about the number of business functions and jobs included, as well as levels and the competency, credential, and other hiring requirements that you have chosen to include.

- Propose and get agreement on a schedule for distributing and completing the survey.

3. Prepare Your Employer Collaborative Members for the Survey

- Remind employers about the need to engage hiring managers and other key decision makers in developing and validating survey responses for each selected business function and critical job.

- Emphasize the importance of clarifying actual hiring requirements for different levels to make sure the requirements reflect which are most important, frequently applied, and necessary to be qualified to do the work.

- Emphasize the need to communicate not just the most in-demand skills and competencies, but their preferred demonstration, including preferred assessment products or instruments.

- Review the hiring requirements survey design and show examples of how it can be completed and submitted.

- Show examples of how you will aggregate and report results to protect the confidentiality of employers. Re-emphasize that the survey should not be used to collect salary information to protect members from any legal risks of working together to address their common talent needs.

- Show examples of what could be shared with outside stakeholders, including education and training providers, and emphasize that whether these results will be shared is the collaborative's choice.

- The group can also combine the hiring requirements information with the job projections data gathered from the demand planning survey for a more complete profile of its employer members' talent needs.

- Summarize the decisions made about the design of the hiring requirements survey and confirm the date of the next meeting to review the results.

Exercise 2

Identifying Hiring Requirements Exercise

The example below illustrates how collaborative members use the hiring requirements process to articulate similarities and differences in their critical jobs, including how required and preferred hiring requirements play an important role.

Because there was no existing trade group for transportation, distribution, and logistics (TDL) companies, a local chamber of commerce organized a group of 10 member companies that recently expressed deep concern over TDL skills shortages. Having secured the buy-in to launch a TDL employer collaborative, the companies decided to focus on warehousing as a critical business function and identified a family of relevant front-line occupations under that function, including (by SOC codes) the following:

- 53-7011 Conveyor Operators and Tenders
- 53-7051 Industrial Truck and Tractor Operators
- 53-1021 First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand
- 53-7062 Laborers and Freight, Stock, and Material Movers, Hand
- 43-5071 Shipping, Receiving, and Traffic Clerks

These occupations were recently targeted in a demand planning survey, and a meeting was convened to review the results. The data showed existing and increasing demand for all five occupations, with the vast majority of demand for entry-level positions. Satisfied with the results—and with a greater sense of urgency and purpose—the collaborative agreed to take the next step and identify hiring requirements.

Because each of the companies treated this family of SOC jobs differently, with some treating equipment operators and clerks as separate jobs and others treating all five as essentially one job without any specific levels, they decided to address competency, credential, and other hiring requirements at the business function level.

During the meeting, the member companies shared a number of their hiring requirements for warehousing positions. Every employer referenced employability skills (i.e., soft skills) as a top requirement. Nearly all of the companies agreed to a core set of work tasks, though there was a debate over how important some were versus others, and a small number of members suggested work tasks that were dismissed as irrelevant by the majority of the members.

Everyone agreed that a high school education was required, but some companies required an associates degree or certificate, while others said they preferred a third-party industry certification. Experience was definitely preferred by most companies, but given the focus on entry-level jobs, many did not require it. Last, each company required job candidates to pass a drug test.

1 of 2

The chamber, serving as host organization for this collaborative, agreed to send out a hiring requirements survey based on what they learned from the meeting. However, they urged collaborative members to work with their internal talent teams, especially the hiring managers for these jobs, to develop survey responses and to identify other hiring requirements that might have been missed.

After reviewing the exercise, discuss the following:

1 As the host organization for the TDL collaborative, would you survey hiring requirements by business function or by job? Why?

2 What hiring requirements would you include in your survey to ensure that you capture the similarities and differences among employers?

3 Would you organize those requirements by level? Explain your answer.

Unit 3.3

Reporting Hiring Requirements Results

In addition to administering the hiring requirements survey and aggregating the results, employer collaboratives will need to determine how the results will be used.

If there are multiple audiences for the results, the collaborative will need to determine how generalized or how specific the shared information should be. Reports must be designed and customized to serve these multiple objectives.

Collaboratives will need to be careful not to reveal information that is deemed proprietary or for the eyes of the collaborative membership only.

We cover four types of reports: (1) collaborative reports, (2) employer internal reports, (3) provider reports, and (4) community reports.

Collaborative Reports

Collaborative reports are the aggregate results after each employer has had a chance to conduct its internal job analyses and complete the hiring requirements survey. While employers trust the host organization with their data, the information shared with the collaborative membership should be in aggregate form; this protects information that may be considered proprietary (see Appendix for legal language provided by U.S. Chamber of Commerce legal counsel).

These reports should include total numbers for demand—including by level, if applicable—and hiring requirements where there is consensus (see Table 3.2: Example Report of Employer Responses by Competency and Table 3.3: Example Report of Employer Responses by Credential). However, the reports should also specify where there are major differences in requirements.

Possible scenarios include (1) collaborative-wide agreement on the importance of a given hiring requirement; (2) broad agreement, but with a minority of collaborative members communicating something different that requires deeper understanding; and (3) no apparent consensus, with employers across the collaborative communicating something different, warranting a discussion. To show both similarities and differences in employer hiring requirements, it is important to show the full distribution of employer responses, not just averages (e.g., median or mean). Many times, averages hide important information on the level of differences between employers.

From there, collaborative members can discuss how to recalibrate their hiring requirements based on feedback from their peers, or they can move forward with better information about important differences among their needs. This is critical information that can help enable mass customization in talent development when using a shared language for communicating hiring requirements.

Table 3.2: Example Report of Employer Responses by Competency

Requirement	Aggregate Employer Responses (Total Employers = 15) 1 = Not Important; 5 = Very Important				
	1	**2**	**3**	**4**	**5**
Work Task A	3	3	1	0	8
Employability Skill B	0	0	0	3	12
Other Hiring Requirement C	1	8	4	2	0

Table 3.3: Example Report of Employer Responses by Credential

Credential	Aggregate Employer Responses (Total Employers = 15)		
	Required	**Preferred**	**Neither**
Degree A	9	6	0
Education Certificate B	5	10	0
Industry Certification C	0	2	12
License D	0	2	13

Employer Internal Reports

Employers should begin by sharing the survey results with internal employees. This is particularly important when a collaborative is starting with upskilling as a talent sourcing strategy. The information should be organized in a format that is suitable to share with existing employees that are interested in, or have been selected for, upskilling opportunities and career advancement.

Provider Reports

Next, collaboratives can create provider reports. These reports are designed to be shared with those providers that the collaborative intends to use to source talent. We will cover how to designate preferred providers in Strategy 5, but for now we are pointing out that this information can be organized to help education and training providers better understand (1) how many learners need to be in the talent pipeline; and (2) what specific competencies, skills, and credentials a provider's curriculum needs to address in order to meet the employer's needs and to set learners up for success.

Community Reports

Finally, collaboratives can publish community reports. These are intended to be public documents and are used by the collaborative to communicate more broadly the demand for talent in the region or state, and what requirements are needed to fill this demand. These reports can be used to help bring attention to a particular skills gap or changing job requirements in a dynamic industry, or to inform public policy and research. Similar to demand planning data, employer-specified hiring requirements can also be used to improve the quality of state occupational projections and real-time labor market information.

Sharing Reports and Templates with Peers in the TPM Network

The design of the needs assessment survey and the resulting aggregated findings can be shared with peers in the TPM network. Part of the mission of the TPM Academy® is to develop a peer-to-peer exchange of ideas for how to communicate demand and hiring requirements that can help streamline the needs assessment process while promoting standardization among requirements and how we describe them where possible.

Reporting Results Exercise

The example below presents the opportunity for a host organization to use data as an action-oriented plan for next steps.

The local chamber of commerce serving as a host organization, as discussed in Exercise 2, successfully disseminated its first hiring requirements survey for the warehousing function on behalf of its TDL employer collaborative. The chamber is now in the process of compiling the results and generating reports to be shared at the next collaborative meeting. Per the agreement among the collaborative members, the results will be compiled in tables and shared in aggregate form to protect the privacy of each individual employer.

Seeing the results for the first time, the chamber staff is preparing for the upcoming collaborative meeting. The plan is to present the results and facilitate a conversation among the collaborative members, but staff members must first understand the results, featured in Tables A–D.

Table A: Results by Competency and Employability Skill

Competency and Employability Skill (Abbreviated List)	Aggregate Employer Responses (Total Employers = 10) 1 = Not Important; 5 = Very Important				
	1	2	3	4	5
Processes Requests and Supplies Orders	0	0	1	1	8
Maintains Inventory Controls	0	1	0	3	6
Completes Inventory Reports	0	0	1	4	5
Maintains a Safe and Clean Work Environment	1	3	5	1	0
Communicates Clearly	0	3	5	1	1
Problem Solver	0	6	2	2	0
Time Management	0	0	0	0	10
Teamwork	1	2	1	5	1

Table B: Results by Academic Level and Credentials

Academic Level and Credential	Aggregate Employer Responses (Total Employers = 10)		
	Required	Preferred	Neither
High School Diploma	10	0	0
Associate Degree	1	2	7
Bachelor's Degree	0	0	10
Community College Warehousing and Distribution Certificate	2	2	6
International Warehouse Logistics Association Certified Logistics Professional	0	1	9

Table C: Results by Experience

Experience	Aggregate Employer Responses (Total Employers = 10)	
	Required	Preferred
Less than One Year of Experience	0	5
Two to Three Years of Experience	0	2

Table D: Results by Other Requirements

Other Requirements	Aggregate Employer Responses (Total Employers = 10)	
	Yes	No
Pass a Drug Test	10	0

After reviewing the exercise, discuss the following:

1 Based on the report's findings, identify two or more hiring requirements for which there is consensus among the collaborative's members. Explain how you arrived at that conclusion.

2 Identify two or more areas for which there is a lack of consensus and explain how you arrived at that conclusion.

3 As a host organization, how would you manage the conversation to address variation in hiring requirements, and what are some possible outcomes?

4 Beyond the employer collaborative membership, how might the collaborative share these findings with other stakeholders, and what format do you recommend it uses?

Ready for Next Steps?

Before you move to the next strategy, make sure you have achieved the learning objectives necessary to move forward. When you go back to your community, ensure you will be able to execute the following activities:

- Explain why communicating competency and credential requirements is important in TPM.

- Identify various ways of signaling employer hiring requirements.

- Explain how to develop and use a shared language for communicating hiring requirements across employers.

- Combine demand planning and hiring requirements into a common needs assessment survey to be completed by collaborative members.

- Use the Strategy 3 Action Plan at the beginning of the chapter to determine your next steps and track your progress.

- For those using the TPM web tool, develop a comprehensive needs assessment survey and report results to stakeholders, including collaborative members and existing workers.

NOTES

TALENT PIPELINE MANAGEMENT ACADEMY

Strategy 4: Analyze Talent Flows

Strategy 4
Table of Contents

Introduction

So far, we have covered how employer collaboratives do the following:

- Determine their focus areas, particularly critical business functions and jobs in building talent pipelines (Strategy 1).
- Identify projected job openings (Strategy 2).
- Identify hiring requirements for filling those jobs (Strategy 3).

Producing this information provides more granular data that employers can use to close their skills gaps. It also helps build trust among employer collaborative members and proves that they can work together to produce actionable results.

However, while Strategies 2–3 are critical to determining demand, we now need to introduce supply into our data collection process. Every collaborative must answer the following critical questions:

- Where have we traditionally found talent for new hires? For upskilling opportunities?
- Do we have the necessary supply of talent internally or from external providers to meet our projected demand?
- What is the potential capacity of our internal and external pipeline to meet our workforce needs now and into the future?
- What are other potential sources of talent—both internal and external—that can help us meet our workforce needs, including increasing diversity?

These are the questions Strategy 4 addresses by showing how to conduct a **back mapping** exercise to clarify where the existing workforce has come from. This is a necessary step to engage in a more complex **talent flow analysis**, which determines the capacity of the collaborative's current and prospective providers to supply future needed talent.

Previous strategies concentrated on how to focus and communicate demand, but back mapping and talent flow analysis focus on supply. Strategy 4 shows how to identify current and prospective sources of talent, whether internal or external. For example, Strategy 4 can be used to identify education and training providers that will be critical in helping employers fill open jobs. It can also be used for internal pipelines where talent can be upskilled to address your needs. This strategy, based on leading business practices, encourages employers to use their own data to improve talent-sourcing strategies.

In addition, this is the first strategy in which employer collaboratives more directly engage current and future talent providers and government partners in gathering information about talent sources and pipeline capacity. Strategy 4 encourages employer collaboratives to compile and share information with their providers to promote a shared understanding of where they are in developing a talent pipeline capable of addressing employer needs now and in the future.

Strategy 4 Learning Objectives

1 Describe the role of back mapping and talent flow analysis in Talent Pipeline Management® (TPM) and how this analysis differs from traditional government approaches to talent supply needs.

2 Identify the internal sources of talent and the tiers and roles of external talent providers within a talent provider network.

3 Conduct back mapping and talent flow analysis using employer data and other data sources.

4 Create tables, graphics, and other visualization tools that help map internal and external talent sourcing networks.

Strategy 4 Action Plan

	4.2 Defining Talent Pipelines	4.3 Conducting Back Mapping with Employer Collaborative	4.4 Conducting Talent Flow Analysis	TPM Web Tool
ACTIVITIES *Actions taken to achieve desired outcomes*	• Inventory potential talent sources (internal and external) • Identify roles/provider tiers of these talent sources • Prioritize talent sources	• Identify critical jobs to include • Determine talent population (e.g. hires or applicants) • Identify current, experienced, new talent sources • Select survey template and schedule delivery • Determine period for analysis • Select number of provider tiers to include (external) • Examine job-to-job flows (internal) • Finalize survey questions for collaborative members • Prepare collaborative members to participate in survey • Analyze individual employer data • Aggregate collaborative data • Identify ways to increase talent flow from sources/ feeder jobs to collaborative members	• Analyze capacity of workers eligible for retraining or potential feeder jobs (internal) • Gather data about completers, enrollees, and course takers from state agencies for each provider (external) and collaborative members that are talent providers • Validate data with provider partners (external) • Analyze internal/cross-collaborative/provider capacity to meet talent demand • Calculate Tier 1 provider talent accepting jobs with collaborative members (external) • Capture destination of talent accepting jobs outside collaborative	• Select survey template and schedule delivery • Organize survey data and identify best template for reporting results
MILESTONES *Progress points marking significant development*	• Inventory of talent sources (internal and external)	• Design and approval of back mapping survey instrument • Completion of survey delivery • Survey responses collected • Back mapping reports developed and presented	• Talent flow analysis • Talent leakage report	• Design survey • Complete survey delivery • Back mapping reports developed/ presented
OUTPUTS *Achievements resulting from actions*	Number and percentage of: • Collaborative members identifying providers (internal and external) • Collaborative members committed to back mapping talent sources	Number and percentage of: • Collaborative members completing back mapping survey • Collaborative members validating survey results	• Number of talent sources providing data • Number and percentage of collaborative members engaged in assessing talent leakage	• Number and percentage of collaborative members completing back mapping survey(s)

*Unit 4.1: The Role of Talent Flow Analysis in TPM covers educational information and therefore is not included in the Strategy 4 Action Plan. However, this resource is meant to serve as a guide and not an exhaustive list of all the activities, milestones, and outputs your collaborative can achieve.

Key TPM Terms and Definitions

Here are the concepts that are most critical for understanding and executing Strategy 4. These terms appear in the order in which they are listed below and are highlighted in blue throughout the chapter.

Back Mapping
A TPM process that helps employer collaboratives identify the major sources of qualified talent on which employers currently rely.

Talent Flow Analysis
A TPM process that helps employer collaboratives work with government agencies and other data providers to analyze talent inflows and outflows to strengthen their talent pipelines. This includes all existing and potential sources of talent where data are available.

Human Resource Information System
An information technology system that captures all aspects of human resources data in a centralized place and supports employee recruitment, hiring, performance, and benefits management.

Applicant Tracking System
A software application that manages employee recruitment data, including job postings, applicant tracking, screening and scoring, interview management, and hiring.

Capture Rate
The percentage of talent coming from the internal and external talent pipeline (identified providers) that is hired, and/or upskilled, and retained by employers from the employer collaborative or employers within the same industry or geographic area over a designated time period.

Leakage Rate
The percentage of talent coming from the internal and external talent pipeline (identified providers) that is not hired or is hired but not retained by employers from the employer collaborative or employers within the same industry or geographic area over a designated time period.

Job-to-Job Flow
The transition from one job to another, whether intentional or not, that results in retraining for a new role or career advancement. These flows can be as simple as one job to another or can have multiple transitions as a worker is retrained or advanced throughout their career.

Provider Roles
The types of services provided by talent providers within the employer collaborative value stream, from career awareness and exploration to employee upskilling, advancement, and retention. Providers can play one or more roles in one or more tiers, although most play a predominate role in a single tier. For example, a Tier 1 provider that is a staffing agency can provide pre-employment training and onboarding services while also offering a small career preparation program for youth (see **Provider Tiers** definition).

Provider Tiers

The position of providers within talent pipelines in relationship to the employer end-customer. Tier 1 providers (e.g., colleges, staffing agencies, other employers) deliver talent directly to employers, and Tier 2 providers (e.g., high schools) deliver talent to Tier 1, whereas Tier 3 providers (e.g., middle schools) deliver talent to Tier 2. Tiers are relevant only for external talent pipelines.

Talent Inflows

The number and characteristics of people hired by an employer, an employer collaborative, employers within the same industry or industry sector of the collaborative, or employers within the major geographic area defined by the employer collaborative for recruiting talent.

Talent Outflows

The number and characteristics of people previously hired but no longer working for an employer, an employer collaborative, employers within the same industry or industry sector of the collaborative, or employers within the major geographic area defined by the employer collaborative for recruiting talent.

Unit 4.1

The Role of Talent Flow Analysis in TPM

Talent flow analysis is when we start to build talent pipelines that have the capacity needed to address projected demand, setting the foundation for managing the pipeline, which we will cover in Strategy 5. This analysis ultimately answers the following question: What is the capacity for a collaborative's existing provider network to supply the talent employers need? There are two main components in Strategy 4: back mapping and talent flow analysis. These two components help unlock more granular, actionable data about the actual sources of supply your collaborative members currently rely on and could use in the future.

Back mapping and talent flow analysis strategies are different from more traditional approaches to supply-demand analysis. Traditional approaches to supply analysis address the number of workers living in a geographic area that are currently working in related occupations. This data is usually based on the most recent U.S. Census data and is commonly presented in broad occupational categories or at the regional or state level.

Most supply studies are based on crosswalking program enrollments and completers in a given geographic area—that are assumed to be the source of supply for employers in the same area—with occupational projections (using Standard Occupational Classification, or SOC). These numbers are commonly provided by state agency data systems to which universities, college, schools, and other government-recognized providers regularly report enrollment and completion data. These numbers are often reviewed alongside labor market projections to examine if supply is consistent with demand. Typically, this is done with university and college postsecondary credit programs, but can also be done with postsecondary non-credit programs, other training providers, and secondary school career and technical education programs.

These same data are often used by state government and economic development organizations to support business development and attraction efforts. The numbers are used to demonstrate that there is an available workforce in the area (e.g., a supply of newly credentialed engineers). See Table 4.1: Comparing Government New Hire Supply Analysis with Talent Flow Analysis for a side-by-side comparison.

Back Mapping

Talent flow analysis starts with an assessment of the existing sources of hires that have been retained—we call this back mapping. It begins by identifying and mapping the existing internal and external talent sourcing networks for supplying the qualified talent needed to fill job openings. This includes reviewing all major sources of talent, including current employees that are in jobs that have historically provided qualified candidates for critical jobs because of related skills or well established career pathways as well as workers from other employers. In addition, back mapping helps identify the relative position of the external talent provider in the network, from the most direct resource for an employer (Tier 1) to a more indirect role (Tier 2). It also differentiates sources by the role they play based on the services they provide (e.g., pre-employment training). Figure 4.1: Example Talent Supply Chain Network provides a visual representation of back mapping.

Figure 4.1: Example Talent Supply Chain Network
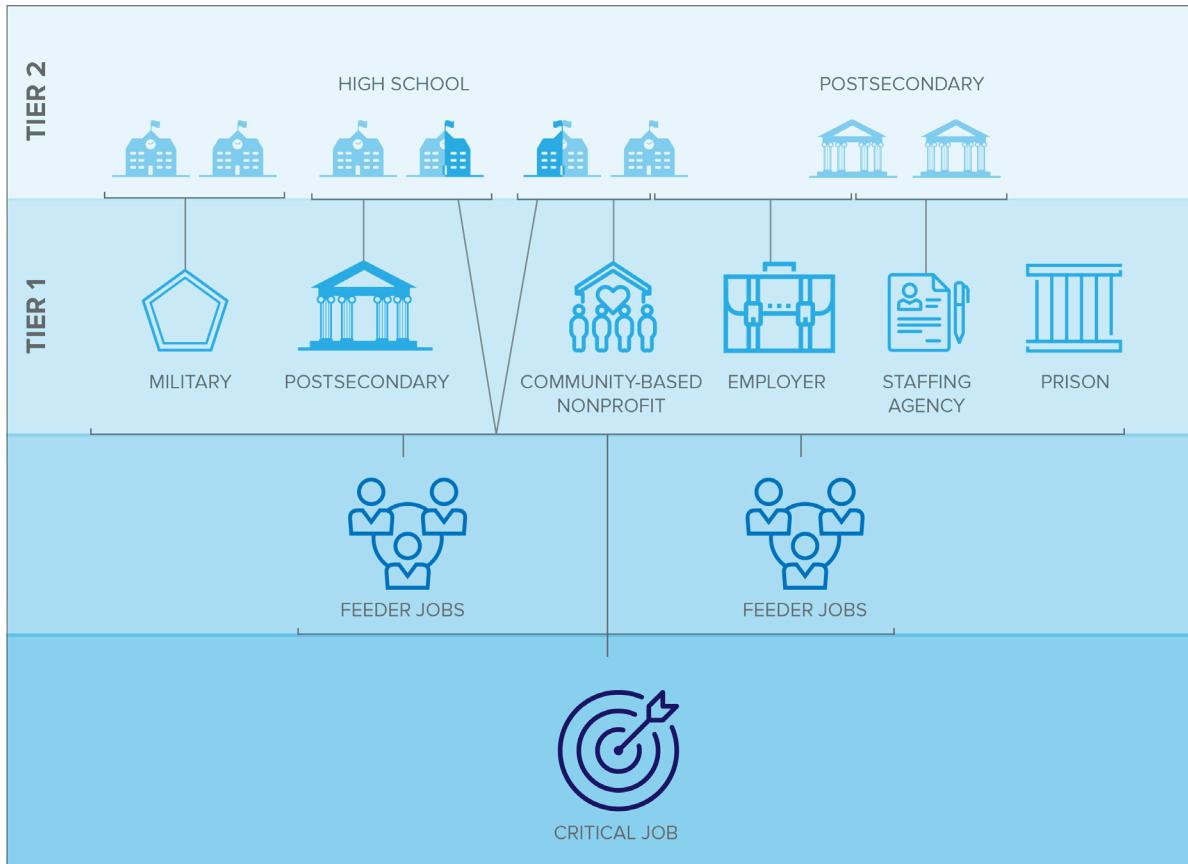
Some employers are improving their recruitment of talent by analyzing from where they get their best talent, especially high performers who are most likely to be retained. These employers are doing this primarily by analyzing employee job performance data against hiring and applicant tracking data, both of which can be found in **human resource information systems (HRIS)** and **applicant tracking systems (ATS)**. TPM builds on these leading practices by providing employers with guidelines on how best to analyze performance and applicant tracking data to identify the most productive internal and external sources of talent.

