ima®

The Association of Accountants and Financial Professionals in Business

Strategic Alignment for Driving Superior Business Results:

Using Hoshin Kanri to Link Lean Initiatives with Business Strategies

Statement on Management Accounting

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Executive Summary

Many organizations have deployed a variety of process and profitability improvement programs over the years to increase efficiencies and eliminate waste. The discipline of lean enterprises has offered great opportunities for organizations to reduce waste and improve cycle time for processes, leading to improvements in shareholder value. Improvement areas are suggested by the DuPont equation, which relates shareholder value to various measures of return on investment (ROI), such as return on assets (ROA), return on net operating assets (RONOA), and so on. At a high level, lean promotes improvement in profitability by seeking to eliminate activities that don't directly contribute to the production of a process or service that a customer values and will pay for. Examples include scrap and rework, unnecessary process steps, or excessive movement of parts and materials. Lean also promotes reduced investment by eliminating production beyond what is required and increasing throughput by reducing work-in-process inventories. Highly effective lean organizations—in both manufacturing and support areas—have demonstrated improvements in unit cost, throughput, and productivity.

As an organization seeks to achieve the benefits of lean, it's important to keep the company's resources focused on the initiatives and projects that demonstrably support the strategic objectives defined by senior management. This Statement on Management Accounting (SMA) describes and demonstrates a tool for achieving that focus, Hoshin Kanri, which starts with the strategic objectives for the organization and provides a disciplined process to:

- Flow those objectives to each functional area,
- Identify improvement initiatives and projects that support achievement of the objectives,
- Develop operational performance indicators (OPI) supporting the organization's key performance indicators (KPI), and
- Assign resources to each initiative.

Recognizing that there is a continuum of experience in lean implementations, the SMA includes appendices describing the benefits of lean in more detail, suggested ways to implement lean in an organization, and selection of KPIs.

Introduction

Since 2014, IMA® (Institute of Management Accountants) has been partnering with the American Society for Quality's Quality Management Division (ASQ/QMD) Technical Committee on Finance and Governance to recognize the common objectives of financial and quality management systems in organizations. These include:

- Maintenance of effective systems of internal controls, both operationally and financially; and
- Continuously improving the efficiency and effectiveness of processes to achieve superior business results.

Numerous studies of high-performing organizations have demonstrated that a vibrant and active quality/lean management system (QLMS) can provide financial benefits such as:

- Recognition of opportunities to reduce product and process cost, improving competitiveness and profitability;
- Implementation of effective methods of flow that enable product and process improvements to profitably grow the business; and
- Sustainment and growth of practices and systems to meet product and process requirements and reduce risk.

Organizations of all sizes and complexity have processes for developing business strategies. Highly successful organizations are distinguished from the others by their ability to engage and energize all levels of the organization in activities that execute that strategy effectively. In QLMS terms, activities that don't support strategies are "waste," which should be eliminated. Thus, at the functional level, the QLMS team itself should also link its own initiatives to those plans. On financial statements, activities that don't support strategic objectives can be reflected in increased costs or additional investment, resulting in reduced return on investment (ROI) and, thus, lower shareholder value.

By training and work experience, management accountants are ideally positioned to be strategic partners with quality and lean managers in achieving the benefits of this approach, providing insights into the financial ramifications of operational activities.

This Statement on Management Accounting (SMA) reflects the inherent connection between the tools used to promote alignment by finance and quality/lean organizations. By implementing the best of both financial and quality tools, organizations can achieve superior business results compared to their peers. This SMA also provides the essential success factors and potential pitfalls in implementing linkage between strategy and execution across the entire organization.

Strategic Planning

At its core, driving superior business results starts with strategic planning. Robert S. Kaplan and David P. Norton of Harvard University are among the foremost researchers in strategic planning and the execution of strategic plans.[1] Their research began in 1992 with the balanced scorecard (BSC), a strategy-execution method they developed in response to a period of excessive management emphasis on after-the-fact, short-term financial results. The BSC resolves this myopia and improves organizational performance by shifting attention from managing solely financial measures to managing both financial and nonfinancial operational measures related to customers, internal processes, and employee innovation, learning, and growth. These

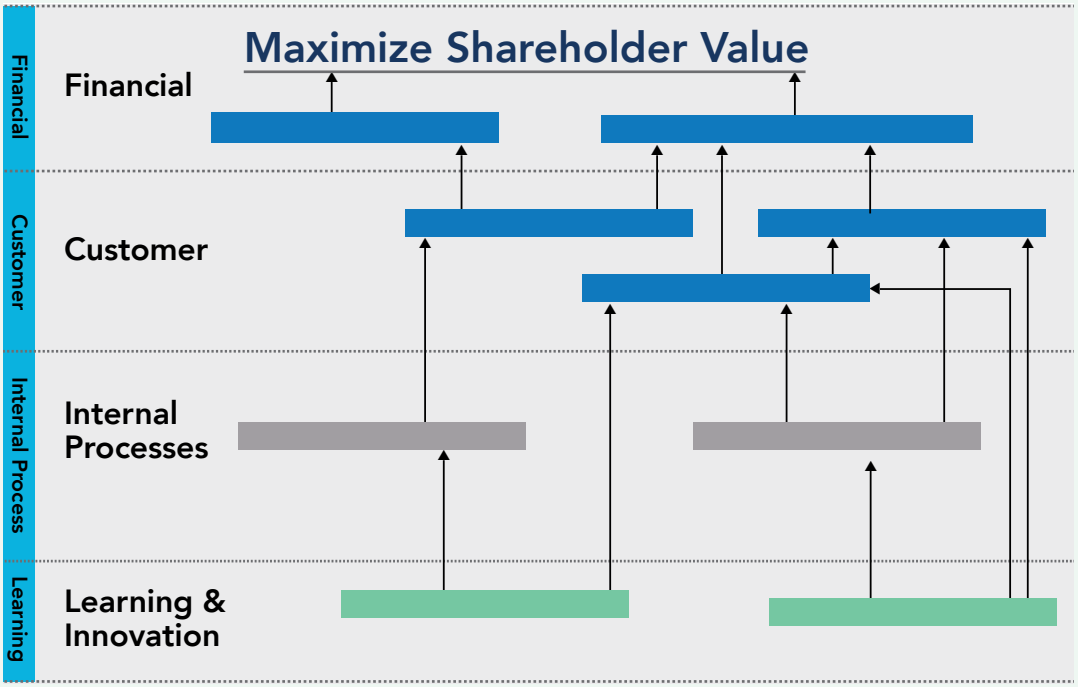
[1] Robert S. Kaplan and David P. Norton, *The Execution Premium: Linking Strategy to Operations for Competitive Advantage,* Harvard Business School Publishing Corporation, Boston, Mass., 2008.

influencing measures are reported *during* the period when timely reactions can occur. This in turn promotes achieving the executives' formulated strategy and better financial results.

Following initial experience with implementation of the BSC, it became clear that a more systematic approach toward development and execution of strategy was needed. The result of this realization was the creation of a framework for strategy development and management across financial and nonfinancial dimensions using a tool called strategy maps. The strategy mapping process recognized that the success of a BSC depends on successful identification of the organization's vital few key performance indicators (KPIs). In practice, it's difficult to separate the vital few measures from the trivial many without first understanding where the executive team wants the organization to go. The executive team's vision and mission explains this, and the team must set the direction for the organization to follow. That's the executive team's primary job: setting and communicating direction. The strategy map is a powerful tool for this communication.

Figure 1 illustrates a generic strategy map with the typical four stacked perspectives (these perspectives can be tailored for a specific organization). Each rectangle in the figure represents a strategic objective with appropriate measures and targets and its associated projects or processes to improve.

Figure 1: Generic Strategy Map Architecture



Note that there are dependency linkages in a strategy map with an upward direction of cumulating effects of contributions. To summarize, a strategy map links from the bottom perspective upward:

- Accomplishing the employee innovation, learning, and growth objectives contributes to the internal process improvement objectives.
- Accomplishing the internal process improvement objectives contributes to the customer satisfaction objectives.
- Accomplishing the customer loyalty and satisfaction objectives results in achieving the financial objectives, typically a combination of revenue growth and cost management objectives.

With a strategy map, the energy, priorities, and actions of people are mobilized, aligned, and focused to achieve the strategic objectives. The upward direction arrows in the strategy map represent the KPIs. One can say that, at the top of the map, maximizing shareholder wealth (or, for public sector organizations, maximizing community and citizen value) is not really a goal but rather a result from accomplishing all the linked strategic objectives with cause-and-effect relationships.

A Strategy Map as a GPS Navigator for the Organization

Think of an organization as an automobile. The motor and driveshaft are the employees with their various methods, such as customer value management and service delivery. The workforce propels the organization toward its target. Collectively, the various enterprise performance management (EPM) and corporate performance management (CPM) methods, including lean and agile management, serve as intermeshed gears. The projects and processes serve as the fuel.

Refining how the strategy map and its associated BSC are used serves as the GPS route navigator for organizations—where the destination input into the GPS is the executive team's strategy. As already noted, the executive team's primary job is to set strategic direction, and the "top" of its strategy map is its destination—increase financial value to shareholders (or, in the public sector, value to citizens). Unlike a GPS's knowledge of roads and algorithms to determine the best route, however, managers and employee teams must themselves "map" which projects, initiatives, and process improvements are best to get to the destination of realizing the strategy.

To carry the analogy one step further, when you make a wrong turn while driving a car with GPS, the GPS's voice chimes in to tell you that you are off-track—and then provides you with corrective-action driving instructions. Unlike the GPS, the calendar-based and long-cycle-time reporting that most organizations have leads to a delayed reaction. This can be mitigated by monitoring the variances between actual and target KPIs as timely signals of opportunities for corrective actions.

Finally, a strategy is never static but is constantly adjusted. This means the destination input to the GPS navigator is constantly changing. The result is an increasing importance on using predictive analytics to determine the best destination (strategy) for meeting the needs of stakeholders combined with a rigorous process to realign the links with each initiative and project.

Aligning Strategy

Just having a strategy isn't enough—it must be communicated clearly throughout the organization, departmental and individual objectives must all be aligned with the strategy, and action plans or tactics must be developed and executed to achieve the strategic objectives.

