



A Leader's Guide to Manufacturing 4.0

Four Talent Strategies to Transform Your
Organization for the Future







“There is no more fundamental issue facing U.S. manufacturing today than the epochal demographic shift underway.

As baby boomers retire and as companies seek to replenish their executive, managerial, and worker ranks, the industry is also transitioning to a new business paradigm based on advanced technologies, putting a premium on new attitudes, abilities, and skills throughout the workforce.”

— *David R. Brousell, Manufacturing Leadership Council, Frost & Sullivan*



Four Game-Changing Talent Strategies

The strategies in this guide will help you organize your priorities around a long-term plan for retooling your operation into one that consistently outperforms the competition.

When implemented across all levels of your organization, you'll achieve "extreme lean" and successfully monetize your investments in Manufacturing 4.0.

For your reference, we've created a checklist on the following page that captures the executable how-tos for each of the four, non-sequential strategies.



Automotive



Global

KEYS TO ICONS: Throughout this guide, you'll notice many Automotive and Global examples denoted by these icons. And, while the auto industry has experienced explosive growth worldwide and has been particularly affected by M4.0-related growing pains, these examples are applicable to all industries and regions. The global examples were drawn from DDI experts around the world.

STRATEGY #1:

Expand your focus from product-only to talent (leaders and workforce)

- Define what success looks like
- Evaluate readiness
- Build critical mass and prioritize mission-critical roles
- Engage key stakeholders and create accountability
- Build initial awareness for your leadership strategy
- Use talent analytics

STRATEGY #2:

Make engagement the primary agent of change

- Operationalize engagement skills
- Design SOPs for workplace interactions
- Monitor gaps in engagement
- Build ownership and involvement
- Coach to build future capability

STRATEGY #3:

Build a talent supply chain

- Identify new upstream talent supply sources to avoid future talent shortages
- Demand a radical shift in your hiring and promotion practices
- Consider contingent workforces to manage production volume
- Audit your practices for gender diversity

STRATEGY #4:

Accelerate leaders to M4.0

- Simulate what good looks like
- Leverage high-potential pools
- Avoid scrap learning
- Accelerate development across the pipeline
- Build the business case for women leaders



Transforming to Manufacturing 4.0 and Radically Rethinking Your Talent

You've eked out every drop of cost savings by improving your machines, materials, and processes. And while you've seen jumps in productivity and your operations have become more agile, manufacturing is continuing to change faster than you can innovate. You're running hard to just keep pace with digitization, automation, expansion, and shifts in customer demand and employee demographics—the megatrends collectively known as “Manufacturing 4.0” (M4.0).

This new M4.0 paradigm comprises major technological innovations, including advanced robotics, IoT (Internet of Things), sensors, mobile services, 3D printing, and data analytics. Companies now have the power to track the production of their products from start to finish, resulting in real-time feedback about product status, material availability, equipment maintenance, etc.

As a result of these megatrends, the next 10 years will see greater change than was seen in the last half century—much of which could undermine substantial gains gleaned from lean. Ironically, it will be the engineering advances driven by today's manufacturing leadership that will cause this backslide. Why? Two reasons: First, companies mistake continuous improvement efforts for the radical level of innovation required to meet the challenges of M4.0. This is akin to focusing exclusively on improving a rail system, but missing the fact that competitors moved on to air travel.

Second, many organizations are preparing M4.0 strategies focused on digitization (of operations, process, and product redesign) and customer demand, while failing to recognize the role people play in linking the two. They overlook critical skill gaps that threaten customer connectivity by breaking the relationship between product innovation and need.

From the factory floor to the C-suite, manufacturers are missing people with the mindsets, skill sets, and readiness levels to cope with the gargantuan leaps forward in engineering and production. On the line, for example, we already see workers being driven further and further away from the production process. Yes, hands-on tasks still exist but, increasingly, most of the heavy lifting is being performed by minds, not muscle.

New, future-looking M4.0 skill sets must evolve as quickly as your engineering and design innovations and your customers' buying preferences (Table 1). Lean manufacturing tools that address only the challenges of the moment won't compensate for the shift in required skills.



Why It's Mainly a Leadership Problem

What is less-in-your-face apparent is the lag in manufacturing leadership, which is being far outpaced by technical innovation. Even more problematic is that the gap between leadership skills and ever-evolving production systems is widening. Without relevant, updated skill sets, leaders tend to break ranks and improvise how they engage the workforce, drive results, and meet customer needs. This variance in leadership performance lowers production quality and raises costs.

It's little wonder that only 37 percent of manufacturing leaders rate their overall leader quality as "high" according to the Global Leadership Forecast 2014|2015, conducted by DDI and The Conference Board.

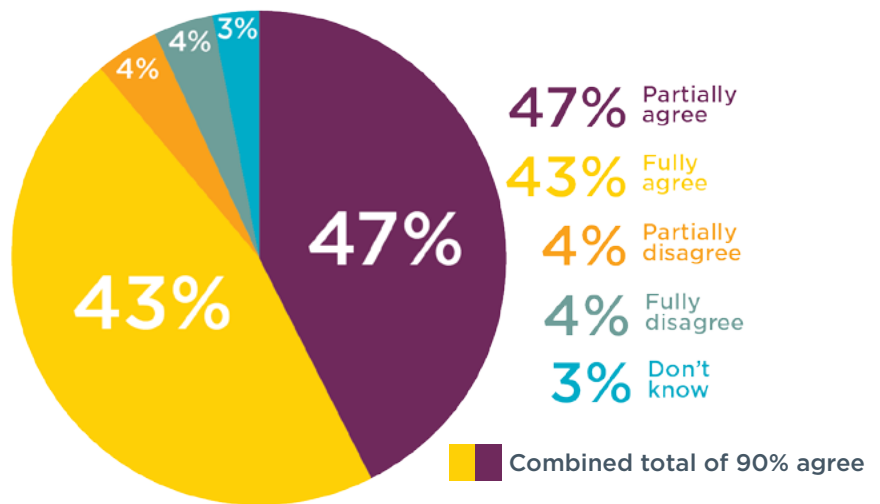
So, how likely is it that M4.0 will change leaders' jobs? In a recent poll by the Manufacturing Leadership Council, 90 percent of respondents agreed that leaders' skills would change significantly (Figure 1).

TABLE 1: SHIFTING REQUIREMENTS FOR MANUFACTURING WORKERS

Past requirements for workers	Present/Future requirements for workers
Experience	Ability to learn
Physical capability	Mental muscle, ability to adapt quickly to changing roles
Mechanical aptitude	Digital and team-collaboration aptitude
Existing knowledge, basic education	Higher-level education, continuous learning
Single-process motivation	Motivation to work in a team across multiple processes
Detailed assembly tasks	Manufacturing process monitoring
Willingness to follow instructions, with occasional contributions to process improvements	Willingness to own the line and assume responsibility for meeting production and quality goals, and constant improvement
Manual data tracking	Real-time data usage

> FIGURE 1: SIGNIFICANT LEADERSHIP SHIFT FORESEEN IN THE M4.0 ERA

Extent to which manufacturers agree that the emergence of the M4.0 era (including cyber-physical systems, digitization, and information-driven factories) requires a substantially different approach and set of skills on the part of manufacturing leaders.



- Manufacturing Leadership Council, 2015 -

Which Skills Will Be Needed by M4.0 Leaders?

According to hundreds of manufacturing leaders we interviewed around the globe, new or enhanced digital, engagement, interpersonal, change, navigation, decision-making, and customer experience skills top the list.

At all levels, leaders will need to become:

- Enterprise-wide, horizontal thinkers
- Empowered, engagement builders
- Customer-connectivity drivers
- Innovators and motivators
- Extreme lean adopters
- Data dot-connectors

While these findings are cause for concern, they also scream “opportunity” for organizations that understand that plant performance, regardless of technology, is ultimately a function of the quality of their leadership and workforce.

The research is clear; manufacturers who’ve turned talent into their primary competitive advantage have realized phenomenal results, including:

- Productivity gains of 40 percent
- More than \$2 million in cost savings from new hires’ continuous improvement innovations

- Staff turnover reduced from 33 to 4 percent
- Savings of over \$500,000 per day, due to a seven percent improvement in the quality of the number of cars ready to leave the line
- Production increase of 43 more cars per shift (on average) for an auto assembly plant

Why This Guide

Given the enormity of the changes occurring in manufacturing (specifically, in workforce and leadership jobs), we’ve designed four overarching strategies to reduce the technology-talent gap—and resultant loss of competitiveness—which is headed our way. A product of four-plus decades of research and experience working with hundreds of manufacturers, these strategies will help you create a fully engaged workforce that strives for continuous improvement—and true innovation—to sustain your competitive advantage.

What follows is a how-to guide to our four game-changing talent strategies—to help you survive and thrive in M4.0.



Nobody Said It Would Be Easy

This is your guide to a strategic transformation through accelerating talent in the M4.0 world. If you are thinking or hoping that this can be accomplished in a matter of months, you're in for a rude awakening. To secure the kind of best-in-class talent that your customers now expect, you're looking at an initial culture-building effort of several years. There are no shortcuts. A sustainable, competitive advantage cannot be achieved through technological and process innovations alone.

Transformation is hard, but the status quo isn't an option. There are many inconvenient truths around transformational change that warrant thoughtful discussion. However, there are also counteractive steps leaders can take to ensure your change initiative gets off the ground and stays on track (Figure 2).

> **FIGURE 2: WHAT LEADERS CAN DO TO CHALLENGE THE STATUS QUO**



- Emerges as a consequence of a series of structure, process, and behavior changes over time.
- Must include an involved approach to build ownership.

- Can't be achieved in a few "off-site meetings."
- No one can come in and "do it for you."
- Timing is not under your control. Starts and stops will occur due to disruption, defensiveness, and revisions to the past.
- False starts are difficult to overcome. Be ready.

- Rewire old habits and create new ones to effect productive changes.
- Simulate the expected environment so leaders can practice future behaviors.
- Encourage application of new skills to drive the transformation.
- Plan for critical mass—initial adopters who act as change agents with enough influence to change status quo mindsets.
- Start with "beachhead" areas, then scale to less-ready areas.
- Collect data tied to the transformation.



STRATEGY #1:

Expand your focus from product-only to talent (leaders and workforce)

“Sure, the priorities in manufacturing are trade, taxes, the environment, etc. But the focus should be on people more than anything. You can’t focus enough on putting money into the factory floor level.”