Back mapping focuses specifically on where a firm's existing workforce came from, rather than the strategies used to recruit and hire qualified talent from these sources. For example, many employers identify and hire qualified talent based on employee referrals or through recruiters. These are different tactics that might not tap the same sources of talent coming from other employers or education and training providers. In addition, back mapping analysis can be applied to different worker populations, such as experienced workers currently in the labor force, newly trained entrants, and experienced workers who have been out of the labor force for a while.

Talent Flow Analysis

Talent flow analysis goes beyond back mapping and addresses the capacity of internal sources of supply (e.g., number of people employed in feeder jobs) and the capacity of existing external providers of talent (e.g., actual or potential enrollments in training programs). It also identifies other potential external providers that should be explored in developing a talent pipeline that meets the needs of the employer collaborative.[1]

Talent flow analysis uses the information the collaborative collected under Strategy 2 to determine whether there is a sufficient supply of qualified talent among existing talent sourcing providers to address the needs of all employers in the collaborative. It addresses (1) the "bandwidth" of the pipeline in terms of the number of people employed in internal feeder jobs and the number of qualified people completing and enrolling in programs from existing and potential talent providers and their potential enrollment capacity, and (2) the effective utilization of this pipeline, such as **capture and leakage rates** of qualified talent coming from the talent sourcing network.

Talent Flow Analysis: New Employer-Driven Approach to Demand-Supply Analysis

Employer collaboratives can build on existing back mapping practices and develop a more sophisticated approach to analyzing the flows of talent. This includes the flow of talent into and out of the collaborative's employer members.

This more advanced practice uses data held by both employers and government partners to map overall flows into and out of collaboratives and larger regions for both existing and potential talent providers. It provides insight into the capacity of existing and potential providers to meet the projected demand for talent.

Combined with what is outlined in Strategies 2 (Engage in Demand Planning) and 3 (Communicate Competency and Credential Requirements), talent flow analysis provides the basis for a new, employer-driven approach to demand-supply analysis. As you will recall, just as Strategies 2 and 3 provided a new approach to communicating demand, talent flow analysis provides the basis for a new approach to analyzing the talent supply.

What makes this approach different is that it focuses only on the supply of talent (e.g., number of graduates or program completers) that employers themselves identify as existing or potential sources of talent for their most critical positions, rather than the total supply of talent from providers compiled by government (see Table 4.1: Comparing Government New Hire Supply Analysis with Talent Flow Analysis for a side-by-side comparison).

[1] This unit is based on a U.S. Chamber Foundation publication and is provided as a background resource on the TPM website: Andrew Reamer, Robert Sheets, and David Stevens, Analyzing Talent Flow: Identifying Opportunities for Improvement (Washington, D.C.: U.S. Chamber of Commerce Foundation, 2015).

In contrast, providers on government lists are assumed to be suppliers because they (1) have related education and training programs based on government crosswalks between government occupational classification systems (e.g., SOC, as discussed in Strategy 2) and provider/program coding systems (e.g., Classification of Instructional Programs, or CIP), and (2) have physical locations within the geographic area that government assumes to be the labor market area within which employers hire. But these assumptions often don't prove to be useful in terms of actual talent supply.

Talent flow analysis is more focused on determining the actual supply of talent by using data to determine real and projected flows to employers within or outside of the collaborative and region.

As a result, talent flow analysis may provide very different estimates of the actual supply of qualified talent within a region compared with traditional government supply estimates.

For example, talent flow analysis may determine that only a few of the many providers within the geographic area defined by government actually provide qualified talent to the employer collaborative. This could be because some providers are not addressing the jobs identified by the employer collaborative or addressing the competencies and credentials required by employers. It also could be that some providers are physically located near employers, but most learners are from other regions and therefore return home after graduation.

Talent flow analysis can also identify actual providers outside of the geographic area defined by government supply estimates, providing a more accurate depiction of where employers get their most-qualified talent.

For example, some healthcare providers may not recruit nurses from all nursing programs within a metropolitan area defined as a labor market area for government supply data. Instead, they might recruit from one or more nursing programs in another metropolitan area, where they get nurses who are a better fit and have higher rates of retention. The nursing programs from this metropolitan area would not be counted in government supply estimates where these healthcare providers are located.

Advanced practices in talent flow analysis can also help identify potential sources of talent from outside a state or region when the available labor force is insufficient to enroll more talent in the programs of state and regional education and training providers. This is common in some regions of the country and in rural areas with declining labor pools and low unemployment rates. Advanced practices also can help identify alternative, nontraditional sources of talent, including nonprofit organizations that provide services to adult populations. Often, employer collaboratives assume that high schools are the major sources of future talent. However, declining school-age populations in many states and regions require employers to focus more attention on adult populations.

Because of these important differences, employer collaboratives should use talent flow analysis as the final determination of actual and potential supply of talent in managing talent pipelines.

Table 4.1: Comparing Government New Hire Supply Analysis with Talent Flow Analysis

Feature	Traditional Supply-Demand Analysis	Talent Flow Analysis	Unique Benefits Achieved by Talent Flow Analysis
Objective	To determine the total number of education and training program completers identified as potential sources of supply for an occupation within a geographic area relative to projected demand	To determine the actual and potential number of qualified hires or qualified applicants from education and training programs —or job-to-job flows for internal talent pipelines—identified by collaboratives as sources of talent for critical positions relative to projected demand (see Strategy 2)	To understand which talent sources employers in the collaborative make use of and at what level
Data Source	State reporting systems for the number of completers from state-financed and regulated providers, including schools, colleges, and universities	Direct from employer collaborative members—for external talent pipelines, information is supplemented by data from providers and state reporting systems	Employers in the collaborative make available their human resources data for data aggregation and analysis
Time Period Covered	Annual supply estimates reported in time periods consistent with demand estimates and government reporting requirements	Annual supply estimates reported in time periods consistent with demand estimates and based on employer talent sourcing needs	Employers signal what time period is preferred for their workforce planning efforts
Targeted Jobs	State occupation and occupational clusters defined by SOC system	Selected by employer collaborative members; coverage uneven across occupations	Can be at the business function level and are consistent with how employer members organize occupations and address workforce needs
Key Assumptions	National and state SOC and Classification of Instructional Programs (commonly referred to as CIP code) crosswalks identify which programs produce completers qualified for selected jobs. Education and training providers within the same government-defined labor market area are the major suppliers of talent for employers within that labor market area.	Employers are capable of producing and sharing data on sources of qualified hires and qualified applicants and can define the geographic reach of their talent recruiting. Collaboratives can work with government data partners to integrate data and estimate both actual and potential talent flows within an employer-defined labor market area.	Data exposes talent sourcing trends and patterns among employer collaborative members that can be used to make critical talent management decisions based on historical hiring decisions and practices.

Supply-Demand Analysis Exercise

The example below illustrates why employer collaboratives should use talent flow analysis in managing the talent pipeline and not rely exclusively on traditional supply-demand data to determine available supply.

A healthcare collaborative was recently formed to address a critical skills shortage of nurses, particularly registered nurses. This position requires a bachelor of science in nursing (BSN). Newly formed, the collaborative had just completed a needs assessment survey and found that in the next two years it will need 95 new nurses. It now wishes to review the available supply to see if its needs can be met within this time frame.

To get started, the collaborative contacted its state agency partners to get information on available supply. The collaborative was formed in a community where there is a major public university, with a college of nursing. The state agency partners looked at the available education and credentialing programs near the collaborative and compiled a supply report, which was then sent to the collaborative.

Reviewing the report, two data points stood out:

- The university enrolled a total of 550 nurses in its programs.

- On average, about 45 nurses graduated each year with a BSN.

The collaborative also noted that the report did not include a public university that, while located two counties away, was well known to be a source of nursing talent.

In addition, the report referenced a grant made three years ago by the state's workforce agency to the university and a partner community college to expand the capacity of the nursing programs to address a nursing shortage. Given the previous grant investment and the high number of enrollments, the state agency partners were surprised that the healthcare collaborative members were still experiencing a shortage.

After reviewing the exercise, discuss the following:

1   Based on the scenario above, explain the assumptions that have been made about supply versus demand for nurses. What information, if any, is missing?

2   What are some reasons why a nursing shortage has persisted for the healthcare collaborative?

3   Would you recommend talent flow analysis to the collaborative? If so, why?

Defining Talent Pipelines

Talent pipelines are either internal or external, but can be combined for a comprehensive approach that includes providing career pathways for newly trained or credentialed individuals as well as for existing workers. In TPM, you should back map and engage in talent flow analysis for internal or external pipelines to provide the necessary data to begin building your talent pipelines in Strategy 5.

Internal Pipelines: Job-to-Job Flows and Feeder Jobs

Internal talent pipelines are best understood in terms of internal **job-to-job flows**. Employers can use Strategy 4 to identify the feeder jobs employees held prior to the critical job that is the focus of the collaborative. Feeder jobs can range from entry-level jobs to mid-level jobs that are commonly held prior to being promoted. For example, in retail industries, a critical targeted job could be store managers. One entry-level feeder job could be sales associates; many times sales associates become shift managers, progress to assistant store managers, and finally move on to store manager positions.

When exploring internal talent pipelines it is important to focus on those job-to-job flows that yield the greatest upskilling opportunities, and not all feeder jobs. There may be many one-off promotions or career advancements that have occurred, but the focus of the collaborative should be on where there is—or could be—direct connections or pathways between jobs resulting in either retraining for new roles or career advancement.

External Pipelines: Identifying Tiers and Roles

External talent pipelines are best understood in terms of **provider roles** and **provider tiers**. In TPM, Tier 1 providers are those that supply qualified workers directly to employers. Tier 1 providers could be job boards, staffing agencies, or education and training programs that provide direct placement to employers. Tier 1 providers can also include other employers.

Tier 2 providers feed talent to Tier 1 providers, forming a value chain with education and training services, adding incremental value at each stage of development. For example, a Tier 2 provider such as a high school or community college may refer or transition learners to other colleges, universities, and employment and staffing agencies for additional value-adding services before they reach employers through Tier 1 providers. (See Figure 4.1: Example Talent Supply Chain Network for visual representation). Tier 3 providers, such as middle schools, boot camps, or high schools, feed talent into Tier 2 providers.

Providers can sometimes function as more than one tier. For example, a college can be both a Tier 1 and a Tier 2 provider depending on whether their program completers are going directly into employment of if they go on to another provider prior to employment.

In the TPM context, roles refer to the specific services that add value to employers and learners. For example, some providers offer employment services that recruit, screen, and refer qualified workers to employers, whereas others provide education, training, and credentialing services. Still other providers offer career awareness and exploration services without providing education and training or recruitment services directly tied to employment, but feed into programs that do. In some cases, providers deliver several services and play multiple roles.

Back mapping and talent flow analysis help identify the various roles that existing or potential providers play at different tiers of the talent pipeline. These processes provide the necessary starting point for building future talent pipelines that have the capacity to meet the needs projected in demand planning. They provide an important baseline analysis that can help do the following:

- Identify the key roles and tiers of the major existing talent sourcing providers and their relative impact on talent pipelines.

- Identify other talent sourcing providers and their potential roles in future efforts to diversify and expand talent pipelines.

Back Mapping Exercise

The exercise below demonstrates how providers can play various roles at different tiers of the talent pipeline and the role of back mapping.

Faced with a chronic shortage of skilled machinists in their region, the Southcentral Manufacturing Consortium used a back mapping process to determine where members got their qualified CNC machining talent. It found that collectively, members had hired 200 qualified employees over the past three years from internal and external sources.

The survey responses provided the following information:

- 100 employees were promoted from machine operator feeder jobs. 55 of these operators were sourced from DEF employment agency with no prior education and training; the other 45 were sourced from the Southcentral Community College CNC Machining Program.

- 100 employees were hired directly from external sources. 25 were from the DEF employment agency, 35 directly from other regional manufacturers, 30 from the Southcentral Community College CNC Machining Program, and 10 from a regional high school career and technical education program.

- 15 of the DEF-sourced employees received their CNC training and credentials from Southcentral Community College's CNC Machining Program, as did 20 of the employees who were sourced directly from other regional manufacturers.

- Half of those employees who received training from the community college program entered the program directly from manufacturing technology programs offered by two of the four regional high schools, including the high school career and technical education program referenced above.

- A quarter of the same group entered the college directly from the Southcentral community-based agency that provides a manufacturing boot camp for low-income adult residents.

After reviewing the exercise, discuss the following:

1 Identify the Tier 1 and Tier 2 providers and what roles they play.

2 Which provider, if any, plays more than one tier or role?

3 Name examples of Tier 1 and Tier 2 providers in your community for an employer or employer collaborative. In addition to their tier, identify the roles they play.

Unit 4.3

Conducting Back Mapping with Employer Collaboratives

With an understanding of both internal pipeline career pathways and external pipeline tiers and roles, we now turn to conducting basic and advanced levels of back mapping using employer data. It is important to keep in mind that back mapping is a discovery process where we are getting our facts straight on where talent is sourced from, whether internally, externally, or both. The job and target population you are conducting back mapping for will determine which type of back mapping process—and later, talent flow analysis—you pursue. Below we discuss back mapping internal and external pipelines.

Starting the Back Mapping Process

Here are two to three important decisions that will determine the scope of any back mapping survey:

1 **Choosing a Population to Study**
The first decision is the talent population to be analyzed, which can include (1) the highest-performing (top talent) qualified hires who were successfully retained, (2) all qualified hires who were successfully retained, or (3) all qualified applicants who met hiring requirements. The goal is to identify where they received their education, training, or credentialing that made them qualified for the job (e.g., high schools, colleges, universities, and other training providers). This information can be broken down further by subgroups, such as women, minorities, veterans, and individuals with disabilities.

2 **Determining the Time Period to Analyze**
The second decision is the time period for analysis. This should be between one and five years. The time period should be sufficient to know whether qualified hires were productive and were retained by employers for a normal or expected length of employment.

3 **Selecting the Number of Tiers**
If conducting external back mapping, the third decision for a collaborative to make is how far back to map in the talent pipeline. The simplest approach is to identify only Tier 1 sources and where workers from those sources received their most recent training and credentials that made them qualified applicants. An advanced approach would identify additional tiers, including feeder schools and programs.

Internal Pipeline Surveys

For many employers, this may be the first time examining their job-to-job flows. They may also be looking into their HRIS system for answers that are not readily available. The purpose of back mapping internal pipelines is to get their facts straight on the internal job-to-job flows that presently exist. Back mapping is used as a tool to identify the job-to-job flows within a company or across a collaborative.

As shown in Table 4.2, an employer collaborative could back map job-to-job flows within their companies and determine the most common pathways taken by employees and their relative contribution to filling store manager jobs compared to new hires. This process helps employers get the facts straight on current or existing upskilling pathways and where there may be opportunities to improve or make them more intentional.

Table 4.2: Back Mapping Internal Job-to-Job Flows for 100 Store Managers

FEEDER JOB	FEEDER JOB	FEEDER JOB	CRITICAL JOB	(#) STORE MANAGERS WHO TOOK INDICATED PATH
External Job →	Sales Associate →	Assistant Manager →	Store Manager	40
External Job →		Assistant Manager →	Store Manager	30
External Job →			Store Manager	10
External Job →	Sales Associate →		Store Manager	20
				TOTAL: 100

This is important information for what feeder jobs should be included in demand planning (i.e., Strategy 2) projections because of the need for backfilling these feeder jobs. It also is important in reviewing what should be included when developing competency-based hiring requirements in competency mapping career pathways in (i.e., Strategy 3).

For employers or collaboratives that are pursuing both internal and external talent pipelines, back mapping job-to-job flows provides the necessary information for determining what feeder jobs should be included in back mapping the external talent pipeline, to which we now turn.

External Pipeline Surveys

Unlike internal pipeline surveys, when exploring external pipelines, there are two ways your can organize back mapping: (1) basic, or (2) advanced. Because most employers have never done back mapping of their talent sources and do not have HRIS that do this for them, employer collaboratives should start with a basic approach and then move to more advanced practices later (see Table 4.3: Basic Approach: New Hire Tier 1 Providers/ Sources and Education and Training Providers and Table 4.4: Advanced Approach: Hire and Applicant Providers/Sources and More Tiers for examples of each approach).

A basic survey, as demonstrated in Table 4.3, starts with recent qualified hires who were successfully retained and asks employers to identify only the Tier 1 provider and the source of the education, training, and credentialing that led to the individuals being qualified for the target job if that source is not the Tier 1 provider.

For example, a community college may be the Tier 1 provider and also deliver the education, training, and credentialing that meets an employer's hiring requirements. In contrast, a Tier 1 provider may be a staffing service that identifies qualified talent from universities and colleges but does not directly deliver training. It is important to note that what makes hires qualified may be completing a program and earning a credential or taking specific courses associated with a program.

An advanced survey, as illustrated in Table 4.4, allows employers to address not only recent qualified hires but also all qualified applicants who applied for positions. It also distinguishes one or more types of talent based on experiences, such as newly trained workers, experienced workers, and current workers. Furthermore, an advanced survey also allows employers to map multiple tiers that make up the individual's career pathway so that they can see where Tier 1 and even Tier 2 providers are sourcing their people.

For example, an advanced survey would allow employers to identify the Tier 2 or Tier 3 high schools that feed learners to university and community college programs, and even the middle schools that feed these high schools. This information is important if, for example, employers wish to target career awareness and exploration investments in a way that improves their existing talent pipeline providers. Finally, an advanced survey allows employers to select one or more groups, such as veterans or women, or show demographic breakdowns by gender, age, and racial/ethnic group, or other demographic characteristics.

Table 4.3: Basic Approach: New Hire Tier 1 Providers/Sources and Education and Training Providers

Population	Number of New Hires	Tier 1	Education and Training Providers
Hires	50	Employment Agency A (20)	Community College A (12)
			Community College B (8)
		Community College A (24)	
		Community College B (6)	

Table 4.4: Advanced Approach: Hire and Applicant Providers/Sources and More Tiers

Population	Number of New Hires	Tier 1	Tier 2	Tier 3
Experienced Workers	20	Employment Agency A (20)	Community College A (12)	High School A (6)
				High School B (6)
			Community College B (8)	Boot Camp (8)
Newly Trained/ Credentialed Workers	30	Community College A (24)	High School A (16)	Middle School A (10)
				Middle School B (6)
			High School B (8)	Middle School C (8)
		Community College B (6)	High School C (6)	Middle School D (6)

Back Mapping Steps

With these key decisions made about the scope of your survey, we can begin the two-step back mapping process, regardless of whether you are starting with internal or external talent pipelines.

1 **Employers Analyze Their Data**
Each employer in the collaborative analyzes its individual-level data on where it sources qualified talent from both internal or external sources. In back mapping external pipelines, the collaborative must choose between either a basic or advanced survey. These data should cover a baseline period of one to five years. Employers can collect these data from their HRIS, ATS, or other types of data sources. Employers also can directly interview or survey these qualified workers recently hired into the targeted positions, or analyze their resumes in their personnel files.

2 **Host Organization Aggregates the Data**
Employers then provide data to the host organization managing the collaborative so they can be aggregated further and shared with other collaborative members in a manner that protects proprietary information. The data can be formatted in summary tables and figures for the selected time period. As with any information, back mapping data on current employees, recent hires, and qualified applicants should be treated as confidential, proprietary data that should never be shared with other employers and partners.

Employer collaboratives can choose to conduct the needs assessment (demand planning and hiring requirements) survey(s) described in Strategies 2 and 3 and the talent flow analysis survey outlined in Strategy 4 at the same time or separately. Employer collaboratives may want to conduct these surveys separately at first and then combine them later as employers become more experienced in completing and using these surveys and becoming more focused on the targeted jobs and providers they are addressing.

Unit 4.4

Conducting Talent Flow Analysis

Back mapping is designed to help improve how employers source talent in several ways, such as strengthening partnerships with internal and external talent sources that have demonstrated providing qualified talent. But there are limits. Back mapping does not, for example, provide data on the bandwidth or capacity of the existing sources of talent that might not be fully utilized by the employer collaborative. It also does not capture data on providers that are not identified by employers and may provide alternative sources of talent in the future. Finally, it does not address where qualified talent goes after leaving employer partners and whether talent is retained in the region.

To address these issues, collaboratives can execute a comprehensive talent flow analysis that combines employer data with other data sources, including the government and talent providers. As with back mapping surveys, employer collaboratives should start with a basic approach and then move to advanced practices.

Once back mapping has occurred, the employer collaborative analyzes the aggregated results to identify opportunities for improving talent flows. For internal talent pipelines, this step can include identifying excess capacity or untapped talent from within the organization that can be available for upskilling. For external talent pipeline mapping, this step can include identifying the most widely used talent providers and those that are underutilized or not used at all by members of the collaborative. Employers may also identify other providers—or other internal jobs—that have not been tapped into and could be included in talent flow analysis. This information can be included as potential future providers that can help address the need for more capacity in the talent pipeline or to accomplish other objectives, such as diversifying the talent pool. This analysis provides the basis for moving to advanced levels of back mapping and more comprehensive talent flow analysis.

Basic Approach: Analyzing Internal Talent Pipeline Capacity

The most basic approach for internal talent sourcing analyzes the number of employees currently employed in the major feeder jobs identified in back mapping relative to the number of employees employed in those jobs. You can also analyze the capacity of workers that may be eligible for retraining or potential feeder jobs that employers may want to leverage in the future for upskilling opportunities. You can also show trends, including whether the number of employees in those positions are increasing or decreasing.

Table 4.5 offers a visual representation of data on internal talent pipeline capacity based on identified feeder jobs.

