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# Building a culture of continuous improvement in an age of disruption

Many are familiar with the Cinderella story of the U.S. men's ice hockey team beating the Soviet Union in the 1980 Olympics. The United States had lost to the Soviet Union for 20 straight years prior to this match, and won this critical game during a time of global change fraught with tense political and economic conflicts.

However, many people are not as familiar with the approach Coach Herb Brooks used to get his team onto the winner's podium. Taking the gold medal was the result of a multiyear effort to build a strong team culture, focus on effective metrics, and use small wins to build overall confidence.

For example, Brooks focused on changing his players' approach from one of being individual stars to being team contributors. It took a series of poignant encounters both on and off the ice to gain players' acceptance of this approach and to see them put it into action successfully.[1]

Similar principles are critical to building an effective culture of continuous improvement in other types of organizations. Building such a culture is not just about executing a handful of process improvement projects. That's a good place to start – and companies may reap tangible rewards from those projects. But more is required to drive sustainable results over time and embed continuous improvement into the very fabric of the organization. That's when the kind of real, transformational changes take place that can generate hundreds of millions of dollars of opportunities.

# Success rate for continuous improvement efforts is less than 60 percent.

With such great potential, continuous improvement has been a highly attractive endeavor for decades. Yet although many companies recognize the value of the discipline, they continue to face challenges in turning aspirations into realities. Indeed, the success rate for these efforts turns out to be less than 60 percent.[2]

A major — if not the biggest — factor affecting the deployment of long-term continuous improvement initiatives today is the fundamental change taking place in the way companies manage and execute work.

This disruptive shift simultaneously makes continuous improvement efforts more important while rendering some traditional approaches ineffective. As a result, companies are compelled to adapt how they embed continuous improvement within their organizational cultures.

In this paper, we describe the effects of a changing work environment on continuous improvement. We then provide five precepts that can help graft continuous improvement into a company's culture so that it becomes part of the organization's DNA.

## Why today's changing work environment disrupts continuous improvement efforts

Establishing an effective culture of continuous improvement has rarely been easy. The path to building a continuous improvement culture is littered with efforts that failed to cross the proverbial goal line. Significant changes in the current work environment are likely to make it even harder in the future. Chief among these changes: the growing need for knowledge workers to perform ad hoc work, rapidly evolving manufacturing processes, an increasingly variable workforce, and the potential power of big data. These changes arguably enhance the potential rewards of continuous improvement, but they also mean that strict process definitions alone won't make continuous improvement stick. Continuous improvement needs to be more than just an exercise in better defining and adhering to processes; it should embody several important elements that don't even appear on a process map and yet are essential to creating a climate that empowers and equips people to drive improvements in the context of the changing workplace.

### The shift to ad hoc
Today's work environment is increasingly services oriented. More employees perform "knowledge work," characterized by non-routine problem solving and regular use of convergent, divergent, and creative thinking[3], often in real time. Some estimates suggest that up to two-thirds of a knowledge worker's day is spent on ad hoc, unstructured tasks that don't follow standard, prescribed paths.[4] These ad hoc environments are increasingly common in claims processing, customer service, and complaint management functions, among others. Because these functions are flatter organizational structures in which employees are empowered to make more decisions, they cannot be managed effectively – much less improved – using rigid processes alone. Organizations should design effective

continuous improvement processes that focus on value and key objectives in order to enable flexibility on top of the appropriate common process "chassis."

Regardless of the level of flexibility or customization, there are aspects of most processes that could or should remain relatively consistent (the "chassis") while also striving toward common objectives. Take, for example, how companies approach making enhancements to their technology applications. Each enhancement can be very different in nature – some may only require changing the options on a drop-down menu, while others may require a wholesale update of the underlying code. These teams can adhere to a common set of basic activities (clarifying customer needs, designing the change, testing it and implementing), regardless of the complexity, while also adhering to consistent objectives such as adherence to delivery dates and customer satisfaction.

### Adapting to 3D printing
For companies that manufacture goods, disruptive technologies and processes such as additive manufacturing (also called 3D printing) and robotics increasingly require quick adaptation to stay ahead of competition. These technologies and processes can lead to improved efficiency, innovation, and bottom-line cost savings. However, these innovations also have the potential to completely upend conventional wisdom and approaches to continuous improvement. A traditional Lean approach to identify and remove waste to drive efficiency along the production line may be usurped by this completely new way of delivering value to the customer.