— *Jerry Jasinowski, The Manufacturing Institute*

You can't keep throwing dollars at new—new product features, new applications, new technologies. By the time your customers have access to your many product-related innovations, your competition has caught up and commoditized your “new” into “so what.”

If you accept that you can't out-digitize or out-widgetize your competitors, then you need a new point of differentiation—one that is sustainable. Your talent, both leaders and workforce, is the singular value-add differentiator that customers will recognize, value, and pay a premium for.

More and more, consumer preferences and purchasing habits are driving mass individualization. Yes, a highly responsive production line is critical, but so is the talent that can connect with the hearts and minds of the customer. Innovation is meaningless if not connected to the end-user. Thus, to create a customer-connected culture, you need an engagement-building talent strategy, which is fully integrated with your business and puts a premium on high-quality skills and interactions for both leaders and your workforce.



“Local leadership is the primary success criteria for making a transformation a success. It is the make or break element for success. In order to drive transformation, leaders must establish a compelling reason for change, enroll the organization in that change, then celebrate small wins often and openly.”

—Pietro D'Arpa, P&G

Ready to create a talent strategy that produces engaged employees and leaders that are connected to your customers? Here's how:

1. Define what success looks like

Spell out future success for roles that are key to driving engagement without relying on old definitions of what “good” is. Most organizations miss tying the business strategy to their core challenges and fail to consider what must be done differently to execute that strategy. We refer to these challenges as business drivers, which enable an objective, measurable connection between strategy and talent. Now, by this we are not saying that there is only one limited and narrow definition of what the “new good” looks like. The new good should be a large set of behaviors, some new and some old.

Once identified, business drivers are mapped to competencies and personality factors that both enable and derail success. An assessment or evaluation of business drivers (discussed in the next step), determines whether leaders are ready to drive long-term business success. Figure 3 shows how competencies and personality attributes are wired to a business driver (Engage Employees, for example).

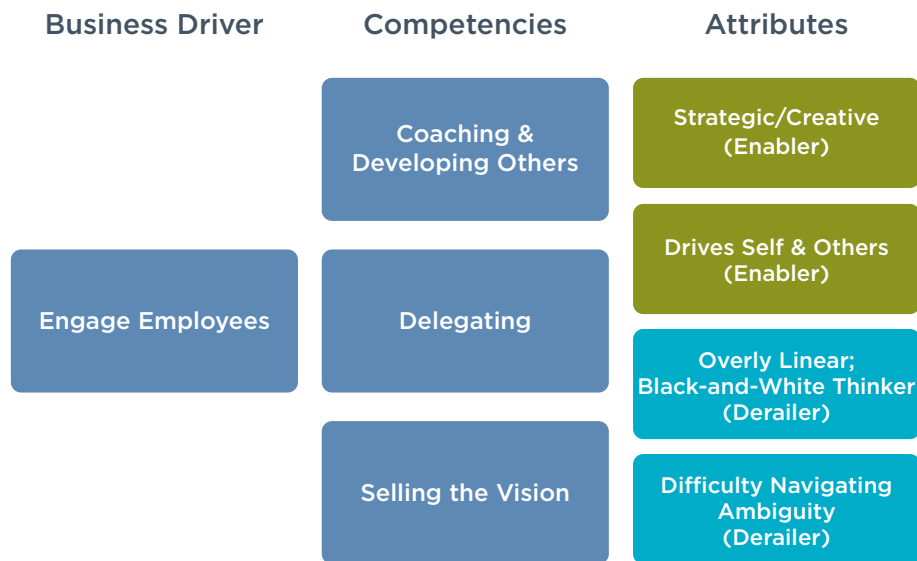


DDI Global Perspective: Searching for competitive advantage

Slow growth in Europe is forcing organizations to look for new ways to run their businesses and create new revenue streams. There is a growing realization that people, not automation, should be the focus for future innovation. And for people to be innovative, they should be engaged and work in environments conducive to creativity. In many ways, Europe is fortunate. Compared with rapidly growing emerging economies, its growth hasn't outpaced educational pipelines and on-the-job development opportunities. Europe also has a culture that has long celebrated the invention and application of new ideas, giving it an edge over more traditionally hierarchical cultures. Still, its advantage is rapidly eroding and the global playing field is leveling.

FIGURE 3: HOW ENGAGEMENT LINKS TO KEY BUSINESS BEHAVIORS

Business Strategy: Move from product-only focus to customer focus



Once you've identified the key business drivers that your organization will need for refocusing your product-only strategy, you can then define comprehensive *Success ProfilesSM* that include level-specific competencies plus personal attributes, experience, and knowledge. See Figure 4 for an example of a *Success ProfileSM* anchored on a business driver.

Developing comprehensive, role-specific *Success ProfilesSM* will set your talent apart from competitors who continue to make key selection decisions based on specialized experience and knowledge—both of which will become obsolete.

These profiles will also maintain a connection between your strategy and your skill sets. When priorities change, newly in-demand competencies

can be substituted or added into your profiles—and appropriate candidates selected or trained—to lead your organization forward.



Now let's apply this *Success ProfileSM* example to a real M4.0 digital leader in the auto industry. The auto industry, like many manufacturing subsegments, is becoming more digital and has plans to increase revenue substantially from M4.0, and digital products and solutions. For example, big car makers are infusing more autonomous driving features into their existing vehicles. Cars are now able to parallel park themselves or apply the brakes in cruise control. As a result, leaders' jobs are changing at all levels and functions. Auto manufacturing leaders must, therefore, work more with internal and external

► **FIGURE 4: LINKING SUCCESS CRITERIA TO BUSINESS PRIORITIES**

Business Strategy: Move from product-only focus to customer focus
Business Driver: Engage Employees



What Makes a Success Profile?

- **Knowledge** is time-sensitive. What is relevant today will be obsolete tomorrow. The only solution is to employ people who are adaptable and accepting of new ways of doing things—leaders with a passion for learning, improving, and flexing with the times.
- **Experience** is the easiest profile component to develop through education and on-the-job learning, and also the easiest to assess. Still, you can't rely

solely on past accomplishments or you'll succumb to the technical trap—hiring for immediate skill needs, which will quickly become obsolete. Instead, for a more holistic view, use all four profile components when considering candidates.

- **Competencies** are important selection criteria. While many can be developed with time and training, others can't be learned. To maximize the return on your development dollars be sure to distinguish between the two.

- **Personal attributes** are key to job fit and, therefore, impact retention and performance. They're also very difficult, if not impossible, to develop, though they can be managed through self-awareness and tactics such as executive coaching. Both require innovative tools to assess meaningfully.

software engineers and new materials in the supply chain (e.g., glass and aluminum), while also determining how to best use 3D printing—all at greater speeds than even five years ago. All of these changes redefine “what good looks like.”

Carmakers are also sinking billions of dollars into the production of completely autonomous and electric vehicles by buying companies that can either convert existing vehicles into autonomous vehicles or produce autonomous cars from the get-go. These new

cars will require equally innovative leaders—entrepreneurial, market-disrupting thinkers—to step into and manage a whole set of new jobs. These digital leaders will require a different Success Profile—with different competencies—and have needs that are distinct from other M4.0 leaders. To illustrate, compare the two Success Profiles (Table 2) and see how the definition of success will continue to change to meet the needs of growing digitalization.

TABLE 2: SUCCESS PROFILES—TWO TYPES OF M4.0 LEADERS

	Auto M4.0 Leader	Digital Auto M4.0 Leader
Knowledge	<ul style="list-style-type: none"> • Competitive differentiation • Supply chain expertise • Smart manufacturing application 	<ul style="list-style-type: none"> • Competitive prediction • Next generation smart and electric capabilities
Competencies	<ul style="list-style-type: none"> • Broadens business value • Creates a service reputation • Drives an engaged workforce • Sells a connected customer vision 	<ul style="list-style-type: none"> • Adds value through digital connectivity (sensors, data flow) • Creates/designs disruptive innovation • Connects to an engaged workforce • Sells an integrated solution vision
Experience	<ul style="list-style-type: none"> • Customer experience data analysis • Has built engaged workforces • Has worked in a smart manufacturing environment 	<ul style="list-style-type: none"> • Customer experience data analysis • Has worked with engaged teams • Has produced IoT disruptive technology with speed-to-market
Personal Attributes	<ul style="list-style-type: none"> • Emotionally intelligent • Drives self and others 	<ul style="list-style-type: none"> • Emotionally intelligent • Drives self and others • Navigates ambiguity • Avoids isolation

2. Evaluate readiness

When everything is riding on a key piece of equipment or new process, what do you do? You test it via trial and error using simulations and tests, evaluate the data, look for root causes, and develop contingency plans. In your transformation, the future of your business is riding on the readiness of your leaders to execute your strategy. Fortunately, scientific assessment technology, similar to equipment simulations, can simulate a day in the life of a manufacturing leader and yield hundreds of behavioral and dispositional data points which, when evaluated correctly, predict readiness and the future success of your leaders to drive change and engagement.

With assessment, you can evaluate leaders individually or in groups, and make decisions about whether to “buy vs. build” the leadership talent you need. For example, should you buy leaders that have the skills you need from the outside or is it more cost-effective to build your own with leaders from inside your organization?

You can also create a “readiness” dashboard using your assessment data (Figure 5), along with key leadership data you have in your company to help drive senior management decisions about placement of leaders in key roles to drive the strategy forward. Some factors pose a higher risk than others to the organization.



DDI Global Perspective: Identifying next-generation talent

A global power management company with more than 100,000 employees and revenues in excess of \$22 billion was facing slowed growth and price erosion due to the commoditization of core products and increasing price pressure from new competitors. New product development and the company's entrepreneurial spirit had sputtered, and the organization was struggling with significant debt and fixed costs due to recent mergers and acquisitions. In addition, it was doing a poor job of identifying the "next-generation" of top leadership talent because of its workforce expansion around the world.

This organization needed a way to answer two questions: Who in the organization was "ready now" to step into general manager positions and what could it do to accelerate "next-generation" general manager talent? Partnering with DDI, the organization identified its relevant business drivers and the competencies to which they are wired, and built a full-day executive assessment and a development program targeting those competencies. The organization, with DDI, also created a highly tailored Strategic Talent Review process.

As a result of the assessment, the organization discovered candidates with the potential to step into future-focused general manager roles. These high potentials were given individual development plans, and some were later placed in an intensive leadership acceleration program.