In many organizations, managers and employees don't know or are unclear about the executive team's strategy. Several years ago, a *USA Today* "Snapshot" stated that only 3% of North American businesses shared their strategies with their personnel. This is puzzling. It's critical that business leadership share as much as possible with its associates so that, at the very least, the associates are positioned to help the organization achieve its goals. Personnel with clear goals that connect their actions to that of the overall business generally have higher levels of engagement—and higher engagement leads to happier people. And, per Shawn Achor, there is a "Happiness Advantage" in business.[2] Businesses with happy people have 37% more sales, are 31% more productive, and are 10 times more engaged.[3]

So, why is the C-suite worried about sharing its key strategies with its personnel? There are generally two reasons given: 1) Personnel may not be able to really understand what the strategies are and why they're needed, and 2) the competition may find out. Regarding the first concern, it's up to the management team to create that translation of the whys and wherefores. In *How the Mighty Fall,* Jim Collins outlines how businesses decline and identifies many markers for businesses to recognize whether they are on this downward spiral.[4] By not sharing the "why's of the what's," the leadership team members run this risk as well as the possibility of perpetuating confusion, even amongst themselves. As for the competition finding out, it's highly likely that the competition already knows the organization's next logical plays. Of course, the amount of detail that's shared may need to be filtered; nevertheless, the main objectives need to be shared.

Toyota, Autoliv, and O.C. Tanner often are considered some of the most successful lean businesses today. All of them welcome people to come and see their methods and processes. Their strategies are widely broadcast to their leadership and disseminated across the workforce.[5]

It's key that the functional managers and their teams proactively align themselves to the organization's strategies. This demonstrates and reinforces the relevance of their systems to the business at hand. One powerful methodology to accomplish this is Hoshin Kanri. This step-by-step planning process often uses an iterative matrix model to connect the organization strategies to the projects, actions, and initiatives of supporting functions. Those initiatives are broken out into tasks, and key metrics are defined. As the matrix is developed, an iterative and interactive process of learning and alignment occurs across the organization's leadership team and its team members. In Hoshin Kanri, this is referred to as a "catch ball" process, with successive back-and-forth cycles that help clarify and align the organizational functions' plans to execute the strategies.

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[2] Shawn Achor, *The Happiness Advantage,* Crown Business, 2010.

[3] Shawn Achor, "The Happiness Dividend," *Harvard Business Review,* June 2011, https://hbr.org/2011/06/the-happiness-dividend; Shawn Achor, "Positive Intelligence," *Harvard Business Review,* January-February 2012, https://hbr.org/2012/01/positive-intelligence.

[4] Jim Collins, *How the Mighty Fall,* Harper Collins Publishers, Inc., 2009.

[5] Jd Marhevko, Arvind Srivastava, and Mary Blair, *Lean Management 50-50-20,* Accuride Corporation, 2016.

Hoshin Kanri is a robust process that has evolved into many variants. This SMA will show a simplified concept as to how the strategies, as developed by an organization's executive team, can be linked to functional initiatives. Table 1 shows a simplified example of a Hoshin Kanri matrix completed for the alignment of the QLMS function of the organization.

Table 1: Hoshin Kanri Matrix

LEVEL II MATRIX – YEAR xxxx: Quality/Lean Management Systems (QLMs)

			●		B1. Conduct Customer Satisfaction Survey. Evaluate Results and Implement Connective Actions based on Feedback	●	●		●		●				●
●	●		●	●	A2. Execute SPC Review of all Key Characteristics. Verify for Effectiveness	●				●				●	
		●	●	●	A1. Define Black Belt projects, Implement and Sustain	●		●	●	●			●		
E. Compliance Systems Management	D. QLMS Systems Optimization: Transactional Processes	C. Lean/Continuous Improvement Integration	B. Coustomer Satisfaction	A. Scrap/Defect Abatement; Process Control	2nd Level **Tactics** (To Achieve the Initiatives) / Top Level **Initiatives** (To Achieve Priorities) / **KPIs** To Improve / **YEAR xxxx** Strategic Priorities **Be the Best There Is...**	**Lead:** PPM/Scrap Internal	**Lead:** OTD: By Customer Date	**Lead:** Material Usage Variance	**Lead:** Days Inventory On Hand (DIOH)	**Lag:** Margin	**Lag:** Customer Satisfaction Survey		Person 1	Person 2	Person 3
	●		●	●	1. **S**takeholder. Grow Profitable Sales by X% by Y Date	●	●			●	●				
	●	●	●	●	2. **S**takeholder. Grow Margin by X% by Y Date	●		●	●	●					
●	●				3. **C**ustomer. World Class Quality, Delivery		●		●		●				
●	●				4. **E**mployee. Grow Satisfaction by X%, Minimal Unplanned Turnover to Y%										
●	●		●	●	5. **S**upply Chain. World Class Quality, Delivery	●	●		●	●	●				
	●	●		●	6. **C**ommunity. Grow Social Responsibility. Meet/Exceed Compliance Requirements						●				

Resources: ● Responsible/Accountable ❍ Consulting/Support

Three (3) QLMS Strategies: 1. Improve upon what we do 2. Deliver new products/processes well 3. Grow skills to enable 1 & 2

The cube is organized into five sections:

- The 6 o'clock (bottom) position lists the organization's strategies. The strategies are typically the responsibility of the executive team.
- The 9 o'clock (left side) position lists the relevant QLMS initiatives reflecting the strategy map. As part of the strategy mapping process, each functional area develops proposed initiatives to achieve the strategies and obtains executive management approval.
- The 12 o'clock (top) position lists key tactics that will be executed to accomplish the initiatives. Tactics are developed at the appropriate level of the organization and are approved by functional management.
- The 3 o'clock position (right side) lists KPIs and ties to the BSC.
- To the right of the KPIs is a section for functional managers to assign resources to each of the tactics. This important step prevents overcommitting scarce resources, which can lead to project delay or failure.

Two additional steps are required to complete the linkage and be prepared to reap the benefits of the process.

1. Target values need to be established for each indicator to provide a yardstick for assessing performance. The executive team typically establishes the targets.
2. A control process needs to be in place to ensure a timely update and analysis of the KPIs and initiation of any necessary corrective action for unfavorable variances by the responsible function.

Note that there are bullets at each intersection of the matrix so that the linkages between strategy and initiatives, initiatives and tactics, tactics and KPIs, and KPIs and strategy are delineated. It's important to enforce the organizational discipline to address each step in the process. Sadly, many organizations neglect the first two elements, where the executive team's formulated strategy resides. They skip to selecting KPIs without identifying the strategies and QLMS initiatives that reflect those strategies.

Roles and Responsibilities

In most organizations, an effective approach is for the executive team to develop the strategic objectives for the organization based on its understanding of strengths, weaknesses, opportunities, and threats. Once this is completed, the executive team can engage the managers and employees in identifying initiatives and tactics to achieve the desired strategic results. Table 2 depicts the roles and responsibilities for linkage of execution to strategy. The arrow in the second column indicates the iterative "catch ball" nature of the process. Using Hoshin Kanri ensures a clear understanding of the linkage between strategy, initiatives, and tactics, and it fosters buy-in at all levels of the organization.

Table 2: Who Is Responsible for What?

Measurement Period	1st Quarter					
	Strategic Objective	Identify Projects, Initiatives, or Processes	KPI Measure	KPI Target	KPI Actual	Comments/ Explanation
Executive Team		↕	↕			
Managers and Employees					*their score*	*X*
					◂····*period results*····▸	

A scorecard is more of a social tool than a technical tool.

A similar iterative process is used to select the KPIs to be used to monitor implementation of the tactics and initiatives and progress toward achieving the strategic

objectives. The managers and employees must accept accountability and responsibility for the chosen metrics, and all must agree that the appropriate indicators are in place. Care should be taken at this step to define specifically how the metrics will be collected, stored, and reported. As the caption to Table 2 indicates, the collection of metrics and preparation of a scorecard is really a social tool—it should be constructed with a view toward fostering collaboration and teamwork to achieve the organization's strategic objectives. The focus should be on picking measures that promote desired behaviors (i.e., a social tool) rather than on the elegance of the measures themselves (i.e., a technical tool). The executive team is responsible for setting target values for each KPI to establish the direction of desired change and defining the point at which the strategic objective has been met. Managers are responsible for implementing the measurement and analysis processes for each KPI and communicating the results to the entire team in a timely manner.

In conclusion, a strategy map and its derived BSC are navigational tools to guide the organization to *execute* the strategy, not necessarily to formulate the strategy. Most executive teams are good at defining strategy, but there's some evidence of organizations failing to implement their strategy successfully. Today's boards of directors are impatient with CEOs who aren't implementing their strategy successfully, resulting in short tenures for the CEO and other key managers.

A Hoshin Kanri Functional Example

The remainder of this SMA will address aspects of implementing lean concepts through projects and initiatives that are aligned to the strategy map and measured by the BSC. Depending on the degree to which your organization has evaluated the benefits of implementing lean concepts in its operations, it should be clear that each of the areas of the strategy map (learning and innovation, internal processes, customer, and financial) are adaptable to lean objectives and affiliated projects. (For organizations that haven't adopted lean concepts in their strategy, Appendix 1 provides a more in-depth review of the benefits to be gained by adopting lean concepts while Appendix 2 provides suggestions for starting an organization down a lean path. Appendix 3 is an in-depth discussion of KPIs.)

While all functions need to be aligned, for simplicity, this section will specifically reference the QLMS of the organization and its connection to sample business strategies. While sustaining and/or building upon the compliance portions of the QLMS, the lean and quality professional needs to continue to demonstrate the value they bring to the organization. A similar alignment should be made with the other functions of the organization, including supply chain, engineering, human resources, legal, finance, and others. These matrices are referred to as Level II Kanris. Depending on the size of the organization, these Level IIs may be blended into one large document, or they may be retained independently by the functional groups as the tactics are executed. It is important, however, for the functional teams to see each other's Kanris. This avoids duplication of effort and promotes collaboration on common themes to further refine the quantity of initiatives.

