

Strategy 6

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Introduction

Let's summarize the TPM process thus far. In Strategy 1, we addressed how employers are more likely to join employer collaboratives when they (1) have a major "pain point" that needs to be addressed in sourcing talent for critical jobs and (2) see value in working with other employers in addressing that pain point. Strategies 2 and 3 helped clarify the specific talent needs of collaborative members. Strategy 4 showed how to establish baseline information on actual and potential sources of talent. Strategy 5 covered how employer collaboratives can establish a talent pipeline that best addresses their major needs and priorities based on value stream, and competency and curriculum mapping. Strategy 5 also addressed how to establish performance metrics, incentives, and risk management strategies to better manage the talent pipeline.

Strategy 6 provides the tools and strategies for employer collaboratives to (1) promote continuous improvement and (2) improve resilience to external disruptions.

Even the best-designed talent pipelines require tweaks over time to improve performance in incremental but important ways for all stakeholders. Using TPM, employer collaboratives can manage their talent pipelines using data and a continuous improvement process in cooperation with their talent providers. This helps keep employers not only engaged and dedicated to the collaborative, but also committed to working with their talent providers, especially those designated as preferred providers. These improvement efforts may—and likely will—involve changes in both employers' and providers' behaviors and practices. That is why a cooperative continuous improvement process is necessary.

Finally, Strategy 6 addresses how employer collaboratives and their partners can undertake resiliency planning. **Resiliency planning** is a process and set of tools that employer collaboratives can use to identify and evaluate the potential severity of both demand- and supply-side disruptions and determine how to respond effectively in both the short and long term using TPM's strategies.



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 Define the role of resiliency planning in TPM.
- 6 Determine and prioritize the potential demand-side and supply-side disruptions for resiliency planning.
- 7 Develop resiliency plans for responding to these potential disruptions.



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 The TPM Resiliency Planning Process
ACTIVITIES Actions taken to achieve desired outcomes	<ul style="list-style-type: none"> Analyze aggregate data from performance scorecard Identify improvement opportunities Establish improvement team and project 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Identify potential solutions Review evidence of potential impact, employer control over problem, and timing Analyze and evaluate potential solutions Determine which solutions to test 	<ul style="list-style-type: none"> Design pilot tests Implement pilot tests Analyze results of pilot tests Refine and implement proven solutions 	<ul style="list-style-type: none"> Provide an implementation guide and resources Continue to evaluate and improve 	<ul style="list-style-type: none"> Identify and rate potential disruptions Develop prevention or contingency plan(s)
MILESTONES Progress points marking significant development	<ul style="list-style-type: none"> Improvement plan Designated improvement team and project 	<ul style="list-style-type: none"> Prioritized list of root causes 	<ul style="list-style-type: none"> Proposal for pilot test 	<ul style="list-style-type: none"> Pilot test implementation Issues, impact, and context identified Retest or recommend scaling 	<ul style="list-style-type: none"> Consensus on scaling the solution Implementation guide for scaling solution Training completed Solution implementation 	<ul style="list-style-type: none"> Disruption ratings Prevention or contingency plan(s)
OUTPUTS Achievements resulting from actions	<ul style="list-style-type: none"> Number and percentage of collaborative members/providers participating Types of leading and lagging measures targeted for improvement 	<ul style="list-style-type: none"> Number and percentage of prioritized root causes advanced to develop solutions 	<ul style="list-style-type: none"> Types of solutions proposed for testing 	<ul style="list-style-type: none"> Solutions tested and ready to implement Solutions ready to scale 	Number and percentage of: <ul style="list-style-type: none"> Collaborative members/providers scaling the solution Members/providers trained on scaling the solution 	<ul style="list-style-type: none"> Types of strategies for short-term response and long-term recovery agreed on by collaborative members

*Note: Unit 6.1: Why Continuous Improvement Is Critical for TPM covers educational information and therefore is not included in the Strategy 6 Action Plan. This Action Plan 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.

Resiliency Planning

The process of identifying potential disruptions to talent pipelines and developing plans for how to respond.

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.

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.

Root Cause Analysis

A process to identify factors that directly cause a performance problem and can be addressed in a continuous improvement process.



Unit 6.1

Why Continuous Improvement Is Critical for TPM

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).