FIGURE 5: EXAMPLE OF A GROUP READINESS DASHBOARD

Risk Level	Readiness Factor	Current Group Readiness Level
HIGH	Skills Assessment Scores Who can manage the complexities of expected growth?	
HIGH	Retirement Level Out of those who are ready, how many are close to retirement? What talent supply gaps will retirements create?	
HIGH	Supply/Bench Out of those who are ready, how many have successors lined up?	
MEDIUM	Role Complexity Are competencies growing in difficulty? What amount of role change is needed?	
MEDIUM	Job Scope What roles and skill sets will need to be created? What scope of change is needed?	
LOW	Motivation Assessment Scores Can leaders navigate ambiguity to execute the strategy?	

These leaders, as a group, are Not Ready for transformation. While motivated, half lack the skills needed. And, because so few have successors waiting in the wings, the supply of these leaders is insufficient to meet impending demand.

3. Build critical mass and prioritize mission-critical roles

No transformation strategy will succeed without reaching critical mass or adoption. Critical mass is the number of adopters sufficient to accelerate the rate of acceptance and ensure that a new idea or new way is self-sustaining and creates further growth. It also implies that, while not everyone will embrace your transformation, enough see the potential and embrace it. Critical mass can mean the difference between thriving vs. surviving in Manufacturing 4.0.

To achieve critical mass, consider the following:

- The number of employees you'll need (ideally 15 to 30 percent of the workforce)
- The strength of adopters' networks—the more

networked your adopters, the greater likelihood of a chain reaction

- Adopters' ability to sell the value proposition
- Adopters' reputation and relatability to the rest of the workforce
- Using high-potential leaders to help as change agents

Building critical mass can be aided by leveraging mission-critical roles in the organization as beachhead areas. Prioritizing your most important focus areas helps the organization gain more traction, more quickly. Why? Because leaders in these areas tip the status quo balance and generate energy to move your organization forward. Once these leaders are identified, investment should be focused accordingly (Table 3).

TABLE 3: MISSION-CRITICAL ROLES PRIORITIZE EFFORTS AND ACCELERATE RESULTS

Mission-Critical Role	Why Pivotal	How to Invest Differentially
Frontline Leaders	As the primary face of the company, high-quality frontline leaders are critical to effective labor relations and all KPIs.	Better hiring practices here will reduce training costs down the road. Increasing frontline skills is an investment in future KPI results and employee retention.
Quality Control Leaders	Overreliance on quality tools limits outcomes. Accelerating the caliber of the quality leader role will help to influence stakeholders and create a culture of quality excellence and more customer connectivity—a sustainable advantage.	Design a robust assessment and development process geared to the specific Success Profile of your quality leaders. Consider the must-have behaviors to build your competitive advantage. Do this for all global quality leaders and their top internal stakeholders.
Plant Managers	Consider these leaders the lynchpin connecting your production strategy to your customers' needs and your bottom-line results. This is a critical transition role between the workforce and your executive leadership ranks.	Create ongoing assessment and development with plant managers based on applicability to the larger multi-site leader role (as opposed to the too-common current needs which create scrap learning).
Advanced Manufacturing Technology Roles	As your best and brightest, technically speaking, incumbents in these roles typically lack key leadership skills to drive change and engage teams.	Determine the quality and quantity of your leadership bench for these roles, and accelerate the supply of specific leadership skills needed to advance your technology and increase your competitiveness.

4. Engage key stakeholders and create accountability

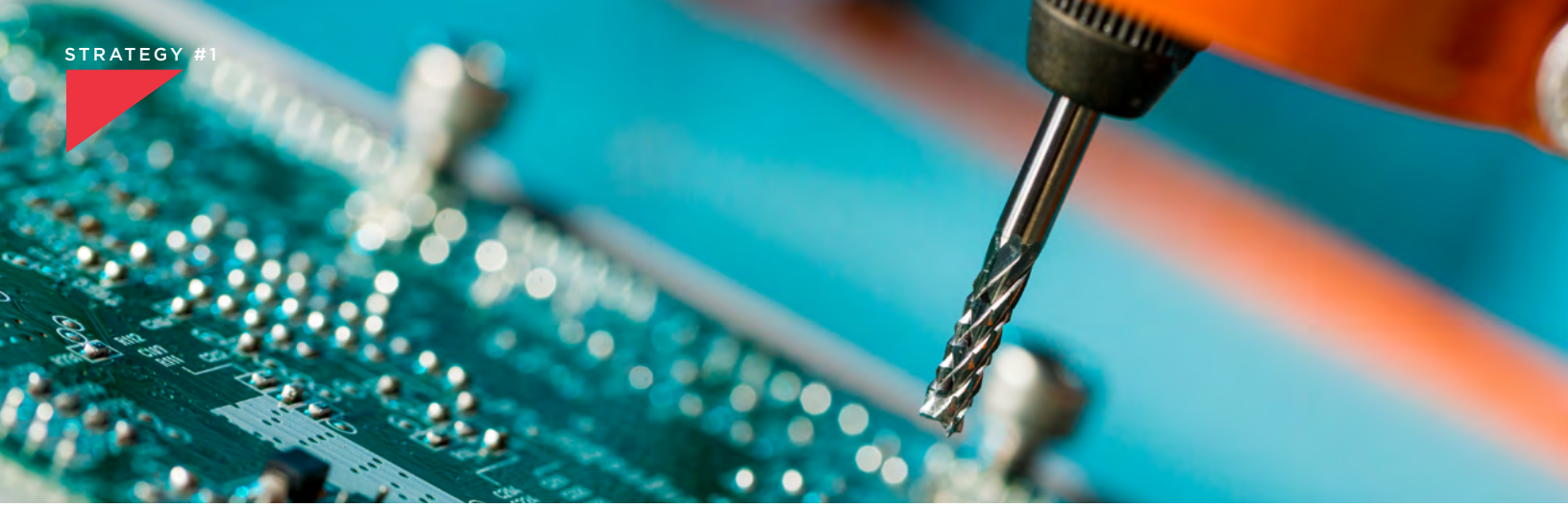
Accountability for engagement and skills acquisition is key to transformation, but often gets lost in organizations' day-to-day struggles for survival. Weaving together accountability for building the culture (the WHATs) and for demonstrating the desired behaviors necessary to get it done (the

HOWs) ensure that changes will stick. Tying both to performance objectives supports further follow-through.

Successful transformation is also dependent upon commitment from senior executives, and collaboration and cooperation between them and HR. Table 4 clarifies what each must do to be successful.

TABLE 4: HOW EXECUTIVES AND HR HELP DRIVE THE CULTURE-BUILDING PLAN

What Executives Must Do Well	What HR Must Do Well
Make talent/culture a top-five objective in your organizational strategy.	Contribute data relevant to challenges, and develop recommendations to overcome challenges and gaps.
Prioritize geographic regions, functions, and units to drive best results based on business requirements.	Develop communications for the plan that connect to the business case and build confidence in execution.
Use mission-critical and high potential leaders to shape and architect the three-year plan.	Promote success stories to line leaders, to celebrate progress and reinforce desired behaviors.
Assign accountability for the plan and the measurement of results to line executives, not sub-teams, task forces, or HR.	Include objectives for executing the plan and for demonstrating effective behaviors as part of leaders' performance objectives.
Leverage a dashboard to determine how far, how fast.	Create a dashboard of outcomes and results that measures change progress.



5. Build initial awareness for your leadership strategy

Now that you've chosen or can identify your mission-critical roles and key stakeholders, give them the word to take action. Articulate and publicize your strategy as you would any other strategy (e.g., growth, product). For example: "Advance the talent and engagement of our leadership and workforce to best meet the changing needs of our global customers." Make sure your articulated strategy carries the proper weight so people understand the significance.

Help build awareness by using visual messaging and storytelling. Engage employees' hearts and minds by sharing your personal connection, feelings, and opinions on the transformation, or enlist clients to share their stories about their challenges and needs. People would rather be made part of the change conversation than being alerted to sweeping change via a poster or email. Innovative ways to do this, such as gamification, photo contests (effective behaviors captured on camera), prizes (gift cards for meeting team production and quality goals), team recognition events, or one-on-one time with senior managers can go a long way toward communicating and building awareness in an engaging way.

Many companies are also using social media to convey messages and create discussions. One Chinese organization utilized national social media to share its transformation success stories, and built the critical mass it needed to execute on M4.0 as a result.

6. Use talent analytics

As a leader, you are used to plowing through lines and lines of data about your supply chain and operations. But how often do you use data about your people to improve your KPIs? As an M4.0 leader, you will be integrating more and more data and should become familiar with best practices around people analytics. Historically, you've likely looked at convenient data about turnover, unscheduled overtime costs, absenteeism, etc. That data is what we refer to as traditional measurement (Table 5).

While traditional measurement can be helpful, its value is limited in the M4.0 world. A better practice is the use of predictive analytics, which uses data to identify gaps and redirect talent accordingly—before issues occur (similar to the use of data for predictive maintenance). By mapping out leadership readiness across the organization, you can see how proficient or ready your leaders and teams are in terms of the current business strategy and the type of development they'll need to become ready. This predictive data can be tied to a raft of other data, including cost management and time-to-market, and used to present a compelling case to the C-suite for what and whom will or won't work.



DDI Global Perspective: Creating a common leadership language

Accelerated expansion of the auto industry, focused on central Mexican cities (e.g., San Luis Potosi), has created a Mexican war for talent and limited the supply of the future-focused skills. And, because leaders hail from a variety of nations, a common language for leadership based more on respect than technical expertise must be created. To do otherwise is to risk launch or expansion failure.

TABLE 5: MEASUREMENTS VS. ANALYTICS

	Traditional Measurement	Predictive Talent Analytics
Type of Data Sets	Product impact focus <ul style="list-style-type: none"> • Survey perceptions of impact • Correlating scores with an outcome (sales quote) 	Business intelligence focus <ul style="list-style-type: none"> • Large number of data sets (30) • Future scenarios using revenue, execution, and readiness to optimize and reduce risks across whole departments, roles, and functions
What You Gain from the Output	<ul style="list-style-type: none"> • Snapshots of data points • Proving a product works 	<ul style="list-style-type: none"> • Trends and themes of strengths and risk points based on larger data sets • Results are used to drive the business
Past or Future Focus	<ul style="list-style-type: none"> • Past: Uses current or past data to report status of yesterday and today 	<ul style="list-style-type: none"> • Future: Leverages data sets to anticipate future trends and risks
Who Cares about the Outputs?	<ul style="list-style-type: none"> • The project manager 	<ul style="list-style-type: none"> • The C-suite



“Addressing culture is a must, specifically developing leadership skills. A holistic approach will allow behavior change to “stick,” ensuring we build leadership skills and model the right behavior to create the culture we aspire to have.”