Strategy Flow-Down

The first step is to acknowledge, accept, and document the organizational strategies as they affect the specific functional entity. Table 3 is the detailed breakout of the sample organization's strategies:

Table 3: Flow-Down of Organizational Strategies
1. **S**takeholder: Grow Profitable Sales by X% by Y Date
2. **S**takeholder: Grow Margin by X% by Y Date
3. **C**ustomer: World Class Quality, Delivery
4. **E**mployee: Grow Satisfaction by X%, Minimal Unplanned Turnover to Y%
5. **S**upply Chain. World Class Quality, Delivery
6. **C**ommunity: Grow Social Responsibility, Meet/Exceed Compliance Requirements

In this example, the business has organized the strategies following both performance excellence formats (the Baldrige Foundation) and the newly upgraded ISO 9001:2015 to address various "interested party" groups, including supply chain, employees, customers, local community, and stockholders (SECCS). The challenge for the quality and lean professional is to align the QLMS processes and results to business strategies—regardless of whether those strategies specifically mention lean systems.

Identification of Functional Initiatives

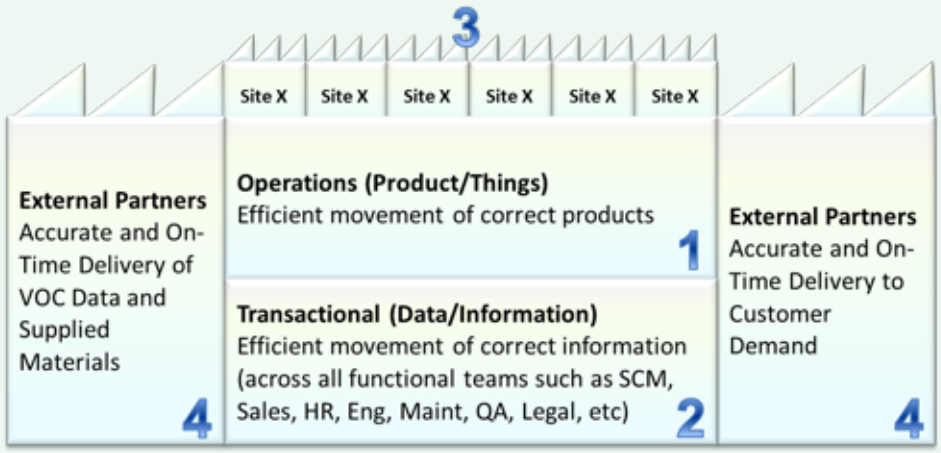
The next step is to identify broad initiatives that the functional area will pursue to achieve the strategic objectives. The initiatives should recognize that strategy is never static because the environment is volatile. Strategy by its nature involves responding to changes, and the initiatives are the tools to implement these responses. This is what distinguishes a strategic initiative from just getting better at what the organization has already been doing.

One approach to the development of initiatives is to consider the business enterprise through the four segments of lean systems in a typical organization (see Figure 2):

1. Operations: The efficient (fast) movement of effective (correct) things.
2. Transactional: The efficient (fast) movement of the effective (correct) data or information.
3. Enterprise: The efficient (fast) movement of the effective (correct) things and information across the business entity.
4. External Partners: Transactional data effectiveness and efficiency (fast and correct) with customers, suppliers, outside providers, and compliance organizations.

By considering each of these systems, each function can more objectively focus on its own processes to better enable the organization's success.

Figure 2: A Lean Framework for Execution



As each initiative is identified, functional management determines how each one matches with the various strategies (see Table 4). Correlation dots help to show the alignment of the initiatives to the strategies. The goal is to minimize the number of initiatives needed to achieve the stated objectives. In the example, if "scrap/defect abatement" occurs, then strategies 1, 2, 5, and 6 could be impacted positively. Scrap abatement is key for lean systems because process flow can't occur when defects are occurring (whether those defects are encapsulated in parts or transactional data). The correlation dots highlight the value proposition that the QLMS function is bringing to the achievement of strategy.

Table 4: Functional Initiatives Linked to Strategic Priorities

E. Compliance Systems Management	D. QLMS Systems Optimization: Transactional Processes	C. Lean/Continuous Improvement Integration	B. Coustomer Satisfaction	A. Scrap/Defect Abatement; Process Control	2nd Level **Tactics** (To Achieve the Initiatives) / Top Level **Initiatives** (To Achieve Priorities) / **KPIs** To Improve / **YEAR xxxx** Strategic Priorities **Be the Best There Is...**
	●		●	●	1. **S**takeholder. Grow Profitable Sales by X% by Y Date
	●	●	●	●	2. **S**takeholder. Grow Margin by X% by Y Date
●	●				3. **C**ustomer. World Class Quality, Delivery
●	●				4. **E**mployee. Grow Satisfaction by X%, Minimal Unplanned Turnover to Y%
●	●		●	●	5. **S**upply Chain. World Class Quality, Delivery
	●	●		●	6. **C**ommunity. Grow Social Responsibility. Meet/Exceed Compliance Requirements

Identification of Tactics to Achieve the Objectives

After the QLMS team and the executive team agree upon the top-level initiatives, QLMS management can begin to identify key tactics needed to achieve the initiatives. Correlation dots are again used to show which tactics support which initiatives. Ideally, tactics are identified that can support multiple initiatives, minimizing the total number of initiatives that need to be staffed and funded. The tool also links the alignment of initiatives to the original strategies.

Table 5 shows the result of this process. The tactics for the year are aligned to the initiatives. A1 demonstrates how a tactic can span several initiatives. This cross-cutting tactic enables the optimization of functional team resources and reduces silos. A2 is also cross-cutting and impacts four initiatives that, in turn, affect all the strategies.

Table 5: Tactics Aligned to Top-Level Initiatives

E. Compliance Systems Management	D. QLMS Systems Optimization: Transactional Processes	C. Lean/Continuous Improvement Integration	B. Coustomer Satisfaction	A. Scrap/Defect Abatement; Process Control	
			●		B1. Conduct Customer Satisfaction Survey. Evaluate Results and Implement Connective Actions based on Feedback
●	●		●	●	A2. Execute SPC Review of all Key Characteristics. Verify for Effectiveness
		●	●	●	A1. Define Black Belt projects, Implement and Sustain
Top Level **Initiatives** (To Achieve Priorities)					2nd Level **Tactics** (To Achieve the Initiatives)
					KPIs To Improve
					YEAR xxxx Strategic Priorities **Be the Best There Is...**

KPIs

Benjamin Franklin said that if you watch your pennies, your dollars will take care of themselves. This is wise advice when applying it to managing KPIs and differentiating between leading and lagging indicators. Essentially, if you only manage the lagging indicators, the system of management is largely reactive rather than proactive or predictive. For example, profit margin is a typical lagging indicator. It's absolutely a required metric from Wall Street's perspective (for example, for investment analysts). Yet by managing its key inputs—such as scrap, rework, or overtime—up front, the team has a stronger chance of yielding better-desired financial results. Manage the leads—the drivers—and the lags will take care of themselves.

Over time, there seems to be some synchronicity with a 2-to-1 ratio of leading indicators to lagging ones. By having the team put its efforts into managing those two leading indicators (the pennies), the lagging values (the dollars) usually manage themselves.

Table 6 demonstrates both leading and lagging indicators. Linkage between the KPIs and the tactics can easily be seen. A powerful benefit to this visibility is that the impact of each tactic on a KPI can be understood and possibly predicted, enabling the organization's governance function to more clearly identify with how the QLMS functions are providing tangible value to the team.

Table 6: KPIs

	Lead: PPM/Scrap Internal	**Lead:** OTD: By Customer Date	**Lead:** Material Usage Variance	**Lead:** Days Inventory On Hand (DIOH)	**Lag:** Margin	**Lag:** Customer Satisfaction Survey
B1. Conduct Customer Satisfaction Survey. Evaluate Results and Implement Connective Actions based on Feedback	●	●		●		●
A2. Execute SPC Review of all Key Characteristics. Verify for Effectiveness	●				●	
A1. Define Black Belt projects, Implement and Sustain	●		●	●	●	

2nd Level
Tactics
(To Achieve the Initiatives)

Top Level
Initiatives
(To Achieve Priorities)

KPIs
To Improve

YEAR xxxx
Strategic Priorities
Be the Best There Is...

Table 7: A Completed Level II Hoshin Kanri

LEVEL II MATRIX – YEAR xxxx: Quality/Lean Management Systems (QLMs)

E. Compliance Systems Management	D. QLMS Systems Optimization: Transactional Processes	C. Lean/Continuous Improvement Integration	B. Coustomer Satisfaction	A. Scrap/Defect Abatement; Process Control		**Lead:** PPM/Scrap Internal	**Lead:** OTD: By Customer Date	**Lead:** Material Usage Variance	**Lead:** Days Inventory On Hand (DIOH)	**Lag:** Margin	**Lag:** Customer Satisfaction Survey	Person 1	Person 2	Person 3
			●		B1. Conduct Customer Satisfaction Survey. Evaluate Results and Implement Connective Actions based on Feedback	●	●		●		●			●
●	●		●	●	A2. Execute SPC Review of all Key Characteristics. Verify for Effectiveness	●				●			●	
		●	●	●	A1. Define Black Belt projects, Implement and Sustain	●		●	●	●				
					2nd Level **Tactics** (To Achieve the Initiatives) / Top Level **Initiatives** (To Achieve Priorities) / **KPIs** To Improve / **YEAR xxxx** Strategic Priorities **Be the Best There Is...**									
	●		●	●	1. **S**takeholder. Grow Profitable Sales by X% by Y Date	●	●			●	●			
	●	●	●	●	2. **S**takeholder. Grow Margin by X% by Y Date	●		●	●	●				
●	●				3. **C**ustomer. World Class Quality, Delivery		●		●		●			
●	●				4. **E**mployee. Grow Satisfaction by X%, Minimal Unplanned Turnover to Y%									
●	●		●	●	5. **S**upply Chain. World Class Quality, Delivery	●	●		●	●	●			
	●	●		●	6. **C**ommunity. Grow Social Responsibility. Meet/Exceed Compliance Requirements						●			

Resources: ● Responsible/Accountable ○ Consulting/Support

Three (3) QLMS Strategies: **1. Improve upon what we do** **2. Deliver new products/processes well** **3. Grow skills to enable 1 & 2**

Resource Assignment

When the full Hoshin Kanri is developed, the leadership team has constructed a clear linkage from the strategy of the organization through the development of aligned initiatives and effective tactics. The last step, shown in Table 7, is to align functional resources to each of the tactics to ensure that the planning has a realistic chance of achievement.