Table 4.5: Feeder Job Capacity for Store Managers

Feeder Jobs	Five-Year Average	Trend
Assistant Store Managers	300	↑
Sales Associates	5,000	↑

Basic Approach: Analyzing External Talent Pipeline Capacity

The most basic approach for analyzing external capacity examines the number of people enrolling in and completing programs. (This can be thought of as the bandwidth of the pipeline.) This is important because employer collaboratives should initially focus on programs that have historically provided qualified hires and that have the potential capacity to meet projected demand. When soliciting data, employer collaboratives should include both existing and potential providers and their possible enrollment capacity. This basic approach involves three major steps:

1 **Employer Collaboratives Gather Data from State Agencies.** Members of the employer collaborative compile a list of providers and their programs based on the back mapping results. Specifically, this process identifies the sources that provided the education, training, and credentials for candidates to be considered qualified for openings for the targeted position. This list should include physical locations of the sources.

The collaborative sends this information to the state higher education agency (typically the entity that submits data to the Integrated Postsecondary Education Data System, commonly known as IPEDS) that is responsible for producing supply data. The collaborative then asks the agency to work with other education and workforce agencies to provide data on the number of completers from both credit and noncredit programs for (1) these identified providers and programs and (2) other providers and programs that have the same or similar programs as defined by government program classification systems (e.g., Classification of Instructional Programs codes).

The employer collaborative should ask for a minimum of three to five years of data to better understand trends. The employer collaborative should request data on (1) the number of graduates or completers receiving credentials and (2) the number of program enrollees.

2 **Employer Collaboratives Gather Data from Talent Providers.** The employer collaborative then sends these data to selected talent providers to validate or confirm the information provided by state agencies for the selected time period and to ask them for supplemental data, when needed, on program enrollees and completers. This will be necessary in many states that do not have complete information on all types of talent providers and all types of programs offered by these providers, such as noncredit programs offered by universities and community colleges. Employer collaboratives also may ask for information on additional courses, rather than full programs, that prepare people for the targeted jobs. Courses can be as effective of a metric to consider as programs if a particular course results in qualified hires. This can be particularly useful for those in STEM-related fields for career technical education programs. Take note, however, that the number of course-takers can include duplicates who may be enrolled in courses that are part of more than one program.

These talent providers also should be encouraged to provide data on additional programs that they feel might be related to the targeted jobs. These program-level data are very important because employers recruit from specific programs that are related to specific jobs, in most cases. One alternative is to collect all program information directly from talent providers if available without engaging state agencies.

3 **Employer Collaboratives Analyze the Data and Produce Supply Reports.** The employer collaborative then analyzes the bandwidth of the existing or potential pipeline and compares it with projected demand over the same time period. This analysis should focus on completers but also look into the potential capacity resulting from leveraging more enrollees and course-takers, and identify trends for incorporation into the performance measures in Strategy 5.

Table 4.6: Talent Pipeline Capacity Analysis offers a visual representation of communicating data on potential yields to collaborative members.

Table 4.6: Talent Pipeline Capacity Analysis

Provider/Program	Enrollees		Completers	
	Three-Year Average	Trend	Three-Year Average	Trend
University A, Program A	20	↑	15	↑
Community College A, Program B	20	↓	18	↑
Community College B, Program A	40	↑	30	↑
Community College B, Program B	30	↑	25	↑
Total	110	↑	88	↑

Advanced Practice: Analyzing Talent Inflows and Outflows

After analyzing talent pipeline capacity, some employer collaboratives might want to move to advanced practice to analyze **talent inflows** and **talent outflows**. In recent years, most states have built state longitudinal data systems that link individual-level data from publicly funded and approved education and training programs with employment data from their state unemployment insurance wage record systems. These systems can be leveraged by employer collaboratives to identify the leakage and capture rate for both internal and external talent pipelines.

These additional data sources add two important pieces of information:

- **Capture Rate and Talent Leakage from Tier 1 Providers and Upskilling:** Back mapping external pipelines identifies flows of talent from Tier 1 providers to collaborative members. For internal talent pipelines it identifies flows of talent that has been retrained for other roles or that were in feeder jobs that advanced into a target position. It does not, however, provide information on the capture rate of talent by collaborative members. Advanced practice via talent flow analysis allows for collaboratives to determine how much talent is lost to other employers within or outside the region.

- **Talent Leakage from Collaborative Employers:** Employers may also want to know where talent goes after leaving them, whether they were sourced from an external partner, or upskilled from within. Talent flow analysis can capture this information and shed light on whether talent is retained by other members of the collaborative, remain within the region, or if they have separated entirely from the collaborative and region.

This information can be organized into tables to show the capture and leakage rates of talent regardless of whether you are starting with internal or external talent pipelines. This information can answer questions like, how many upskilled workers were retained by an employer or within the collaborative versus how many were lost to other employers? Or, what percentage of program graduates from a Tier 1 provider are being employed by our collaborative members versus going to other employers in our same region? When combined with data gathered when analyzing talent source capacity, you can determine your effective utilization rate of talent sources, whether internal, external, or both.

See Table 4.7: Upskilling Capture Rate for how this analysis can inform internal talent flow analysis, and see Table 4.8: Talent Provider Capture Rate for examples of additional data to include for external pipeline talent flow analysis.

Table 4.7: Upskilling Capture Rate

Upskilling Program	Number of Upskilled Workers in Past Three Years			
	Employed by Collaborative Members in Region	Employed in Region but Not by Collaborative Members	Employed Outside of Region	Not Employed/ Unknown
Retrained Workers for New, Emerging, and Changing Jobs	53	5	25	2
Career Advanced Workers	45	10	5	5
Career Advanced Workers from Diversity Populations	14	6	2	0

Table 4.8: Talent Provider Capture Rate

Provider/Program	Number of Graduates with Required Credentials in Past Three Years			
	Employed by Collaborative Members in Region	Employed in Region but Not by Collaborative Members	Employed Outside of Region	Not Employed/ Unknown
University A, Program A	53	5	25	2
College A, Program A	45	10	5	5
College B, Program A	14	6	2	0
Vocational School A, Program A	10	19	10	5

An advanced talent flow analysis provides valuable information when implementing the remaining TPM strategies, which focus on managing performance, providing incentives, and continuously improving talent supply chains. It might require working with more than one state when collaboratives source talent from multiple states. This is especially important in metropolitan areas or larger rural regions that span more than one state.

Advanced practices for external pipeline talent flow analysis can be extended even further to identify potential recruitment sources from outside the state or region, particularly when there is an insufficient labor pool available within an employer's state or region. This could involve identifying outside states and regions where talent providers have been successful in recruiting learners. It also could involve analyzing working-age population migration patterns to identify potential recruitment states and regions, and then identifying providers that have related programs in these states and regions.

Talent Flow Analysis Employer Collaborative Exercise

The example below illustrates how employer collaboratives can transition from back mapping to talent flow analysis.

The healthcare collaborative referenced in the first exercise has decided to proceed with a talent flow analysis survey for nursing, with a focus on registered nurses. The host organization convening the collaborative surveyed employer members to determine from where they sourced their recent qualified hires to get a better understanding of the collaborative's talent-sourcing patterns. Member employers were asked to identify the nursing programs that were the sources of their nursing hires over the past two years.

Each employer reviewed its HRIS records and provided information on the total number of hires for each nursing program and any feeder program that the hires completed.

The employer collaborative host organization then compiled the data, resulting in a list of three BSN providers and two associate of science in nursing (ASN) feeder programs. One BSN program and its ASN feeder program were within the metropolitan area (referenced as University A and Community College A, respectively), but two were from outside the region (referenced as University B and University C) supplied by the same ASN feeder program (referenced as Community College B).

Next, the employer collaborative requested information on the total number of enrollments and graduates in these programs. It also requested information from another BSN program outside of the region (referenced as University D), with which it did not have a relationship, but given the diverse student population, sourcing from the program could help collaborative members further diversify their front-line workforce, which is a priority for them.

Last, the collaborative requested information from its state labor agency to merge employment data with provider data to ascertain how much talent it was capturing from each provider.

The host organization compiled the results of the survey and shared the findings with its employer members. The findings are presented in Tables A–C.

Table A: Healthcare Collaborative Back Mapping Results

Population	Tier 1	Tier 2
New Hires	University A, in region: 15	Community College A, in region: 12
	University B, outside region: 25	Community College B, outside region: 15
	University C, outside region: 10	Community College B, outside region: 6

Table B: Healthcare Collaborative Talent Pipeline Capacity Analysis

Provider	Enrollees	Completers
University A, in region	550	45
University B, outside region	400	76
University C, outside region	225	93
University D, outside region	115	50
Community College A, in region	250	30
Community College B, outside region	378	85

Table C: Healthcare Collaborative Talent Flow Analysis

Provider	Employed by Collaborative	Employed in Region but Not by Collaborative	Employed Outside of Region	Not Employed, Unknown
University A, in region	15	5	13	12
University B, outside region	25	10	28	13
University C, outside region	10	5	55	23

After reviewing the findings, discuss the following:

1 Based on the outlined scenario, what types of insights do employers have now that they did not have before, compared with the original supply-demand analysis provided in Exercise 1?

2 What decisions could employers consider based on this new information?

3 What information is missing or what questions still need to be addressed before employers begin making decisions about who will be in their talent supply chain moving forward?

Ready for Next Steps?

Before you move to the next strategy, make sure you have achieved the learning objectives necessary to move forward. Ensure that when you go back to your community, you will be able to execute the following activities:

- Explain why talent flow analysis is integral to managing a talent supply chain.

- Identify Tier 1 and Tier 2 providers for external talent pipelines and their relationship to one another.

- Identify internal jobs that can be retrained for new roles as well as feeder jobs that can be upskilled for career advancement.

- Conduct back mapping with your collaborative members.

- Request and use data from data partners for talent pipeline capacity analysis and talent flow analysis.

- Use the Strategy 4 Action Plan at the beginning of the chapter to determine your next steps and track your progress.

- For those using the TPM web tool, develop reports and generate visualization tools depicting the flow of talent from providers and other partners to your collaborative members.

NOTES

TALENT PIPELINE MANAGEMENT ACADEMY
Strategy 5: Build Talent Supply Chains

Strategy 5
Table of Contents

Introduction

In Strategies 2, 3, and 4, employer collaboratives went through a structured process to get the facts straight on their talent pipeline needs. Employers in the collaborative are now better prepared to make decisions about how they will address that need and with which partners. Whereas the previous strategies were focused on data collection and preparation, Strategy 5 now uses that data to make decisions on how to build solutions, which can be internal talent pipeline solutions, external, or both.

Strategy 5 explores how employer collaboratives build and manage their talent supply chains to create shared value for employers and their talent sourcing partners, otherwise known as providers.

Specifically, this strategy shows how to use decisions made in Strategy 1 on critical pain points and data collected in Strategies 2, 3, and 4 to make decisions on where to start in building internal and external talent pipelines. It also describes the implications of your decision on whether additional data needs to be collected.

Next, this strategy shows how to identify and work with preferred and trusted partners in co-designing internal or external talent pipeline solutions that address the performance indicators most important to an employer collaborative. This strategy also provides guidance on how an employer collaborative works with its partners to build a **value stream map**, develop **performance scorecards**, and target **incentives** that optimize performance.

Strategy 5 Learning Objectives

1 Determine where to start in building your talent pipeline—internal, external, or both—and understand the ramifications of that decision.

2 Designate preferred providers that make up your talent supply chain.

3 Share employer data with designated preferred providers.

4 Co-design internal and external talent pipelines with preferred providers using a value stream mapping process.

5 Select and develop appropriate performance measures to meet your collaborative's needs.

6 Identify and inventory existing and potential employer incentives to improve supply chain performance.

Strategy 5 Action Plan

	5.1 Exploring Options for Where to Start in Building Talent Pipelines	5.2 Identifying Preferred Providers	5.3 Engaging Your Partners	5.4 Co-Designing Talent Pipelines	TPM Web Tool
ACTIVITIES — Actions taken to achieve desired outcomes	Review decisions and findings from previous strategies including: • Shared pain points, capacity, willingness, expected impacts, and urgency • Confidence in projected demand • Agreement on competency and credential requirements • Back mapping and talent flow analysis	• Establish process and performance requirements for preferred providers • Establish plan for designation of preferred provider status (management of recognition status, levels, duration) • Identify preferred providers	• Determine approach to engage preferred providers—upskilling/internal and external, meetings with leadership, educational/introductory meetings, sharing information, representation at kickoff meeting • Share data with preferred providers • Hear from preferred providers • Agree on next steps and commitments for co-designing talent pipelines	• Identify the major roles or functions played by collaborative members and their partners • Classify roles into tiers • Determine tiers/roles for preferred providers • Determine value-added learning activities and competency outcomes, assessments and demonstrations, at each stage of talent development • Establish key performance measures • Determine incentives that are targeted at each stage of talent development	• Add preferred providers • Add measures to the performance dashboard and collect baseline data • Add roles and activities to the value stream map
MILESTONES — Progress points marking significant development	• Agreement on where to start	Agreement on: • Preferred provider selection criteria • Preferred provider selection process • Preferred provider designations/list	• Kickoff leadership meeting • Clear commitments made to co-design talent pipelines (e.g., staff time)	Agreement on: • Value stream and curriculum map with roles, tiers, learning activities/outcomes • Performance measures and score cards • Incentives	• Develop performance dashboard • Develop value stream map
OUTPUTS — Achievements resulting from actions	• Decision made on where to start	• Number and percentage of identified providers earning preferred status (optional: by level)	• Dollar value of staff time allocated Number and percentage of: • Collaborative members and providers attending kick off meeting • Collaborative members and providers committed to co-design talent pipelines	• Dollar value of financial and in-kind incentives Number and percentage of: • Participating providers • Participating collaborative members • Collaborative members providing financial or in-kind incentives	• Performance scorecard demonstrating improvements or opportunities for continuous improvement • Value stream map outlining roles and activities for all partners

Key TPM Terms and Definitions

The following concepts are most critical for understanding and executing Strategy 5. These terms appear in the order in which they are listed below and are highlighted in orange throughout the chapter.

Value Stream Map
A visual tool used to show, in sequence, the major activities and roles that make up a value stream.

Performance Scorecard
A visualization tool used to communicate the major performance indicators that have been prioritized to tell employers and their stakeholders how effective partnerships have been in managing key transition points and achieving intended outcomes.

Incentives
Financial and nonfinancial rewards to recognize results and to support continuous improvement. Financial incentives include anything that has a monetary value, including equipment donations, work-based learning opportunities, and access to staff. Nonfinancial incentives include designations such as preferred provider status that can be marketed by a program or institution for recruitment purposes.

Full Productivity
The point at which an individual has reached expected levels of productivity in a destination job. In TPM, time to full productivity can be tracked as a performance measure to ensure individuals are managing transitions and being effectively onboarded into employment with minimal time lost.

Preferred Providers
Providers of talent sourcing and development services—including education and training providers and staffing organizations—that are recognized by an employer collaborative based on their ability to meet employer requirements, such as ability and proven track record for supplying qualified talent for jobs.

Performance Measures
Quantitative indicators of outcomes that are expressed in terms of rates, ratios, or percentages addressing one or more critical variables, all of which contribute to improved business performance and competitiveness:

- **Quality**, in the context of TPM, refers to whether individuals have the right mix of competencies to successfully perform work for critical business functions and jobs.

- **Time** addresses maximizing efficiency in value-adding activities, reducing time spent in non-value-adding activities (e.g., irrelevant training), and minimizing the wait time between activities or services (e.g., employee training).

- **Cost** refers to the balancing of dollars spent in producing quality outcomes, including the reduction of opportunity costs (e.g., reducing foregone earnings).

Feeder Schools
Education or training providers that are known to transition individuals receiving education or services to another provider before reaching employers. For example, in TPM, Tier 2 providers transition learners to Tier 1 providers.

Leading and Lagging Measures

Leading measures are short-term, intermediate measures (e.g., credential attained) that address actions that are major determinants and predictors of longer-term, bottom-line measures (e.g., reduced onboarding and training costs), otherwise known as lagging measures.

Curriculum Mapping

A process used to provide detailed information about how a learning outcome and/or competency ought to be delivered and assessed and could include examples of it done well.

Value Stream

The process that a product or service goes through from beginning to end, with each step adding incremental value until the product reaches the end customer.

Transition Point

The moment when an individual moves from one program or service to the next, which can occur within or between providers. For example, in TPM, transition points occur when someone moves from a Tier 2 provider, such as a feeder high school, to a Tier 1 provider, such as a university.

Employer Return on Investment

A measure that calculates the returns that employers receive from investments, usually expressed as a ratio of total dollar benefits compared with total dollar costs.

Learning Outcomes

Measurable and observable statements about what a person knows and is able to do that are tied to a curriculum. In TPM, these learning outcomes are aligned to the competency hiring requirements an employer includes in a job description.

Competency Mapping

A process used to determine which learning outcomes relate to which competency hiring requirements, and which providers are responsible for them.

Continuous Improvement

A structured method to improve a process over time. Continuous improvement processes in the business world include Lean Six Sigma and the five-step DMAIC (define, measure, analyze, improve, and control) process, which is used to optimize performance and eliminate waste.

Transition Measures

The key performance measures at each point of transition. A transition measure is a type of leading measure.

Unit 5.1

Exploring Options for Where to Start in Building Talent Pipelines

One of the most important decisions for employer collaboratives is deciding where to start in building talent pipelines. Employer collaboratives have the option of starting at any point along the end-to-end talent pipeline. For example, they could start with building internal pipelines with a focus on upskilling current workers for new roles or for career advancement opportunities. They could also start with building external pipelines and choose to work with their partners to provide better career exploration and pre-employment training to get more qualified job applicants. Or, employer collaboratives could start with both approaches by upskilling current workers in feeder jobs into more advanced positions while simultaneously backfilling those feeder jobs with new hires from external partners.

In many cases, employer collaboratives will have already decided on whether to start pursuing internal or external talent pipelines, or both. Even if this is the case, in TPM we encourage you to get the facts straight first so that your employer collaborative can validate their decision with data on where to start.

Reviewing Decisions and Findings from Previous Strategies

The decision on where to start should be based in part on a review of previous decisions and findings from Strategies 1, 2, 3 and 4. Here are some major considerations:

Strategy 1: Organize Employer Collaboratives

Shared Pain Points: Talent Management Challenges: What were the most important shared pain points your collaborative identified? Were those pain points focused more on upskilling current workers or getting more qualified job applicants and new hires onboarded to **full productivity**?

For example, retail employers may want to improve career progressions and reskill existing workers to improve retention, or a group of manufacturers may use upskilling to facilitate skill attainment and career advancement through an apprenticeship. Another group of employers may want to focus on increasing diversity by sourcing from underutilized external talent providers.

Employer Collaborative Capacity, Willingness, Expected Impacts, and Urgency to Take Action: Where was the greatest capacity and willingness to take action? Was there more capacity and willingness to work on shared pain points for upskilling of current workers or new hires? Where do they see the greatest expected impacts?

How urgent was the need? Did employers need quick results which are more likely with upskilling and short-term pre-employment training and onboarding? Or, are employers willing to explore longer term strategies that could involve expanded career exploration and longer term pre-employment training with trusted partners?

For example, manufacturers may be more willing and able to cooperate first on upskilling current employees through a partnership with one or more providers because they think it will have the largest impacts and produce quicker results. Healthcare employers may be more likely to cooperate on upskilling nurses in urgently needed

specialty areas. Both manufacturing and healthcare collaboratives may then be willing to focus on improving the longer term supply of qualified applicants to address expected growth and/or retirements.

Strategy 2: Engage in Demand Planning

Level and Confidence in Short-term and Long-term Job Openings: Do we have a sufficient level of demand and confidence in our projected job openings to start with building external talent pipelines? Or, should we first focus on internal pipelines to meet our immediate needs and then collect more information about our future needs?

In most cases, employer collaboratives need to be confident that they will have a relatively high level of short-term and long-term job openings to justify putting a lot of time and effort in building external talent pipelines. This will also be necessary to fully engage potential partners wanting to maintain or increase enrollments in education and training programs.

For example, a manufacturing collaborative may decide that they do not have sufficient numbers of projected job openings to start building better external pipelines. Instead, they may decide to focus on upskilling current workers to meet immediate needs and resurvey their members in a year on critical jobs as well as feeder jobs to reconsider whether to move forward on building external pipelines. In contrast, an IT collaborative may decide that they have sufficient numbers of expected job openings to justify focusing on both internal and external pipelines.

Strategy 3: Communicate Competency and Credential Requirements

Agreement on Competency and Credential Requirements and Career Pathways: Do we have sufficient agreement on competency and credential requirements to move forward with building internal and/or external pipelines? Employer collaboratives can work effectively together even if they have differences in their required and preferred competency and credential hiring requirements.

However, the level of agreement on what are the most critical competencies and what are the range of credential requirements have implications for where to start. In most cases, employer collaboratives can focus on upskilling with agreement on only a few critical competencies. However, many times, it will take a higher level of consensus on what are the most important competencies and credentials for building effective external talent pipelines. For employer collaboratives seeking to build both internal and external pipelines, there will need to be some level of agreement on career pathways and the relationships between competencies for jobs in those pathways, whether feeder jobs or critical jobs.

For example, a manufacturing collaborative may decide that they have sufficient agreement on a few competencies that could be the basis for collaborating on short-term upskilling of current machining technicians but not sufficient agreement on the full range of competencies and credentials for building external talent pipelines. They could agree to start with upskilling and then resurvey members on competencies and credentials after members have had sufficient time to reconsider their requirements based on conversations with other employer collaborative members. In contrast, a healthcare collaborative could decide they have sufficient consensus to move forward on internal and external pipelines for medical assistants and surgical technologists.

Strategy 4: Analyze Talent Flows

Best Opportunities to Improve Talent Flows: The collaborative should review the results of its back mapping and talent flow analysis conducted in Strategy 4 for internal talent pipelines or external talent pipelines, or both. Where are the best opportunities to improve talent flows to address the critical pain points?

For example, a manufacturing collaborative could see the best opportunities to improve talent flows from internal sources to fill machining technician jobs because of the total number of people in the most common feeder jobs—machine operators. Collaborative members also could decide to further explore untapped sources of talent for machine operators from community-based organizations that provide job training that they identified as effective. In contrast, an IT collaborative could see their best opportunities to improve diversity for network administrators as well as help desk technicians—a major feeder job— by expanding flows from two community colleges and a community-based organization.

Additional Considerations

Remember to Get the Facts Straight Before Taking Action: In reviewing these options on where to start, it is important to consider whether an employer collaborative has sufficient data to take action. Employer collaboratives may need to revisit previous strategies in order to collect data needed to move forward successfully with building a talent supply chain solution with partners.

In some cases, employer collaboratives may want to go back and reconsider the highest priority pain points (Strategy 1). They may want to add the most important feeder jobs identified in talent flow analysis (Strategy 4) to their demand planning survey (Strategy 2). They could decide to revisit their competency and credential requirement data (Strategy 3) to improve the alignment between critical and feeder jobs in their chosen career pathways. They may want to go back and improve their talent flow analysis by working with other data partners to show talent flows from underutilized providers (Strategy 4).