—Liliana Ramirez-Jones, Ford Motor Company



STRATEGY #2:

Make engagement your primary agent of change

“Leaders in manufacturing often try to become a specialist of every single process. This is okay as long as it supports the teams and helps them make their own decisions. I believe that more brains are smarter than one brain. Get the team into the decision-making process. Let them be a part of the idea-gathering in critical situations, where quick solutions are needed. Encourage them to make decisions, even if they don’t know the exact solution. And believe in your teams or change them.”

– *Peter Hochholdinger, Tesla*

Next-generation businesses will be as invested in their engagement strategies as in their operational strategies. At the core of a top-notch, lean manufacturing strategy is a culture of lean—an environment with an engagement mindset that ensures lean is sustained beyond the launch of tools and technology. What best-in-class manufacturers have demonstrated so successfully is taking organizational goals and making them part of their cultural DNA via engagement.

Engagement is the Lynchpin to Customer Connectivity

Employee engagement is the emotional commitment employees have to the organization and its goals. It is the energy that fuels your people engine and is critical to redirecting your product-only focus. Yes, the product is ultimately paramount, but for your product to add value and provide the desired customer experience, your workforce must be emotionally committed to what it does. Every day, they must engage their minds as much, or more so, as their hands. They are the machine behind the machine.

Engagement is also about ownership—being accountable, responsible, and invested in a role. Two key things drive ownership: voice and choice. Your employees need to have a voice in their work and your organization and the ability to choose how that work gets done. If you want them to engage with your customers, move them from mere order-takers to value-deliverers.

Engagement is:

- ▶ The primary enabler of successful execution of any organizational strategy.
- ▶ Not a short-term initiative—never “achieved” or “finished,” only improved.
- ▶ Driven from the top—an organizational imperative, not an HR initiative.
- ▶ All about the job and culture fit.
- ▶ Impacted most by an employee’s immediate leader.
- ▶ Reached through the heart.

For senior leaders to operationalize engagement and initiate transformation, they’ll need to do more than merely invest in an engagement survey. They’ll need to “move”—not just measure—by building engagement skills. If not, and they fail to consider the engagement of their teams in favor of operations, you’re likely to experience high turnover, low levels of initiative, missed targets, and heavy-handed customer scrutiny.

Just how important is an engaged culture? Changing culture and understanding employee attitudes was the number one M4.0 challenge for leadership, in a recent poll of its members by the Manufacturing Leadership Council. Understanding the pace of change was a close second (Figure 6).



Executives need to “move”—not just measure—engagement.



DDI Global Perspective: Fostering engagement to grow lean

Manufacturers in China invest way more in the continuous improvement of facilities, equipment, and processes, than in “upgrading” employee capabilities. As a result, there’s a lot of capability going to waste. While many Chinese manufacturers have introduced lean processes, implementation remains an issue because leaders and employees are lacking the appropriate skills. They haven’t been trained to conduct efficient workplace interactions and promote employee empowerment and ownership. In most cases, Chinese manufacturers treat lean as a best practice in terms of process management, but not in terms of business management. Creating the sort of engaging environment in which lean can be both effective and sustainable depends on senior executives’ mindset and capabilities.

> **FIGURE 6: MANUFACTURERS’ MOST IMPORTANT LEADERSHIP CHALLENGES WITH M4.0**



- Manufacturing Leadership Council, 2015 -

➤ **FIGURE 7: THE INS AND OUTS OF ENGAGEMENT**



INTERNAL FACTORS

Communication: Leaders create the environment in which the workforce can be heard, has a voice, and is allowed to show what it knows.

Leadership Quality: Leaders must use high-quality interactions with employees as a standard operating procedure, in which employees have autonomy in their space, are allowed to fail within reason, and are allowed to create a digital, customer-connected future.

Performance Management: Leaders align expectations of both the WHAT and HOW of the “employee creator” to the KPIs for all employees as a standardized operating procedure.

Challenging Work: Leaders create opportunities for employees to interact directly with the customers and/or suppliers to better understand their needs, form relationships, and cross-train at multiple stations/areas.

Recognition/Compensation/Benefits: High-quality leaders know how to motivate employees with recognition and link individual and team efforts to compensation and benefits, for the total reward package.

Selection System: Leaders screen and hire employees who have the ability and disposition to connect with customers, a predisposition for quality and safety, and the skills for collaborating with colleagues.

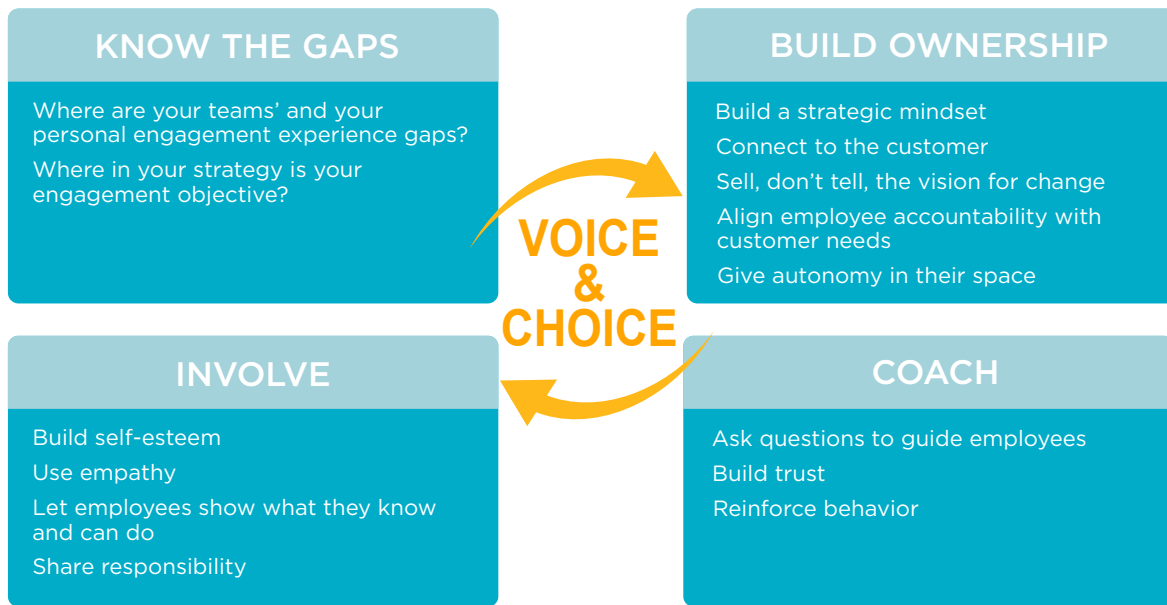
Career Development: Highly engaging leaders help their teams see the criteria for progression (either lateral or vertical), and provide the skill development resources to progress in their careers. A high-performance workforce expects this.

Many organizational factors are required to support leaders as you accelerate engagement and make it the primary agent for change. Figure 7 illustrates how you need to leverage all of these factors over time to change your product-only strategy and move the engagement needle. External factors, including the supply and demand of talent and your company’s brand, impact emotional commitment.

More powerful perhaps are the internal factors: development, leadership quality, degree of challenge, selection, recognition, etc. All of these are driven by a personally meaningful and motivating purpose that describes the impact the organization has on improving the lives of its customers.

Leaders must be convincing in conveying meaning that fuels passion. An organization’s purpose is the central power source that fuels engagement. It is the organization’s inherent reason to exist that motivates customers to buy and employees to act. Purpose drives passion—the kind that breaks the status quo and drives ground-breaking technology and experiences that delight the customer.

➤ **FIGURE 8: OPERATIONALIZING AN ENGAGEMENT TRANSFORMATION**



Voice and choice are at the heart of the engagement strategy. If you want employees to connect with your customers, teach them HOW to think, without telling them WHAT to think.

Ready to build engagement and power up your transformation? Here's how:

1. Operationalize engagement skills

Manufacturing leaders must master building engagement. Unfortunately, the data show that less than three percent are highly effective at key engagement-building behaviors, including:

- Selling the vision
- Influencing movement or inspiring passion
- Providing timely feedback
- Delegating and following up
- Evaluating and helping to close skill gaps

But, how do effective M4.0 leaders apply these skills? In Figure 8, we outline four steps to help leaders operationalize engagement skills.

2. Design SOPs for workplace interactions

Engagement is a product of effective interactions with employees. When, however, these critical interactions (team meetings, shift changes, changeover discussions, etc.) don't go well, they can add to the negative impact of the eight recognized forms of

waste: defects, overproduction, downtime, underutilized skills, transportation, inventory, motion (e.g., bending, lifting, reaching), and overprocessing. The end result? Organizations fail to meet the essential lean objectives of continuous improvement and improved performance.

While improving poor leader-employee interactions may sound simple, it can be as challenging as eliminating every other form of waste. One reason is that organizations are just waking up to the "people side of lean"; they haven't yet come to the realization that ineffective interactions are the root cause of much of the waste they've mistakenly attributed to other sources. Unlike the cause-and-effect relationship between defective products and reduced profit margins, for example, the connection between ineffective interactions and the bottom line isn't as readily apparent. This explains, in part, why the "ninth form of waste" (ineffective interactions) has been overlooked for so long.

The other part is that leaders don't recognize their own role in generating waste through their interactions. Perhaps a legacy from the "command and

control” era, many leaders follow a simple, one-way communication style of telling people what they need to do, and showing little concern for employees’ perspectives. It’s perhaps counterintuitive that more interactive discussions—which take more time—are actually more efficient and result in avoiding waste. Leaders who take the communication shortcut of “telling” without demonstrating respect, clarifying understanding, or seeking employee input also cut off opportunities to build employee commitment, solve problems more quickly, and build stronger team capability.

As with other operations, workplace interactions can benefit from a standard operating procedure. Key to the success of this type of SOP are leader behaviors that address both the personal and practical needs of employees. The *Interaction Essentials*SM (Figure 9) offer a structured, yet adaptable approach for meeting both. These include five steps—the Interaction Guidelines—that address personal needs, and five Key Principles that address practical needs. The Interaction Guidelines drive the dialogue process, and the Key Principles enable leaders to build esteem and trust, express empathy, and encourage involvement.

➤ **FIGURE 9: INTERACTION ESSENTIALSSM**

The *Interaction Essentials*SM are effective at eliminating the ninth form of waste, and can be used by leaders to address teams or interact with individual employees. Despite the difficulty of a particular coaching or feedback situation, leaders can use the Key Principles to demonstrate respect for others—a tenet of lean leadership.