Aligned Execution

Once the initiatives, tactics, and KPIs are defined, the process of aligned execution begins through the implementation of the developed tactics. The completion of the tactics enables the initiatives to be achieved and furthers the attainment of the strategies and KPIs. The KPIs and their cascaded operational performance indicators (OPIs) provide the mechanism for alignment. The old adage is, "You get what you measure." The KPIs and OPIs provide the "line of sight" for managers and employee teams to view how what they do—their priorities and actions—contribute to accomplishing the strategic objectives.

Conclusion

To effectively execute the business's overall strategy, the development of a Hoshin Kanri that links the business's key strategies to that of the organization's functions can be critical. The Hoshin Kanri process methodically destroys silos and increases employee engagement, enabling success of key strategies. By creating these linkages, the overall business deploys fewer initiatives while developing precise tactics that are optimized to advance the company's strategies.

After the strategies and tactics are developed, the KPIs are then determined to monitor the progress. Developing leading and lagging indicators, usually in a 2-to-1 ratio of lead to lag, can enable an organization to be more proactive rather than reactive to end results. The Hoshin Kanri also helps strip out redundant or correlating metrics, thereby enabling a very streamlined metrics system. Utilize the basic tenets of process control to enable focus on variation reduction and basic process improvement. With the Hoshin Kanri and KPIs in place, execute to the tactics.

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Additional Resources

Chad Smith and Debra Smith, "The Importance of Flow and Why We Fail So Miserably at It," *Quality Management Forum,* Spring 2015, pp. 17-25. This describes the definition of flow in lean manufacturing environments and its importance to organizational success.

Grace Duffy, "Evolutionary and Revolutionary Decision Making Models," *Quality Management Forum,* Spring 2015, pp. 9-12. This provides further insight on how to develop the general content of the strategic plan.

Daniel Zrymiak, "Understanding Governance Within Organizational Excellence and Management Systems," *Quality Management Forum,* Spring 2015, pp. 5-8. This outlines some potential approaches to linking functional objectives to the organization's strategy.

Gary Cokins, "Fixing a Kite with a Broken String–The Balanced Scorecard, *Quality Management Forum,* Spring 2015, pp. 13-16. There are several ways to develop KPIs. This provides excellent guidance.

Appendix 1: Becoming Lean across the Enterprise

The Benefits of Incorporating Lean Initiatives with Strategies

The business case for lean is compelling. Eliminating waste improves workforce productivity, reduces the cycle time to produce an end product, and lowers unit cost. This has a direct impact on the bottom line of the organization and its value to shareholders. The DuPont equation suggests that shareholder value correlates well to ROI. Therefore, an effective lean strategy can have these benefits to shareholder value:

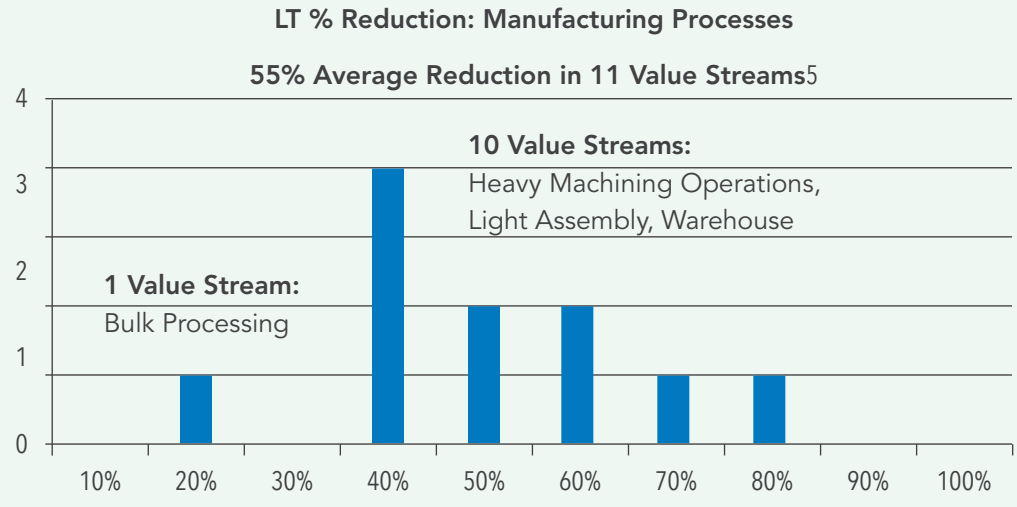
- Shorter cycle times require less investment in in-process inventory;
- Reduced unit cost means improved profit margins if the price remains steady; and
- Improved productivity can result in more volume capacity with a given set of resources.

Strategically, the benefits of lean can allow an organization to be nimbler in the marketplace through:

- Faster response to changes in market demand signals with shorter cycle times;
- More competitive pricing with reduced unit costs; and
- Internal capacity to meet new opportunities through increased productivity of existing resources.

These benefits have been demonstrated in real-world implementations, including those documented in the book *Lean Management 50-50-20*.[6] Accuride Corporation showed that with effective lean implementation, lead time was reduced by more than 50% for operational processes (see Figure A1-1). In these cases, the cost per unit was commonly reduced by 20% or more, enabling the company to be more agile and competitive with pricing and potentially secure more business without sacrificing current margin.

Figure A1-1: Lead Time Reductions Experienced by Accuride Corporation Lean Initiatives



[6] Marhevko, Srivastava, and Blair, 2016.

Even if the market itself is stagnant, lean systems should enable between 50% and 75% reductions in core transactional processes, such as new product introduction, request for quote, or the order to cash cycle. This enables the organization to gain new business by being able to quote first, get to market first, provide a more competitive price, and get paid in a timely manner.

Lean organizations can also identify opportunities to partner with their customers and suppliers to increase inventory turnover and reduce cycle time, thereby reducing inventory and cost per unit across the value chain.

How Does It Work?

In deciding to commit the effort to becoming lean, organizations need to understand their key value streams. Value streams are the processes used to produce the organizations' products or services. These can include labor input, flow of materials, and the information needed to meet the customer's expectations. The underlying principle of a lean enterprise is the continuous review of processes and procedures to eliminate waste, improving efficiency and effectiveness of all parts of the organization. Waste can be thought of as any activity that doesn't directly contribute to a product or service that a customer values and will pay for. Waste can include the obvious, such as rework or nonconforming products, as well as more subtle contributors, such as time waiting for material or data, overproduction, or excessive transportation of items for processing.

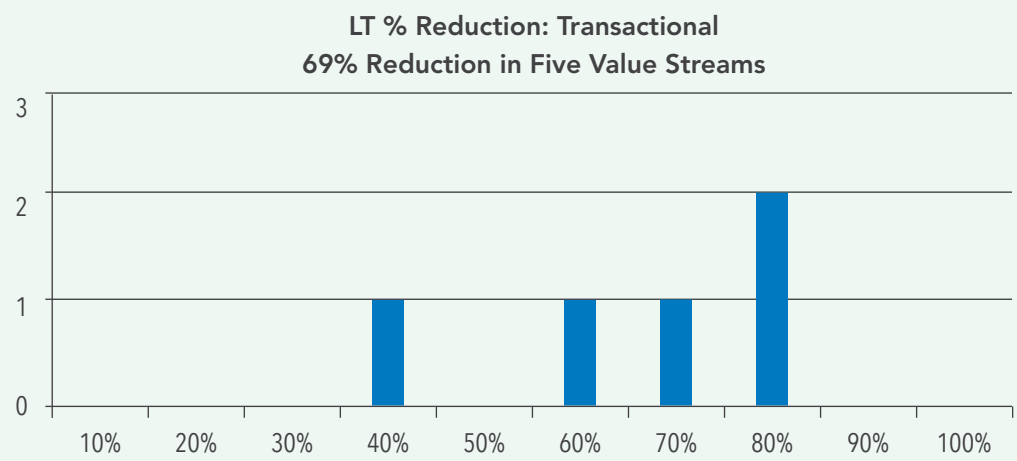
Although frequently thought of as a manufacturing discipline, numerous studies have shown that lean can be successfully applied to almost any type of process, including service delivery and support organizations. In finance and accounting, consider the wastes of approval steps that don't enhance internal controls or of incorrect invoices or inaccurate reports that need to be reworked.

Organizations typically start with lean operations (often called lean manufacturing), which is the focus on the core value streams of the organization's manufacturing and/or operations. Lean operations is the effective and efficient flow of what's being delivered, whether it's a product or process. Lean is simply about flow. If you can flow your products more quickly through the processes and reduce lead time, then the productivity will increase and the cost per unit will decrease.

The next level is to achieve the effective and efficient flow of data/information (transactional lean). There is generally a limit to how much core value streams of the business can be optimized given that they are typically dependent on the accurate and timely delivery of data from outside their span of control. Within the business, these support functions typically include engineering, supply chain, quality, environmental health and safety (EHS), sales and marketing, human resources, finance, IT, legal, and so on. Very few of these transactional teams typically provide the actual product that the customer is buying, yet they are a necessary part of the business's structure of support.

It is their responsibility to develop, manage, and execute their necessary systems in such a manner that enables the most efficient (flow) and effective (quality) implementation of services. It isn't unusual to see dramatic reductions in lead time (greater than 50%-75%) and an 80%-90% reduction in errors and rework (see Figure A1-2).