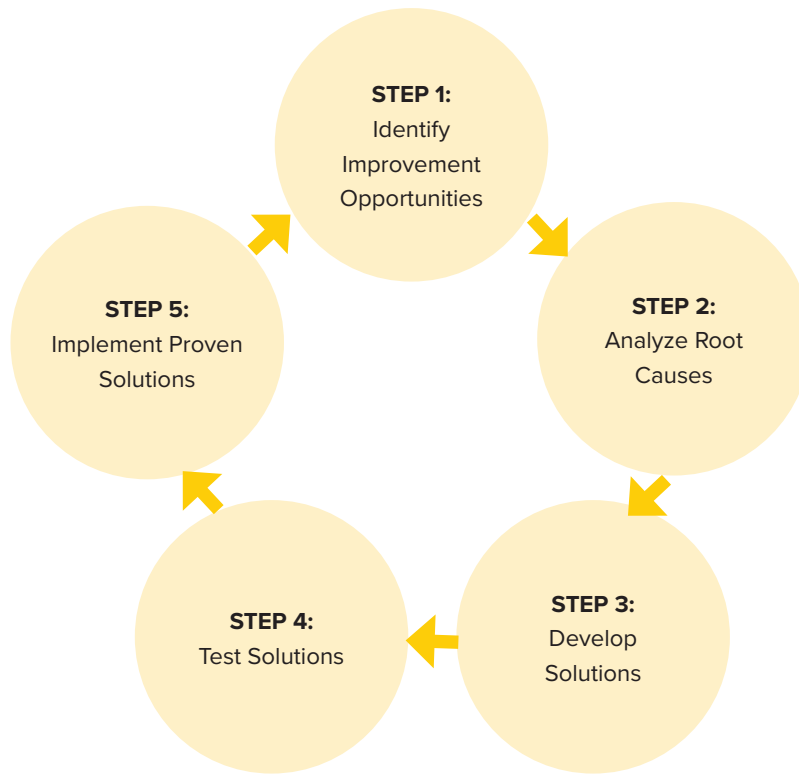
Step 2 — Analyze Root Causes: Explore and analyze additional data to determine major **root causes** of performance problems and what is needed to improve performance for the selected opportunity.

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



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 its internal and external talent pipelines. It has 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 the first year of employment	75%	●	↑
Percentage of recent hires and qualified applicants from prioritized under-sourced populations	35%	●	↓
Percentage of employees advancing in careers from prioritized under-sourced populations	30%	●	↓
Driver/Transition Measures	Performance	Relative to Goal	Trend
Number of learners who 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 trends 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 its internal talent pipelines:

- **Internal Opportunity 1: Improve the Percentage of Recent Hires and Qualified Applicants from Prioritized Under-Sourced Populations.** This opportunity could 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 Prioritized 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 could identify two potential improvement opportunities for its 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 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 providers who 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.

Exercise 1



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 its preferred providers for over a year. It is 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. It 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 its 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. It 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.

		A	B	C	D
Talent Pipeline	Type of Provider	Number Hired or Advanced in Their Career	Percentage of Qualified New Hires	Percentage (of Column A) Retained After Six Months	Percentage (of Column A) 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.

Unit 6.3

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 first agree on what is causing the problem 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 can also 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:

- **Review Major Processes:** Team members should review the process or processes involved in producing results on the chosen measures. This review should include risk assessment and management analyses, reporting on these processes, and guidance for improvement as addressed in Strategy 5.
- **Brainstorm Potential Root Causes:** Team members should then brainstorm additional potential causes. 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. This level of control could be:
 - **Direct:** Employer collaboratives and their provider partners have the control necessary to directly affect the root cause.
 - **Indirect:** Employer collaboratives and their provider partners can gain the necessary control by working with other partners such as local and state governments (e.g., transportation access).
 - **No Control:** Employer collaboratives and their provider partners cannot gain the necessary control within the time frame needed to build or improve talent pipelines, even when working with other partners.

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 for internal talent pipelines (see Table 6.2) could conduct further research into the major gaps in career advancement rates. They could have reviewed the career advancement processes used by employers and then identified three additional root causes:

- **Awareness of Career Advancement Opportunities:** Employers did not sufficiently communicate career advancement opportunities, especially with employees from under-sourced populations.
- **Opportunities for Career Advancement:** Employers did not provide sufficient opportunities for career advancement, especially for employees 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.

The improvement team may 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. See Table 6.4: Potential Root Cause Analysis for Internal Opportunity 2 for an example of how a collaborative can comprehensively assess root causes.