While an engaged environment is now “table stakes” for most industries, many are failing to ante up. According to Gallup Daily tracking in February 2017, only 36 percent of employees in the U.S. are engaged (i.e., they are involved in, enthusiastic about, and committed to their work and workplace). However, the Global Leadership Forecast 2014|2015 showed that companies with high leadership and engagement are nine times more likely to outperform their peers financially.

3. Monitor gaps in engagement

Make it a point to observe and listen to the engagement experience in your area. How interested are employees in their work or the needs of your customers? Are they taking initiative or are they just “putting time in” on the job? Below are a set of example behaviors you may see or hear about the employee engagement experience that indicate whether you have engagement issues.

At your own site, which of the below do you see or hear?

- Slowing the line down or “rate busting”
- No sense of urgency when a piece of equipment is down
- Workers who don’t make eye contact when you or visitors walk by their workstations
- Excessive absenteeism
- Tardiness
- Excessive turnover
- Little or no participation in continuous improvement meetings or programs
- Leaders spending time with HR to resolve conflicts on the line
- Workers who stop working or slack off if they have made their goal for the day
- Little communication at shift change

- Workers don’t understand how their errors affect the line downstream
- Workers don’t understand the whole process on the line
- Repeated missed targets with no effort to catch up
- Unclean work areas
- Complaints about supervisor communications, trust, and/or how conflicts are resolved

Ask questions about the engaging experiences valued by your teams. Do they value shared responsibility, more interaction with customers, and/or additional education about technology? What is it about their work that they enjoy and want to do more of or learn more about?

Consider where the team is in its level of engagement and where you want it to be. Based on the information you have gathered, how engaged are your employees now? How engaged should they be in order to achieve your transformation with the speed and results you expect? The engagement continuum (Figure 10) provides a way for you to plot where you think the workforce is now versus where you think it needs to be. Understanding the gap will tell you a lot about what you need to do as a leader to drive engagement, and how far and how fast you need to go.

FIGURE 10: THE ENGAGEMENT CONTINUUM: HOW FAR, HOW FAST?





DDI Global Perspective: Finding quality talent

Europe is a high-cost economy and its operations must be especially efficient for it to survive. Its most successful plants are run in ways that would have been impossible to predict just a few years ago. The U.K. auto industry has emerged from a place of seemingly unstoppable decline to a point of vibrancy. Spain and eastern Europe have emerged as a source of top-grade, low-cost talent. Germany leverages automation to deal with talent shortages. But if technology advancements and new markets have brought Europe back to a point where it can compete, then the quality of its workforce will determine its future success.

4. Build ownership and involvement

To fuel engagement, leaders must build ownership and involvement by creating a compelling business case that demonstrates:

- Why the culture or talent status quo won't work anymore, and the customer-driven urgency of changing NOW
- What employees and leaders stand to gain, both personally and practically
- What the organization stands to gain and how the customer will benefit
- What values and behaviors are expected to drive intended results, and how those behaviors differ from current behaviors
- What will remain the same, and why

Leaders can also ask provocative questions related to M4.0 around meeting new customer demands and exceeding competitive benchmarks, such as:

What breaks down the most? Our products, processes, or our people? What are the risks to our customers if we can't meet their supply demands? How do the benefits of transformation outweigh the benefits of not changing? How can we transform to double the number of interactions with our customers?

Beyond initial awareness and buy-in, driving engagement means creating ways for employees to gain a voice and choice in the transformation. In a change effort—whether to enhance customer experience, integrate globally, increase speed, or all of the above—involvement of the workforce in HOW the change is designed, implemented, and measured is as critical a component of the strategy as the four steps (to operationalize engagement). Involvement fuels engagement and builds energy and commitment to help the effort succeed well into the future.

Examples of a high-involvement approach that builds engagement include:

- Cross-functional, cross-level design teams to work on implementation plans
- Large-scale discussion meetings (in person, virtual, and both) to collect input from employees on existing bottlenecks and process changes
- Team contests for best annual improvement ideas
- Social media polls, collecting data from employees on questions such as:
 - How do we want employees to describe what it's like to work here?
 - What organizational behaviors should we prioritize and reward, given the changes in our competitive landscape and changing customer demands?
 - What do leaders need to do more of to demonstrate engagement?
 - When we hire new employees, what about our culture will attract and engage them?

5. Coach to build future capability

Effective coaching is one of the most important drivers of team member performance. Whether guiding people toward success in new or challenging situations, or helping them improve or enhance their work performance, leaders' ability to coach and provide feedback makes the difference between mediocrity and high performance. M4.0 leaders know how to encourage people to take ownership of, and be accountable for, their work performance.

More specifically, they:

- Create a work environment where people are comfortable taking on the risks associated with new responsibilities.

- Boost morale, improve productivity, and increase profitability by coaching individuals to achieve peak performance as part and parcel of their leadership role.
- Manage work performance issues in a fair, consistent manner.

Coaching can be utilized proactively or reactively, informally or formally, with individuals or a group, and is especially critical in high-risk situations. According to the MPI/DDI plant management research series, plant managers report that high-quality leaders spend up to 50 percent of their time in proactive coaching and less time firefighting.



How to Use Coaching

The best coaches ask questions and listen more than they speak. Examples of the many types of open-ended coaching questions include:

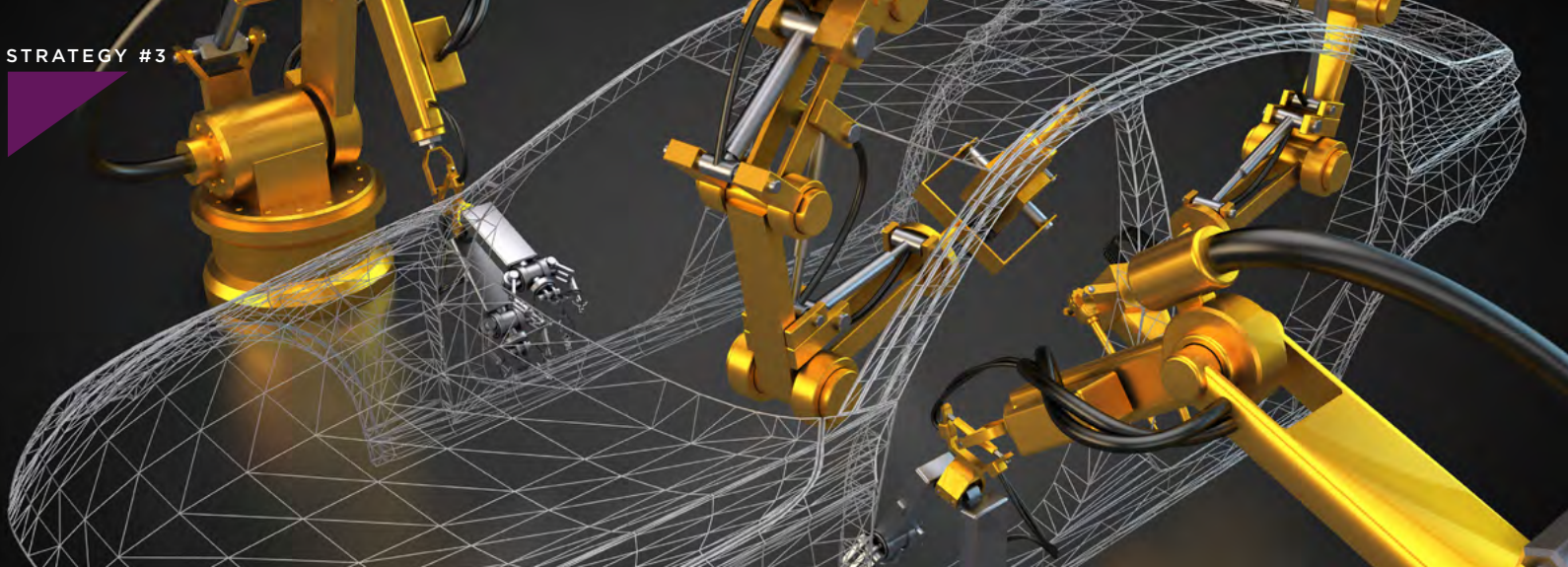
- 1. Context:** Understand the situation clearly by asking who, what, when, where, why, and how.
- 2. Causal:** What's behind the person's thinking? Why?
- 3. Challenge:** Push thinking and ask provocative questions, such as, "What if you tried...?" or "What would happen if...?"
- 4. Connections:** Show broader implications, think bigger: "How is that related to...?" "What are the implications on...?"
- 5. Calibration:** Make sure you are in sync with the implications and next steps: "What will you...?" "How will you...?"



STRATEGY #3: Build a talent supply chain

“To compete we need to take care of today while planning for the future. It’s not a one and done to keep pace.”

—*Peter McCue, TE Connectivity*



Just as you'd build supply-chain systems for parts, tools, and distribution, you can build a strategic, sustainable supply of critical and/or scarce skill sets.

Consider your existing supply chains. If you're in a complex assembly environment (e.g., auto industry), you have quality and inventory control measures to reject substandard parts and ensure a reserve of replacement parts. So why not demand the same safeguards with respect to the people who operate your expensive technology?

Reactive talent recruitment can't adequately staff operations in constant flux. As the single most important component of production, your talent cannot be treated as a low-cost commodity. Short-term sourcing and low-quality evaluation solutions will never suffice when a more robust strategy is required to ensure long-term competitiveness. Weak supply negates near-term hiring gains: Technological advances, increasing costs, and impaired future capacity make these gains obsolete. And, persisting with a just-in-time approach to leadership growth is the best way to lose the war for talent.

Pressures on the Pipeline

The pressure on the talent-supply pipeline is only intensifying as technology and digitization transform manufacturing and the skills required of workers. Other factors challenging the "health" of the workforce:

- **Aging of the workforce.** Approximately 10,000 baby boomers retire every day (Social Security Administration), and plants are expected to lose 20 to 30 percent of their workforce to retirement in the next five years. When we combine the number of jobs that will be vacated and the additional 700,000 jobs that will be created due to expected economic expansion, it's clear that skills will be in shorter supply and hiring will continue to become more challenging and even more expensive.
- **Cross-generational collaboration.** Part of the new reality is that baby boomers will be working side by side, and being led by Gen X and millennials. The former have a work style that is more typically results- and process-driven, while the latter is more "needy" when it comes to engagement and career enhancement. How you leverage these millennials to help them make the shift from muscle to mind could be the source of great advantage.
- **Overreliance on new hires' technical abilities.** The danger is that other critical skills—collaboration, problem-solving, work pace, process adherence, and learning ability get overlooked. This kind of hiring mistake is costly and far too common. A 2015 study by MPI showed that in over 300 manufacturing sites, poorly selected personal attributes and competencies are much more likely to be the cause of termination than technical and professional "know-how," education, or past achievements.