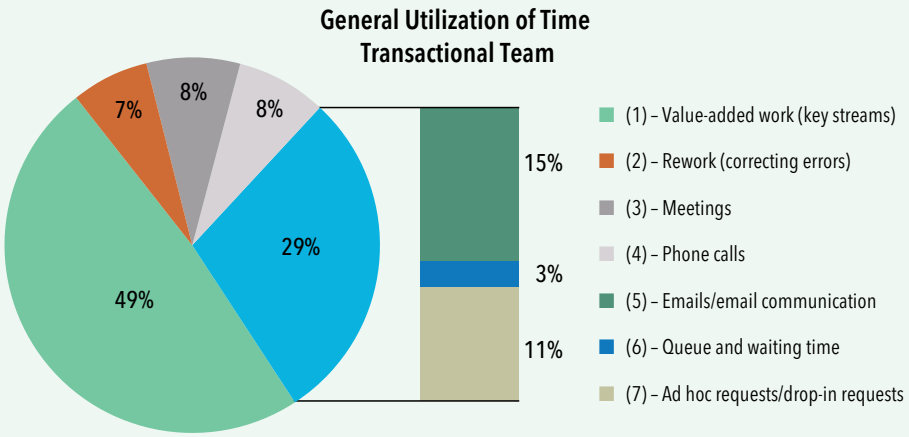
Figure A1-2: Lead Time Reductions Experienced by Accuride Corporation Lean Initiatives



Should an organization start lean via the traditional lean operations route or should it start at the transactional levels? Is it possible to successfully start with the transactional processes first? The vast majority of companies begins with lean operations, but imagine the change in perspective of how lean could be deployed if it's first started in the business's transactional processes. How fast would the rest of the business follow through with execution when the transactional process flows are already efficient and effective? Or would it never get off the ground as the office personnel try to figure out how it applies to them? The product transformation processes in operations can only be as optimized to the level that the transactional processes will enable them to be. While it's easy to get lean value stream numbers such as lead time, productivity, and cost per unit when dealing with pieces and parts, it would take a very selfless and servant-based organization to look at itself in the mirror and say, "Let's really start at the top." In the transactional Standard Work (StdW) sample (see Figure A1-3), nearly 50 professionals were evaluated for how they spent their time. About 10% of it was purely due to rework and waiting time for late and/or incorrect information. Imagine the reaction if a direct labor team spent a full 10% of its time on rework and waiting—there would be an immediate in-depth review to resolve the situation. If the transactional team focuses on initially only that portion of its system wastes, then the organization has an opportunity to redeploy 10% of staff to other parts of the business.

At this phase of the lean journey, the operational pieces should be flowing well. As the core value streams are optimized in flow and quality, the external processes can then be optimized to support them more effectively. For larger, multisite organizations that are vertically integrated, shipping intercompany is a common occurrence. Managing those system orders efficiently (flow) and effectively (quality) will further enhance the agility of the business. By focusing on the product and process transactions across the organization, the business will take its next great leap in reducing its lead time. Again, the adage "Time is money" will become even more transparent as the egregious wastes in the system are exposed.

Figure A1-3: Case Study Results of General Utilization of Time in a Transactional Team



Sample data across an internal transactional team of 50 professionals. Ten percent of the time was identified as nonvalue-added (rework, queue, and waiting time). If 75% of the process lead times are recovered and efficiencies are gained, it is anticipated that 10% of the time could be recovered.

Benchmarking…Looking through Others' Eyes

For organizations that recognize the value of lean and are looking for ways to integrate it with their business strategy, a valuable tool is to benchmark value stream performance against organizations in the same industry, organizations performing similar processes, or even outstanding organizations in other fields. Global supply chain expert Bill Waddell states, "Seeing your business through the same lens won't lead to the changes you hope to make. Instead, you must learn to look at the business through Toyota Eyes…" (or through the eyes of whomever you are looking to benchmark).[7]

How do we force ourselves to look at our organization through that different lens? How do we then apply that feedback to the business strategy? What are the key process steps that are needed to effectively link our functional initiatives with that of the business strategies? And then, what are the major steps needed to harness that aligned power to develop a lean organization? How does one approach looking at their business objectively to see it for its possibilities? There are generally two paths that business teams can consider. They can:

1. Pay for a third-party evaluation and secure support from a consultant organization.
2. Find a way to conduct their own benchmarking and do it themselves (DIY).

Both have strong pros and cons. A third-party evaluation can be quite costly, but it may have a shorter overall lead time than the DIY method. There's the benefit in selecting a partner that will not only help to identify the opportunities but also help the team get started on its journey without becoming a permanent cost fixture in the organization. There are many reputable and strong third-party lean practitioner resources out there. They seem to follow a general approach:

[7] Bill Waddell, "Toyota Eyes," www.bill-waddell.com/leadership-and-culture/103-toyota-eyes.

- They will aid in the initial assessment of the organization and facilitate the creation of the initial current state value stream maps (VSMs).
- They will provide the business with basic lean and systems training.
- They will stand back and let the team members of the business do the legwork—execute the physical actions—while the third party monitors from the sidelines. They are, after all, teaching the business "how to fish." If the third party is doing the execution of the tasks and the implementation of the systems, the business's ownership of the improved processes generally won't hold up over time.
- As the business evolves through its phases of improvement, the third party will bow out, leaving the organization to stand on its own. Depending upon the organization's size and complexity, this partnership can last from two to four or more years.
- Most critically, the third party will fire the organization, its own customer, if it isn't ready or able to effectively commit to the journey. How many of our organizations would willingly turn away business?

Third-party partners can be powerful and effective. When the in-house team doesn't know how or where to start, this may be a good and quick option.

The DIY method also has its own pros and cons. Depending on one's perspective, a main detractor may be the longer lead time for implementation. And time, as we know, is money. Regardless, as long as the organization starts on its journey, it can get there with the commitment of the senior leadership team. One strong positive is that the organization's unique culture is cultivated along the way. People who are uncomfortable engaging in the process often self-select by leaving. Aside from not having to provide severance packages, this approach can be smoother for a company.

There are several large and inclusive not-for-profit organizations (NPOs) that can help the DIY-er. These NPOs often host a variety of conferences, webinars, and site tours. They provide local training and mentoring support with benchmarking opportunities. The level of engagement with these entities is up to the organization: They can do as much or as little as they want. These organizations have survey tools that businesses can conduct on themselves. As companies work on their lean journey, they can compete with others via these entities' recognition programs. When an organization is ready to be objectively evaluated, it can apply for recognition. And, essentially for the cost of travel and expense (T&E), these organizations will send subject matter experts (SMEs) to the business and evaluate its level of lean execution. Just a few examples include:

- The Baldrige Foundation: The Baldrige Foundation manages the Baldrige National Performance Excellence Program in the United States. The President of the United States presents this award. The Alliance for Performance Excellence manages the Baldrige Performance Excellence Award at the state level. Almost every state participates in this program. This process is an amazing way to learn how to develop, implement, and manage performance excellence systems and then participate in site assessments to see how others apply the techniques. The American Society for Quality (ASQ) supports the Baldrige Performance Excellence process.

- The Association for Manufacturing Excellence (AME): AME's recognition program is the AME Manufacturing Excellence Award. AME focuses on developing a mentoring relationship. Like Baldrige, its rigorous application process forces an organization to be objective and introspective in its review of itself.
- The Shingo Institute: Shingo's recognition is the Shingo Prize for Operational Excellence. Shingo is globally regarded for its in-depth evaluation of an organization's continuous improvement systems.
- The Japanese Union of Scientists and Engineers (JUSE): JUSE's recognition is the Deming Prize.
- There are also several lean system self-assessment tools. Aside from those provided by the organizations listed above, Waddell's 100-question lean survey is very intuitive.[8]

Regardless of the method of support that's chosen for a business's lean journey, it should enable an organization to rapidly better itself so that it can provide more value to its customers and become more competitive.

Lean Results

Depending on the type of key value stream(s) the organization has, experience in working across dozens of value streams has demonstrated that it isn't uncommon to see the following types of results from effective lean programs:

- More than 50% reduction in lead time for operations-based processes. This can vary depending upon the process type: heavy assembly/component throughput, large-scale machining, capital equipment building, and so on. The more manual the processes, the more the lead time can generally be reduced.
- Between 20% and 40% reduction in lead time for batch-based systems such as painting, heat treating, chemical baths, bulk recipe batches, and so forth, where batches of products are produced simultaneously.
- Greater than 70% average reduction in lead time for transactional and data flow-based processes.

In a case study of eight value streams across a diverse set of processes including batch-based, heavy machinery, and light assembly processes, the overall average of improvements was a 55% average reduction in lead time, which enabled a 60% average increase in productivity and an average 25% decrease in cost per unit.

Figure A1-4 shows the change in productivity as a function of a reduction in lead time. Figure A1-5 shows the reduction in cost per unit as a function of a reduction in lead time. The individual results appear to show minimal correlation between the two variables, yet the change in lead time always resulted in an increase in productivity. The difference in results reflects the diversity of the processes.

[8] Bill Waddell, Lean Systems Audit, 2010.

Figure A1-4: Case Study Results of Changes in Productivity as a Function of Change in Lead Time

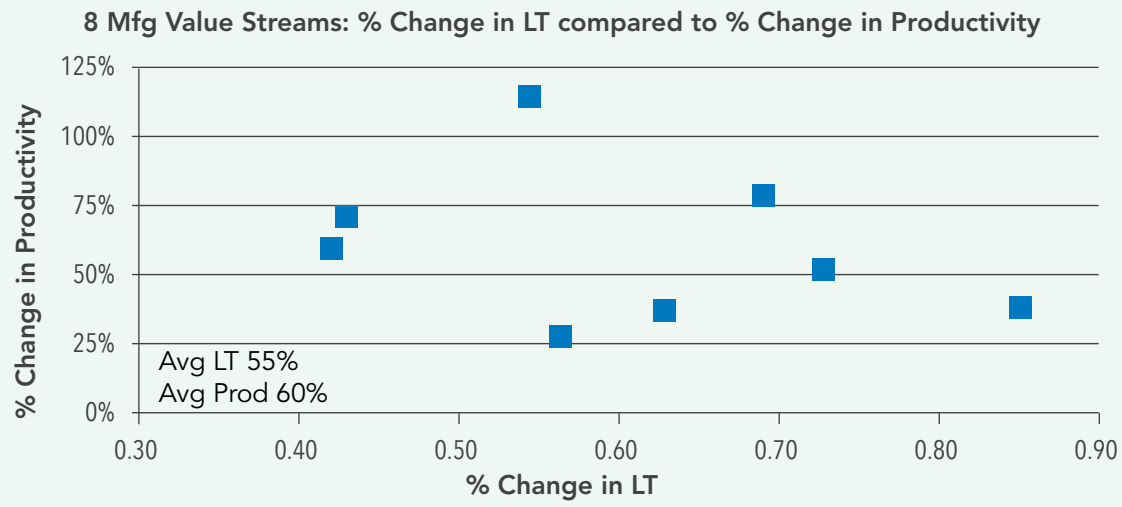
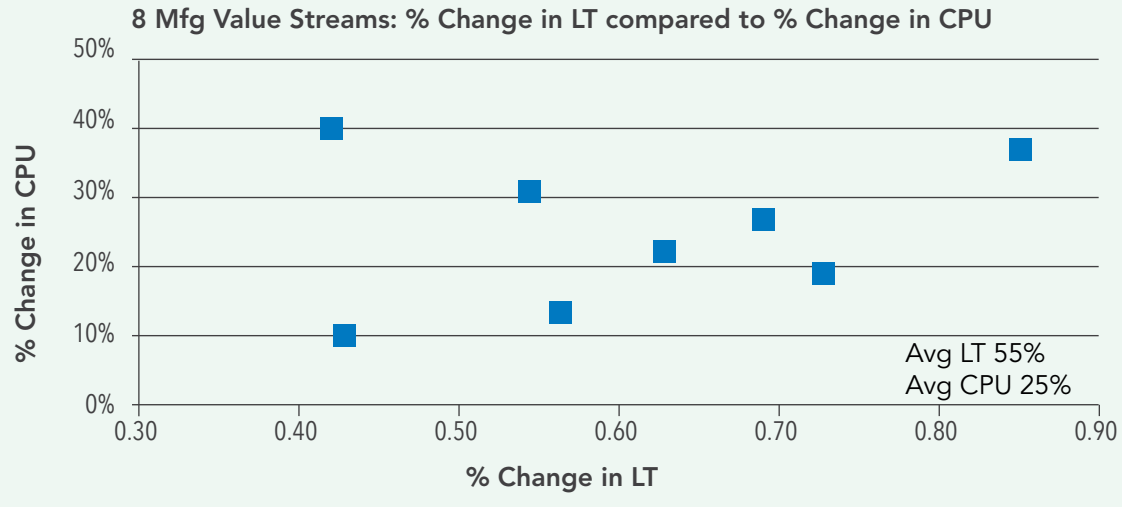