Emphasize the Need for a Comprehensive End-to-End Approach, Regardless of Where You Choose to Start: In reviewing these options on where to start, it is important to remember that the TPM framework provides a comprehensive end-to-end approach for building both internal and external talent pipelines. And, it is important to make sure that wherever you start, you are always taking actions consistent with this comprehensive pipeline methodology.

For example, if you start with upskilling and expanding career pathways for existing entry-level workers, then you may want to make sure that these entry-level jobs can be easily backfilled with qualified new hires from existing or new talent sourcing partners. In addition, if you focus on new hires, you may want to make sure that existing employees have the opportunity to meet the same skill and credential requirements that are included for new hires. In most cases, employers will need to eventually incorporate both upskilling and new hire strategies to be successful in the long run.

Deciding Where to Start Exercise

This exercise demonstrates key factors to consider as a collaborative determines where to start building their talent supply chains with internal talent pipelines, external, or both.

A manufacturing collaborative made up of 10 companies has chosen to focus on engineers and CNC machinists as their focus area. For engineers, the pain point they want to address is reducing time to fill open jobs with qualified job candidates. For CNC machinists the pain point to address is increasing the number of qualified job applicants and improving retention. The collaborative members have just completed a needs assessment survey (Strategies 2 and 3) and talent flow analysis survey (Strategy 4) and are in the process of reviewing the results and deciding where to start with internal talent pipelines, external, or both.

For engineers, the level of demand came out lower than expected in large part due to a wave of retirements that is anticipated to begin in two years. Even though the numbers are lower than expected, the collaborative decided it was still a critical long-term need and given longer lead times needed to prepare qualified engineers, it would not be wise to put off building a solution. When they reviewed their back mapping data they found that they consistently got their best engineers from a nearby private university and a larger public university, both of which have excess capacity that can meet their long-term need. Other qualified engineers usually came from other employers, both within and outside their geographic area.

For CNC machinists, the need was both urgent and large. The collaborative's demand planning showed the need for a significant number of new CNC machinists over the next two years. When the collaborative reviewed their talent flow data they found that those CNC machinists that they were able to retain at higher levels usually came from within their own companies with a majority of them coming from two entry-level production positions. When the collaborative members compared the competency-based hiring requirements for the production positions and CNC machinists, it became clear they could be more intentional about providing career advancement opportunities to their production workers. When looking at their internal pipeline capacity, however, the collaborative members did notice that meeting their CNC machinists demand could cut into their supply of workers for their two entry-level feeder positions.

After reviewing the exercise, discuss the following:

1 Based on the data gathered through the previous TPM strategies, would you recommend the collaborative pursue an internal talent pipeline, external, both, or neither for engineers? What about for CNC machinists?

2 Based on your decision, will the collaborative need any additional data before moving forward?

Unit 5.2

Identifying Preferred Providers

After making a decision on where to start, employer collaboratives should then decide on an approach for identifying **preferred providers**, whether for internal or external pipelines, or both. Beginning with where companies have historically sourced talent from (Strategy 4) and ascertaining their ability to meet your projected demand in the future, collaboratives can begin to make qualitative decisions about who they will work with to meet their talent needs now and in the future.

The most important incentive collaboratives can offer in the TPM process is designating or recognizing an education or training provider as a "preferred" provider of talent to their member companies, based on its past or anticipated ability to produce results. We define providers as those organizations that offer any education, training, or related support services (with learning objectives, activities, resource materials, and related supports that improve persistence and completion) provided predominantly through classroom experiences, work-based learning, or counseling. Providers can also offer related services, such as recruitment, orientation, assessment, screening, scheduling, advising, and other support services that might impact performance, including quality, cost, and time.

In managing supply chains, businesses have established standards and recognition systems to identify and improve suppliers that provide them materials and services. However, the business community has yet to set standards and develop a recognition process for education and training providers that supply businesses with talent.[1]

The preferred provider incentive is the foundation used to target other financial incentives, such as internships, equipment donations, or support services (e.g., career guidance), which can improve performance in the talent supply chain and contribute toward a stronger ROI for employers. But, employers in the collaborative must first designate which providers are eligible to receive their incentives.

When a collaborative comes together to establish the criteria necessary to earn preferred provider status, it effectively creates an employer-led quality assurance system that complements public sector-driven accreditation and accountability systems. Having this type of market signaling in place can also activate new incentives, such as better financing tools for preferred providers.

When organized effectively, a preferred provider designation can be a highly sought-after incentive by education and training providers that wish to demonstrate that they have a validated special relationship with employers. This can improve recruitment of learners into programs and contribute significantly toward getting those learners quality employment outcomes.

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[1] To learn more about the global International Organization for Standardization system (commonly referred to as ISO) quality management standards that provide the foundation for supplier certification, read the following publications: Robert Sheets and Jason A. Tyszko, Changing the Debate on Quality Assurance in Higher Education: The Case for Employer Leadership and a Roadmap for Change (Washington, D.C.: U.S. Chamber of Commerce Foundation, 2015). Jason A. Tyszko (2017) Employer-led Quality Assurance, Change: The Magazine of Higher Learning, 49:1, 26-33. Gardner Carrick, Robert Sheets, and Jason A. Tyszko, Quality Pathways: Employer Leadership in Earn and Learn Opportunities (Washington, D.C.: U.S. Chamber of Commerce Foundation, 2018).

Considerations When Identifying Preferred Providers

Employer collaboratives should consider the following when selecting and designating preferred providers:

- **Internal and/or External Talent Pipelines:** Will the focus of designating preferred providers be for internal talent pipelines, external, or both? For internal, the focus will be on those providers offering value-added training, coaching, or support services for upskilling pathways. For external, the focus will be on tiers (see below).

- **Collaborative or Employer-Specific Designation:** Will the collaborative manage the recognition process and provide the endorsement? Will it manage a process that enables its employer members to make endorsements? Or will it do both?

- **Current or Potential Providers:** The collaborative can narrow its list to those providers that it previously identified through the activities detailed in Strategy 4 and back mapping, or it can expand the review to include potential talent providers that no company has recruited from to date.

- **Tiers:** For external pipelines, will the preferred provider designation go only to Tier 1 providers—one step removed from employment? Or will it extend to Tier 2 providers and beyond to tier feeder programs as well?

- **Time:** How long will the designation last and will current preferred providers be expected to maintain their designation based on time intervals?

- **Provisional or Designated Status:** Will the collaborative provide a provisional status for a preferred provider or fully designate them as preferred from the beginning? Some collaboratives may choose to use a provisional status to identify who they plan to work with but not fully recognize them as preferred until after the successful completion of the co-design process or until performance data has been collected and reviewed.

The Process and Criteria for Designating Preferred Providers

When identifying preferred providers, employer collaboratives will also want to be clear on the process and performance requirements for attaining such a designation. The criteria should be clear so providers understand either why they were identified as a preferred provider or how they can demonstrate or share evidence that they should be considered for such a designation. Your employer collaborative should establish clear criteria for recognizing one or more preferred providers and make this information publicly available to avoid any confusion.

When setting this criteria, your employer collaborative should consider a mix of process and performance requirements or goals, such as how the provider uses employer inputs (e.g., employer-specified competencies or credentials), how responsive or adaptive they are to changing workforce needs, or their proven ability to deliver a quality workforce on time and at the preparation level that meets employer needs.

An additional consideration is whether employers should have one or more levels of recognition. Collaboratives that seek to establish multiple levels of recognition will need to be clear on how a provider can attain one or more levels of recognition. For example, a collaborative can set foundational requirements for providers—such as the ability to integrate industry recognized credentials—while employer members can set more advanced requirements based on their particular talent needs, such as actual hires

Employer collaboratives should use the results from their talent flow analysis in Strategy 4 to review the performance of current talent sourcing partners. This includes internal upskilling pathways (i.e., job-to-job flows) and external hires. Employer collaboratives should then identify other potential providers including those that may be untapped partners for addressing their most important pain points. For example, an employer collaborative could explore other providers that may allow them to address diversity goals.

An employer collaborative may wish to openly engage all current and potential providers in the talent pipeline building process and let them make their case for playing different roles at different tiers, and then designate those providers during or after the process. This approach could use a Request for Information (RFI) that seeks to gather input from potential providers on criteria to be used and what information they can provide to address these criteria. This approach may be beneficial when you have no established partnerships and many potential providers, and there is a need to learn more about potential partners.

Employer collaboratives also could use a formal Request for Proposal (RFP) that provides a more structured way to evaluate and compare the potential strengths and weaknesses of different partners. This can be done by invitation or as an open process. It can also be repeated to bring new providers into your talent supply chain or to reevaluate the commitment of existing preferred providers.

In both cases—RFI and RFP—your collaborative will need to make clear your criteria for designating preferred providers. The criteria is ultimately determined by the collaborative itself, but can include a mix of process, performance, and commitment requirements. Consideration when setting criteria should include:

- **Past Performance:** How have providers performed in the past in playing the desired role in the talent pipeline and addressing employer pain points?

- **Capabilities and Expertise:** Do providers have the necessary capabilities (e.g., programs, equipment) and expertise (e.g., qualified instructors) for playing one or more roles in the talent pipeline?

- **Leadership Commitment:** Do providers have the leadership commitment to play the desired roles and co-design talent pipelines?

Avoiding Unintended Consequences

Regardless of the approach taken, employer collaboratives should be cognizant of potential unintended consequences to avoid when identifying or designating preferred providers. Examples include the following:

- **Partner Lock-In:** Employer collaboratives should be mindful of maintaining their leverage with preferred providers by always having opportunities to work with other potential sources of talent. Collaboratives should always preserve choice in who they can work with in order to maintain the responsiveness and flexibility that their talent supply chain requires. This applies to providers for external talent pipelines as well as those that are providing value-added training or support services for internal pipelines.

- **Restricted Access to Talent:** Talent supply chains should not be rigid in that they restrict access to other sources of qualified talent. Employers should be open to all qualified talent but ought to be proactive in sourcing from preferred partners that have demonstrated the responsiveness and flexibility required to fill their need. In addition, when building career pathways for new hires coming from external providers, employers should be mindful to not restrict career advancement opportunities for existing workers. Employers have a better chance of achieving a positive ROI when leveraging a comprehensive talent strategy that balances external and internal talent pipelines.

- **Community Reputation:** Designating preferred providers does not come without risk to reputation and brand. There is a risk that employers may be labeled as bad partners to education and training providers and might be characterized as cutting out certain providers. These risks should be avoided by always being open and transparent about what the collaborative is trying to accomplish and the requirements for being designated a preferred provider. Make sure to always allow for adjustments over time based on the ability of new providers to demonstrate that they can meet the collaborative's needs.

- **Coordination Problems:** When employers and collaboratives are pursuing both internal and external talent pipelines, respective designated preferred providers should be coordinating their efforts to ensure there is no disconnect, inefficiencies, or redundancy in developing streamlined, equitable talent pipelines for new and current workers.

Being designated a preferred provider will be very important to most talent providers in any community, especially publicly funded providers that have a mission to address employer needs. As a result, employer collaboratives should manage this process in ways that build acceptance and trust with existing and future providers in their communities. This is especially relevant to providers already involved as partners in established public-private partnerships (see Strategy 1) and those that may even be members of chambers of commerce and economic development organizations that are playing the function of host organization.

Exercise 2

Designating Preferred Providers Exercise

This exercise highlights different talent providers that are in consideration for preferred provider status and how a collaborative will work through the process of selecting criteria and designating providers with the recognition.

The same manufacturing collaborative from Exercise 1 has come together to improve the pipeline of qualified CNC machinists and entry-level production workers. The collaborative plans to upskill a number of production workers into more advanced machinist positions, but will require new talent sourcing partners to improve the quality and supply of entry-level production workers.

For upskilling current production workers, several of the employer collaborative members have worked with a community-based nonprofit that provides career coaching services. In addition to career coaching, the nonprofit also has training available to current workers and provides other support services, including housing, transportation, childcare assistance, and financial literacy. Workers who have taken advantage of these services have reduced time to full productivity in the targeted jobs with higher retention rates when compared to their peers who have not taken advantage of these services, but who are otherwise eligible.

For new production workers, the collaborative identified that member companies get their most qualified recruits from a community college in the area. However, the need to backfill production workers on top of the existing demand will likely exceed the community college's current capacity. In addition, many graduates of the program do not leave with a relevant industry credential. Further review of HR records indicates that these learners often need additional training and their retention rates are consistently low.

Two collaborative members inform the other members that they have recently started to source production workers from an area high school that has established a manufacturing career and technical education program. This program has smaller class sizes and doesn't award college credit, but learners do earn industry credentials in machining and require little additional training once onboarded.

Another private college in the area has recently developed a new machining program that includes industry credentialing as a central feature of the program, but none of the collaborative members currently have a relationship with that school.

Last, a for-profit manufacturing "boot camp" recently began advertising their program and recruiting students. They have reached out to the manufacturing collaborative's host organization requesting a meeting about being named a preferred provider which they can then use to recruit more students. They have assured the host organization that their program is cutting edge and can meet the collaborative's needs.

After reviewing the exercise, discuss the following:

1 Which of the providers should be considered when designating preferred providers? Discuss how you arrived at your decision.

2 What evidence would the collaborative need in order to recognize a preferred provider?

3 How could the host organization know if the for-profit has what it takes to be recognized?

4 What major questions or issues will arise if some providers are recognized but not others? How could the employer collaborative manage this process in a way that builds acceptance and trust in the community?

Unit 5.3

Engaging Your Partners

Having developed an approach for identifying and designating preferred providers, the next step for an employer collaborative is to work with those providers to co-design talent pipelines. This process should be executed in ways that achieve a positive ROI for the employer collaborative members and generate shared value for all partners in the talent supply chain.

It is important to keep in mind that TPM is not something that happens to providers, but with them. Employer-led does not mean employer alone, and now it is critical for the collaborative to engage its preferred providers in building a high-performing talent pipeline.

As introduced in Strategy 1, employer collaboratives should keep potential partners informed about what they have been doing to get ready to work with them. Employer collaboratives should share information about their critical pain points and focus areas. They also should share with potential partners the preliminary findings from the data collected in Strategies 2, 3, and 4.

Host organizations—along with selected representatives from the employer collaborative—must now organize all the information they have collected in the previous strategies and work in partnership with their designated provider networks to organize performance-based talent supply chain networks. They do this by (1) sharing information, (2) co-designing a talent pipeline through a value stream mapping process, (3) developing **performance measures** and aligning incentives, and (4) developing performance scorecards that communicate outcomes and the effectiveness of the partnership.

It's important to identify the right people for each part of the co-design process, and that can vary from step to step. The collaborative members who participate in value stream mapping may be different from those who participate in developing the performance scorecard, pending who makes up the collaborative and where their expertise lay.

Employer collaboratives can begin this process by focusing first on their internal or external talent pipelines. However, wherever they choose to start, they should always take a comprehensive end-to-end approach and make sure they are taking into consideration implications for their entire pipelines. We now review the steps in engaging your providers in building talent pipelines, regardless of where you choose to start.

Engaging Provider Leadership

When engaging providers, host organizations and their employer collaborative members need to work through a series of activities and decision points. There are many ways to engage your provider partners, but we recommend beginning with a leadership meeting that affirms the desire to establish partnerships with preferred providers and provides an opportunity to share information the collaborative has collected to date. The leadership meeting also provides an important opportunity to secure the necessary buy-in to commit staff to go through the co-design process, including mapping a value stream and aligning performance metrics and incentives.

Keep in mind, if your collaborative has been engaging stakeholders throughout the process—even sharing information with them as it becomes available—this initial meeting may be seamless as they have been prepared to engage all along. However, if your collaborative has kept their work private to date, the host organization may have to organize additional meetings to bring the providers they seek to convene up to speed.

To the extent possible, the information the collaborative has gathered to date should be shared in advance with those providers you plan to convene. As many questions as possible should be answered ahead of the leadership meeting to ensure there is sufficient trust and buy-in heading into the meeting. *Some have organized a series of pre-meetings in anticipation of the leadership meeting to ensure that all questions have been answered.* Host organizations and the employer collaborative members will need to make a decision on just how much to share in advance and with whom.

The host organization should work with the collaborative members to determine who should represent them in the kickoff meeting. In some cases this can be done by the host organization themselves, but it is often advantageous to have one or two employer champions act as collaborative representatives, which demonstrates trust in the host organization and for the process. The employer champions can also provide subject matter or technical expertise through the involvement of key employees, such as a front-line manager.

If starting with upskilling and internal talent pipelines, the host organization should convene the major providers of education and training services for upskilling existing employees, whether through customized training programs with employers or through employer tuition assistance programs. They also should include providers of career coaching services as well as those providing support services and related benefit programs important for promoting career advancement and diversity. Upskilling providers should be encouraged to come ready to present information about their education and training programs and services relevant to the critical jobs and career pathways prioritized by the employer collaborative, including customized training services and different ways employees could access and use tuition assistance benefits. They also should be encouraged to present information on career coaching and support and benefit management services.

If starting with external talent pipelines, the host organizations should at least convene Tier 1 providers, but they should also include their **feeder schools** however possible. What matters most at this point is that the talent supply chain is working as a team and is transparent in how it is organizing roles and setting goals. When focusing on external pipelines, goals should be set with the providers in advance so they are prepared to not only receive the employer data, but also present information that is most relevant to the collaborative. Some of this data may overlap with what was collected during Strategy 4—talent flow analysis—but should be included here so that providers have a chance to present their programs, capacity, and achievements to date.

Sharing Employer Collaborative Data

Whether starting with internal or external pipelines or handling both at once, the host organization and collaborative representatives should prepare to present the information the collaborative has collected to date, which includes:

1. Definitions and measures for the collaborative's agreed-on pain points and baseline analysis (Strategy 1).

2. Definitions for critical business functions and jobs that the collaborative has chosen to focus on (Strategy 1).

3. Aggregate short-term projections for new and replacement positions (Strategy 2), which could include projections for feeder jobs that lead to critical jobs.

4. Hiring requirements, including information related to competencies and their preferred assessment and demonstration, credentials, and other requirements (Strategy 3). For those starting with upskilling, this should include data on new, emerging, and changing jobs that will require retraining and the mapping of career pathways.

5. Back mapping data and analytics about talent flows (Strategy 4). If focusing on upskilling, this should include internal job-to-job flows within internal career pathways. (Note: Some collaboratives may choose to keep historical data private if they are working with new provider networks).

6. Designated preferred providers and their relationship to one another (Strategy 5).

7. **Leading and lagging measures** the collaborative plans to address (which will be covered in Strategy 5, Unit 5.4).

8. Current and potential incentives the collaborative is prepared to commit that they believe will help improve performance (which will be covered in Strategy 5, Unit 5.4).

In addition to being prepared to present the data, the employer representatives should be prepared to address a number of questions that their designated preferred provider representatives will likely have, which could include:

1. What is the source of the data and what methodology was used?

2. Can individual company data be shared?

3. What is the difference between a business function and a job?

4. What level of confidence do we have in the job projection data?

5. How flexible is the collaborative in revisiting the hiring requirements based on feedback from partners?

6. Why was each education and training provider chosen as a preferred provider and what was the criteria used?

7. What guarantee is there that their learners will have priority access to opportunities and employment with the collaborative members?

Hearing from Your Provider Partners

After sharing the employer collaborative's data and answering any questions that may have come up related to the data, the next step is to hear from your provider partners. This is an important step because the providers want to share their information as well and establish a baseline of their own for kicking off a co-design process. However, providers should be cautioned in advance against coming to the leadership meeting with the intent to "sell" their programs to the employer representatives or to provide overly detailed information on their courses (e.g., lesson plans). The idea of the leadership meeting is to co-design talent pipelines with employers based on the data and information collected by the collaboratives. Information presented by providers could include the following:

1. Available and planned program offerings
2. Identification of, and data related to, feeder programs
3. Current enrollment and completion data
4. Credentials and assessments offered
5. Experience with work-based learning opportunities
6. Evidence on graduate experiences and outcomes, particularly as it relates to employment

Knowing if Engaging Your Provider Partners was Successful

If your kickoff leadership meeting was successful you will have established a shared understanding of the goals and objectives related to the talent pipeline you seek to build. You will have also solidified shared value propositions in building a talent pipeline. At the end of the meeting the participants should ask themselves the following questions: (1) do we feel confident we can work together to build a career pathway that addresses the needs of the companies in the collaborative, including the target business functions and jobs, shared pain points, and hiring requirements, and (2) will we commit staff time to working together to co-design a talent supply chain that will be reviewed and submitted for approval by employer collaborative and provider leadership?

The leadership meeting should conclude with agreed-on next steps and staff assigned to carry out the co-design process with the understanding that they will report back to the leadership team once the work is complete. This remaining process can take place through a series of meetings among the collaborative's staff and representatives, and staff and experts made available by the provider partners. Similarly to the employer collaborative, it's important to identify the right people for each part of the co-design process, which sometimes may be the same people or sometimes different people (i.e., an assessment and/or credentialing expert would be important to include in a **curriculum mapping** exercise but perhaps not as critical when identifying performance measures).

Unit 5.4

Co-Designing Talent Pipelines

Having had a successful leadership meeting and secured buy-in to move forward, now the work of co-designing a talent supply chain begins. This process involves (1) value stream and curriculum mapping, (2) setting performance measures, and (3) aligning incentives. Once complete, the results of the co-design process will be brought back to employer and provider leadership for review and approval.

The co-design process will unfold based on the plan you arrived at in the leadership meeting. It will likely take place as a series of meetings and engagements with individual providers and experts that can take place over the course of days, weeks, or even months depending on how quickly you are trying to implement a talent pipeline. The length of time and number of engagements will also depend on the complexity of your talent supply chain (e.g., organizing both internal and external talent pipelines) and the number of providers involved.

When co-designing a talent supply chain, the employer collaboratives' staff and representatives should be prepared to meet with several different experts on the provider side. These experts may include:

1. Senior organization leadership (e.g., principals, deans, CEOs, executive directors)
2. Curriculum and instructional design experts
3. Assessment and credentialing experts
4. Guidance counselors and case managers
5. Faculty, teachers, and instructors
6. Staff responsible for organizing and managing work-based learning or earn and learn opportunities
7. Students

When initiating a co-design process it is important to keep in mind that both sides should come prepared to learn, make changes and concessions, and engage in joint decision-making. This is a process that should result in shared understanding and agreement. It should also address the value proposition and core performance goals of each stakeholder. What follows is a series of activities that employers and their providers need to work through, starting with value stream mapping.

Value Stream Maps

Value stream maps are used in supply chain management to show, at a strategic level, the roles and responsibilities involved in producing and delivering a good or service. It is called a **value stream** because each partner in the chain adds incremental value, all aimed at meeting the needs of an end-customer.