DDI Global Perspective: Matching talent with technology

China has been the world's biggest manufacturing country for the past decade but, with labor costs steadily rising, many low value-adding manufacturers have gone out of business or have relocated to "lower cost" countries. There is now great urgency in China to upgrade its production industry to prevent this hemorrhaging of investment. Technically skilled employees are in short supply and leaders often lack future-focused skill sets. China's government has issued its own colossal version of M4.0, titled "Made in China 2025."

This initiative takes M4.0 to a whole new level by establishing a more structured, government-backed program that signals the time-sensitive need for transformation. The Chinese government wants to make manufacturers more competitive across the board by mandating upgrades in technology and innovation to increase production of parts internally and improve the perception of Chinese firms, so they're seen as more innovative and high-quality.

Ready to build your talent supply chain?

Here's how:

1. Identify new upstream talent supply sources to avoid future talent shortages

Sponsor projects at technical colleges and high schools, fund apprenticeships and internships, and/or create rotational assignments for new-college hires to fill future leadership roles. Already done? Then consider recruitment efforts in industries outside of manufacturing, such as banking or retail, where you'll likely find customer relationship skills that can be paired with manufacturing-related development to fill future leadership roles.

2. Demand a radical shift in your hiring and promotion practices

You need better practices to head off the looming workforce obsolescence most manufacturers will face. Stop focusing disproportionately on candidates' technical skills and past production experience, which will become hopelessly outdated at an accelerating pace. Instead, look to hire individuals demonstrating strength in agility, continuous learning, interpersonal communication, and proactive

problem-solving skills. If this sounds like an about-face in terms of typical hiring practices, it is. And it's a reflection of exactly how much and how rapidly skill sets required in the Manufacturing 4.0 era are changing. The key to changing workforce hiring successfully—whether for purposes of plant expansion, start-up, or retirement replacement—is to ensure your hiring plans are aligned with critical business and cultural strategies, and account for specific realities and challenges within each labor market.

A systematic approach to hiring (Figure 11) based on quality rather than cost-of-hire will help you:

- Identify and select high-potential workers who possess the innate personal attributes and motivations required to succeed in your unique organizational environment.
- Accelerate time-to-productivity through the integration of staffing, onboarding, and early training actions.
- Create an ongoing "talent supply chain"—much like that of a materials/parts supply chain—to ensure a sustainable pool of talent in dynamic and competitive labor economies.

3. Consider contingent workforces to manage production volume

While the increased use of contingent workers can be effective, it is also cause for concern. On the positive side, contingent employment relationships are in many respects a sensible response to today's competitive global marketplace. Contingent arrangements allow firms to maximize workforce flexibility in the face of seasonal and cyclical forces, and respond to the demands of just-in-time production.

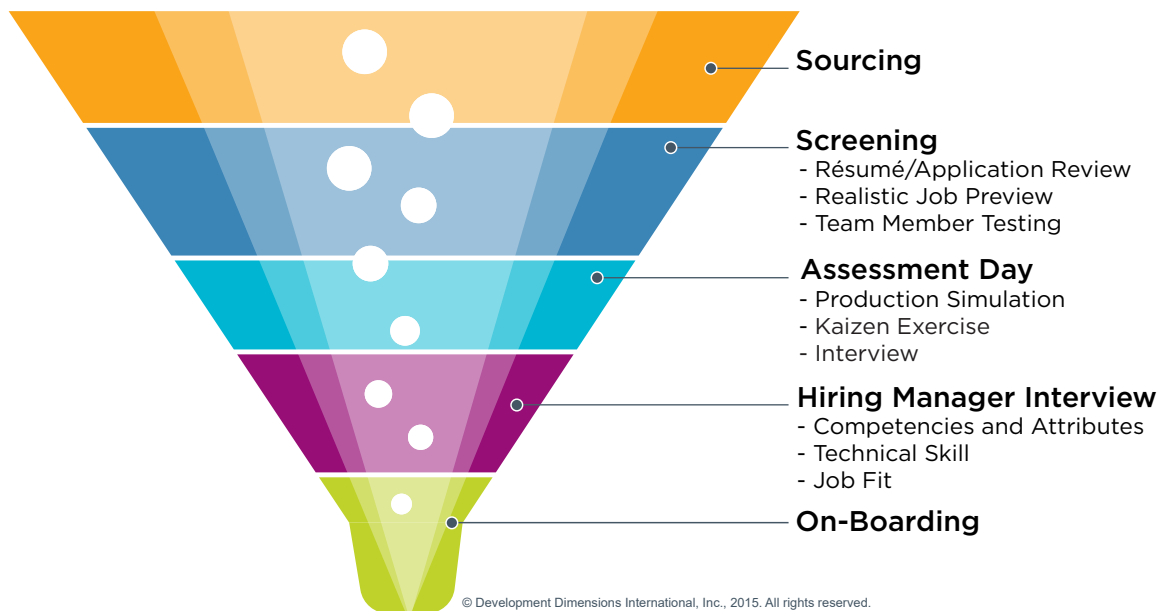
While current tax, labor, and employment laws give employers and employees incentives for creating these contingent relationships, they may also raise legal issues. An employer, for example, may opt to treat workers as independent contractors to save on contributions to Social Security, unemployment, health insurance, and workers' compensation, and be relieved of responsibilities related to labor and employment laws. Despite the loss of these protections and benefits, workers may accept contractor

status because the scenario gives them an opportunity for immediate financial gains through underpayment of taxes. Unfortunately, for many low-wage workers, there is no alternative.

Temporary workers tend to be female (a legally protected group in the U.S.), younger, and lower paid. And they are less likely to hold an advanced degree. Two-thirds fall into three major occupational groups: transportation and materials moving, production, and office and administrative support. In the U.S. in recent years, they have been utilized more heavily in the middle and southeastern states.

To avoid productivity, quality and legal issues associated with a contingent workforce, we recommend using the same selection criteria and process used for your permanent workforce. If all employees have the same and roughly equal technical, interpersonal, and team skills, you will make your "people side of operations" leaner, and help smooth team dynamics.

FIGURE 11: BEST-IN-CLASS HIRING SYSTEM





DDI Global Perspective: Securing talent

From around the world, we see manufacturers working to perfect their talent pipelines. In Mexico, for example, one company designed a selection strategy to find operators with not only the right technical skills, but also the right attributes for learning, performing, and growing in a highly collaborative environment. Unfortunately, after just six months, turnover and worker dissatisfaction began to rise. Why? The manufacturer only applied this personal attributes-driven approach to talent selection for the frontline level—not for supervisors. These more-senior leaders were selected instead on the basis of previous experience and technical expertise. As a result, workers were ready to learn, grow, and adapt, but leaders were not.

In China's second-, third-, and fourth-tier cities, finding ready-now talent is a tough order. Because quantity over quality rules the day, safeguards to ensure a stable talent supply chain, especially during the start-up and expansion phases of most manufacturing operations, future-focused Success Profiles and robust onboarding and development programs would go a long way toward improving leader readiness.

Europe, meanwhile, is slightly ahead of the game. Its strong service sector, which values motivation even more than knowledge and/or experience, is showing manufacturing a thing or two about workforce selection criteria that adds value for the customer.

Wherever your operation is located, the fact remains that many of the skills and attributes that you need today—and will need tomorrow—cannot be developed. This is why you need a supply chain to acquire them.

4. Audit your practices for gender diversity

Most manufacturing companies are facing a huge STEM and leadership shortage, given pending retirements and lack of millennials attracted to manufacturing jobs. Therefore, planning to bring in and bring up more women leaders in manufacturing is not only a viable option, but a way to achieve better financial results. Organizations with better financial performance have more women in leadership roles. Those in the top 20 percent (for performance) report that women occupy 37 percent of leader positions. This is compared to 19 percent of women leaders for organizations in the bottom 20 percent for performance according to the Global Leadership Forecast 2014|2015. Therefore, it's not just a women's issue, it's a business issue for manufacturers that want to build a strong future leadership bench.



And, while women are a great source of STEM and financial skills, they tend to work in lower-level manufacturing jobs. In the U.S. auto industry, for example, women comprise only 16.9 percent of senior and managerial positions (U.S. EEOC, 2014). For women to ascend to leadership,

they need to be in higher profile, core areas (i.e., production, quality control, engineering, finance). To attract and grow more women into leadership roles, manufacturers must eliminate physical barriers (i.e., strength), as well as foster a gender-neutral culture, where women not only are paid equally, but also have the same access to advancement and mentors that men enjoy.

Take an objective look at your HR policies and procedures and consider if they advance or hinder your ability to select, develop, and promote women in leadership to build your bench. A women in leadership audit should contain:

- Data and benchmarks about how your practices compare with other manufacturing organizations in your segment.
- A read on how prevalent and impactful your talent and HR practices are for women in leadership.
- A scorecard with which you can evaluate and track your practices, including percentage of total women leaders, percentage of women who are high potentials, promotion speed of women, and engagement levels of women leaders.



STRATEGY #4: Accelerate leaders to M4.0

“We expect more change in the next five to ten years than there’s been in the last 50—and with that comes real opportunity. As leaders, we must create an environment where every member of the team helps anticipate change and develops creative solutions to evolve, adapt, and respond.”

—*Bill Shaw, General Motors*

If the past has taught us anything, it is that the only thing certain about the changing dynamics of the manufacturing industry is the frightening speed with which these changes will need to be implemented. We all know that leading from behind just won't cut it. So, in addition to creating a talent supply chain, you must also accelerate your leadership skills—or face short supply.

So what should we expect from our future frontline supervisors and area managers? According to a recent poll from the Manufacturing Leadership Council, manufacturing leaders rated the following skills in Figure 12 as critical to M4.0.