Figure A1-5: Case Study Results of Changes in Cost Per Unit as a Function of Change in Lead Time



Risks to Lean Implementation Success

Successful implementation of lean inevitably results in the need for fewer people to perform the value stream processes. This is often where lean gets its bad rap—that "lean" colloquially stands for "Less Employees Are Needed." On the surface, this is true, but that doesn't have to be a bad thing. Organizations typically face three options in addressing the employees whose current work is eliminated by lean initiatives:

1. Redeployment: Personnel that are freed up from their nonvalue-added or inefficient activities should be redeployed within the organization. Trained, experienced resources provide low-cost additional capacity for the organization. These workers bring a deeper understanding of the work across functions in the organization, which can be applied

effectively to future lean improvements. Further, by working with these employees to find continued suitable, satisfying work within the organization, the culture of trust builds, reducing resistance to further improvements.

2. Attrition: Some associates simply won't be able to withstand the systemic changes that come with lean processes and will opt out. As they leave, and natural attrition happens, they typically won't need to be replaced. One company's experience was that, depending on operations type, across five baseline lean system implementations, this can range from 3% to 5% across the business.
3. Layoffs: This should be the last resort for the organization. Everyone has experienced changes in business conditions that preclude large-scale redeployment of employees or timely reductions through attrition alone. The sidebar "Less Employees Are Needed" highlights ways that organizations can keep the necessity for layoffs from derailing progress on implementing lean.

At least two *Fortune* 500 companies have demonstrated the use of redirected personnel as ad-hoc problem-solving teams across the business. This powerful "self-funding" method brought significant savings to the bottom line while simultaneously cross-training these personnel to be effective in a variety of roles. One business used redirected personnel to replace third-party contractors in various capacities. Generally, though, when attrition or growth openings occurred, personnel from these pools were sourced from within. Their bottom-line impact well exceeded the expense of their "temporary" retention until a position was available. In one business, no new personnel were hired over a two-year time frame while the business grew both in size and market share.[9]

If the organization is solely fixated on the "less employees" aspect of lean, it may likely achieve short-term gains but not realize long-term sustainability. Achieving the subsequent levels of lean improvement will become culturally challenging to achieve. This is a result of two factors:

1. When the leadership team's language focuses on "belly buttons or toe tags," its focus isn't effectively on the improvement of the business.
2. Losing the trust of the workforce means that the commitment, creativity, and perseverance needed to make meaningful change will likely not be applied to the challenge of improving processes and procedures.

"Less Employees Are Needed"

Organizations that struggle with implementation of a lean culture typically run into varying levels of resistance to change due to a perception that the hidden agenda is really to eliminate jobs.

Organizations that succeed with lean implementation demonstrate a sincere commitment to retaining, retraining, and redeploying current employees to make the organization more successful and jobs more secure.

This commitment can be demonstrated with Hoshin Kanri, where the linkage between initiatives, strategies, and resources is agreed upon at all levels of the organization.

Part of building trust with employees, of course, is clearly and candidly communicating risks and opportunities. There will always be cases where there aren't opportunities for growth and expansion. Some employees will leave voluntarily, either due to an uncertain future or an unwillingness to adapt to the new culture. As a last resort, layoffs may need to occur. The question is whether the workforce sees that all other alternatives have been exhausted.

[9] Marhevko, Srivastava, and Blair, 2016.

Appendix 2: Implementing Lean[10]

So where does one start? How does an organization leverage the functional linkage from the strategic plan to the functional teams and enable lean to happen concurrently? There are hundreds of businesses that have been successful, and there are simply too many books to cite. Each of the models out there has worked for someone. What will be the approach methodology that will work for your business?

From a transactional lean perspective, many specialties are now arising. There's lean accounting, lean sales and marketing, lean engineering via mastering lean product development, lean supply chain and logistics, and lean HR, among others.[11] These resources should remind a serious leadership team that lean isn't just in operations.

There are many lean "tools" to leverage at the operations level. Many of these translate equally well into the transactional level, such as value stream mapping, 5S analysis, kanban, and poka-yoke. One that isn't as commonly translated, though, is the power of applying Standard Work (StdW). It's easy to grab an industrial engineer with a stopwatch to determine the best way for an operator to load piece X into machine Y and then do steps A through Z. Imagine translating this type of breakdown to maintenance personnel, financial personnel managing credit/debit memos, supplier quality engineers, software engineers, laboratory technicians, and so on. Where appropriate, conducting StdW analysis on indirect labor positions can be very powerful. Personnel tied to operations add value to the business and can be related to the variable fluctuation of sales. Those in transactional positions need to optimize their processes as much as is feasible to maximize margin potential. The basic tenets of lean apply across the business.

Aligning Key Value Streams across the Business Enterprise: Both Product and Transactional

Jonathan Chong's article on enterprise-wide value stream mapping, "Practitioner Briefing on Enterprise-Wide Value Stream Mapping: Create a Vision of Your Company That Really Puts Your Customers First," describes how a business can look at itself from that 50,000-foot level.[12] Chong identifies five main components in an enterprise-wide VSM:

1. Transactional: The marketing and sales value stream.

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[10] For more extensive information on lean and lean accounting, see the following related SMAs: *Lean Enterprise Fundamentals* and *Accounting for the Lean Enterprise* available at www.imanet.org.

[11] Brian Maskell, Bruce Baggaley, and Larry Grasso, *Practical Lean Accounting: A Proven System for Measuring and Managing the Lean Enterprise,* Productivity Press, 2003; Ade Asefeso, MCIPS, MBA, *Lean Sales and Marketing,* lulu.com, 2013; Ronald Mascitelli, *Mastering Lean Product Development: A Practical, Event-Driven Process for Maximizing Speed, Profits and Quality,* Technology Perspectives, 2011; Paul Myerson, *Lean Supply Chain and Logistics Management,* McGraw-Hill, 2012; Dwane Lay, *Lean HR: Introducing Process Excellence to Your Practice,* CreateSpace Independent Publishing Platform, 2013.

[12] Jonathan Chong, "Practitioner Briefing on Enterprise-Wide Value Stream Mapping: Create a Vision of Your Company That Really Puts Your Customers First," TBM Consulting Group, March 2013, http://beta.tbmcg.fr/whitepaper_assets/ManagementBriefing_Value_Stream.pdf.

2. Transactional: A product development value stream. (See "Product Development in the Automotive Industry" for an example of a product development value stream.)[13]
3. Operations: An operations value stream.
4. Transactional: The IT infrastructure showing data flow.
5. Transactional: The supply chain (and logistics) value stream; this can include several perspectives:
    - The planning management of receiving goods, including the development of pull signals via kanban markets.
    - The planning management of outside service providers (OSPs) who add value to the product outside of the "four walls" of the business.
    - The planning and coordination of shipping and logistics of the finished goods and services.

Figure A2-1 is a high-level concept of a VSM for a multisite manufacturer with the transactional processes, operations, and supply chain links shown. A formal set of VSMs would have much more information for specific value streams. The intent here is to show the complexities of intercompany shipping across multiple sites.

Today, organizations seem to first focus on the third component, the operations' value streams. In the model shown, organizations would focus on achieving that 50% reduction in lead time from within the "four walls" of the various sites. This can be done simultaneously across the sites if the local personnel are effectively trained in the methodologies.

There are often rapid and sizeable returns within the "four walls" of the various sites. As the sites work across this journey, the teams often recognize the need for the transactional processes to catch up, traditionally in Sections 2, 4, and 5, as shown in the model. As the company expands its focus, Section 1 gets incorporated into the fold along with the intercompany product and process logistics. It's critical to note that the quality management system needs to be in good order for this to occur.