In TPM the value stream map is a visual blueprint of the talent supply chain. It is a useful tool for communicating how employers and preferred providers understand the talent development process from start to finish and for providing a way to clearly signal the major **transition points** and the roles and responsibilities of all partners involved in the process. Value stream maps can also be used to show the major performance drivers in sequence, along with the incentives tied to them, which the participants should address as part of the co-design process.

Value stream maps for internal pipelines focused on reskilling for new, emerging, or changing jobs can be used for developing or revising employee training programs and how they will be financed and delivered. For example, some providers could provide on-site and/or online training opportunities coordinated with employer training. Others could offer this through modular courses offered through employer-paid tuition assistance programs along with career coaching and related support services. In most cases, employers and their partners will need to explore how to provide career coaching and support services for entry-level employees who may face barriers in advancing to higher-level positions. (Note: aligning incentives are covered in more detail in the next section).

Value stream mapping also supports upskilling that results in career advancement. Strategy 3 addressed the need to align competencies between jobs within a career pathway to make clear how they relate to each other and how competencies in feeder jobs could be built on for higher level critical jobs. Strategy 4 identified the internal pipeline capacity and how many people could be expected to advance from entry-level to higher level jobs. Value stream mapping now makes possible the development of more intentional upskilling opportunities for current workers.

Lastly, value stream mapping for external talent pipelines is comparable with developing career pathways or programs of study with education and training providers. For educators and training providers, a career pathway shows a scope and sequence of learning across providers to prepare a learner for entry-level employment in a career field. Education and training providers have a rich history of developing career pathways for career and technical education programs supported by state and federal policy. What makes value stream maps different is that they are co-designed with employers based on the data employers have gathered in advance. They are also used to align incentives and performance measures in ways that generate a positive **employer return on investment**.

Breaking Down the Value Stream Map into Its Component Parts

A value stream map identifies major activities involved in developing talent and who delivers the services, but also includes the performance goals at each transition point and the incentives used to improve performance. These maps have six major components, each involving decisions that should be spaced out over the course of the co-design process:

- **Talent Pipeline Roles:** The major roles or functions (e.g., career awareness) played by employers and their partners, showing shared responsibilities at each transition point in the pipeline
- **Tiers:** The classification of which roles fall under which tiers
- **Preferred Providers:** The sorting of which providers are tagged to which tiers and roles
- **Learning Activities/Outcomes:** The value-added learning activities and competency outcomes as well as assessments and demonstrations, at each stage of talent development

- **Performance Measures:** The key performance measures at each point of transition
- **Incentives:** The incentives that are targeted at each stage of the talent development process

While not reflected in the value stream map itself, collaboratives should factor in considerations related to time, demand, and the capacity of provider partners. For example, the value stream map encourages a conversation among the co-design partners to build a value stream map that is consistent with the level of demand projected in Strategy 2 and the time period in which demand needs to be met. It should also consider the capacity of partners (i.e., enrollments and completers) and effective capture and leakage rates covered in Strategy 4. This allows a collaborative to anticipate or consider talent leakage or attrition in ways that ensure there are enough completers to meet the projected level of demand.

See Figure 5.1: Basic Value Stream Map and Figure 5.2: Advanced Value Stream Map. The more advanced map provides a template for populating the map with data and decisions made by the co-design participants.

Figure 5.1: Basic Value Stream Map
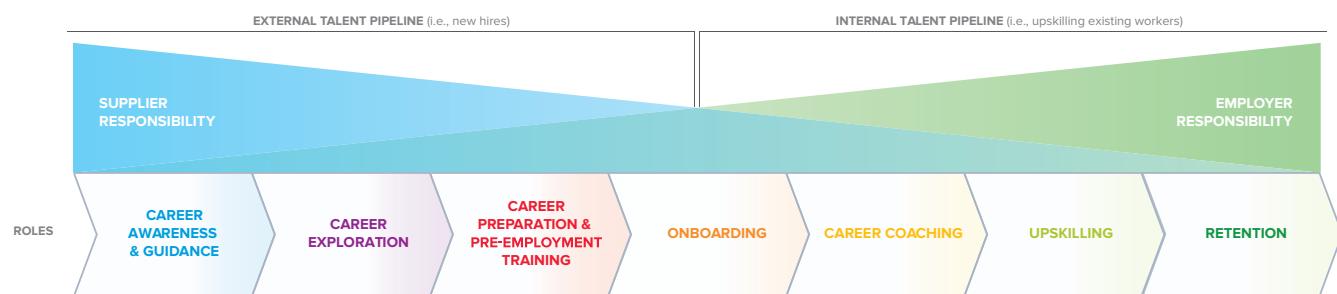
Figure 5.2: Advanced Value Stream Map
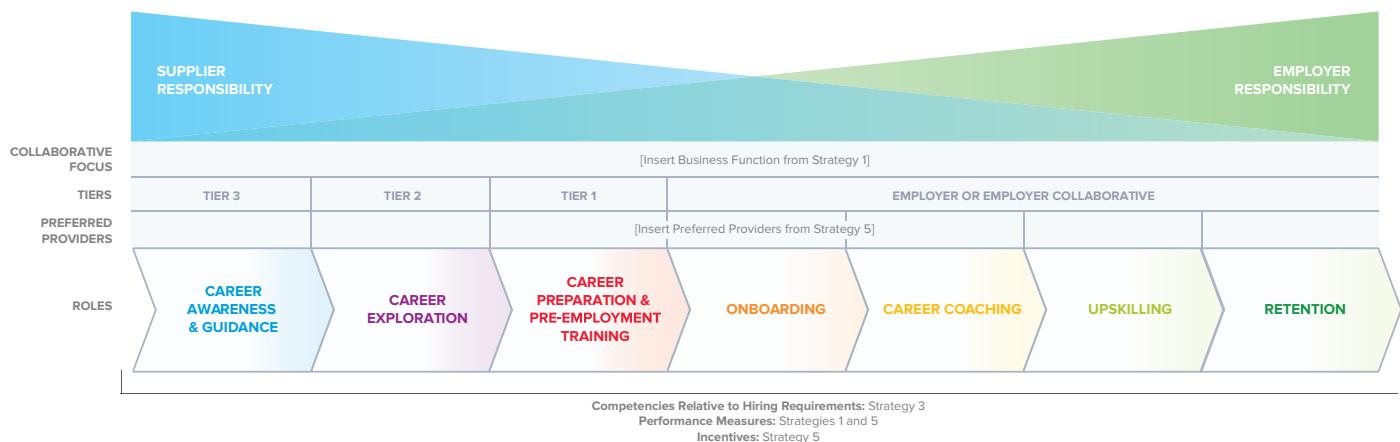
When engaging in a value stream mapping process, you will first need to reach agreement on the roles, tiers, and providers playing those roles/tiers, but also done in a way that can be delivered within the timeframe needed by the employer partners and with sufficient capacity to meet the projected level of demand. Demand data already aggregated by the collaborative members during Strategy 2, and data about provider tiers and roles gathered during Strategies 4 and 5, will prove helpful to this discussion. Questions you can use to guide the discussion include:

1. What are the major roles in developing talent for our pipeline and how do we define them?

2. Which role and tier will each provider be responsible for?

3. Which providers are feeders to others, and which will employers directly recruit from?

4. What level of demand needs to be met and by whom, including estimated enrollments and completers, accounting for attrition?

5. What time period does the value stream need to address in the immediate future? Which providers fall within the timeframe for current projections? Who is responsible for future talent supply?

Competency and Curriculum Mapping

With roles firmly established and having reached agreement on the above questions, the co-design team is now ready to address the fourth component of the value stream mapping process: learning activities and outcomes. Here you will need to engage the curriculum, instructional design, and assessment experts to build out the activities covered under each talent development role. Data that employers have gathered as part of Strategy 3—the hiring requirements—will prove essential in mapping out **learning outcomes** and the progression of learning. Learning outcomes are measurable and observable statements about what a person knows and is able to do that are tied to a curriculum.

The co-design team may find it beneficial to make use of competency and curriculum mapping tools. **Competency mapping** tools are useful for both upskilling and external talent pipelines and enable partners to map which learning outcomes relate to which competency hiring requirements, and which providers (and at what tier) are responsible for them. They can also be used to show the progression of learning outcomes attained over time across multiple provider partners. Curriculum mapping takes another step to provide detailed information about how a learning outcome and/or competency ought to be delivered and assessed.

Collaborative representatives should defer to the curriculum and instructional design experts on how they believe the employers' competency hiring requirements can best be achieved (e.g., scope and sequence of learning activities).

However, employers should make sure that the competency hiring requirements and learning outcomes are aligned and that proposed assessments of learning outcomes are also aligned with the preferred demonstrations of these competencies.

Overall, these competency and curriculum mapping exercises should involve a rich back-and-forth discussion between the collaborative representatives and providers to address questions such as the following:

1. Which learning outcomes correspond to which competency hiring requirements?

2. How will learning outcomes be sequenced across partners and tiers? Who is responsible for addressing which learning outcomes at what points in the talent supply chain?

3. How will learning outcomes be delivered? Should it be delivered in a classroom or through a work-based learning experience?

4. What is its preferred demonstration? What types of assessments correspond to each learning outcome? What are examples of these types of assessments?

5. Are there any learning outcomes that are company specific and how will they be accounted for?

6. What learning activities and assessments are the employers responsible for and need to be included as part of onboarding and training processes?

The back and forth negotiation that results from the co-design process could result in employers adjusting their hiring requirements that were identified in Strategy 3. Similar to providers, employers must approach the conversation with an openness to being flexible and should adjust or modify their hiring requirements as needed based on the results of the value stream mapping process. If employers do not adjust, then they run the risk of requesting hiring requirements prior to employment that they now plan to address as part of their agreed-on onboarding and training process. This could increase the duration of training and increase its costs. Further reducing the hiring requirements as a result of the co-design process is more often than not a win for all stakeholders.

The competency and curriculum maps that follow are just examples. What is most important is for the co-design team to decide for themselves what competency and curriculum mapping process works best for them and which tools should be used or adapted to meet their needs.

Competency and Curriculum Mapping for Internal Talent Pipelines

Starting with internal talent pipelines, employers and their partners should explore: (1) developing coordinated or shared customized training programs for retraining existing employees in new, emerging, or changing jobs, and (2) developing coordinated or shared career pathways and advancement opportunities, supported by coordinated career coaching and support services and benefit management.

Data that employers have gathered as part of Strategy 3—the changes in hiring requirements—will prove essential in mapping out how employers and providers will partner to retraining employees to meet these new requirements and address other common skill gaps.

Co-design partners should start by organizing a job-to-job comparison of competencies that shows the relationship between jobs. This is a particularly important tool to show the difference in competencies between a feeder job and a critical job. A job comparison example is provided in Table 5.1: Job Comparison by Competency Example.

Table 5.1: Job Comparison by Competency Example

Master List of Competency Hiring Requirements (CHR)	Job 1 (Entry Level)	Job 2 (Mid Level)	Job 3 (Senior Level)
CHR 1	X	X	X
CHR 2	X	X	X
CHR 3		X	X
CHR 4			X

As shown in this example, data from Strategy 3 would be used to identify the competency hiring requirements and whether these requirements are the same or whether they have been changed or added. The job comparisons by competency also provide the opportunity for employers to identify hiring requirements or additional competencies that should be reinforced or addressed because they are important in addressing the common and critical skill gaps that have been discovered through **continuous improvement** initiatives (Strategy 6) and internal company evaluations (e.g., hiring manager recommendations).

With an identified list of target competency hiring requirements, the co-design participants are now ready to move on to competency mapping. Competency mapping tools enable co-design partners to show the relationship between competency hiring requirements and learning outcomes, as well as which partners (and at what tier) are responsible for their delivery and attainment. Some competencies may be the same as the learning outcome. However, some competencies may require multiple learning outcomes. It is important to lay out the full list of learning outcomes associated with each competency to ensure it has been appropriately mastered. A competency map example is provided in Table 5.2: Internal Pipeline Competency Mapping Tool Example.

Table 5.2: Internal Pipeline Competency Mapping Tool Example

Competency Hiring Requirements (CHR) — Reinforced or New	Learning Outcomes (LO)	Provider(s)	Employer(s)
CHR1 (Reinforced)	LO1	X	
CHR2 (Reinforced)	LO2		X
CHR3 (Reinforced)	LO3	X	
CHR4 (New)	LO4		X

The competency mapping process alone will likely be an improvement for how employer and educator partners assess how hiring requirements are linked to learning objectives. For those who want to take this learning to the next level, curriculum mapping is a beneficial next step. Curriculum maps can be populated with additional information about how the learning outcome is to be delivered, demonstrated, and assessed. More than a checklist, a curriculum map provides an opportunity for the co-design participants to input rich information specific to the type of learning activity (e.g., course, on-the-job training) associated with a competency and learning outcome as well as the preferred demonstration or assessment used to determine mastery. An example of a curriculum map is provided in Table 5.3: Curriculum Mapping for Industrial Maintenance Example.

Table 5.3: Curriculum Mapping for Industrial Maintenance Example

Competency Hiring Requirements (CHR)	Learning Outcomes (LO)	Learning Activity	Assessment Type	Assessment Description	Example Assessments and Evaluation Rubrics
CHR1: Troubleshoot, repair, and replace motors (AC & DC)	LO 1: Troubleshoot motors	Industrial Maintenance Program, Unit 2.1: Industrial Motors (AC & DC)	Performance	Students are given an assignment and asked to diagnose a performance problem with industrial equipment; then asked to determine the causes of the problem and what should be done to repair and replace; and then how they came to that decision.	Evaluation rubric should address: (1) motor is removed and reinstalled consistent with removal and installation checklist and (2) motor performance problem is successfully diagnosed and explained.

Competency and Curriculum Mapping for External Talent Pipelines

For external talent pipelines, similar competency and curriculum mapping processes are used, except instead of focusing on job-to-job comparisons and upskilling pathways, they are now used to identify the progression of learning across one or more external provider partners and how they relate to the employer collaborative's competency-based hiring requirements.

Similar to internal pipeline competency and curriculum mapping tools, these maps show the relationship between competency hiring requirements (identified in Strategy 3) and learning outcomes as well as which providers (and at what tier) is responsible for them. Competency maps can be simple checklists or you can develop curriculum maps with additional information about how the learning outcome is to be delivered (e.g., course, internship), demonstrated, and assessed.

A competency mapping example is provided in Table 5.4: External Pipeline Competency Mapping Tool Example. For curriculum mapping for external pipelines that include the rich information specific to the delivery of the competency and associated learning outcomes, refer back to Table 5.3: Curriculum Mapping for Industrial Maintenance Example.

Table 5.4: External Pipeline Competency Mapping Tool Example

Competency Hiring Requirements (CHR)	Learning Outcomes (LO)	Tier 3 Providers	Tier 2 Providers	Tier 1 Providers	Collaborative Employers
CHR1	LO1		X		
CHR2	LO2		X		
CHR3	LO3			X	
	LO4			X	
CHR4	LO5				X
	LO6				X
	LO7			X	

Considerations when Coordinating Implementation of Internal and External Talent Pipelines

If your collaborative is pursuing both internal and external talent pipelines you will need to ensure you are coordinating your efforts to avoid inefficiencies or unintended consequences. These situations could arise when you are pursuing upskilling opportunities for a destination job but also sourcing for the same job from external preferred providers. Coordination problems can also occur when building an internal pipeline involving a feeder job that will also need to be backfilled. Many times these pipelines will be addressed by separate co-design teams, which if that is the case, then they must be intentional about coordinating their efforts to ensure you have a well functioning end-to-end talent management process or, minimally, to avoid unintended consequences. What follows are some common coordination considerations as you execute your value stream mapping process for both internal and external talent pipelines.

- When building an internal talent pipeline, will career pathway programs be the same or different than programs that prepare new hires for the same critical jobs? For example, should employers use the same partners and programs for preparing current employees in sales associate/assistant manager jobs for manager jobs as they do for hiring store managers as new hires from external pipelines? If so, how do they design and promote them for both existing employees and new hires? If not, how are they designed and delivered differently and how can they be coordinated and aligned wherever possible?

- How will programs for existing employees be credentialed and how will existing employees in those critical jobs (e.g., store manager) be given the same opportunities to get these credentials? And how will these credentials be different than those given in external pipeline programs for new hires?

- How will career coaching and support services be provided to improve access and success in career pathway programs? How will career coaching for existing employees be similar or different than for career awareness and exploration at earlier stages in the external talent pipeline? Also, how should employers and their partners provide necessary support services and how is this coordinated with publicly funded support services?

Value Stream Mapping Exercise

This exercise demonstrates how the value stream mapping process can reveal important considerations in co-designing career pathways with preferred providers.

The same manufacturing collaborative from Exercises 1 and 2 has now engaged their preferred providers and is kicking off the value stream mapping process. This includes working with the local nonprofit to provide customized training and support services to move entry-level production workers into more advanced CNC machinist positions. It also includes working with the local community college and the newer high school CTE program as Tier 1 providers of new production talent.

Leadership from the manufacturing collaborative and from the providers have agreed to move forward to co-design internal and external talent pipelines based on the data the employers provided. Subsequently, the host organization staff plans a series of meetings with the providers to map the value stream, starting with aligning the learning activities and outcomes with the employer's competency-based hiring requirements.

For upskilling, the employers used a curriculum map to compare the competency requirements of production workers to CNC machinists. The process helped employers better harmonize their requirements so that the community-based nonprofit could provide a common training platform and service to help employers upskill workers. They also wanted to add additional competency requirements for newer production workers to better prepare them for future career advancement opportunities that are faster, more aligned, and more cost effective transitions into CNC machining jobs.

For external hires, the employers similarly used curriculum mapping tools to map the learning that takes place in the classroom to new competency-based hiring requirements for entry-level production workers. They began by identifying 25 learning outcomes used in the programs offered by the community college and high school. Of the 25 learning outcomes:

- 15 were consistent with the employer hiring requirements;
- Three were relevant to less than half the manufacturers in the collaborative;
- Seven were not relevant to the collaborative members and added four weeks of instruction time; and
- Three important technical skills that were required by all the employers were not addressed in the program.

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In addition to the learning outcomes, three assessments were offered as part of the curriculum and learners had the ability to acquire two industry credentials, each of which required learners to pay a fee. One of the credentials was a highly sought-after industry-recognized credential for all of the collaborative members that addressed core technical skills and could offset some of the companies' onboarding and training costs if job candidates arrived with this credential. The second credential was not known to the collaborative members and it was questionable if it addressed their hiring requirements at all.

The education providers indicated that they were willing to adapt the curriculum, but they also noted that, per the employer presentation the day before, three of the learning outcomes that the curriculum addressed were part of the onboarding and training process that the companies currently offered and were unable to change for safety and compliance reasons. Those three learning outcomes added at least another two weeks of instruction time.

After reviewing the exercise, discuss the following:

1   What are some issues that surfaced as a result of this process that may have otherwise gone unnoticed or unresolved?

2   What are some decisions the collaborative should consider after mapping learning outcomes to competency-based hiring requirements for both internal and external talent pipelines?

3   How would you address assessment and credentialing opportunities?

4   Identify instances when time and cost should be factored into your decisions.

Setting Performance Measures

Having completed the first four components of the value stream mapping process—talent pipeline roles, tiers, preferred providers, and learning activities/outcomes—you are now ready to move on to setting performance measures and creating scorecards based on those measures. The host organization and employer collaborative representatives are now ready to introduce their designated preferred providers to the most important measures that have been discussed thus far. From there, they can work through the co-design process to further explore and validate the leading **transition measures** and tie them to lagging bottom-line measures that address employer ROI.

The first step in enhancing your collaborative's talent supply chain is determining which performance measures are most important in delivering a positive ROI to your employer members. In TPM, performance measures start from an employer perspective by addressing how improved talent sourcing for the most critical business functions and jobs will contribute to improved business performance and competitiveness. These measures create a clear "line of sight" or relationship between talent sourcing measures and overall business performance measures.

For example, reducing the time it takes to fill critical job openings with qualified talent contributes to improved productivity and revenue generation because essential work gets done on time or more work can be taken up. In addition, reducing turnover reduces costs associated with recruitment, onboarding, and training, which contributes to the organization's overall profitability. Finally, upskilling current employees and providing them more career advancement opportunities may also reduce turnover and improve returns to external recruiting efforts.

The examples above hit on four talent management challenges associated with key pain points experienced by employers that were first presented in Strategy 1:

- **Unfilled Job Openings:** The inability to fill critical job openings with qualified talent in the time frames needed to meet business needs, resulting in lost revenues.
- **Onboarding and Upgrading Costs:** The increased cost of onboarding recent hires and upgrading existing workers.
- **Career Advancement and Retention:** Employers are not able to provide career advancement opportunities for current employees to fill critical job openings and retain workers who are leaving the company and the industry.
- **Increasing Diversity and Opportunity:** Employers are not able to increase the diversity of employees and applicants, expand economic opportunity, and promote equity.

In developing performance measures for the talent supply chain, collaboratives should identify specific metrics that address these challenges. They should start by asking employers what measures they currently use to track and analyze their key pain points and how collaboratives can build from or enhance these measures. Collaboratives should also ask how frequently employers gather and report data on these measures and what internal data sources they use.

Here are some example measures for the four identified pain points.

Unfilled Job Openings: Measuring at the Point of Hire

- Cost per hire
- Percentage of jobs filled within a needed time period
- Percentage of providers' referred applicants who meet hiring requirements
- Ratio of job openings to qualified applicants
- Average number of days between initial job posting and hire

Onboarding and Upgrading Costs: Measuring Hires against Meeting Performance Goals

- Percentage of hires meeting employer performance goals within anticipated time periods
- Average number of days from hiring to meeting employer performance goals
- Costs of onboarding to meet performance goals
- Costs of supplemental training to upgrade current workers

Career Advancement and Retention: Measuring Upskilling and Longer-Term Results

- Percentage of current employees retrained for success in new, emerging, and changing jobs
- Percentage of retrained employees in new, emerging and changing jobs retained after defined time period (e.g., 12 months)
- Percentage of workers from feeder jobs moved into critical jobs after defined time period (e.g., 12 months)
- Percentage of new hires retained in employment after defined time period (e.g., 12 months)
- Cost of turnover within defined time period

Increasing Diversity and Opportunity: Building More Diverse and Equitable Talent Pipelines

- Percentage of employees from targeted under-sourced populations
- Percentage of recent hires and qualified applicants from targeted under-sourced populations
- Percentage of employees retrained for new, emerging and changing jobs from targeted under-sourced populations
- Percentage of employees advancing in careers from targeted under-sourced population
- Percentage of employees retained from targeted under-sourced populations

In most cases, employer collaboratives will have to collect data on these pain point measures directly from employers based on agreed-on common metrics and time periods.