### The very nature of the workforce is changing
Workforces are evolving to become a mixture of full-time and part-time employees, contractors, and freelancers. People also move more freely from role to role and across organizational and geographic boundaries through both formal rotational programs and informal channels. Increasingly, companies are rethinking their resource models – moving toward project-based work models, building new "labor supply chains," and engaging the power of the crowd – to respond to this desire and structural need for flexibility.[5] The implication for continuous improvement is that knowledge transfer, documentation, communication, learning, and accountability measures are more important than ever before.

### Big data creates big opportunities and big challenges
With increasing access to troves of rich and varied data from diverse sources, businesses should be able to more easily identify opportunities to improve. In particular, data analytics (backward looking) and predictive analytics (forward looking) make it easier for companies to find patterns in data, which can help to increase customer value. However, knowing which analytics tools to invest in and having personnel with the knowledge and skills who can generate the most relevant outputs from big data remain significant challenges. This may require continuous improvement professionals – either within the organization or external advisors, or some combination thereof – to elevate their "game" by:

• Understanding which data sources to tap

• Formulating questions and hypotheses that lead to targeted and efficient data analysis

• Interpreting the results in the appropriate context including both the continuous improvement program as well as the broader business priorities

• Communicating results to stakeholders in compelling and actionable ways so that they don't get lost amid the "noise" of other day-to-day activities

A major — if not the biggest — factor affecting the deployment of long-term continuous improvement initiatives today is the fundamental change taking place in the way companies manage and execute work.

# Mastering the disruptive forces of change with continuous improvement

Given these rapid changes in the workplace, continuous improvement is even more vital today. It's a highly effective mindset, culture, and toolkit for navigating, focusing, and iteratively improving amidst the rapid changes companies are undergoing at many levels. It's not an easy journey, but five well-established, battle-hardened principles of continuous improvement can lead to effective execution.

# #1: Persistent leadership

Aligning organizational leaders behind each project and confirming their sponsorship and involvement is one of the most fundamental and important factors affecting continuous improvement. Continuous improvement doesn't happen overnight – it is a multiyear journey that requires long-term vision and commitment, so expectations and a strong leadership mindset should be instilled across the organization early in the process.

Equally important is conveying that continuous improvement is not just a cost-cutting exercise. Rather than focusing on individual projects, continuous improvement aims to produce transformational, long-term results. It can achieve this by building and profiting from the early momentum generated by initial quick wins, and it requires striking the right balance between establishing centralized governance and support and distributing ownership throughout the organization.

**Common pitfalls and implications for a changing work environment:**

Although early momentum often gets leaders on board, their attention and endurance can waver, particularly when presented with potentially disruptive capabilities: for example, big data's voluminous insights or additive manufacturing's ability to up-end the research, development and production process.

Over time, individual managers can begin to impose their own agendas and preferences, charging off in different directions, chasing different incentives, and weakening the investments the organization has made in developing a cohesive improvement culture. With change occurring at such a rapid, and at times, disruptive pace, leaders should make sure the original vision stays top of mind to provide critical guidance for long-term success.

**Example**

One life sciences company anticipated that its continuous improvement journey would be a daunting, multiyear effort, and the company's executive team knew that all leaders needed to be fully on board – and needed to stay that way over time. To accomplish this, the company identified a group of stakeholders that would meet on a regular basis. Key objectives of the meetings were to reinvigorate the commitment of leaders to their "continuous involvement plan," hear their ideas and address their concerns, and equip them with consistent messaging to help keep their organizations marching to the same beat.

# #2: Real change management

Too often, change management has a bad reputation, and for good reason. It's often done too late, it's too soft, and it's viewed as optional. Change management should be more than just tagging some people as "change agents", sending out a pithy communication and putting a few folks through training.

What's missing is "real" change management. Continuous improvement organizations exist to drive change. As such, they should be experts at managing change. Real change management is not fluffy or optional. It's tangible, quantifiable and critical to driving sustainable adoption.