Table 6.4: Potential Root Cause Analysis for Internal Opportunity 2

Internal Opportunity 2: Improving Percentage of Employees Advancing in Careers from Under-Sourced Populations	Root Cause	Direct/ Indirect Impact	Level of Impact (High = H, Medium = M, Low = L)	Evidence of Impact (High = H, Medium = M, Low = L)	Direct Control/ Indirect Control/ No Control
Root Cause 1: Awareness of Career Advancement Opportunities	Employers did not sufficiently communicate career advancement opportunities, especially with employees from under-sourced populations.	Direct	M	L	Direct
Root Cause 2: Opportunities for Career Advancement	Employers did not provide sufficient opportunities for career advancement, especially for employees from under-sourced populations.	Direct	H	H	Direct
Root Cause 3: Distribution of Career Advancement Opportunities	Career advancement opportunities were in facilities with the lowest concentration of employees from under-sourced populations.	Indirect	L	L	Direct

As the team moves to external pipeline strategies, they could decide to focus on Opportunity 1 (see Table 6.3). They review the hiring process as well as the risk assessment and management plan developed in Strategy 5 and decide to conduct further research into the major gaps between hiring requirements and the applicants who did not meet those requirements. Engaging in this analysis may result in identifying additional root causes:

- **Employer Communication of Hiring Requirements:** Employer members did not sufficiently communicate to all providers with regard to critical technical and employability skills.
- **Provider Curriculum and Assessments:** Some 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. See Table 6.5: Potential Root Cause Analysis Internal Opportunity 1 for a sample template that can be used to assess root causes.

Table 6.5: Potential Root Cause Analysis Internal Opportunity 1

External Opportunity 1: Improving Percentage of Applicants Meeting Requirements	Root Cause	Direct/ Indirect Impact	Level of Impact (High = H, Medium = M, Low = L)	Evidence of Impact (High = H, Medium = M, Low = L)	Direct Control/ Indirect Control/ No Control
Root Cause 1: Employer Communication of Hiring Requirements	Employers did not sufficiently communicate to all providers on critical skills.	Direct	H	H	Direct
Root Cause 2: Provider Curriculum and Assessments	Some providers did not sufficiently address the critical skills or provide evidence that these skills were attained.	Direct	H	M	Direct

Common Missteps in Root Cause Analysis

In conducting 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 practices. This is more likely to occur 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 turnover were flaws in the preparation process. However, assumptions could also include the need for communicating more realistic expectations about working in acute healthcare settings and quality of 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, nursing scheduling, and compensation on retention.



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 its external talent pipeline partners based on the performance data it 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.

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.

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. Only those solutions that are within the improvement team's control to implement within the time frame available for testing and implementation should be considered.

Finally, improvement 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 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 that can offer 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. Similarly to assessing root causes in the previous unit, control can be assessed as either direct, indirect, or lack thereof (i.e., no control).

As with analyzing root causes, the improvement team should then identify potential solutions that are rated highest based on these four criteria and agree on 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 competencies 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 providers to improve the alignment between employer requirements and curriculum and assessment systems.

Table 6.6: Potential Solution Assessment for External Opportunity 1

External Opportunity 1: Improving Percentage of Applicants Meeting Requirements	Potential Solution	Root Cause Impact (High = H, Medium = M, Low = L)	Level of Impact (High = H, Medium = M, Low = L)	Evidence of Impact (High = H, Medium = M, Low = L)	Direct Control/ Indirect Control/ No Control	Move Forward with Pilot Testing?
Solution 1	Improve competency detail on employer surveys	H	H	H	Direct	Yes
Solution 2	Curriculum review and alignment	H	H	M	Direct	Wait until first solution is piloted

Common Missteps in Developing Solutions

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.

Unit 6.5

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 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 to gain further insights on what worked and what did not work.

Table 6.7: 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?

Unit 6.6

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. Make changes to increase effectiveness 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 6.8: 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?

Unit 6.7

The TPM Resiliency Planning Process

Consistent with supply chain management principles and strategies, TPM assumes there will be constant changes in the world, in the economy and labor market, in provider networks, and in government policy that require agility and responsiveness on the part of all partners. These changes can be minor or significant disruptions that can either be anticipated or unanticipated with little time to respond. They can be disruptions that affect the demand or supply sides of the talent pipeline, or both. For example, the COVID-19 pandemic delivered one of the biggest and broadest value chain disruptions, affecting entire global supply chains as well as the demand and supply sides of talent pipelines. The pandemic raised awareness of other potential disruptions and emphasized the need to have plans and systems in place to become more resilient to future disruptions.