Measuring Performance Drivers and Key Points of Transition in the Pipeline

The value stream mapping process now provides employer collaborative members and their partners the opportunity to introduce leading measures that may drive or predict performance on employer pain point measures and help manage key transition points across the entire talent pipeline (see Table 5.5: Examples of Types of Measures). This is most important when developing measures with external pipeline providers where results against employer pain point measures will be lagging. Leading measures can help identify progress and performance when transitioning between career awareness and exploration to enrollment in programs of talent sourcing providers.

The measures you select for your talent supply chain should have the following characteristics:

- **Actionable:** Choose measures for which they can take action to improve performance on key employer pain points. Actionable measures should also help partners address these pain points in ways that create shared value for all partners involved, including education and training providers. These are leading measures because they are important determinants or drivers of performance on pain point measures. They also are important in creating shared value because they improve the cost effectiveness of supply chains in addressing employer needs.

- **Aligned:** Employer collaboratives should consider how these measures align with not only their own company measures but also align with government measures so that talent providers are not pulled in different directions.

- **Practical and Cost-Effective:** One final consideration is ongoing data collection costs for employers and their partners. In most cases, employer collaboratives will have to ask talent sourcing providers to report this information based on an annual data request. In some cases, this will involve additional data collection from employers, such as the percentage of completers applying for jobs with employers in the collaborative.

Table 5.5: Examples of Types of Measures illustrates how employer collaboratives can design leading indicators at key transition points that are predictive of performance on pain point measures. In this example, employer collaboratives can track whether they are getting the right numbers of learners from feeder schools into career preparation and pre-employment training programs (e.g., ratio of enrolled to total capacity) and whether the number and percentage of learners coming out of these programs and applying for open positions is sufficient to reach the desired ratio of openings to qualified applicants.

One major challenge in aligning leading measures, including key transition points and measures, to bottom-line employer pain point measures (lagging measures) is deciding when to expect interventions in the supply chain to have major impacts on employer metrics, including employer ROI. These goals are important in managing and incenting performance.

Table 5.5: Examples of Types of Measures

	Career Awareness/Exploration Leading Measures	Career Preparation/ Pre-Employment Training Leading Measures	Employer Pain Point Lagging Measures
EXTERNAL	• Percentage of learners from feeder schools enrolling in targeted programs of talent providers • Percentage of learners from feeder schools indicating a career interest related to critical jobs • Percentage of learners from feeder schools participating in career exploration activities related to critical jobs	• Percentage of enrolled learners completing programs and attaining required or preferred credentials • Number and percentage of completers from talent providers applying for jobs with collaborative employers • Ratio of enrolled learners to total enrollment capacity	• Percentage of providers' referred applicants who meet hiring requirements • Ratio of job openings to qualified applicants • Average number of days between initial job posting and hire • Percentage of jobs filled within the needed time period
	• Cost per learner to participate in career exploration activities	• Cost per credentialed learner	• Cost per hire
INTERNAL	• Percentage of existing workers receiving career coaching on retraining opportunities • Percentage of existing workers in entry-level jobs receiving career coaching on career advancement opportunities	• Number and percentage of existing workers receiving retraining for changing job roles • Percentage of entry-level workers completing a career advancement course and earning a credential	• Number and percentage of existing workers retrained and retained • Number and percentage of workers upskilled into critical jobs and retained

Using Performance Measures to Design Scorecards

The goal of this co-design process is to come to agreement on how to track progress and keep score for the talent supply chain network. Remember, TPM is a team sport and we value how the team is performing more than the outputs and outcomes associated with any one partner in the value stream.

Value stream mapping participants should engage in a deliberate process to link a variety of performance metrics across the talent pipeline in a way that is transparent and shows the goal of each partner relative to one another.

Questions the partners should work through include the following:

1. Are the pain point measures that matter to employers clear?
2. Which transition measures should be prioritized at which stage of the value stream?
3. Do these transition measures align with any accountability systems that providers are accountable to?
4. Is there clear alignment between the agreed-on transition measures and bottom-line measures?
5. How will we collect and share data on performance and who will have access to the data and when?
6. How often will we measure?

When getting started, value stream participants should develop a simple performance scorecard that shows how well the collaborative and its partners are meeting performance goals. The scorecard minimally should include the following:

- **Name and Description of the Performance Measure:** A clear and concise name and description
- **Performance Level:** Achievement against the measure expressed as a ratio, percentage, or absolute number or rating
- **Performance Relative to Goal:** Whether the current level of performance is meeting, exceeding, or not meeting the intended goal, expressed in letters, icons, or colors
- **Performance Trend:** Whether the performance level is improving over recent time periods, expressed in upward or downward arrows or other types of icons and colors

Scorecards can also include ongoing data gathered from talent flow analysis. Some collaboratives would benefit from tracking the ongoing capture and leakage rates from providers relative to performance against transition and bottom-line measures.

For external pipelines, employer collaboratives can use performance scorecards to benchmark the progress of any one provider against one or more transition measures, or they can use them to compare performance across multiple providers. For internal pipelines they can be used to benchmark the success of cohorts of employees who use different sets of provider services available to them when pursuing upskilling pathways.

For those collaboratives that manage multiple talent supplier networks, these scorecard tools can be used to compare performance among providers and to make strategic choices about talent pipeline partnerships.

By comparing performance, your collaborative can identify leading practices that can inform continuous improvement or make determinations about whether to ramp up, ramp down, or discontinue a partnership. See Table 5.6: Example Aggregate Performance Scorecard for an example of an aggregate performance scorecard and Table 5.7: Example Performance Scorecard for Tier 1 Training Providers for an example of a scorecard that compares providers against a common metric. Table 5.8: Example Performance Scorecard for Internal Pipeline Provider Services provides an example of an upskilling pathway where employee performance is compared to the type of services they accessed.

Table 5.6: Example Aggregate Performance Scorecard

Shared Pain Point Measures	Performance	Relative to Goals	Trend
Percentage of applicants from talent providers that meet the requirements	55%	🔴	⬇
Average number of days to fill open positions	128 days	🔴	⬇
Percentage of hires retained in first year of employment	75%	🟡	⬆
Percentage of recent hires from targeted, under-sourced populations	35%	🟡	⬆
Percentage of employees completing career advancement programs	48%	🟡	⬆
Driver/Transition Measures	**Performance**	**Relative to Goals**	**Trend**
Percentage of employees in entry-level jobs enrolling in career advancement programs	50%	🟡	⬆
Number of learners who complete education and training programs	75	🟢	▬
Number of learners enrolled in education and training programs	95	🟡	▬

Table 5.7: Example Performance Scorecard for Tier 1 Training Providers

Tier 1 Provider	Measure	Level	Relative to Goals	Trend
Community College A	Percentage of applicants from talent providers who meet the requirements	85%	🟢	⬆
University B	Percentage of applicants from talent providers who meet the requirements	60%	🟡	⬇
University C	Percentage of applicants from talent providers who meet the requirements	40%	🔴	⬇

Table 5.8: Example Performance Scorecard for Internal Pipeline Provider Services

Provider Services	Measure	Level	Relative to Goals	Trend
Accessing Community College A training services	Percentage of employees completing career advancement programs	55%	🟡	↓
Accessing Community College A training services and Community-based, Nonprofit B career coaching services	Percentage of employees completing career advancement programs	65%	🟢	↑

Aligning Incentives to Performance

Having achieved agreement on the leading and lagging measures that will help the talent supply chain network keep score, it is time to target the right mix of incentives that will optimize performance across partners and deliver a positive ROI for employers and learners.

Incentives are important because they can both reward preferred and trusted providers for being responsive to employer needs as well as optimize performance across the talent supply chain in ways that manifest into a positive ROI.

Taking stock of existing incentives provides critical information that helps employers establish a baseline understanding of what they're currently spending on incentives.

The most important incentive of all is priority access to jobs, but employers can reward providers in many other ways and can be financial or nonfinancial. For example, for external pipeline partners collaboratives can provide exclusive access to equipment, staff, and work-based learning opportunities as financial incentives, or incentives that have a monetary cost. For internal pipelines, employers can leverage training funds and tuition reimbursement as financial incentives to preferred, value-added providers that are responsible for delivering critical training services.

Employers can also leverage financial incentives and preferred provider partnerships to support workers in pursuing and persisting in upskilling pathways. For low-income, opportunity populations, incentives—such as child care, housing, financial literacy, and transportations supports—can be important in order to access training and career advancement opportunities as well as promote retention.

We have already covered the preferred provider designation as a critical nonfinancial incentive that employer collaboratives can use to signal to the marketplace that the institution or program has a special relationship with the collaborative's employer members.

Targeting incentives is critical to ensure employers are getting the right type of responsiveness and flexibility from providers. It also confirms for providers that their efforts to understand and meet employer needs reap rewards for their programs and, most importantly, their learners.

When managing the talent pipeline, employer collaboratives should consider and document the full range of private and public incentives that could be used to drive performance in talent pipelines, as shown in Table 5.9: Types of Incentives Driving TPM.

First, employers should ensure that their own teams are rewarded for managing the talent pipeline well and delivering a positive ROI to the company. To align internal incentives, collaboratives should encourage their employer members to reward staff that deliver high-quality job forecasting data, communicate accurate hiring requirements, and improve the onboarding, upskilling, and advancement of workers in the company.

Companies have many resources at their disposal to acknowledge these internal teams and reward them for helping achieve a positive ROI. Companies must demonstrate that efforts to improve the talent pipeline that generate positive returns for the company are recognized and valued.

Next, employers should target incentives to their designated preferred providers, and from there align with public incentives where possible. Not all incentives have to be tied to a preferred provider designation. However, the more a collaborative can tie incentives to a preferred provider designation, the more likely providers will see the value in being more responsive and flexible in meeting the collaborative's requirements.

Employers must understand that these incentives are highly valued and sought after; they should not be given away casually but should be part of a continuous improvement system for talent supply chain performance and employer ROI. The process of inventorying and aligning incentives should also be done as an extension of the process for co-designing programs with providers.

Below are questions value stream mapping participants should work through when identifying and targeting incentives:

1. What types of financial and nonfinancial incentives are collaborative members providing now?

2. Are these incentives targeted to internal or external talent pipelines?

3. If internal, have you identified the most important career and support incentives that will promote access to and persistence and success in upskilling opportunities?

4. Is there a connection between the type of incentives given and performance?

5. Are the incentives employers are willing to offer the ones that are most in demand by providers?

6. What types of incentives will collaborative members be able to provide in the future that may be more valuable to providers?

7. What are the costs of the agreed-on incentives?

8. Who will manage the distribution of incentives (e.g., host organization versus individual employer members)?

Employer collaboratives and their host organization should prioritize getting the incentives right within their control. They should also be in communication with relevant public-sector partners to ensure they are knowledgeable about who the collaborative is working with as well as how they are measuring and incentivizing performance. This ensures that employers preserve their end-customer role and achieve the right level of responsiveness and flexibility with preferred providers, but with the possibility of additional public-sector support. Value stream mapping participants should ask, are there any available or potential public incentives that should be sought after, and would they help improve ROI?

Common public sector workforce and economic development incentives that may be leveraged to support external and internal talent pipeline development and implementation include, but are not limited to:

- Career and technical education and workforce development grant programs
- Wage and training subsidies
- Social services (e.g., case management services), including income support, housing, childcare, transportation assistance, etc.
- Tax credits or incentives for hiring target populations

Opening up these lines of communication early on can help ensure that public agencies reinforce the collaborative's work moving forward and do not introduce solutions that are in search of a problem. Once formed, employer collaboratives bring about opportunities to substantially improve employer signaling in the talent marketplace. The signaling that results from these employer collaborative members can be leveraged by public-sector partners to achieve a better return on public-sector investments.

However, while public-sector incentives often bring much-needed resources to the table, public-sector partners should be careful not to undermine employers in their end-customer role in ways that reduce quality and increase training time and cost. Done right, talent supply chain networks can align their incentives with public incentives and ensure the right mix is in place to deliver stronger ROI for learners and employers.

Table 5.9: Types of Incentives Driving TPM

	Step 1	Step 2	Step 3
Type of Incentive	Employers to Internal Teams	Employers to Preferred Providers	Public Systems to Providers and Employers
Description	Incentives given to employees or business units in a company	Incentives given from a company to a provider	Incentives given by policymakers and public agencies to providers or employers
Nonfinancial	Examples • Employee team recognition for performance and improvement • Expanded career and professional development opportunities	Examples • Preferred provider recognition • Access to and use of employer facilities • Access to workers	Examples • Accreditation and other eligibility and recognition systems tied to public funding streams • Identification and communication of employer-led preferred provider networks • Alignment of career guidance and consumer information systems • Access to public data integration
Financial	Examples • Employee bonus plans for team performance and improvement • Expanded investments in technology tools and related supports • Access to career coaching services and career advancement opportunities	Examples • Priority access to internships and other work-based learning experiences • Monetary and equipment donations • Shared training costs for preferred training providers • Subsidizing support services through employee benefits or direct investment	Examples • Deployment of funding streams aligned to employer-led preferred provider networks • Performance-based funding • Scholarships and financial aid • Tax credits and incentives • Social impact bonds • Customized training funds for current workers • Social services

Reaching Agreement on Your Talent Supply Chain Solution

Having completed the value stream map, the employer collaborative and provider leaders that kicked off the co-design process should now reconvene to review the results. This includes reviewing the completed value stream map and related resources, such as curriculum maps, performance scorecards, and incentives.

The staff that prepared the value stream and proposed partnerships should present their recommendations and address any questions that come up. They should also be prepared to revisit certain value stream mapping activities as needed to address additional concerns or to incorporate new feedback and information that may have come up since their last meeting.

Keep in mind that talent supply chains are by their very nature responsive and adaptive to changing conditions. They must be as flexible and dynamic as the labor markets they seek to provide solutions for. In the sixth and final strategy we will demonstrate how data collected through your performance scorecards will help drive continuous improvement of your talent supply chain in ways that optimize performance and ROI.

Congratulations, you are now ready to implement your talent supply chain!

Exercise 4

Setting Measures and Aligning Incentives Exercise

This exercise demonstrates how a co-design team will explore performance measures and incentives, and how they can be aligned with one another to improve performance and create shared value.

Picking up where our manufacturing collaborative left off in Exercise 3, they are now ready to work with their talent pipeline partners to set performance goals for internal and external talent pipelines as well as align their incentives in ways that improve performance.

At the first leadership team meeting the collaborative shared their pain points measures for CNC machinists and production workers, namely increasing the number of qualified job applicants and improving retention. Also at the meeting, the collaborative's preferred providers shared the metrics they are accountable for. For the community-based nonprofit providing upskilling training, this included career advancement and job placement indicators related to the workforce funds they receive from a public workforce agency. For the community college and high school addressing new production workers, this included program enrollments and completions, which the colleges and high schools must report to the state. More recently, the community college and high school started to track industry credential attainment as a career readiness indicator.

The employer collaborative members asked for a definition of program completion and they learned that for the college and high school, it was achieved not by the satisfactory attainment of all relevant learning outcomes or competencies but by a passing letter grade assigned by a trainer or instructor. This grade included attendance, completion of assignments, and several other factors. The community-based nonprofit had a pass-fail program, but what made its program different was that it did not allow more than three unexcused absences or else the participant received an automatic fail. After hearing this, the manufacturers were very interested in tracking learner attendance and completion of assignments as a predictor of success.

Moving on, the manufacturers inventoried the incentives that they currently provide to education and training providers. Their goal was to better manage those incentives in ways that would help improve the performance of their talent pipeline. Collaborative members discovered that they each sponsored facility tours for younger learners in the fall and spring. One of the companies also allowed its employees to make classroom visits to promote jobs in the manufacturing sector and many employees also served as mentors to interested learners. The companies recognize this volunteerism annually in industry newsletters.

However, little to no marketing, advertising, or coaching was provided to current workers about career advancement opportunities. In light of their decision to pursue an upskilling pathway, the collaborative was eager to find ways of incenting and supporting workers seeking career advancement. They worked with the community-based nonprofit to see which of their support services were most effective based on prior results and the employers offered to pool their funds and jointly contract for their transportation and child care services.

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In addition, all of the companies involved in the collaborative offered some type of internship program. However, the internships were only available to the community college students and there was wide variation in the number of internships offered in any given year, when they took place, and how the program was delivered and assessed. Even though the internship programs lacked consistency, what little evidence was available suggested that learners who had an internship were more likely to continue in their studies and pursue full-time employment with the company.

The collaborative also considered a new mentorship program where newly upskilled CNC machinists could coach promising production workers. Those workers would be allowed time on the job to shadow the CNC machinists. As an incentive for coaches, the employer collaborative agreed to offer them performance pay for each production worker that is successfully upskilled in their new position.

One of the collaborative members piloted a new program with the community college in which they provided toolkits free of charge to 15 low-income learners that stood out in terms of their commitment to the program and their volunteerism. Each toolkit was valued at $250 and prominently featured the company's logo. Feedback from the providers was that this significantly reduced learner fees and those that received the toolkit were more motivated to complete the program, with many inquiring about potential internship opportunities with the company.

After reviewing the exercise, discuss the following:

1 Identify which measures are leading "transition" measures versus lagging "bottom-line" measures. How might you recommend aligning performance metrics? Explain your answer.

2 By going through this process, what are some potential decisions that can be made about incentive offerings? Of the employer incentives currently provided, which are most important to improving performance? Explain.

3 How would you recommend the companies and provider partners manage internships going forward?

4 What are additional performance measures and incentives not mentioned in the example that the collaborative might want to consider?

Ready for Next Steps?

Before you move to the next strategy, make sure you have achieved the
learning objectives necessary to move forward. Ensure that when you go back
to your community, you will be able to execute the following activities:

- Decide on whether to build an internal talent pipeline, external, or both.

- Develop preferred provider criteria and designations.

- Co-design a talent supply chain through value streams with designated
  preferred providers.

- Align and organize learning outcomes with competency-based hiring
  requirements using competency and curriculum mapping tools.

- Develop and select performance measures and design performance
  scorecards.

- Inventory and align employer incentives in ways that improve performance.

- Use the Strategy 5 Action Plan at the beginning of the chapter to determine
  your next steps and track your progress.

- For those using the TPM web tool, use the tool to develop a value
  stream map and create a performance dashboard including the selected
  performance measures.

NOTES

TALENT PIPELINE MANAGEMENT ACADEMY

Strategy 6: Continuous Improvement

Strategy 6
Table of Contents

Introduction

Strategy 5 covered how to build and manage talent pipelines with designated preferred providers. But that is not the end of the Talent Pipeline Management® (TPM) process.

At this stage of TPM®, employer collaboratives should have the information they need to improve performance on pain point metrics, increase ROI, and create additional shared value for all partners.

Strategy 6 shows how employer collaboratives can manage their talent pipelines using data and a process of continuous improvement in cooperation with their talent providers. This helps keep employers engaged and dedicated to the collaborative and committed to working with their talent providers, especially those designated as preferred providers. These improvement efforts may—and likely will—involve changes in the practices of both employers and providers. That is why a cooperative continuous improvement process is necessary.

Strategy 6 first provides an overview of the role of continuous improvement in TPM and its five-step process. We then describe how to use performance scorecards (first presented in Strategy 5) and related information to identify where large gaps exist between expected and actual performance and where performance levels are moving in the wrong direction. From there, you will learn how to evaluate improvement opportunities and assign **continuous improvement teams** to manage a project of your choosing.

We conclude this strategy by revisiting employer ROI. We provide examples of different approaches and methodologies for how to calculate ROI in ways that go beyond the performance scorecard and show value to the employer collaborative members.

Strategy 6 Learning Objectives

1   Define the role of continuous improvement in TPM.

2   Apply the five-step approach to continuous improvement.

3   Determine improvement priorities and organize improvement teams.

4   Identify the key issues to be addressed in each step of the improvement process.

5   Calculate and manage ROI.

Strategy 6 Action Plan

	6.2 Identifying Improvement Opportunities	6.3 Analyzing Root Causes	6.4 Developing Solutions	6.5 Testing Solutions	6.6 Implementing Proven Solutions	6.7 Calculating Return on Investment
ACTIVITIES Actions taken to achieve desired outcomes	• Analyze aggregate data from performance scorecard • Identify improvement opportunities • Establish improvement team and project	• Identify potential root causes, review available evidence • Rate each root cause's level of impact • Analyze root causes with greatest level of impact • Consider employer control over problem	• Identify potential solutions • Review evidence of potential impact, employer control over problem, and timing • Analyze and evaluate potential solutions • Determine which solutions to test	• Design pilot tests • Implement pilot tests • Analyze results of pilot tests • Refine and implement proven solutions	• Provide an implementation guide and resources • Continue to evaluate and improve	• Determine baseline cost • Calculate cost of engaging in a collaborative • Determine updated costs • Define benefits achieved by calculating ROI
MILESTONES Progress points marking significant development	• Improvement plan • Designated improvement team and project	• Prioritized list of root causes	• Proposal for pilot test	• Pilot test implementation • Issues, impact, context identified • Retest or recommend scaling	• Consensus on scaling the solution • Implementation guide for scaling solution • Training completed • Solution implementation	• ROI calculation • Employer assessment of ROI
OUTPUTS Achievements resulting from actions	• Number and percentage of collaborative members/ providers participating • Types of leading and lagging measures targeted for improvement	• Number and percentage of prioritized root causes advanced to develop solutions	• Types of solutions proposed for testing	• Solutions tested and ready to implement • Solutions ready to scale	• Number and percentage of: • Collaborative members/ providers scaling the solution • Members/ providers trained on scaling the solution	• Dollar value of ROI per collaborative member

*Unit 6.1: Why Continuous Improvement is Critical for TPM covers educational information and therefore is not included in the Strategy 6 Action Plan. However, this resource is meant to serve as a guide and not an exhaustive list of all the activities, milestones, and outputs your collaborative can achieve.

**The TPM Web Tool includes an Improvement Plan tool to define, measure, analyze, improve, and control performance on measures identified in the Performance Dashboard. Log in to the TPM Web Tool to access the Improvement Plan.

Key TPM Terms and Definitions

The following concepts are most critical for understanding and executing Strategy 6. These terms appear in the order in which they are listed below and are highlighted in yellow throughout the chapter.

Continuous Improvement Team
A team established by the employer collaborative or an individual employer to carry out an improvement project and report results for a specific period of time based on the agreed scope and goals.

DMAIC
A widely accepted data-driven continuous improvement process that includes five major steps: (1) define, (2) measure, (3) analyze, (4) improve, and (5) control.

Lean Six Sigma
An improvement methodology used to identify and eliminate waste and optimize performance.

Root Cause
Those conditions or factors that directly cause a performance problem.