Product Development in the Automotive Industry

The automotive industry has a very well-defined model issued by the Automotive Industry Action Group (AIAG) called Advanced Product Quality Planning (APQP). Product planning is commonly executed across a "staged gate approach." APQP identifies five stages. (Other product development systems identify six, seven, or more gates.) Each of these gates should be considered when an organization is conducting its value stream analysis of its product development system. Some key gate considerations (per AIAG) are:

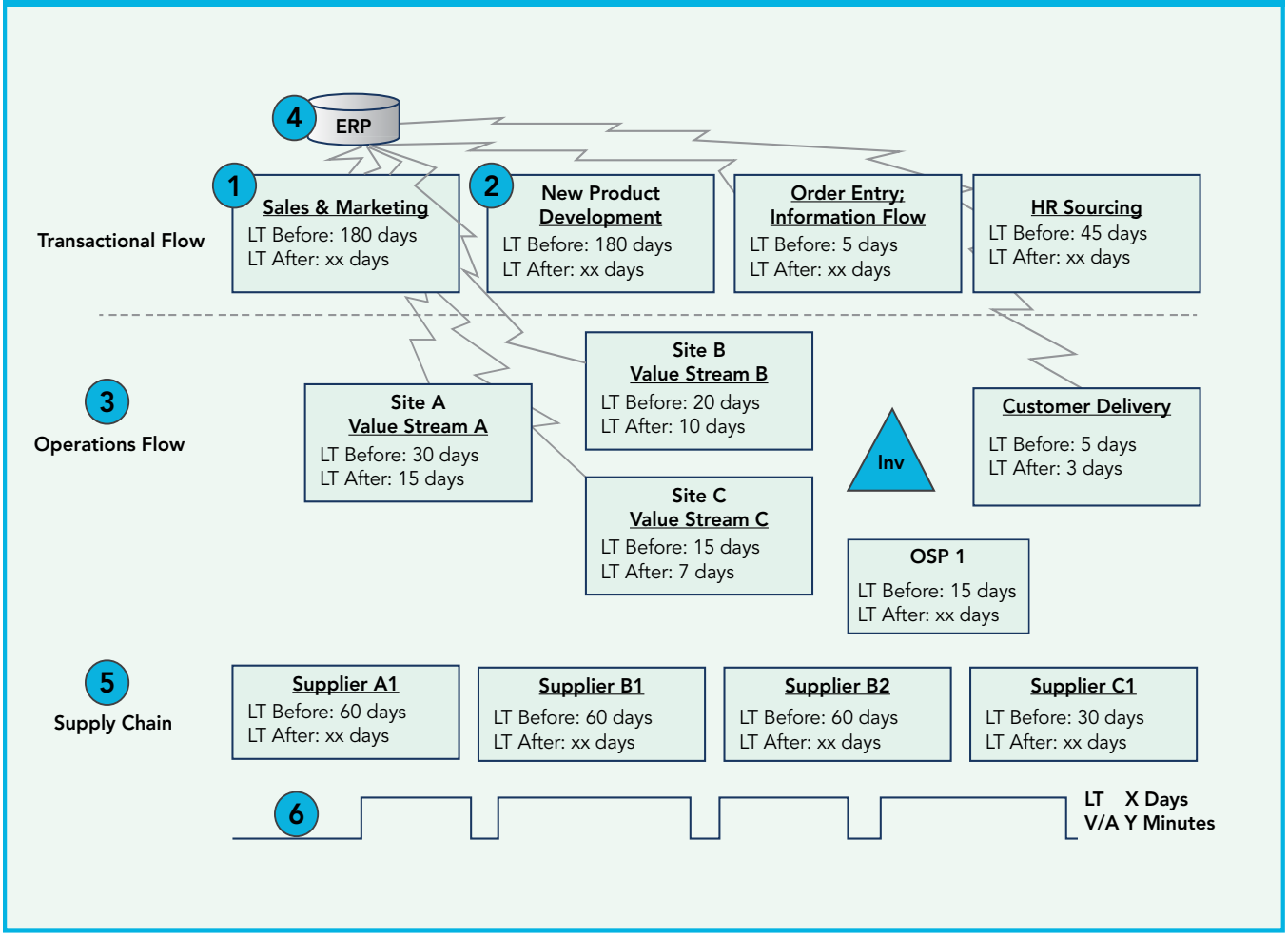
1. **Planning and defining** of the new product or process. This is typically based on voice of the customer and/or marketing analysis.
2. **Product design and development.** This involves prototype development and review of feasibility of providing the product or process in a manner that meets strategic objectives.
3. **Process design and development,** i.e., creating and testing the new product and/or process. This includes both the physical creation of the product/process and also the manufacturing or system development across which the product/process will be performed.
4. **Product/process validation** through a pilot. The process is verified as effective.
5. **Feedback, assessment, and corrective action.** The new product or process is issued. Data across the process is evaluated and fed back into the overall system for Lessons Learned and Change Management.

Incorporate Partners: Customers, Supply Chain, Contract Services: Largely Transactional

Continuing that path of "inside out," the final phase of focus (Section 5 in Figure A2-1) includes all partners external to the organization. Whether the organization does operations or transactional processes first, working with the external entities in the last phase makes the most

[13] Automotive Industry Action Group, *Advanced Product and Quality Planning and Control Plan (APQP),* Second Edition, 2008.

Figure A2-1: Conceptual Value Stream Map for a Multisite Organization



sense. Put your house in order first before going outside. This sets an example for the supplier and gives management a clear view of what to ask for.

There are a few large categories of entities to consider in the scope of external partners. These would typically include:

a. Customers: Front-end transactional processes, such as sales and forecast planning, order entry acknowledgements, order entry processing, and so on. Back-end transactional processes, such as logistics delivery, sequencing, billing, and the inevitable debit memo processing.

b. OSPs: Supporting their front-end transactional processes, such as sales and forecast planning, order entry acknowledgements, order entry processing, and so forth. Understanding their back-end transactional process needs, such as logistics delivery, sequencing, and billing.

c. Suppliers: Supporting their front-end transactional processes, such as sales and forecast planning, order entry acknowledgements, order entry processing, and so on. Understanding their back-end transactional process needs such as logistics delivery, sequencing, and billing.

d. Internal/external functions requiring third-party compliance: Financial, quality, supply chain, and environmental health and safety systems typically have some form of compliance criteria in which internal or third-party support is needed. Examples would be the Sarbanes-Oxley Act (SOX), General Agreement on Tariffs and Trade (GATT), Committee of Sponsoring Organizations of the Treadway Commission (COSO), third-party quality systems such as ISO 9001, third-party EHS systems such as ISO 14001, local state environmental and regularly requirements, and industry-specific requirements such as FDA regulations.

Highly effective businesses can partner with each of these entities proactively to optimize the relevant processes, reduce waste, and improve both efficiencies (flow) and effectiveness (quality). The objective is a "win-win" for both the business itself and each outside party.

It can sometimes be very challenging to get the customer partners to the table. Some customers simply believe that a warehouse of goods is the best way to do business. Helping them to understand the value proposition of lean can take time and persistence.

Most businesses start with their suppliers and outside service providers. From there, they grow to incorporate the compliance organizations. They share results to demonstrate their newfound agility. As lean becomes more recognized for its benefits, some customers are now creating a pull with their suppliers and are requesting partnered lean system approaches. Leveraging these opportunities can be financially beneficial to both teams.

A Note on Governance

It's important that complex organizations implement a steering committee or type of QLMS council to provide governance to the business improvement efforts. Governance includes prioritizing projects and resources, sharing best practices, and tracking lessons learned across all sites and process areas. In the case study organization, utilizing a sound governance structure drove the velocity of execution across locations in a business unit with six to 10 sites, enabling the documented results in two to four years. The utilization of Hoshin Kanri is a key component in enabling the speed of execution.

In the case study model, the company achieved an average of 55% lead time reduction across the sites "inside the four walls." When the transactional processes were incorporated and the overall enterprise map was executed, an additional 25%-30% of working capital was removed from across the entire value stream.

Another aspect of governance is utilizing product costing tools, such as lean accounting or activity-based costing (ABC), to identify additional opportunities. When it comes to lean accounting, accountants should understand that it's acceptable to have two or more "coexisting" management accounting methods. When applicable, ABC should be applied for strategic profit margin analysis of products, service lines, channels, and customers. Lean accounting is for operational improvement. There are different types of costs for different purposes for different users of the information.

Traditional cost of goods sold (COGS) is a critical metric often used to measure profitability. It has three basic components: materials, overhead, and direct labor. These are the costs needed to produce the product prior to the application of selling, general, and administrative (SG&A) expense and taxes. In North America, and depending on the type of product or process, it isn't uncommon for materials to be the largest component of COGS. Oftentimes, this can be 60%-70% of the total COGS. Typically, the next highest contributor is applied overhead. Upper management's driven focus on lean strictly to reduce labor costs can be very misplaced. Consider the investment tied up in the raw materials, work-in-process, and finished goods inventory and the "overhead" waste of moving it all around within the four walls and then across the enterprise and the components of inventory carrying cost. This isn't about low-cost country sourcing or beating suppliers into cost submission; it's about purely reducing the amount of what is on hand and only buying what's truly needed. Appropriate governance ensures that the entire organization focuses on solving the right problems. Recall the previous discussion on the equation correlating shareholder value to ROI (profitability divided by investment). Effective lean programs work on both parts.

Appendix 3: KPIs

Imagine if every day every employee in an organization, from the bottom of the organization to the CEO or managing director at the top, could answer this single question: How am I doing on what's important? The first half of the question can be easily displayed with a KPI dial in a BSC or dashboard, with the actual compared to the target. But it's the second half of the question that is the key, and the important KPIs are derived from the strategy map.

Measurements are far more a social system than a technical one. Selecting and measuring KPIs are critical tasks. You get what you measure, and a strategy map and its associated BSC serve a greater social purpose than a technical one (although information technology and software are essential enablers). Performance measures motivate people and focus them on what matters most.

The risk and peril of the BSC involves the process of identifying and integrating appropriate cause-and-effect linkages of strategic objectives, which are each supported by the vital few measures, and then subsequently cascading the KPIs down through the organization. KPIs ultimately extend downward into OPIs that employees can more easily relate to and directly affect. OPIs are typically displayed in dashboards. Remember, the strategic objectives are located in a strategy map, not in a BSC. The KPIs in the BSC reflect the strategic objectives in the strategy map.

The primary task of a strategy map and its associated BSC is to align the managers' and employees' work and priorities with multiple and linked strategic objectives that, if accomplished, will achieve the strategy. This linkage is documented in the Level II Kanris. This consequently leads to realizing the end game achieving the organization's objectives.

A superior strategy map, BSC, and linkage system embraces employee teams communicating among themselves to take actions rather than a supervisory command-and-control style from senior managers. An executive team that micromanages the KPI performance of employees can be corrosive. If the strategy map and cascading KPI and OPI selection exercise is done well and subsequently maintained, then higher-level managers need only view their own score performance, share their results with the employee teams below them, and coach the teams to improve their KPI and OPI scores and/or consider replacing or deleting existing KPIs or OPIs.

Selecting KPIs

When organizations implement a BSC, how does anyone know if its measures—the KPIs—support the strategic intent of the executive team? Are the selected measures the right measures? Or are they what the organization can and has been measuring rather than what it should measure? And is the purpose of the BSC only to better monitor the dials rather than facilitate the employee actions needed to move the dials?

