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Company Culture and the Path to Improved Food Safety

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Table of Contents

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Company Culture and the Path to Improved Food Safety

By Lone Jespersen, Ph.D., and Mike Robach

The World Health Organization has estimated that almost 1 in 10 people is sickened by eating food processed or prepared by others;[1] it is estimated that approximately 50 percent of cases of foodborne illness are due to failures in the culture of the organizations responsible for the safety of products.[2] In other words, much improvement is still required in understanding how culture can be improved to enhance food safety performance.

Good news: A global study in 2015 showed that senior leaders (e.g., C-suite, executive vice presidents) rank culture as the number one concern in their organizations for its ability to meet the challenges of the future and for the business to be sustainable and develop further.[3] They no longer use statements such as "What if culture impacts business performance"? Instead, they ask "How and what can I do to assimilate and maintain a positive culture including food safety"?

As visionaries looking ahead 10 years, we see a landscape that goes beyond seeking compliance to where food safety *lives* in all levels of a food company—from the boardroom to creating new food products to processing lines and food counters: a landscape where employees *earn autonomy* to meet and continuously improve food safety systems and where the company's people system flexes with the increasing complexity of the workforce. A landscape where principles of social science *blend* seamlessly with food science, and *success* is measured through behavioral consistency and team dynamics.

The path to this vision lies squarely in the culture of your company. Not in better pathogen detection technologies, certification standards, or blockchain-like solutions, but in optimizing the culture of your company to improve measurable food safety performance. Three cases from the food industry show the very specific impact of focusing on maturing culture. In a midsize Australian produce company, the culture focus resulted in a 70 percent reduction in customer complaints and a 45 percent reduction in lost-time injuries. Similarly, a large U.S. manufacturing company showed a 35 percent reduction in customer complaints, a

reduction in employee turnover from 23 percent to 12 percent, a 32 percent improvement in efficiency, and a 50 percent reduction in recordable injuries. A large U.S. food distribution company surveyed its employees after a focus on culture, and across 17,000 employees, 91 percent felt connected to the company's values, 91 percent understood how they contributed to the success of the organization, and 82 percent felt management cared about their well-being. These are just a few examples from the food industry that show the concrete values and the tangible connection between maturing culture and a company's financial performance.

How do you deliver on this vision to show similar improvements in your company?

Find Your Path

To break down the daunting task of finding the best path for your company, the Global Food Safety Initiative (GFSI) has published its position, developed "by leaders, for leaders," in which 35 leaders from global companies joined the GFSI technical working group on culture in December 2015 and outlined what a culture of food safety is and how this sometimes-confusing topic can be segmented into five distinct but integrated dimensions that are relevant for any company's culture. This special edition of *Food Safety*

Magazine helps your company navigate this landscape of food safety; it was designed and written to continue the "by leaders, for leaders" theme of GFSI and complement its position with practical advice and learnings. As such, 19 leaders agreed to co-author five articles, each complementing a dimension of the GFSI framework (Figure 1).

The GFSI framework[4] consists of five dimensions based on a review of seven existing culture evaluation tools.[5] If you are looking to better understand your current culture and improve it, you should look at all five dimensions. No
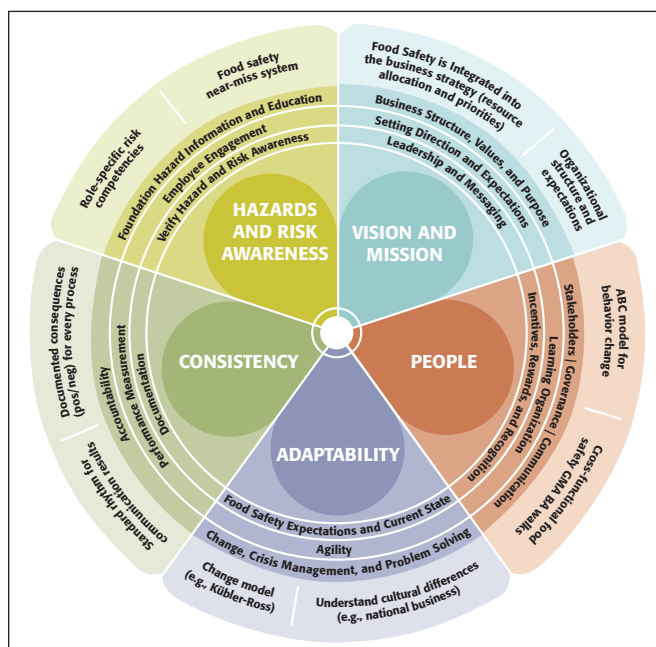

Figure 1. Culture Dimensions and Tools

one dimension alone can strengthen your current culture. As you can see, each dimension consists of subdimensions, each identified by the GFSI group as important; for each dimension, you will find in this issue practical tactics and stories to help you continue your journey. As such, to describe the vision and mission of the GFSI position, the authors of the first article, "Setting the Tone to Support a Strong Food Safety Culture," recommend seven winning practices to set a positive tone from the top down, such as be consistent and transparent in your messages, don't underestimate the signals of allocating resources around food safety, and show that you appreciate employees' effort and engagement in food safety. The authors describe some great practical ideas for showing that you appreciate your staff. This is also a theme in the article on adaptability, entitled "The World Is Changing and So Must Your Food Safety Expectations," which identifies the importance of setting targets and communicating specifically and consistently. The authors of this article also

recommend specific and creative ways to engage everyone in food safety, every day. The theme of engagement is at the heart of the third article, "The "A" in Culture: A Toolbox to Drive Positive Food Safety Behaviors," where experts discuss several tools to ensure that everyone learns what competencies are important to their job and what is expected, in more than the traditional components of training. Such clarity of expectations and consistency can be measured: The authors of the article "Measure What You Treasure" discuss how this can be done by integrating food safety into measures from behaviors as leading indicators and risk assessments. Risk assessments as we know them from food science and the proven principles of Hazard Analysis and Critical Control Points are topics of the fifth article, "Food Safety = Culture Science + Social Science + Food Science." The authors suggest that these principles are just one part of that equation and provide specific and practical communication and engagement tools for balancing the equation and delivering the results that we are all after: safe food, every day, everywhere.