Root Cause Analysis
A process to identify factors that directly cause a performance problem and can be addressed in a continuous improvement process.

Baseline Cost
The total cost incurred by employers measured in dollars relative to their starting position prior to undergoing the TPM process. An example of a baseline cost is the cost of a hire prior to engaging in a talent supply chain solution.

Benefits Achieved
The value derived by employers over and above the cost of implementing a solution, which can be measured, for example, in dollars, such as reduced cost in filling a position, or in time, such as a shorter onboarding process.

Cost of Engaging in a Collaborative
The total cost in terms of time spent and resources committed when working as a member of an employer collaborative. This calculation is useful to compare total cost versus total benefit to calculate an employer ROI.

Why Continuous Improvement Is Critical for TPM

Let's summarize the TPM process thus far. In Strategy 1, we addressed how employers are more likely to join employer collaboratives when (1) they have a major "pain point" that needs to be addressed in sourcing talent for critical jobs and (2) they see value in working with other employers in addressing that pain point. Strategies 2 and 3 help clarify the specific talent needs of collaborative members. Strategy 4 shows how to establish baseline information on actual and potential sources of talent. Strategy 5 establishes how to build and manage talent pipelines using value stream maps, performance measures, and incentives.

And now, Strategy 6 demonstrates how employers and their talent sourcing providers can work together to improve performance on these measures, especially those bottom-line pain point measures that led to the employer collaborative forming in the first place. It also provides an opportunity to calculate and demonstrate an employer ROI.

To guide the continuous improvement process, TPM encourages the use of a systematic and data-driven approach that has proved effective across all aspects of the business enterprise as well as in the nonprofit and public sectors. The TPM continuous improvement process is based on the widely used **DMAIC** (pronounced "duh-may-ik") approach consisting of five improvement steps: (1) define, (2) measure, (3) analyze, (4) improve, and (5) control.

These improvement steps underlie many leading improvement processes, such as **Lean Six Sigma**. They also involve the applications of many useful improvement techniques and tools that are widely known and used across industries and professions.

Systematic improvement approaches like DMAIC are essential to prevent taking action based on "data-free observations" and "conventional wisdom" and to avoid pursuing "solutions in search of problems." They also reduce the chances of taking action based on priorities set by outside parties, such as government-led initiatives that might not directly address a collaborative's shared pain point(s) and performance challenges. Such actions are clearly seen in states and regions pursuing grant opportunities that do not tackle their most critical challenges but require substantial time commitments and potentially carry significant costs.

Without a systematic approach to continuous improvement, employer collaboratives run the risk of wasting time and resources that will not produce the results and shared value needed to be self-sustaining and demonstrate the positive ROI that employers value.

The TPM approach to continuous improvement is based on the DMAIC approach (see Figure 6.1: TPM Continuous Improvement Process). The TPM approach involves the following steps:

Step 1 — Identify Improvement Opportunities: Define the focus and goals of a continuous improvement project based on information gathered from the analysis of performance presented in the performance scorecard (Strategy 5).

Step 2 — Analyze Root Causes: Explore and analyze additional data to determine major **root causes** of performance problems and what is needed to improve performance for the selected opportunity.

Step 3 — Develop Solutions: Develop possible solutions for the performance problem, including new approaches, methods, and processes, along with new types of incentives.

Step 4 — Test Solutions: Conduct a pilot test of one or more solutions and evaluate their effectiveness.

Step 5 — Implement Proven Solutions: Fully implement those solutions that deliver the most promising results and take steps to ensure they can be sustained, and then start again in exploring the next improvement opportunity.

Figure 6.1: TPM Continuous Improvement Process

STEP 1:
Identify Improvement Opportunities

STEP 2:
Analyze Root Causes

STEP 3:
Develop Solutions

STEP 4:
Test Solutions

STEP 5:
Implement Proven Solutions
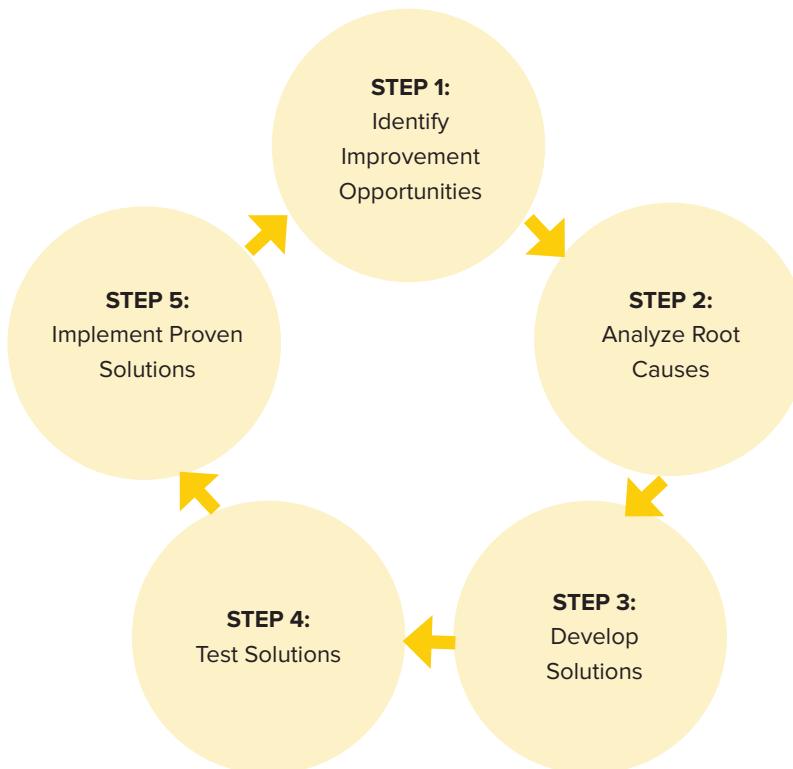
Unit 6.2

STEP 1: Identifying Improvement Opportunities

The first step in the TPM continuous improvement process is to identify the highest-priority improvement opportunities to address based on a review of the data made available through your collaborative's performance scorecard.

Using Performance Scorecards to Identify Improvement Opportunities

As discussed in Strategy 5, performance scorecards present current performance in useful ways to highlight problems that may present continuous improvement opportunities. In particular, they present (1) performance relative to goals and (2) performance trends and whether performance is moving upward or downward.

Using the sample scorecard introduced in Strategy 5, Table 6.1: Example Aggregate Performance Scorecard shows an aggregate scorecard for an employer collaborative that has decided to focus on improving both their internal and external talent pipelines. They have decided to focus on five major pain points: (1) the quality of new hires, (2) unfilled job openings, (3) retention of new hires over the first year, (4) new hire diversity, and (5) diversity in internal career advancement. The collaborative also decided to address whether sufficient numbers of learners were entering and completing education and training programs to meet projected demand so that all employers would be able to meet their hiring needs in the future.

Table 6.1: Example Aggregate Performance Scorecard

Shared Pain Point Measures	Performance	Relative to Goal	Trend
Percentage of applicants from talent providers that meet requirements	55%	🔴	↓
Average number of days to fill open positions	128 days	🔴	↓
Percentage of hires retained in first year of employment	75%	🟡	↑
Percentage of recent hires and qualified applicants from targeted under-sourced populations	35%	🔴	↓
Percentage of employees advancing in careers from targeted under-sourced populations	30%	🔴	↓
Driver/Transition Measures	**Performance**	**Relative to Goal**	**Trend**
Number of learners that complete education and training programs	75	🟢	—
Number of learners enrolled in education and training programs	95	🟡	—

In reviewing performance scorecards, employer collaboratives should consider identifying improvement opportunities based on the following considerations:

- **Level of Impact:** The degree of direct or indirect impact on employer ROI, with priority given to direct pain point measures

- **Immediacy of Impact:** How fast the impact will be realized to generate employer ROI, with priority given to performance measures for which improvement initiatives have the potential to achieve quick wins for the collaborative

- **Performance Gaps:** The size of the gap between actual performance and performance goal, with priority given to measures with the largest gaps

- **Performance Trends:** The trend in performance, with priority given to measures that are trending downward

Improving the Internal Talent Pipeline

As an example, an employer collaborative using the performance scorecard in Table 6.2 could identify two opportunities for improving their internal talent pipelines:

- **Internal Opportunity 1: Improve the Percentage of Recent Hires and Qualified Applicants from Targeted Under-Sourced Populations.** This opportunity would immediately affect the major pain points identified by employers in improving the diversity of their workforce. It also has the possibility to increase the total number of qualified applicants and reduce the days required to fill job openings.

- **Internal Opportunity 2: Improve the Percentage of Employees Advancing in Careers from Targeted Under-Sourced Populations.** This opportunity could reduce gaps in career advancement rates as well as increase the total number of employees advancing in careers. It also may improve the ability to recruit and retain workers from under-sourced populations because employers can promote career advancement opportunities.

Table 6.2: Scoring the Internal Opportunities

Selection Criteria	Internal Opportunity 1	Internal Opportunity 2
1. Level of Impact	H	H
2. Immediacy of Impact	M	H
3. Performance Gaps	H	H
4. Performance Trend	H	H

H = High; M = Medium; L = Low

After identifying and ranking improvement opportunities, the employer collaborative should then identify the opportunity that would be most effective and most feasible. In this case, it may want to prioritize Opportunity 2 first and then move to Opportunity 1 once it has satisfactorily resolved the problem of career advancement for current employees.

Improving the External Talent Pipeline

An employer collaborative also could identify two potential improvement opportunities for their external talent pipelines and decide which one to prioritize. As shown in Table 6.3: Scoring the External Opportunities, the collaborative could evaluate and score these two opportunities as follows:

- **External Opportunity 1: Improve the Percentage of Applicants Meeting Requirements.** This opportunity would immediately affect the major pain points identified by employers and address major performance gaps that are trending in the wrong direction. It might also have an additional impact of reducing the number of days required to fill open positions and could reduce the number of unqualified candidates who need to be screened, resulting in increased cost savings.

- **External Opportunity 2: Increase the Number of Learners Enrolled in Education and Training Programs.** This opportunity would provide a moderate level of impact by generating more applicants, however it would not address the problem of too few applicants meeting employer requirements. It might also have the unintended consequence of driving up hiring costs, with more learners needing to be screened. A larger cohort does not necessarily equate to more learners meeting employer requirements. Employers might not see a reasonable ROI in the near term since they would need to wait considerably longer for learners to complete an education or training program.

Table 6.3: Scoring the External Opportunities

Selection Criteria	External Opportunity 1	External Opportunity 2
1. Level of Impact	H	M
2. Immediacy of Impact	H	L
3. Performance Gaps	H	M
4. Performance Trend	H	L

H = High; M = Medium; L = Low

Again, after identifying and ranking improvement opportunities, the employer collaborative should then identify the opportunity that would be most effective and most feasible. In this case, it may want to prioritize Opportunity 1 and then move to Opportunity 2 once it has satisfactorily resolved the problem of learners not meeting employer requirements.

Establishing the Improvement Team and Project

After selecting an improvement opportunity, the employer collaborative should then establish a continuous improvement team to carry out a project that develops and tests solutions for addressing this performance problem over a specified time period.

In exploring this further, the team may want to determine the scope of the effort and whether this problem can be addressed by working with one or more talent providers or whether this problem is shared across all or most partners. This could be done by reviewing education and training provider-level scorecards, as shown in Strategy 5.

The improvement team should include people who are best positioned to analyze the problem, as well as develop and test the most promising solutions. In most cases, this will involve front-line professionals from employers and talent-sourcing providers. The improvement team also should include continuous improvement experts from employers and talent provider partners, including Lean Six Sigma experts if available.

For example, in addressing the first improvement opportunity for external talent pipelines, the employer collaborative might determine that this problem exists across all partners. As a result, the collaborative may want to establish an improvement team made up of hiring managers and human resource professionals who have been involved with improving the communication of hiring requirements (Strategy 3), in addition to front-line program administrators and instructors from all major education and training providers that are responsible for preparing their learners to meet these requirements. This improvement team should be supported by those staffing the collaborative, who can provide the necessary data and help coordinate the meetings, as well as continuous improvement experts.

Comparing Talent Supplier Performance Exercise

This exercise demonstrates the need for collaboratives to use data to determine next steps.

The manufacturing collaborative discussed in Strategy 5 (see Exercises 1–4) has been collaborating with their preferred providers for over a year. They are working with a community-based nonprofit to upskill current production workers for CNC machinist positions and with a community college and high school to backfill new entry-level production workers.

The collaborative's goal was to promote at least 30 production workers to CNC machinist positions within a year to meet projected demand. They also had to backfill those positions and increase the supply of production workers to meet growing demand. Prior to implementing TPM, the collaborative had an average six-month retention rate of 70% for CNC machinists and 50% for production workers.

After a year of implementation, the host organization aggregated relevant performance information to see if their efforts have been successful. In particular, the collaborative began to review its HR data to track how many people successfully advanced in their careers or were hired from Tier 1 providers. They also wanted to track the quality of new hires from external talent sourcing partners, retention, and how many workers—from both internal and external partners—reached full productivity.

Below is the report the host organization generated for the collaborative to review.

Talent Pipeline	Type of Provider	Number Hired or Advanced in their Career	Percentage of Qualified New Hires	Percentage Retained After Six Months	Percentage Reaching Full Productivity Within Six Months
Internal	Community-based nonprofit	40	N/A	85%	60%
External	Community college	30	70%	50%	60%
External	High school	20	90%	60%	80%

After reviewing the exercise, discuss the following:

1 Has the collaborative been successful in improving its internal and external talent pipelines? Explain your answer.

2 Identify one or more potential improvement opportunities the collaborative should pursue.

STEP 2: Analyzing Root Causes

Step 2 is for the improvement team to identify the most critical direct causes of the performance problem—what are often referred to as root causes. Root causes are those factors that directly cause a performance gap to occur.

Root cause analysis is a critical step because it forces collaboratives to agree on what is causing the problem first and not rush to a solution too quickly or develop a solution in search of a problem.

Just as in business and everyday life, we often want a quick fix to a problem and don't want to take the time to examine what is really going on. We then run the risk of quickly accepting conventional wisdom about a problem instead of seriously asking "why." As a result, teams should never stop asking "why" when searching for root causes, and they should challenge conventional wisdom whenever possible throughout the process and always ask "What is the evidence that leads us to this conclusion?"

In addition, improvement teams should focus on those root causes that are within their control and for which they can take action within a reasonable time frame. Sometimes, root causes can be directly addressed by employers and their partners because they are the result of existing policies, practices, and processes that can be changed within the scope and time frames of the improvement initiative. But root causes also can reflect larger environmental factors that cannot be directly addressed, such as economic and population factors.

A systematic process for conducting a root cause analysis should use well-established methods, tools, and practices of proven improvement approaches whenever possible. At a minimum, the process should include the following steps:

- **Brainstorm Potential Root Causes:** Team members should first brainstorm about potential causes they can explore. This is particularly important for those employers and partners that are most directly involved in producing results for the chosen performance measure. These causes may be reflected in more than one performance measure. Teams should avoid assigning blame or responsibility to others, and should instead focus on making lists of potential causes that are balanced and comprehensive and emphasize that most causes are complex and involve changes from all partners.

- **Review Available Evidence:** Improvement team members should then review available evidence about each of these causes from their performance data and from follow-up discussions with employers and their partners. Teams should also consult experts and explore any research on related performance problems that have developed compelling evidence of root causes.

- **Analyze and Evaluate Potential Root Causes:** Next, improvement teams should conduct a systematic evaluation of these potential causes and rate them based on several important factors, such as the following:
    - **Root Cause:** Degree to which a cause is a direct cause
    - **Level of Impact:** Cause's degree of direct or indirect impact on performance
    - **Evidence:** Degree of evidence that the cause has an impact on performance
    - **Control:** Level of control the employer collaborative and its designated preferred providers have in affecting the cause within the scope and timing of the initiative

Improvement teams should identify the root causes for the improvement opportunities that are rated the highest based on these four criteria and agree on which ones to address.

For example, the team addressing Opportunity 2 internal talent pipelines (see Table 6.2) could conduct further research into the major gaps in career advancement rates. They could have identified three major root causes:

- **Awareness of Career Advancement Opportunities:** Employers did not sufficiently communicate career advancement opportunities, especially with employees at the lowest-level feeder jobs from under-sourced populations.

- **Opportunities for Career Advancement:** Employers did not provide sufficient opportunities for career advancement, especially for employees at the lowest-level feeder jobs from under-sourced populations.

- **Distribution of Career Advancement Opportunities:** Career advancement opportunities were in facilities with the lowest concentration of employees from under-sourced populations in lower-level feeder jobs.

The improvement team could agree that the first two root causes must be addressed first so that all employees have better awareness and opportunities. The third root cause would take more time to address by recruiting more new hires into these facilities through external pipelines strategies.

As the team moved to external pipeline strategies, they could decide to focus on Opportunity 1 (see Table 6.3). They then could conduct further research into the major gaps between hiring requirements and the applicants who did not meet those requirements, and identified two major root causes:

- **Employer Communication of Hiring Requirements:** Employer members did not sufficiently communicate to all education and training providers on critical technical and employability skills.

- **Education and Training Provider Curriculum and Assessments:** Some education and training providers did not correctly address these skills or did not provide the necessary evidence that these technical and employability skills were attained.

The improvement team could agree that both causes must be addressed in developing comprehensive solutions to address the performance problem.

In conducting this root cause analysis, employer collaborative teams should try to avoid three common mistakes: (1) relying on conventional wisdom and easy answers without looking at available data, (2) focusing on symptoms rather than their underlying causes, and (3) focusing on causes that are outside their control or that require coordination with partners that might not share the same objectives and sense of urgency.

Employer collaborative improvement teams should also avoid the common mistake of assuming that causes of performance problems can be found only on the talent provider side without giving equal attention to the employer side. This is usually the case when analyzing problems in retaining newly hired employees.

For example, a healthcare employer collaborative identified its highest-priority improvement opportunity to be increasing the retention rate of newly onboarded nurses in hospitals. The team assumed the causes of retention problems were in preparing the nurses. But some assumptions could also include more realistic expectations on working in acute healthcare settings and the technical preparation and clinical experiences provided. In this example, the employer collaborative might not give equal attention to employer practices, including the impact of nursing supervisors, onboarding systems, and nursing scheduling and compensation.

Analyzing Root Causes Exercise

This exercise demonstrates the various considerations collaboratives need to weigh when analyzing root causes and the role of evidence.

The same manufacturing collaborative from Exercise 1 has decided to pursue two continuous improvement opportunities for their external talent pipeline partners based on the performance data they collected for new production workers.

The first opportunity is focused on investigating the differences between the two providers in qualified hires and the time it takes new hires to reach full productivity. The second is focused on exploring the retention problems they are experiencing with both.

After reviewing the exercise, discuss the following:

1 For both continuous improvement opportunities, what are potential root causes the collaborative should consider? Which have the most direct impact on performance?

2 Are these root causes within the control of employers, talent sourcing partners, or neither? Can the collaborative take action on them?

3 What evidence should you seek out to validate that you have identified the right root causes?

Unit 6.4

STEP 3: Developing Solutions

Once teams have identified, evaluated, and prioritized the root causes of performance problems, the next step is to do the same for solutions that address these causes.

Developing a range of potential solutions is very important in preventing teams from quickly adopting widely recommended practices, popular homegrown solutions promoted by partners, or solutions that are being pushed by government initiatives or other outside efforts. Most commonly, this occurs without a systematic review of whether these solutions directly address the root causes and whether there is any evidence they will work within the context and time frames of the team's improvement initiatives.

As with root cause analysis, improvement teams should not be too quick to adopt a ready-made, silver-bullet solution without getting the facts straight. And they should consider only solutions that are within their control to implement within the time frame available to test and implement them.

Finally, teams should take the time necessary to get broad consensus within the team and within the larger employer collaborative that they have properly and systemically identified and reviewed all possible solutions, so that they can get the necessary commitment and support for testing and evaluating one or more of these potential solutions.

To do this, the team should follow a systematic process in developing solutions:

- **Identify Potential Solutions:** First, the team should ask all employer members and their partners to brainstorm on potential solutions. This should include those employers and partners that are most directly involved in producing results for the chosen performance measure.

- **Review Available Evidence:** Team members should then review available evidence about each of these solutions. Also, teams should consult experts and consider any research that has explored related performance problems and developed compelling evidence of the solutions.

- **Analyze and Evaluate Potential Solutions:** Next, the team should conduct a systematic evaluation of potential solutions and rate them on factors that include the following:

    - **Root Cause Impact:** The degree to which the solution has a direct impact on one or more root causes

    - **Level of Impact:** The degree or amount of impact the solution is expected to have on the targeted root cause

    - **Evidence:** The degree of evidence that the solution will have an impact on the targeted root cause

    - **Control:** The level of control the employer collaborative has in addressing the cause within the scope and timing of the initiative

As with analyzing root causes, the improvement team should then identify potential solutions that are rated highest based on these four criteria and agree which ones to address. For example, the team addressing Opportunity 1 for external talent pipelines based on the two root causes could explore two potential solutions:

- **Improve the Competency Detail on Employer Surveys:** The team could explore how to improve the level of detail in the specification of competency requirements in the hiring requirements survey used in Strategy 3.

- **Curriculum Review and Alignment:** The team could also explore a curriculum review process that the employer collaborative could execute with all partners to improve the alignment between employer requirements and curriculum and assessment systems.

Solutions should always address root causes, be evidence based, and have the support of key partners. Common mistakes that occur while developing solutions include (1) designing solutions that do not address root causes, (2) reinventing the wheel by implementing solutions that have already been tested in similar contexts with limited success, and (3) adopting what are considered to be best practices without fully exploring whether there is any evidence that they work.

STEP 4: Testing Solutions

Once improvement teams have identified a potential solution, the fourth step is to pilot test this solution to evaluate its effectiveness before implementing it for the entire talent pipeline.

One common mistake in continuous improvement initiatives is not putting the solution to the test in the context in which it is expected to work. The solution must be confirmed to work in at least one setting before committing to the expense and time of implementing it everywhere. *This requires a pilot test and evaluation.*

Pilot testing is essential to your improvement process because it can help you refine the solution and it saves considerable resources if the solution does not work. The pilot testing should also be conducted in the context of where the solution will be implemented so that it can be evaluated where it will be expected to get results without changing other conditions.

In most cases, improvement teams can use a pre-post design that compares performance before and after the pilot testing. In other cases, they could test the solution while maintaining a control group for comparison purposes (see Table 6.4: Common Questions When Testing Solutions Depending on the Design of the Pilot).

For example, the team addressing Opportunity 1 for external talent pipelines (i.e., improving percentage of applicants meeting requirements) with the two root causes and two potential solutions could decide to conduct a limited pilot test. The team could test a revised employer survey to determine whether companies can provide the additional detail and whether the team is satisfied that it would address the gaps between requirements and applicants. The team also could decide to pilot test the curriculum review and alignment solution with one volunteer education and training provider to see if it is effective in closing the gaps for the provider's learners.