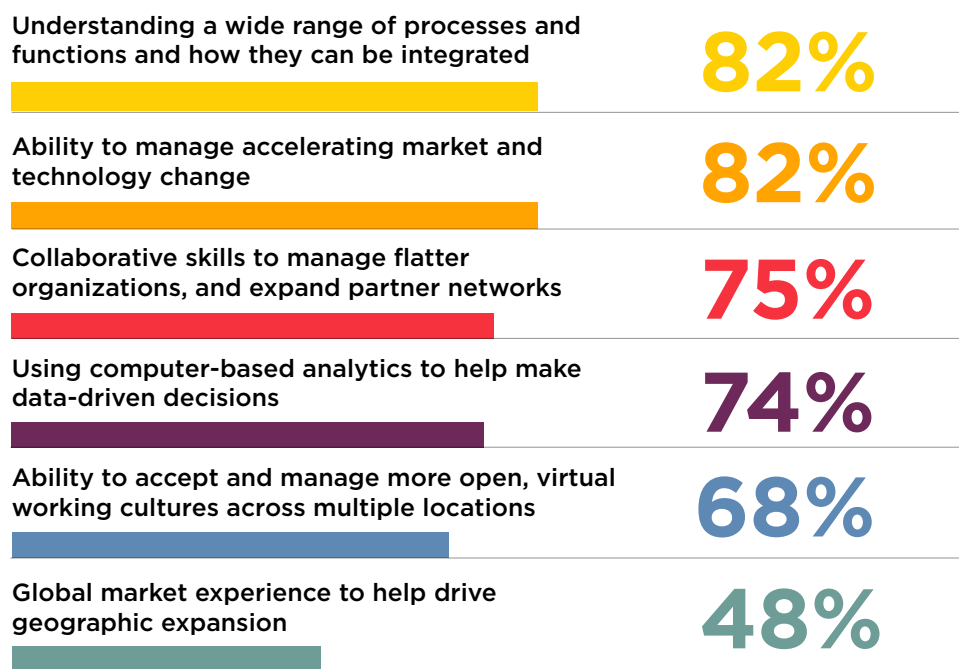
In Strategy #1, we overviewed how leaders' jobs and criteria for success will change with M4.0. In this section, we will add more detail around how the leader

role will change. Leaders will require an expanded, enterprise view of operations. They will need to work across old boundaries and develop a new, “whole-process” way of thinking to support alignment of interdependent entities. Leaders will also need an understanding of the predictive analytics that will become an integral part of the production monitoring process.

On the front lines, future leaders will interact more frequently with both customers and suppliers and, as a result, will need top-notch critical thinking and interpersonal skills. Their teams will be increasingly technically savvy and eager to participate in decisions concerning production processes. Table 6 shows how the leaders of tomorrow will have to evolve to survive and thrive in M4.0.

> FIGURE 12: CRITICAL M4.0 LEADERSHIP SKILLS

What degree of importance would you assign to the following (percent reflects top two levels of response on a 1 to 5 scale)?



- Manufacturing Leadership Council, 2015 -

 **TABLE 6: LEADER TRANSFORMATION TO M4.0**

Who the leader is today	Who the leader will be tomorrow
Perpetuator of the status quo	Eager bar-raiser with a learning orientation—intent on replacing obsolescent processes, materials, and tools
Backward-looker—intent on optimizing	Forward-thinker—driven to reimagine processes to delight the customer and predict competitive advantage
Small-picture seer—focused on sub-processes	Big-picture grasper—views whole processes, including suppliers, customers, and all agility components in between
Adherer to SOPs	Extreme-lean practitioner—committed to creating smoother changeovers, shorter delivery times, and higher customer values
Data-user for routine functionality	Analytics-applier to predict and avoid waste
Inconsistent demonstrator of interpersonal skills	People-catalyst—drives collaboration with more technically oriented workers, within and without the traditional operation
Command and control director	Engagement driver



DDI Global Perspective: Adapting leader roles to M4.0

In China, technical experts promoted to leadership roles are frustrated and failing, while existing mid- to senior-level leaders lack (comparatively) strategic thinking, engagement, and innovation-fostering skills. And, despite the cultural emphasis on career progression, talent development is not a core skill in most organizations. As a result, many young workers with leadership aspirations are moving on in efforts to move up more quickly. Companies wanting to identify, develop, and retain these workers must keep this in mind.

In Europe, open borders (relatively speaking) are driving manufacturing leader to learn new ways to manage, steer, and inspire increasingly diverse teams. In some cases, these teams are hotbeds of innovation and productivity; in others, they are masses of inefficiency, conflict, and compromise. A systematic approach to finding and developing leaders for this multicultural environment is both a necessity and a rich opportunity for the continuing evolution of the manufacturing market.

In Mexico, one of the biggest challenges when starting or expanding operations is building an appropriate and effective culture. Historically, manufacturers here have looked at internal candidates when filling first- or second-level leadership positions. While promotion from within can be great for fostering loyalty and a culture of commitment, it has had some unintended consequences. The promotions often involve relocating people from different sites (and different countries), which has created a clash of subcultures. To create cohesive teams, leadership must consider the needs, work styles, and personalities of individual members. Facilitating team-building activities and creating a common vision for the “new” work environment (once leadership is in place) will go a long way toward improving relationships and boosting productivity.

Ready to move the needle on leadership, reduce the variance in leader quality, and close the gap on today's skills and those needed for tomorrow? Here's how:

1. Simulate what good looks like

Assessment simulations for leaders (think flight simulators for pilots) provide robust data on key leadership behaviors that are best-in-class for driving performance. The data identify the behaviors that are either strengths, are subpar, require some improvement, or need immediate remediation (via feedback and development). Similar to a throughput improvement process, an assessment simulation can create a common language of behaviors and a set

of contingency plans to solve problems and reduce variance (Figure 13). Groups of leaders, with the support of upper management, can share development successes and wins as a result.

2. Leverage high-potential pools

After you have defined “what good looks like” (via Success Profiles and simulations), identify high-potential M4.0 leaders by keeping the following in mind:

- **Identify with data:** Typically, selection processes confuse high performance with potential to perform at a higher-level job. Current performance is entirely different than a leader's future capacity to be successful in a new and/or higher-level role.

> FIGURE 13: THROUGHPUT IMPROVEMENT PROCESSES (TIP)—OPERATIONS VS. LEADERSHIP



And, even if leaders demonstrate potential, they may not be walk-in-the-door ready until they first fill a few gaps. You'll need additional performance, potential, and readiness data to find leaders who can produce in the high-speed, ambiguous, and competitive manufacturing environment.

- **Assess to find fit:** How do you get the data you need to identify high potentials? Companies that use assessment methods to gather accurate disposition and behavioral data accelerate the readiness of up-and-coming leaders and achieve the highest payoff. Keep in mind that not all potential leaders are wired to drive growth; you need future leaders who can scale solutions and are entrepreneurial. You shouldn't "reward" your most productive workers with leadership roles unless you're sure they really want more responsibility. The truth is they probably don't: The best workers on the production line are hands-on, and often find it difficult to delegate.

All companies make this error in one way or another. Technical skills are not what are needed for supervisory roles, and promoting on this basis means you lose out in two ways. The process line loses its best worker, and you've just acquired a lackluster leader—a double whammy, with double the financial impact.

- **Measure and sustain:** Whatever form your acceleration efforts take, they should be built to outlast you and everyone else in your organization. Best-in-class organizations install predictive people analytics as a means of not only monitoring the investment in the bench, but also redirecting actions and predicting which skills and processes will be needed in the future. High-potentials can be highly valuable change mobilizers. As pools comprise 10 percent or so of leaders at each level, you have ready-made role models for driving your business forward. Keep them active and engaged by giving them responsibility for energizing the workforce in the transformation. Ask them to develop a business case for the roll-out or a plan for leveraging some of your initial success stories.



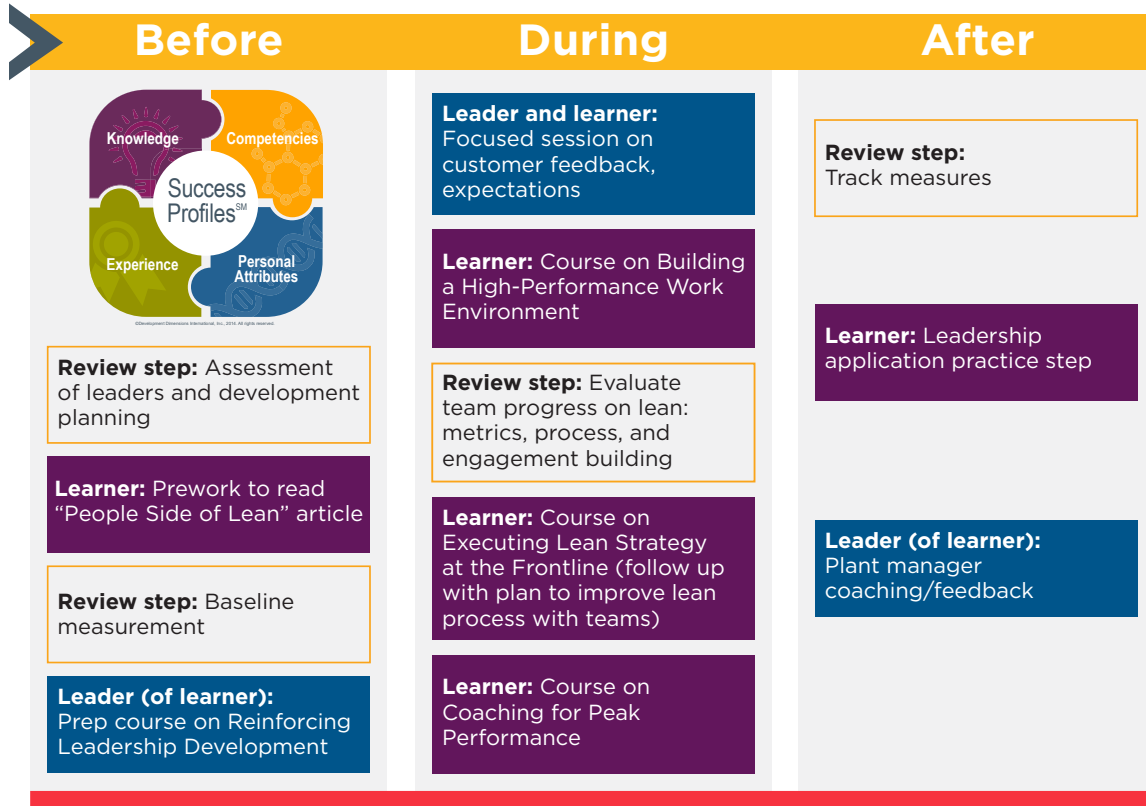
CASE STUDY: Development across the pipeline

An auto OEM in Mexico wanted to build a common leadership language in its new plant and establish a standard way for leaders to build respect with employees. The many cultures and languages represented at the site was complicating cost-control efforts and creating excessive turnover.

The OEM, with DDI, configured leadership courses based on an assessment across three levels of leadership: supervisors, team leaders, and managers. Each group received level-appropriate coursework, but the skills taught across the levels were consistent. Each level also worked on application exercises back on the job.