There are many aspects of change that can and should be tangibly measured such as how well a future state vision was communicated or understood, how much people buy-into that vision and their readiness to change from the current state. These measures can be translated onto a change management dashboard with green, yellow, red colors pinpointing where things are going well and where targeted efforts are needed to improve awareness, readiness or capabilities.

**Common pitfalls and implications for a changing work environment:**

Change management is frequently an afterthought rather than an integral part of a continuous improvement plan. By the time process improvement teams call in the change folks when they're getting ready to implement, it's often much too late and hampered by unrealistic expectations. In fact, many process improvement teams expect that sending a well-worded email from a senior leader is sufficient motivation for people to adopt a new way of working. Not surprisingly, those approaches to managing change rarely succeed. Given the fluid and diverse nature of today's workforce – or "labor supply chain", it's important to be able to gauge levels of readiness and willingness across diverse groups of people that may have very different motivations and allegiances.

**Example**
The life sciences company mentioned previously soon realized that using consistent messaging alone wasn't enough to engage and equip leaders with the tools to instill a continuous improvement culture within the organization. Instead, it needed a better way to measure and improve its approach to managing change. It administered regular surveys to gauge what people on the front lines thought, see who was on board, and determine who was resisting the desired changes. The company was then able to target resources on educating and engaging employees who might be confused or concerned about the changes.

# #3: Manage what you measure

Peter Drucker is often credited with popularizing the maxim "What gets measured gets managed." But the maxim doesn't address an obvious follow-on question: What, exactly, should be measured?

It's true that applying metrics and measurements to behavior can have profound effects. Yet measuring the wrong things can be counterproductive. For example, a company striving to provide superior customer service might not necessarily want to judge employee performance on the length of calls alone. An effective continuous improvement culture has an understanding of what should get measured – and how this measurement results in value for both the company and the customer.

Also, senior executives should be evaluated on similar categories of performance as employees on the front lines are – a concept known as "cascading scorecards." The actual metrics should be tailored and relevant at each organizational level. Implementing cascading scorecards can align focus and behaviors to common goals throughout a company, and can help people see how their day to day actions contribute value to the broader company goals and priorities. To encourage cultural change, these metrics should also align to incentives that drive the right desired behaviors.

**Common pitfalls and implications for a changing work environment:**

Big data enthusiasts beware – despite the exponential growth in data now available at management's fingertips, it can be challenging to separate true signals of value from the noise.

Companies must still go through the process of defining what to measure, and they must prioritize what to improve. Big data holds remarkable promise – but used carelessly can be a distraction. Companies should maintain focus and discipline on the key metrics tied to customer value and quality.

**Example**

For the life sciences company in our previous examples, metrics became one of the most powerful mechanisms for engendering cultural change. Management decided to hold organizational leaders accountable to a set of five high-level metrics, each of which had a dedicated "owner." These metrics cascaded down to other metrics at other organizational levels that also had owners. For example, one of the metrics focused on inventory levels; specifically, how many "days of sales" worth of product was stored in company warehouses. This metric was owned by the head of production, and it cascaded down to a "forecast accuracy" metric that was owned by the head of supply chain planning. This enabled the company to align production with forecasted sales. Developing the five metrics wasn't easy – leadership had to make hard choices about what and what not to measure. Yet as difficult as the exercise was, focusing everyone's attention on very specific metrics was critical to the overall success of the continuous improvement program.

# #4: Let the data guide the way

There is no one-size-fits-all model for continuous improvement. Effective companies customize and incorporate continuous improvement tools and methods to fit their particular goals, challenges, and culture. However, one tenet holds true: any continuous improvement initiative should be based on data-driven decision making.[6]

Companies that also invest in analytical techniques, such as employing quantitative hypothesis testing approaches and leveraging advanced visualization techniques, are able to separate facts from speculation and can boost their chances of success.

As always, companies must choose from among multiple tools, methods, and concepts when deciding exactly how to implement data-driven methods. The key is developing and using a consistent and repeatable approach to process improvement.[7]

**Common pitfalls and implications for a changing work environment:**

Organizations that lack a strong culture of data-driven decision making can get caught up in some variation of "the loudest voice wins." Without an objective means of data-supported decision making, managers with the most persuasive or aggressive personal styles often win – whether or not their pet projects are the most beneficial to the business.