A common mistake during this step is fully implementing a solution without properly testing and evaluating it first through a pilot that yields comparable data through either pre- and post-evaluations or comparison groups.

The evaluation should involve both direct data collected on changes in performance and data gathered from interviews and focus groups with participants to gain further insights on what worked and what did not work.

Table 6.4: Common Questions When Testing Solutions Depending on the Design of the Pilot

Pre-Post Pilot Test Design	Comparison Pilot Test Design
1. Was the solution implemented as intended?	1. Was the solution implemented as intended at the test site?
2. Did the solution have the desired impact?	2. Did the solution have the desired impact?
3. Were other contributing factors controlled?	3. Were other contributing factors controlled at the test site?
	4. Did the control site experience produce different results?
	5. Were most other factors controlled for at the control site?
4. Does the solution need to be tested again?	6. Does the solution need to be tested again?
5. Do you recommend this solution be scaled?	7. Do you recommend this solution be scaled?

STEP 5: Implementing Proven Solutions

Successfully piloting a solution in one setting does not guarantee it will work everywhere.

After the improvement team has successfully piloted the solution and shown promising results, it must address how it would scale the solution within the larger talent pipeline. This means considering what would be needed to ensure that the solution is successfully implemented in a much broader context.

Replicating small successes on a larger scale can be complicated by the addition of new factors and challenges that can reduce effectiveness. However, the chances of success are greater when teams fully specify how the solution should be implemented in other settings and teams have a plan to continually evaluate and adjust the solution during the scaling process. Here are two essential elements in this final step:

- **Provide an Implementation Guide and Resources:** Develop a detailed description of the solution and guidance on how to fully implement it to get the best results.

- **Continue to Evaluate and Improve:** Collect data on an ongoing basis to evaluate the implementation of the solution and whether it is getting the desired results and make adjustments as needed. In addition to making changes or adjustments to make it more effective as it is being scaled.

Common mistakes made during this step include (1) not communicating the results and securing the buy-in of all critical stakeholders in implementing the solution correctly at scale, (2) not fully specifying the solution in ways that can be easily implemented in the talent pipeline, and (3) not providing sufficient resources and support to fully train key personnel involved in implementing the solution. See Table 6.5: Common Questions When Implementing and Scaling Proven Solutions to help avoid these frequently made slip-ups.

Table 6.5: Common Questions When Implementing and Scaling Proven Solutions

1. Have all stakeholders been informed of the pilot results, and is there consensus on scaling the solution?
2. Have implementation guidance and other resources been provided to all necessary partners?
3. Has training been provided to key stakeholders involved in scaling the solution?
4. Are there any barriers to scaling the solution that need to be addressed?
5. Have steps been taken to collect data and validate that the desired impact has been achieved at scale?

Calculating Return on Investment

Continuous improvement can drive better performance and lays the foundation for calculating and reporting ROI back to employer members. Calculating ROI is a leading practice in the business community and in TPM. It makes transparent the success of your talent pipeline and continuous improvement activities.

As discussed in Strategy 1, host organizations must communicate a clear value proposition to employers that they will better address their key pain points and achieve greater ROI by supporting the collaborative's work. Employers should be strongly encouraged to calculate their ROI in working with the collaborative by considering at least two types of costs:

- **Employer Collaborative Participation:** Time and resources spent working with the collaborative to develop and implement solutions
- **Employer Incentives:** Costs associated with any direct investments made by employer partners to support and reward provider networks

In addition, host organizations should encourage their employer members to calculate their own ROI using their preferred methodologies. Host organizations can assist members by providing benchmarks from their industries, such as measures for cost of hire and cost of turnover in manufacturing and information technology.

The simplest form of calculating ROI is by comparing the **baseline cost** (BC) to **benefits achieved**. To do this, take the baseline cost and subtract the updated cost (UC), and divide by the baseline cost. Take the total and multiply by 100 to get an ROI percentage. Some collaboratives will decide to include the **cost of engaging in a collaborative** (e.g., membership fees, staff time) as an add-on to their total costs.

Formula: (BC – UC) / BC x 100

For example, if the measure most important to a collaborative was to calculate the ROI achieved in reducing the cost of a hire, then you can take the baseline cost of a hire over a specified baseline time period before participating in the collaborative (BCH) and subtract the updated cost of a hire after participating in the collaborative (UCH), and divide the total by the baseline cost, then multiply by 100.

Example Formula: (BCH – UCH) / BCH x 100

Cost reduction metrics, like reduced cost of a hire, can be used for both external and internal pipelines. For example, employers can reduce cost of a hire by using TPM to attract and onboard qualified new hires and/or it can be used to promote upskilling pathways from within that reduce the need to source externally for critical positions.

Cost reduction, however, is only one form of calculating ROI. Collaboratives can also calculate ROI based on benefits achieved, such as productivity gained, new business taken on, or profits increased. We encourage you to work with your employer members to determine the right type of ROI metrics for them, but be sure to focus your attention on ROI that you can measure and where there is an agreed-on methodology for calculating it.

Another way of approaching ROI is to have a common set of ROI metrics for the collaborative, such as cost reduction, but provide guidance to individual company members on how they can calculate benefits achieved for their firm. As with all things TPM, there is no right answer or approach when it comes to calculating ROI, only the approach that works best for your collaborative's membership.

Calculating Return on Investment Exercise

The exercise demonstrates how an employer collaborative can estimate ROI and determine if collaborative members are benefiting from their participation in the collaborative.

An IT collaborative has come together to solve a critical shortage of network administrators across its members' companies. The companies' pain point challenge is not finding enough highly qualified workers to meet the needs of many of their new defense contractor clients. The host organization has convinced its members to participate in an ROI calculation that will show whether the collaborative is adding value and, if so, by how much.

To start, the collaborative members decided to focus on the total cost of a hire to see if they have achieved any savings by working together. They also decided to provide ROI data to the collaborative in ways that can be aggregated annually to show the average level of returns to collaborative members and benchmark progress.

Having agreed on how success would be measured, the members determined their baseline costs. The collaborative used an industry methodology for measuring hiring costs, along with some standard benchmarks for costs. This methodology includes advertising, candidate screening and selection, and onboarding. The average hiring cost reported by employers using this methodology and related benchmarks was $8,000 per hire. The companies then added in the expense of staff time and related expenses incurred in serving on education and workforce advisory groups and attending related meetings and events, averaging about $30,000 per hire.

After a year of working together and sourcing new network administrators with a set of preferred providers, the collaborative increased the number of highly qualified job candidates and new hires. After sharing their data with the host organization, members found that they reduced their advertising, candidate screening and selection, and onboarding costs by 50% to $4,000 per hire.

The collaborative members continued to provide staff to engage directly with providers. They also focused staff time on essential meetings and events with preferred providers, resulting in a 50% reduction in employer costs to $15,000 per hire. The collaborative estimated that time spent in meetings plus new incentive offerings—paid internships and covering the cost of taking an industry certification—averaged $10,500 per hire.

Last, the host organization convening the collaborative would like the work to continue. However, up to this point the collaborative has been supported by a small grant that is coming to an end. For the host organization to continue staffing the collaborative, it will require participating members to contribute dues, estimated to be $2,000 annually per company.

In all, members concluded that they received a positive ROI that could be further increased by cooperating on new initiatives to improve talent pipeline performance.

After reviewing the exercise, discuss the following:

1 What is the cost of a new hire before and after participating in the collaborative?

2 What is the ROI for collaborative members?

3 Is this ROI sufficiently positive for the collaborative to continue? Explain your answer.

4 If you were representing a company in this collaborative, would you continue your participation with the additional dues requirement? Explain your answer.

Ready for Next Steps?

Have you achieved the learning objectives in Strategy 6 necessary to move forward? When you go back to your community, verify you will be able to execute the following activities:

- Explain the role of continuous improvement opportunities in TPM.

- Explain the five-step continuous improvement process.

- Explain major decisions, actions, and common mistakes in each step.

- Calculate ROI for employer collaborative members.

- Use the Strategy 6 Action Plan at the beginning of the chapter to determine your next steps and track your progress.

- For those using the TPM web tool, use the tool to create and manage your selected improvement opportunity.

If you can do all of the above, you have the skills and tools needed to be successful in implementing continuous improvement.

NOTES

APPENDIX

Appendix

U.S. Chamber of Commerce Foundation Talent Pipeline Management® (TPM)
TPM Academy®

TPM Key Terms and Definitions
Terms of Use Agreement

Key TPM Terms and Definitions

To distinguish TPM® from previous workforce efforts that have not resulted in the intended outcome of connecting learners with promising career pathways, the Chamber Foundation team has developed language to reorient its partners to a workforce system that is both employer led and demand driven.

Some terms are new; others are commonplace, but with little consensus on how they are used in a workforce development context. To eliminate potential misinterpretation, this glossary contains definitions of even the most basic terms. These terms and definitions appear throughout the curriculum as part of the introductions to the respective strategies in which they are first used.

Applicant Tracking System
A software application that manages employee recruitment data, including job postings, applicant tracking, screening and scoring, interview management, and hiring.

Backfilling
To fill a position or job that has recently or will become open due to an existing worker having changed roles in the company/industry or advanced in their career.

Back Mapping
A TPM process that helps employer collaboratives identify the major sources of qualified talent on which employers currently rely.

Baseline Cost
The total cost incurred by employers measured in dollars relative to their starting position prior to undergoing the TPM process. An example of a baseline cost is the cost of a hire prior to engaging in a talent supply chain solution.

Benefits Achieved
The value derived by employers over and above the cost of implementing a solution, which can be measured, for example, in dollars, such as reduced cost in filling a position, or in time, such as a shorter onboarding process.

Bottom-Line Measure
The talent-related performance measures that have the most direct and highest impact on the overall profitability and performance of the business.

Business Function
The type of business or economic activity that is critical in making products or providing services at one or more establishments (see Establishment definition). It may or may not be defined as a primary activity for purposes of North American Industry Classification System (NAICS) coding of business establishments, and it may be carried out by one or more occupations. Examples include logistics planning, warehousing, machining, engineering, and nursing.

Capture Rate
The percentage of talent coming from the internal and external talent pipeline (identified providers) that is hired, and/or upskilled, and retained by employers from the employer collaborative or employers within the same industry or geographic area over a designated time period.

Competency
What someone should know or be able to do in a particular job as demonstrated through tasks performed; tools and technologies used; and knowledge, skills, and abilities applied. In Strategy 5, we will discuss learning outcomes, which are similar to competencies but are more commonly associated with curricula.

Continuous Improvement
A structured method to improve a process over time. Continuous improvement processes in the business world include Lean Six Sigma and the five-step DMAIC (define, measure, analyze, improve, and control) process, which is used to optimize performance and eliminate waste.

Continuous Improvement Team
A team established by the employer collaborative or an individual employer to carry out an improvement project and report results for a specific period of time based on the agreed scope and goals.

Cost of Engaging in a Collaborative
The total cost in terms of time spent and resources committed when working as a member of an employer collaborative. This calculation is useful to compare total cost versus total benefit to calculate an employer ROI.

Credentials
Documents attesting to qualifications and the attainment of competencies, usually in the form of education degrees and certificates, industry and professional certifications, badges, and licenses.

Critical Job
A job that has been selected by the employer or employer collaborative to focus its attention on, whether an entry-level job or an advanced job for internal talent sourcing.

Competency Mapping
A process used to determine which learning outcomes relate to which competency hiring requirements, and which providers are responsible for them.

Curriculum Mapping
A process used to provide detailed information about how a learning outcome and/or competency ought to be delivered and assessed and could include examples of it done well.

Demand Driven
A focus on skilled jobs that are in demand, based on labor market information.

Demand Planning
The process of developing annual or short-term projections of job openings based on a set of assumptions and a time period chosen by an employer collaborative.

DMAIC
A widely accepted data-driven continuous improvement process that includes five major steps: (1) define, (2) measure, (3) analyze, (4) improve, and (5) control.

Employability Skills
Essential workplace skills needed to be successful in any job, including what are commonly referred to as "soft skills," such as problem solving, critical thinking, communication, and teamwork.

Employer Collaborative
A partnership organized by employers, for employers to collectively address shared workforce needs. The collaborative is bolstered by management support provided through a new or existing employer-led organization of the collaborative members' choice. Employer collaboratives are different from most public-private partnerships in that they are organized and managed to maximize responsiveness to employers as end-customers and to deliver an employer return on investment.

Employer Return on Investment
A measure that calculates the returns that employers receive from investments, usually expressed as a ratio of total dollar benefits compared with total dollar costs.

End-Customers
Employers that are developing and implementing a talent supply chain to address a workforce need that results in a measurable return on investment.

Establishment
A single physical location (e.g., plant, office) of a company that may have multiple locations or facilities. Establishments carry out business or economic activities as typically defined under NAICS. More detailed examples of business or economic activities include industrial machinery manufacturing, computer systems design and related services, and specialty surgery and primary care.

Feeder Job
A job—usually entry-level—that is being sourced internally to fill an opening for a critical job.

Feeder Schools
Education or training providers that are known to transition individuals receiving education or services to another provider before reaching employers. For example, in TPM, Tier 2 providers transition learners to Tier 1 providers.

Full Productivity
The point at which an individual has reached expected levels of productivity in a destination job. In TPM, time to full productivity can be tracked as a performance measure to ensure individuals are managing transitions and being effectively onboarded into employment with minimal time lost.

Hiring Requirements
The competencies, credentials, work experience, and other characteristics (e.g., ability to pass a drug test) used for making hiring decisions for one or more jobs related to a business function. Hiring requirements can be preferred or required.

Host Organization
The organization that houses and provides the staff and management support for one or more employer collaboratives. Host organizations are different from traditional intermediaries in that they are business member organizations (e.g., chambers of commerce, industry sector-based associations) or economic development organizations dedicated to business growth and competitiveness and are chosen or affirmed by the employer members to manage and staff employer collaboratives.

Human Resource Information System
An information technology system that captures all aspects of human resources data in a centralized place and supports employee recruitment, hiring, performance, and benefits management.

Incentives
Financial and nonfinancial rewards to recognize results and to support continuous improvement. Financial incentives include anything that has a monetary value, including equipment donations, work-based learning opportunities, and access to staff. Nonfinancial incentives include designations such as preferred provider status that can be marketed by a program or institution for recruitment purposes.

Industry
The type of primary business or economic activity carried out in a business establishment as typically defined under NAICS. Examples of major industry categories include manufacturing, healthcare, and information technology.

Job-to-Job Flow
The transition from one job to another, whether intentional or not, that results in retraining for a new role or career advancement. These flows can be as simple as one job to another or can have multiple transitions as a worker is retrained or advanced throughout their career.

Knowledge
What a person should understand in terms of facts, theories, principles, concepts, and procedures related to general or specific domains, including disciplines and professions.

Labor Market Information
Quantitative or qualitative data related to employment and workforce trends in national, state, regional, and local labor markets.

Leading and Lagging Measures
Leading measures are short-term, intermediate measures (e.g., credential attained) that address actions that are major determinants and predictors of longer-term, bottom-line measures (e.g., reduced onboarding and training costs), otherwise known as lagging measures.

Leakage Rate
The percentage of talent coming from the internal and external talent pipeline (identified providers) that is not hired or is hired but not retained by employers from the employer collaborative or employers within the same industry or geographic area over a designated time period.

Lean Six Sigma
An improvement methodology used to identify and eliminate waste and optimize performance.

Learning Outcomes
Measurable and observable statements about what a person knows and is able to do that are tied to a curriculum. In TPM, these learning outcomes are aligned to the competency hiring requirements an employer includes in a job description.

Occupation
The type of job or job family that is typically used to classify workers into occupational categories based on the Standard Occupational Classification system (commonly referred to as SOC code) or another classification system. Employers use a variety of job titles that can be crosswalked to one or more occupations. Examples include registered nurse, machinist, and engineer.

Performance Measures
Quantitative indicators of outcomes that are expressed in terms of rates, ratios, or percentages addressing one or more critical variables, all of which contribute to improved business performance and competitiveness:

- **Quality**, in the context of TPM, refers to whether individuals have the right mix of competencies to successfully perform work for critical business functions and jobs.

- **Time** addresses maximizing efficiency in value-adding activities, reducing time spent in non-value-adding activities (e.g., irrelevant training), and minimizing the wait time between activities or services (e.g., employee training).

- **Cost** refers to the balancing of dollars spent in producing quality outcomes, including the reduction of opportunity costs (e.g., reducing foregone earnings).

Performance Scorecard
A visualization tool used to communicate the major performance indicators that have been prioritized to tell employers and their stakeholders how effective partnerships have been in managing key transition points and achieving intended outcomes.

Preferred Providers
Providers of talent sourcing and development services—including education and training providers and staffing organizations—that are recognized by an employer collaborative based on their ability to meet employer requirements, such as ability and proven track record for supplying qualified talent for jobs.

Primary Labor Market Information
Labor market information provided directly by employers and other participants in labor markets (e.g., workers). TPM uses primary labor market information from employers in a collaborative regarding their level of workforce demand.

Projections
In the context of TPM, projections are quantitative estimates of future employment by industry and occupation. Projections can be short- or long-term, which are defined differently depending on the originating source making the projections.

Provider
The role education and training partners play in providing services designed to deliver talent for employer end-customers in a talent supply chain.

Provider Roles
The types of services provided by talent providers within the employer collaborative value stream, from career awareness and exploration to employee upskilling, advancement, and retention. Providers can play one or more roles in one or more tiers, although most play a predominate role in a single tier. For example, a Tier 1 provider that is a staffing agency can provide pre-employment training and onboarding services while also offering a small career preparation program for youth (see Provider Tiers definition).

Provider Tiers
The position of providers within talent pipelines in relationship to the employer end-customer. Tier 1 providers (e.g., colleges, staffing agencies, other employers) deliver talent directly to employers, and Tier 2 providers (e.g., high schools) deliver talent to Tier 1, whereas Tier 3 providers (e.g., middle schools) deliver talent to Tier 2. Tiers are relevant only for external talent pipelines.

Real-Time Labor Market Information
Aggregated job openings and skills data generated by using web technologies to capture and analyze job postings from job boards and websites. Real-time LMI also includes supply-side analysis using resumes and job board worker profiles.

Root Cause
Those conditions or factors that directly cause a performance problem.

Root Cause Analysis
A process to identify factors that directly cause a performance problem and can be addressed in a continuous improvement process.

Secondary Labor Market Information
Information and analysis about the level of workforce demand by industry generated through reviewing labor market information reports (e.g., state occupational projections) or through aggregating job posting data (e.g., real-time labor market information).

Shared Pain Point
A common area of need across employers that have come together to form an employer collaborative. Shared pain points should provide the starting point for defining the focus of an employer collaborative.

Shared Value
The value that is created for employers, education and training providers, and the learners they serve—as well as society in general—when employers play an expanded leadership role as end-customers of talent supply chains.

Skills
Capabilities to apply knowledge and perform work tasks.

State Occupational Projections
State government projections of short-term (e.g., two-year) and long-term (e.g., 10-year) job openings resulting from new jobs and replacement of existing jobs. State occupational projections are based on government-defined occupational classifications and are produced at the state and sub-state levels.

Survey
Employer collaboratives conduct two types of surveys:

> **The Needs Assessment Survey** addresses employer projections of job openings through demand planning (as presented here in Strategy 2) and competency, credential, and other hiring requirements (Strategy 3).

> **The Talent Flow Analysis Survey** identifies the actual specific sources of talent from providers (also called back mapping) and supplies the basis for linkages with other data for more comprehensive talent flow analysis to analyze the capacity of providers to supply needed talent (outlined in Strategy 4). For example, this survey might show that a company's welders consistently come from a particular community college program, or that most of its recent engineering hires graduated from a university in a neighboring state.

Talent
Individuals who have the skills and credentials that drive competitive advantage within a company and industry.

Talent Flow Analysis
A TPM process that helps employer collaboratives work with government agencies and other data providers to analyze talent inflows and outflows to strengthen their talent pipelines. This includes all existing and potential sources of talent where data are available.

Talent Inflows
The number and characteristics of people hired by an employer, an employer collaborative, employers within the same industry or industry sector of the collaborative, or employers within the major geographic area defined by the employer collaborative for recruiting talent.

Talent Outflows
The number and characteristics of people previously hired but no longer working for an employer, an employer collaborative, employers within the same industry or industry sector of the collaborative, or employers within the major geographic area defined by the employer collaborative for recruiting talent.

Talent Pipeline Management (TPM)
An end-to-end talent management approach that is implemented by employers to source and develop talent for jobs critical to their competitiveness and growth.

Talent Supply Chain
An end-to-end talent management process made up of employers as end-customers and education and workforce partners as providers, with each playing key roles in adding value to the development of talent. Talent supply chains can be developed by individual employers or by multiple employers acting together as employer collaboratives.

Tools and Technologies
Essential technologies used to perform work tasks and skills, including software and equipment.

Transition Measures
The key performance measures at each point of transition. A transition measure is a type of leading measure.

Transition Point
The moment when an individual moves from one program or service to the next, which can occur within or between providers. For example, in TPM, transition points occur when someone moves from a Tier 2 provider, such as a feeder high school, to a Tier 1 provider, such as a university.

Upskilling
Adding to the skills of current employees of collaborative members to prepare them for success in:

- **New, Emerging, and Changing Job Roles** due to changing technologies and changes in how work is organized and carried out within companies and across their industries. This may involve the retraining of workers who must transition to new jobs because their current jobs are transforming.
- **Career Pathways** providing career advancement opportunities within and outside their companies.

Value Proposition

The unique value and benefits achieved for key stakeholders based on following the TPM process.

Value Stream

The process that a product or service goes through from beginning to end, with each step adding incremental value until the product reaches the end customer.

Value Stream Map

A visual tool used to show, in sequence, the major activities and roles that make up a value stream.

Work Tasks

Work performed in carrying out job roles, functions, and responsibilities.

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The U.S. Chamber of Commerce Foundation ("Chamber Foundation") provides this TPM Web Tool and curriculum for TPM Member access to tools and information for collaborating and planning. TPM Members are organized into groups ("TPM Collaboratives") led by team leaders ("Host Organizations"). All TPM Host Organizations and Collaboratives together make up the TPM Network. Access to password-protected areas is only for TPM Members that have agreed to use the TPM Web Tool and curriculum for their intended purpose. Individuals given access as TPM Members are not permitted to share their username or password.

By activating a TPM Member account, you agree to (1) appropriate use of the TPM Web Tool and curriculum, (2) participation in the TPM Collaborative by responding to surveys and other information-gathering requests that will be used solely for improving workforce development, and (3) the sharing of information that you provide to benefit workforce development.

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