As a result of pipeline development, the plant is now able to establish a common expectation for high-quality leadership behaviors, which is critical for engaging its highly diverse workforce.

Objective: Drive results through high-quality leadership



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3. Avoid scrap learning

Design learning initiatives as a “journey” for participants—not a series of isolated interventions. When learning doesn’t stick or get applied, a form of waste called scrap learning is created. Too often, learners are put into a conference room and talked at for hours or days, with little or no thought given to how they can apply the lessons back on the job. To avoid creating scrap learning, target learning to sustain improvement of certain key behaviors.

When designing a need-specific learning journey:

- **Avoid information overload**—Don’t provide too much information in a single sitting.
- **Use a combination of learning segments**—Link virtual and face-to-face learning to specific job-related projects. Together they offer professional development that is anchored in business strategy and saturated with immediate practical applications.

- **Devise a realistic timeframe**—Learning journeys take place over a period of time to allow for practice and absorption. Allow learners the skill-honing time appropriate for both the complexity of the subject matter and the volume of new information.
- **Customize development components**—Employ formal and informal development for each participant or cohort group. Create a unique pattern of alternating learning forms—skills practice, project or problem-solving applications, discussions (in-person or virtual), networking, presentations, etc.—to increase (over time) the likelihood that the training and the associated behavioral changes will stick.

Organizations that use a learning journey approach are nearly 75 percent more confident in participants’ level of leadership. A well-designed learning journey (Figure 14) provides additional benefits: clear alignment between development solutions

and business strategy; new, shared perspectives and insights; a common leadership language among learners; and bite-size segments of learning that allow leaders to balance time off the floor.

4. Accelerate development across the pipeline

Your end goal is to update and transform the collective skill set of the organization—to reward employees for challenging the status quo. As a result, you'll increase levels of innovation and fluidity, develop multi-skilled workers, and facilitate team-building between demographic groups.

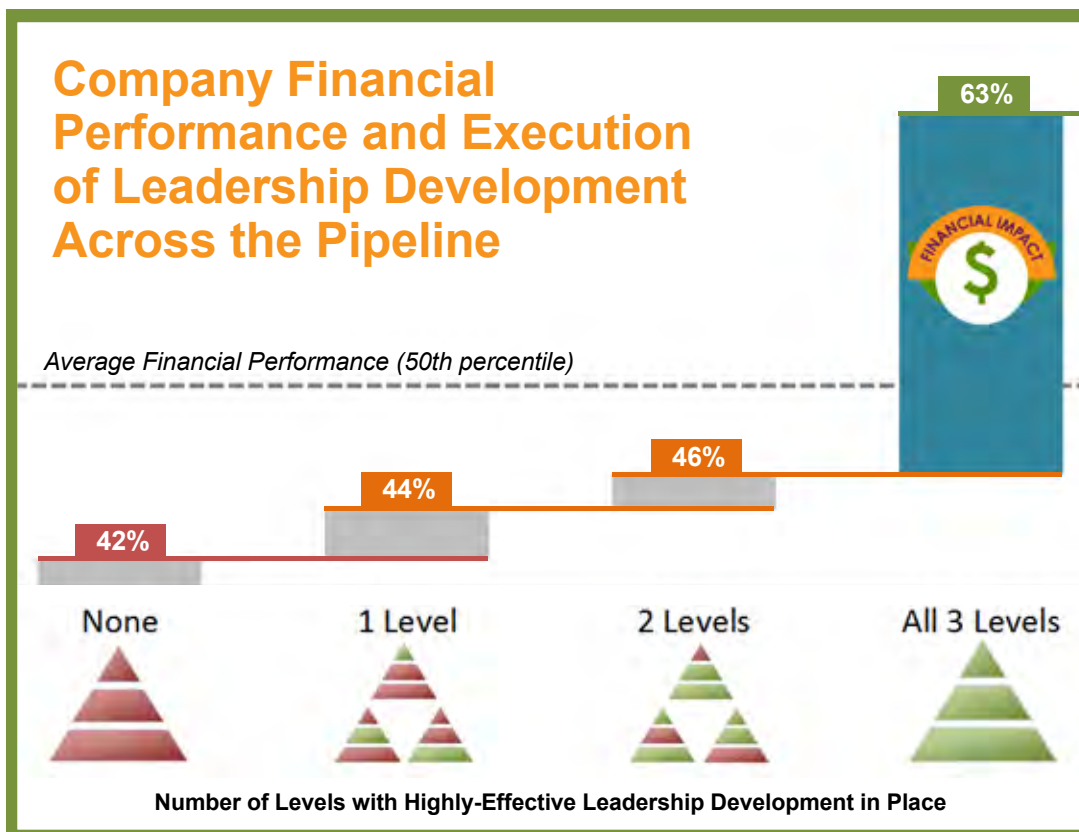
Focus on fast-tracking learning across levels, so skills are acquired en masse, not group-by-group or level-by-level (Figure 15). DDI research shows that organizations are 3.3 times more likely to be in the top 20 percent of financial performers when they develop all levels.

5. Build the business case for women leaders

You must make sure you ignite women's engagement in your business, with interactive education that builds excitement and raises awareness of the issues surrounding women in leadership in your company. Examples include research, stories, and case examples that address the following:

- Making the case for “why women” in leadership roles and “why now” in your company.
- Building an impactful personal brand for leadership in the workplace
- Influencing skeptical stakeholders
- Quieting the inner critic and self-doubt
- Taking more risks to achieve more extraordinary things
- Networking throughout the organization

> FIGURE 15: FINANCIAL PERFORMANCE AND PIPELINE DEVELOPMENT



- DDI's Global Leadership Forecast 2014|2015 -

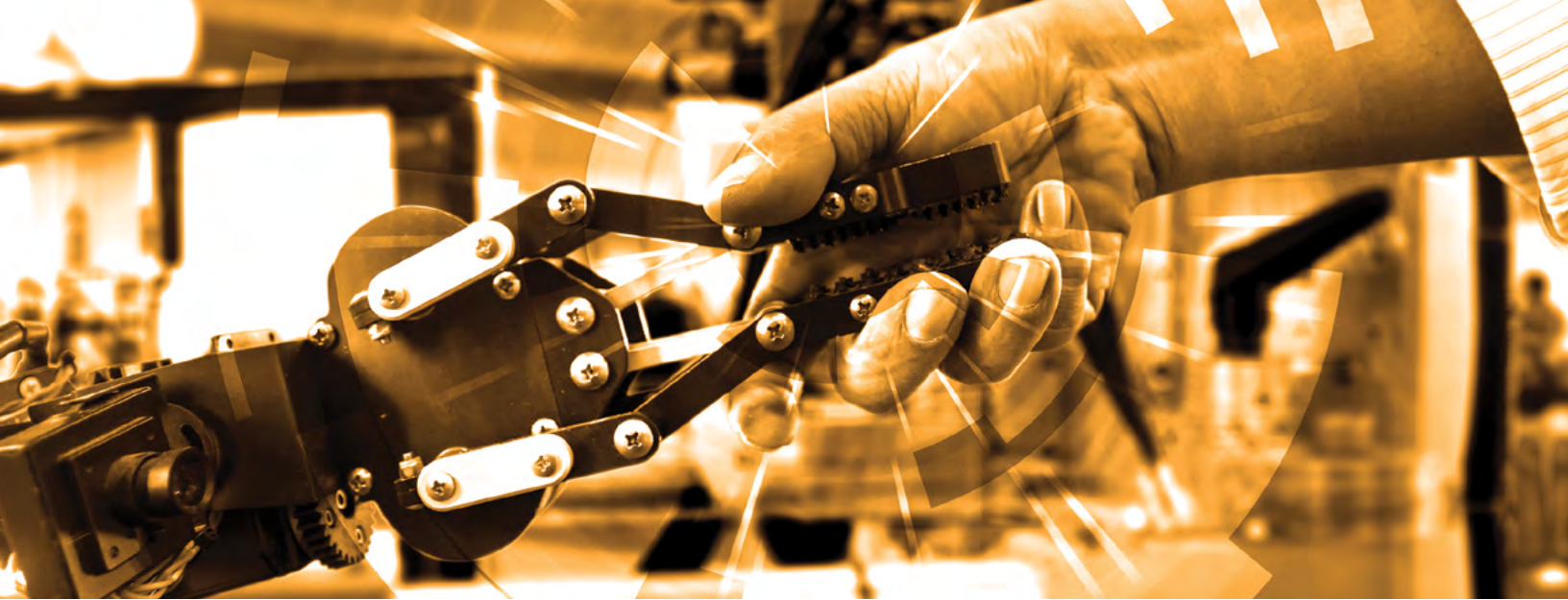


Summary

The megatrends currently affecting the manufacturing industry are a threat to everything we know and everything we've held to be true about manufacturing for the last 50 years. Talent has not only failed to keep up with advances in processes, efficiencies, and technology, but also limited the contributions of those advances.

Ultimately, the issue around future manufacturing competitiveness and growth will not be a market problem, a customer problem, or even a technology problem. It will be a leadership problem. Astute manufacturers will act proactively and apply their own lean systems to improve leadership quality—an often overlooked source of cost reduction and productivity improvement.

Within this guide, we set forth four strategies that will help either start you on your way or continue your forward progress. By adopting these strategies, you can build a sustainable competitive advantage—based on talent—which cannot be lost due to competitors' product innovations. You can also effect real change by transforming your culture, and creating a talent supply chain commensurate with your organizational strategy. And, last, but not least, you can ensure your leaders are up to speed—ready to take on present and future challenges, and successfully navigate your organizations through the M4.0 era.



Acknowledgments



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Jill George, Ph.D., is DDI's Global Manufacturing Practice Leader. She is responsible for ensuring DDI is at the forefront of top trends and issues facing the industry, and leads a team that navigates the interface of mega trends and talent across manufacturing sectors. She and her team spearhead DDI's global consulting resources to help organizations identify, develop, and deploy their production, first-line leader, mid-level, and executive talent.

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About DDI

We work side by side with people who are relentless about identifying and developing leaders who perform and will leave an enduring legacy. Because better leaders lead to a better future, we've been obsessed with the science and practice of leadership for nearly five decades. We help clients uniquely define and achieve great leadership at every level of their organization, from aspiring leaders to the C-suite. Our promise remains: Together, we can co-create a solution that's aligned with your business context and aimed squarely at your business goals.

We do this by sharing our expertise in leadership:

Strategy ▶ Selection ▶ Development ▶ Succession Management



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