Furthermore, in today's changing work environment where ad hoc processes are more the norm than the exception, tried-and-true management tools such as process maps and RACI charts may no longer be as relevant. Rather, process mining technology tools such as Process X-ray or Value Stream Mapping can enable companies to follow what actually happens in complex, variable processes – and to more quickly and objectively identify insights into how to improve.

**Example**

A company that purchased thousands of pieces of equipment each year for operations was frustrated with the time required to procure and install the new equipment. The average process lead-time for a new piece of equipment, from defining the requirements to completing the final installation testing, exceeded four months.

The organization tried several internally promoted ideas for identifying the root cause and reducing the lead-time, but the problem only worsened. Then leadership enlisted outside help to take an approach that translated existing ideas into hypotheses and tested those with data. Through this process the company discovered that a bottleneck at the end of the procurement and delivery process was the real source of delays, not the perceived problems earlier in the process. By first proving the problem with data-driven measurements, then addressing this bottleneck, the company not only addressed the real root cause problem, but it also estimated a more than 40 percent reduction in equipment procurement cycle times as a result.

# #5: Do fewer things better

Companies with strong cultures of continuous improvement have sound governance capabilities that enable them to hone in on top improvement opportunities, allocate resources effectively and manage the changes to completion. This frequently means doing fewer things better.

This concept starts with the rollout of continuous improvement capabilities. Leading companies start with smaller-scale, but still fully invested and empowered, pilot projects before launching on a grander scale across the business. As their programs grow more dispersed, they develop a coordinated approach to cross-organization execution and benefit tracking, focused on a consistent set of shared priorities across the business.

It may be tempting to rely on an existing organizational structure to do a top-down rollout of continuous improvement within a functional group. However, such an approach can miss some of the biggest and most valuable opportunities that are usually found by analyzing and improving the end-to-end process or value stream. These value streams can cross multiple organizational silos and business units and the handoffs between groups tend to be where problems emerge. Successful companies realize this and put in place methods to prioritize and coordinate value stream initiatives that resolve conflicts, assign accountability, and drive toward the greater good of the overall business.

**Common pitfalls and implications for a changing work environment:**

Once they experience some initial success, organizations can be tempted to take on too much and can quickly find themselves inundated with process improvement opportunities. Too many initiatives underpinned by a sea of data can prove counterproductive as managers and front-line employees' attention and motivation dissipate from initiative overload.

Indeed, our experience suggests that what works for continuous improvement in the beginning of an initiative may not work 18 months later. This is particularly true in manufacturing and research & development environments, which have already begun experiencing the disruptive change potential of additive manufacturing technologies. Effective organizations start out with continuous improvement pilots in one or two process areas, learn from this experience, and then adapt accordingly to manage success and relevance before rolling out to remaining areas.

**Example**

One company's continuous improvement program was so successful that it soon found itself with more than 650 projects under way. As the organization took on more projects, fewer actually progressed. So the company put in place a governance team that used a scorecard to evaluate each existing and proposed project against a clear set of criteria, narrowing the organization's focus from more than 650 projects to approximately 100 projects and emphasizing rapid execution of the highest priority opportunities. This focus now enables them to get more of the highest priority continuous improvement efforts successfully implemented each year.

# Battling disruption with focused change

The 1980 U.S. Olympic men's hockey team built a culture of continuous improvement, helping them beat long-time rival Soviet Union and eventually capture the gold against Finland. Coach Herb Brooks applied many of the key principles of continuous improvement such as persistent leadership over multiple years, real change management to get the team to think and act differently, and finally, he helped them focus on doing fewer things but doing those fewer things better. This approach fostered a new and powerful team culture that helped make Brooks' - and the team's - vision a reality.

Outside the rink, effectively embedding a culture of continuous improvement continues to be a source of significant, transformational value for businesses worldwide. The fact that the work environment is rapidly evolving, driven by economic, cultural, and technological changes, makes a continuous improvement culture both a strategic imperative and a growing challenge. By focusing on the principles outlined in this paper, including leadership, engagement, metrics, a data-driven approach, and robust governance, companies can successfully weave continuous improvement into their DNA. These principles, drawn from several decades of experience and coupled with new analytical techniques and abundant sources of data, can help companies build continuous improvement cultures that embrace and capture value from deliberate, focused change.

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