Resiliency planning refers to the process by which employer collaboratives and their partners identify potential disruptions to their talent pipelines and develop prevention or contingency plans for how to bounce back and become more resilient to these disruptions in the future. It is critical in TPM because it encourages employer collaboratives to identify some of the most severe disruptions that could impact their talent pipelines and have in place a plan to prevent, manage, and/or mitigate risks associated with the disruption.

The TPM framework also provides a structured process for how to respond to disruptions and identify who will take what actions across the TPM strategies. In some cases, this planning process may provide ideas for the employer collaborative to increase the agility and resilience of the talent pipeline in advance of potential disruptions. For example, an employer collaborative could decide to put plans in place for how to effectively utilize virtual platforms for carrying out critical activities (e.g., working, learning) to make them more agile and resilient to future pandemics or natural disasters.

Like continuous improvement, it is important to form a team of partners that will tackle resiliency planning, including identifying which partners will participate in and provide input on the following outlined steps. It will be necessary to include partners outside of the employer collaborative to ensure that resiliency planning is comprehensive and appropriately developed, monitored, and implemented, if need be. There might be overlap with the continuous improvement team, but who needs to play a role in resiliency planning will depend on the type of disruption and related implementation plan.

Resiliency planning has two major steps:

Step 1: Identifying and Rating Potential Disruptions

The first step is identifying and rating potential disruptions.¹ Employer collaboratives and their partners should brainstorm what they think would significantly impact the performance of the talent pipeline and the capacity of employers and partners to effectively play their roles at different stages of that pipeline.

¹ McKinsey & Company's report, *Identifying and Rating Potential Disruptions*, provided the foundation for our approach to resiliency planning, particularly considering lead times for responding to a disruption effectively. The report can be found here: <https://www.mckinsey.com/business-functions/operations/our-insights/risk-resilience-and-rebalancing-in-global-value-chains>

As shown in Table 6.9, collaboratives should identify each potential disruption and determine:

- **Demand Side and/or Supply Side:** Whether the disruption will directly impact the demand side—employers—or the supply side of the talent pipeline, or both, with the understanding that, either way, indirect impacts will be felt. This provides a starting point in developing resiliency plans based on assumptions of who will be most directly impacted and how their response will impact other partners in the pipeline.
- **Severity of Disruption:** The severity of the disruption on the pipeline’s performance and the partners’ capacity to effectively carry out their roles
- **Lead Times:** The potential to anticipate a disruption with sufficient lead time to respond effectively

In most cases, employer collaboratives should prioritize the most severe disruptions that can be anticipated but that do not provide the necessary lead times to respond effectively without doing some type of resiliency planning in advance. As shown in Table 6.9: Identifying and Rating Potential Disruptions, the COVID-19 pandemic was such a disruption. It had major impacts on employers by reducing demand for products and services and shutting down workplaces, resulting in drastic cuts in employment and projected hiring but having the opposite effect on others (i.e., a “K” shaped recovery). It also had major impacts on the supply side, with many providers making changes in how they delivered instruction and significant impacts on student enrollment and completion of programs. In contrast, other types of disruptions, like technological and staffing shifts, happen more closely over time with impacts that can be anticipated and planned for, thus requiring less resiliency planning.

Table 6.9: Identifying and Rating Potential Disruptions

Disruption	Demand or Supply Side, or Both?	Likelihood (H, M, L)	Severity (H, M, L)	Lead Times (Yes or No)
1. Economic downturn	Demand side	M	H	No
2. Large employer closures and relocations	Demand side	M	M	Yes
3. Provider closure or program discontinued	Supply side	L	L	Yes
4. Technology and staffing model shifts	Demand side	H	H	Yes
5. Pandemics	Both	M	H	No
6. Natural disasters (e.g., wildfires)	Both	H	H	No
7. Government funding cuts for education partners	Supply side	L	M	Yes

Step 2: Resiliency Strategies and Implementation Plans

The second step is to develop prevention or contingency plans that make use of the TPM strategies and promote resiliency across your talent pipeline. This includes strategies and implementation plans for short-term response and long-term recovery planning involving one or more strategies, depending on the breadth of the impact on the talent pipeline.

First, an employer collaborative should select one or more likely or possible disruptions for which advanced planning would be valuable. Having selected one or more disruptions, collaboratives should brainstorm potential prevention or contingency plans that would mitigate—if not eliminate—the risks associated with that disruption. For example, if the collaborative is concerned about a provider shutting down a program on which it relies, it may wish to put in place a contingency plan for rapidly shifting demand to another preferred provider or to a new provider that was previously identified as a potential provider. Another example is a pandemic, where employers may put in place plans to communicate shifting demand, to repurpose their pipeline to support an adjacent industry sector, or to transition to remote work, learning, and work-based learning. Table 6.10 shows potential prevention or contingency plans consistent with the previously identified disruptions.