In an enterprise and corporate performance management (EPM/CPM) framework, the results and outcome information from the various EPM/CPM methods should answer three questions: What? What does that mean? And what's next? In most cases, the BSC only answers

the first question. Worse yet, answering the "what" may not even focus on a relevant "what." Organizations struggle with determining what KPIs to measure. A technique to identify KPIs is to examine each strategic objective in the strategy map and ask, "What two or three metrics can monitor the progress toward accomplishing the strategic objective?"

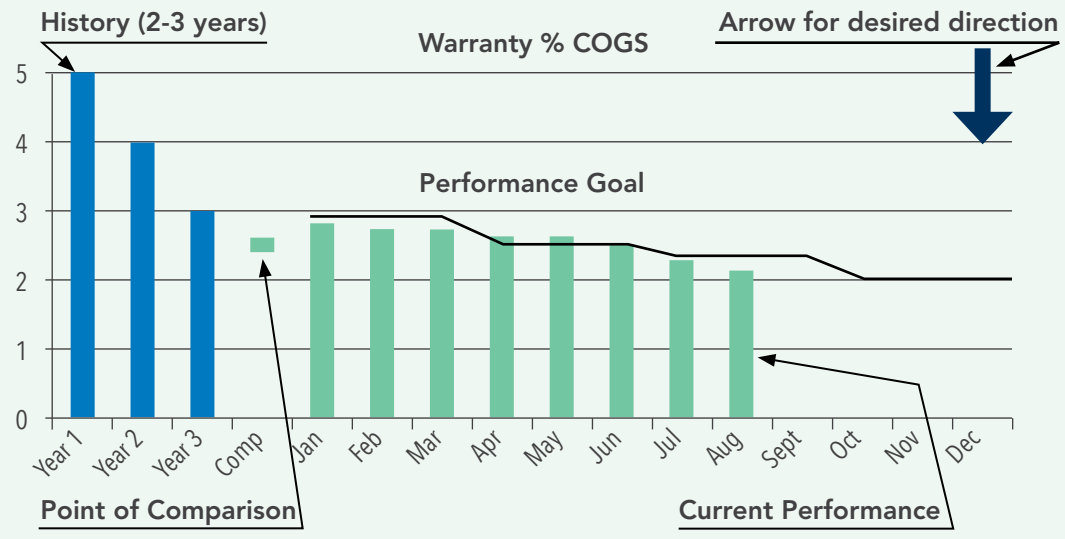
It's quite helpful to monitor the KPIs in a graphical format to look for shifts, trends, and cycles. This helps when determining the next course of action. Forrest Breyfogle's book *Business Deployment Vol. II: A Leaders' Guide for Going Beyond Lean Six Sigma and the Balanced Scorecard* provides a detailed approach on how to break down KPIs and manage them in a predictive manner.[14]

When talking about KPIs, businesses can sometimes go overboard. It isn't uncommon to see PowerPoint presentations with reams of pages that upper management doesn't have time to review. After the first 15 to 20 pages, the team is saturated. Teams developing those Tier I KPIs with their underlying Tier IIs and Tier IIIs aren't really adding value to the business: They are verifying (again) what's already known. What is the value of all that effort? While all this analysis is going on, the resource time needed to actually execute problem solving can be starved. Organizations should apply their lean lens to metrics and KPIs as well.

Suggestions for Developing KPIs

The right side of the Hoshin Kanri identifies the KPIs of the organization. There are varying approaches on how to develop these. As mentioned earlier, a blend of leading and lagging indicators helps to control the front end so that the back end follows. Figure A3-1 shows some suggested components that can be included in a KPI graph.

Figure A3-1: Sample KPI Graph Format for Warranty %COGS



[14] Forrest Breyfogle, *Integrated Enterprise Excellence, Vol. II: Business Deployment: A Leaders' Guide for Going Beyond Lean Six Sigma and the Balanced Scorecard,* Bridgeway Books, 2008.

- Some form of history (if available) should be provided to tell the story of overall performance. It's a general practice to stay within three years because systems and metric definitions change over time. When applying for general performance awards, this history is often reviewed as part of the evidence of sustainability.
- A point of comparison (POC) should be provided where practical. A POC can be a benchmark reference, but it shouldn't be confused with one if it isn't truly the best in class for that measured feature. A POC enables more flexibility where comparisons can be made to any of the following sources or "levels" of data comparisons: international, national, state, city, industry, competitor, intercompany, interdepartment, and so forth. The overall intent is to develop an objective comparison with another entity to see where the organization stands. POCs can work in two ways:

    1. If the team is performing negatively to the comparison, it can provide motivation and clarity that the comparative level can be achieved; if someone else has done it, so can they. In the real example provided here, the team felt great when its performance for warranty as a percentage of COGS went from a 5 to a 4—that's a 20% year-over-year reduction. Without an effective comparison, a team may feel it has really hit the new low. Yet when faced with the reality of a comparison, it's rapidly able to adjust its filter and look at the problem differently. From Year 2 to 3, it reduced it again by 25%. And yet, it still wasn't enough. It had sufficient motivation to know that there was a way to do this in order to recover its competitive position.

       The real challenge, though, is that in this example, the customer advised the business of a competitor's result in Year 2. The customer took a mandatory pricing reduction, citing that the pricing was inflated to account for the costs of the warranty. The business's choice was to forego the revenue or address its performance. It chose the latter. When it ended up exceeding the benchmark and showed the customer, it was able to recover some of the pricing. One can only assume that the customer possibly shared the business's new performance level with the competitor to extract further cost reductions.

    2. If the team is performing positively to the comparison, it can provide a sales or marketing advantage that can be leveraged.

- A performance target or objective needs to be identified. This shows the team how the KPI is performing to the plan. KPIs monitor the progress toward accomplishing the integrated strategic objectives that comprise the strategy (and ideally are derived from a strategy map). The KPI target can be flat or stepped as progressive goals are achieved.
- The current performance of the KPI is tracked on either a rolling 12 (last 12 consecutive months) or in a year-to-date format. The idea is to observe the overall behavior of the process over time.
- The arrow of desired direction helps the reviewing audience understand the performance intent. Which way is desired? Up or down?

Suggestions for Managing KPIs

There are a few challenges in interpreting graphs at the leadership level:

1. The data is usually collected monthly; there aren't usually "hundreds" of data points at "high check" frequencies to assess for performance. This is another benefit of the use of leading indicators.
2. People tend to "over-characterize" the performance of a process. Two points over average may be misidentified as a "trend." One point "higher than the rest" may be labeled as a "spike."
3. Most critically, many of these KPIs aren't typically expected to be distributed normally. Depending on the type of KPI, it's often hoped that it will tactically trend (or shift) up or down. Margin, revenue, or market share perpetually going up may be considered to be a great thing. A flatlined part per million (PPM) at zero would also be quite nice.

By applying a few of Shewart's basic principles of control, a less reactionary interpretation of the KPI performance can be made and enable people to focus more on reducing the underlying causes of variation.[15]

Figure A3-2: Sample Shewart Chart Demonstrating Shift

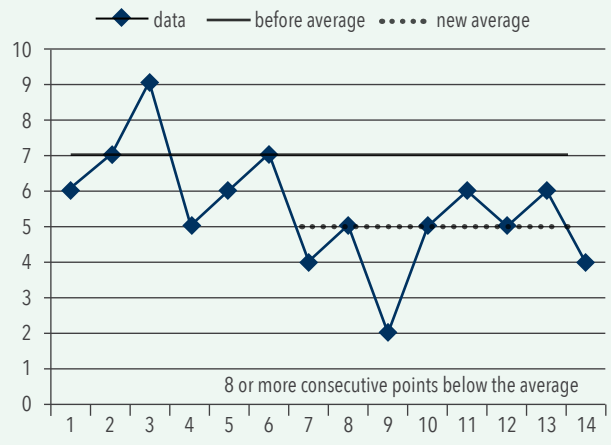
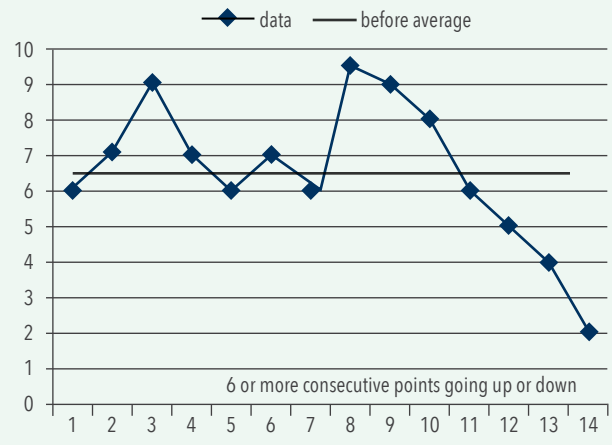


Figure A3-3: Sample Shewart Chart Demonstrating Trend



Per Shewart, a shift has occurred when there are "8 points in a row above or below the average" (see Figure A3-2). Other references, depending on the surrounding circumstances, will cite five, six, or seven points. The bottom line, though, is that "two or three" points in a row above or below the average doesn't make a trend. Think of it this way: For a normal process, you should have an equal chance of getting a value above or below the average—the same odds as flipping a coin. If you flipped a coin twice, there's a good chance you could get two consecutive heads or two consecutive tails. The odds of getting the same face decreases dramatically with each consecutive flip. By flip five, six, seven, or eight, the possibility is there that you would

[15] AT&T, *AT&T's Statistical Quality Control Handbook*,1985.

still be getting a consecutive head or tail, but the probability is getting close to nil. It just isn't normal. At that point, you're looking closely at that coin. From a process change interpretation perspective, there really isn't any shifting going on unless there are more than five to eight consecutive points in a row above or below that average.

A similar point is made to trend behavior. An increase or decrease of two or three doesn't make a trend. There needs to be six or more data points going consecutively in the same direction for the process to be considered trending (see Figure A3-3).

A "spike" in performance can be considered for removal from the data set if there is a verified special set of conditions that caused the metric to behave that way. If a special cause isn't identified, then that super-high or low point may just be part of the normal variation of the process.

In summary, KPIs create visibility and accountability. Too many of them create waste and inability to leverage one's human resources to execute the fixes. Identify the key leading and lagging KPIs that are needed. Use Hoshin Kanri to connect the KPIs from the business strategies to the tactics and stick to the vital few. Develop an introspective review of the transitional processes and make them more efficient.