Table 6.10: Prevention or Contingency Plan Examples

Disruption	Prevention or Contingency Plan(s) Examples
1. Economic downturn	Rapidly assess and communicate demand reduction for external and internal talent pipelines
2. Large employer closures and relocations	Render outplacement and coordinate retraining assistance
3. Provider closure or program discontinued	Shift demand to alternative preferred providers
4. Technology and staffing model shifts	Upskill current workers and communicate changing skill needs to preferred providers
5. Pandemics	Shift to remote work and learn platforms; rapidly assess and communicate demand shifts; and repurpose talent pipeline to serve adjacent industries with priority needs
6. Natural disasters (e.g., wildfires)	Shift to remote work and learning platforms
7. Government funding cuts for education partners	Activate public-private financing options for learners and programs (e.g., social impact bonds and employer ISAs)

More than just an opportunity to develop contingency plans, TPM allows partners to use a structured process to get the facts straight on the overall impact of a disruption on all partners so that a commensurate course of action can surface. While employer collaboratives should explore ways to prevent and mitigate the effects of a disruption, even the best prevention or contingency plans will require a response in both the short term and the long term that needs to be managed by the collaborative. The TPM framework provides guidance on how to take immediate action in the short term based on the nature of the disruption, while preparing employers and their education and workforce partners with a set of strategies and tools to plan a longer-term recovery. It also produces data and analysis that help prevent chasing well-intended solutions that are not the right fit for the problem(s) at hand.

It should be noted that not all disruptions can be predicted or planned for adequately in advance. Even when your collaborative has not had the opportunity to plan for a disruption, you can still use the TPM framework and the strategies therein to provide a structured short-term response and to plan a long-term recovery.

With a system like TPM in place, communities large and small will have a set of workforce tools that will improve their resiliency and the continuity of critical partnerships, and will enable them to produce better information during a disruption—information that will be critical for short-term and long-term decision making. Table 6.11: Applying the TPM Framework to a Disruption shows some possible actions that employer collaboratives should consider in developing their prevention or contingency plans.

Table 6.11: Applying the TPM Framework to a Disruption

TPM Strategy	Short-Term Response	Long-Term Recovery
<p>Strategy 1: Organize Employer Collaboratives</p>	<ul style="list-style-type: none"> • Implement existing prevention or contingency plan(s), monitor effectiveness, and adjust your plan(s) as needed. • Revisit the focus of your collaborative and determine if its relevance and criticality has gone up or down in the short term. • If your collaborative’s focus is less relevant in the short term, determine if there are ways your talent supply chain can be repurposed to meet the needs of other workforce priorities in an adjacent industry. 	<ul style="list-style-type: none"> • If the focus of a collaborative has been de-prioritized in the short term, make sure the collaborative has the processes in place to rapidly revisit its original focus once the recovery has begun. • In times of recovery, critical positions may become more urgent with less supply and fewer partners focused on the collaborative’s needs. It is imperative that employers brainstorm a variety of recovery scenarios and have systems and processes in place to ramp up quickly in order to manage their long-term needs.
<p>Strategy 2: Project Critical Job Demand</p>	<ul style="list-style-type: none"> • Determine if demand has gone up or down based on the relevance of the jobs given the nature of the disruption. Revisit your original projections and adjust them based on the changed business environment. • Share the results of your findings with your provider partners to manage expectations. 	<ul style="list-style-type: none"> • Develop demand projections based on a variety of contingencies and assumptions about the recovery and how demand may change based on those assumptions. • Be transparent with your provider partners to build trust and to be clear on what to expect given a number of variables that are likely outside of your control.
<p>Strategy 3: Align and Communicate Job Requirements</p>	<ul style="list-style-type: none"> • If the focus is more relevant, then revisit the hiring requirements to remove barriers to entry and adjust to accommodate for workers from an adjacent industry. • If the focus is less relevant, then crosswalk the job qualifications to adjacent industries that have urgent needs to determine level of fit between jobs. 	<ul style="list-style-type: none"> • If the focus was more relevant in the short term, revisit future hiring requirements based on what was learned during the short-term response. This includes solidifying competency and/or skills-based requirements and relaxing credential and education-level requirements. • If the focus was less relevant in the short term, then revisit longer-term hiring requirements and reduce barriers wherever possible to improve access to talent much earlier.
<p>Strategy 4: Analyze Talent Supply</p>	<ul style="list-style-type: none"> • If the focus of the collaborative is more relevant, revisit the capacity of existing providers and their ability to meet the adjusted demand. • In addition, identify alternative sources of talent, including a mix of upskilling opportunities and external hiring from nontraditional providers. • Lastly, explore hiring from adjacent industry sectors and engage in competency mapping in partnership with other employer collaboratives (see Strategy 3 above). 	<ul style="list-style-type: none"> • Regardless of whether the focus of the collaborative is more or less relevant, revisit your analysis of suppliers to determine how the environment has shifted. • Some external providers may no longer have relevant programs or their capacity may have significantly changed. • New providers may have emerged that have excess capacity that can be accessed. • You may have identified job-to-job flows for upskilling within your industry, or from adjacent industries, that should be part of your long-term solution moving forward.

Table 6.11: Continued

TPM Strategy	Short-Term Response	Long-Term Recovery
<p>Strategy 5: Build Talent Supply Chains</p>	<ul style="list-style-type: none"> • Signal changes in demand to your preferred providers early and often and share with them the results of your data collection. • If your focus is more relevant, then explore with your providers how to ramp up capacity and accelerate training and placement. This includes working with and onboarding new preferred providers and exploring upskilling opportunities. • If less relevant, then work with your preferred providers to ramp down training temporarily or adjust capacity to meet reduced demand in the short term. In addition, if your talent supply chain can be a feeder for an urgent, adjacent sector, then work to temporarily repurpose the value stream, including upskilling opportunities. • Assess learner needs and adjust public and private incentive offerings accordingly. • Prepare to make significant changes to your value stream map and how learning is delivered and managed (e.g., moving to remote platforms). Also, revisit your risk analysis to brainstorm new potential risks that can be predicted and managed. • Revisit performance expectations and pain points and recalibrate your scorecards accordingly. Adjust for new types of providers you are working with or new upskilling solutions. 	<ul style="list-style-type: none"> • Given changes to the environment, determine if the same mix of preferred providers remains relevant. This includes providers you were working with pre-disruption, and providers you may have onboarded during the disruption. If you added upskilling opportunities into your short-term solution set, then determine if they will remain part of your longer-term strategy. • Decide which changes to your value stream map (e.g., remote learning platforms and options) and risk analysis should become permanent and which should be part of future contingency plans should the disruption occur again. • Continue to share updated information gathered in Strategies 2–4 with your partners. • Share multiple forecasting scenarios to prepare for a variety of contingencies to mitigate under- or overshooting demand. • Work closely with your preferred providers to determine the right mix of public and private incentives to aid in the recovery and to restore continuity of the talent supply chain. • Continue to adjust performance expectations as you transition from short-term solutions to long-term recovery.
<p>Strategy 6: Engage in Continuous Improvement and Resiliency Planning</p>	<ul style="list-style-type: none"> • Ramp up and prioritize the activity of continuous improvement teams. • As needed, introduce new talent pipeline continuity metrics and monitor them closely while making improvements all along the way. 	<ul style="list-style-type: none"> • Make permanent any new talent pipeline continuity metrics. • Ramp up and prioritize the activity of continuous improvement teams to ensure a smoother and more responsive recovery. • Establish new or make changes to existing prevention and contingency plans based on lessons learned and your experience with the disruption.

Exercise 3



Leveraging TPM for Resiliency Planning

Using Table 6.10 on page 28, pick one or more possible disruptions and identify potential prevention or contingency plans to avoid or mitigate the adverse effects of the disruption on your talent pipeline.

Disruption 1:

Prevention or Contingency Plan 1:

Disruption 2:

Prevention or Contingency Plan 2:

Now using the same disruptions and prevention or contingency plans you selected, identify the short-term response that you would need to carry out using one or more TPM strategies. Next, identify how you would use the same strategy to help facilitate a long-term recovery.

Disruption	Prevention or Contingency Plan	TPM Strategy	Short-Term Response	Long-Term Recovery
Disruption 1	Plan A			
	Plan B			
Disruption 2	Plan A			
	Plan B			

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:

- Identify an improvement opportunity and establish an improvement team to address it.
- Use the five-step continuous improvement process to address your improvement opportunity.
- Explain major decisions, actions, and common mistakes in each step.
- Develop prevention or contingency plans for potential disruptions.
- 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 and resiliency planning.

NOTES