For each 'petal' (Figure 1), you will find a summary of practical ideas for you to consider in your journey. Select the one that can be integrated into your culture and your system, and create a path that is unique and impactful for improving and sustaining your company's food safety performance!

Conclusion

It is no longer a matter of "whether culture impacts food safety"; it is a matter of how and a matter of finding and committing to the best path for your company to improve. Take these learnings and apply them within your company. Accept these as valid principles; build upon them instead of obsessing with how to develop unique, bottom-up solutions. As consumers, we all deserve to find peace in the blind confidence that we as food professionals put our effort where it can have the biggest impact: on the safety of our food.

Enjoy!

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By Mark Beaumont, Ph.D., John Helferich, and Sara Mortimore

Setting the Tone to Support a Strong Food Safety Culture

Members of any organization look to their leaders for direction about organizational culture. A leader who sets a positive tone through word and deed and by consistently modeling and exercising good leadership principles will bring alignment and enhance the effectiveness of the organization's culture.

Executive leaders in food firms have an opportunity to establish a dialogue within the organization to describe a desired cultural framework for food safety excellence.

This article focuses on how senior leaders, namely CEOs, the executive team, functional leaders, plant managers, and their staff, can take steps to strike the right tone to achieve their organizational culture objectives.

While we focus on the tone set internally in this article, the tone set externally is also of great importance. External stakeholders are interested in not only what product a firm makes but also how it makes it. How the firm safely produces food is increasingly of great import to consumers. Many organizations have adopted a corporate responsibility (CR) model. Consumers, investors, and employees rightfully demand transparency, trust, and credibility in how organizations fulfill their role as responsible corporate citizens. This ensures sound and ethical stewardship of the environment, sustainability, and worker health and safety. Food safety fits into this same basket, and the CR model provides a way to create an executive forum for routine review of performance in these key topics.

In this article, we share our observations of how leaders successfully set a positive tone through their actions and communications. You will learn how leaders can positively impact food safety culture based on real-world examples.

Based on our collective experience, we have identified 'Seven Winning Practices' that we would expect to see from any senior leader in a food company (Figure 1.1). We also provide you, a food safety leader, with some practical tips to help your senior leaders set the right tone for food safety cultural excellence.

Practice 1: Ensuring Consistency

People in an organization pay attention to observed behaviors, both good and bad. When the organization sees consistency from senior leaders,

Figure 1.1. Winning Practices to Set a Positive Tone*

THREE TAKE AWAYS

- ☐ Provide candid and regular reviews, education, and measurements.
- ☐ Identify and drive your specific 'must win' food safety priorities.
- ☐ Foster ownership among the wide community of leaders.

it reinforces its own behaviors. Executive leaders will be noticed when attending team meetings, visiting sites, engaging business partners, and in many other situations. Their consistent adherence to proper food safety behaviors will reinforce consistent standards throughout the organization. This consistency will support the enhancement of the organization's food safety culture. Conversely, inconsistent behavior can lead to chaos with deviations from food safety expectations and standards. This results in a less coherent culture and will be easily recognized by customers and business partners to the detriment of the organization.

Executive reinforcement of the foundational need for being the best you can be in food safety has made an impact at Land O'Lakes. An opportunity was identified several years ago, when the company's senior food safety leaders recognized that training and education had largely focused on the plants, which at the time was the same in many food companies. Land O'Lakes determined that the leadership teams and cross-functional corporate personnel would benefit by having a greater understanding of what it meant to work in a food company with the added responsibility for making and distributing food that is safe, for both people and animals. Commitment was given for a full-day food safety workshop; initially, all senior executives attended, including the CEO, who opened and closed the event. This was followed by open attendance for all corporate staff, 800 of whom have now been through this experience. At the end of the session, each left their own written commitment with food safety leadership. This effort alone has driven food safety awareness to a whole new level across all corporate functions.

Practical suggestions for senior leaders to set the right tone in maintaining consistency:

- Always ask food safety-related questions and provide direct, immediate, and specific verbal feedback when on visits to manufacturing facilities. Use a visit as an opportunity to reinforce how expected behaviors relate to the organization's values and food safety system requirements.
- Reinforce support for actions that assist and further the mission of cultural excellence.
- Share with teams, if appropriate, summaries of all significant meetings, executive reviews, and of any engagement with business partners where food safety is on the agenda. Sharing your own food safety objectives and deliverables with your team is an excellent way to model accountability and transparency, and shows how individual objectives are intertwined with furthering the organization's culture.

Practice 2: Allocation of Resources to Food Safety

Allocation of financial resources by executive leaders sends a strong message to the organization that food safety is important. These resources could be capital for plant improvements or IT system investments, expenses for training and education, travel for supplier audits, participation in external meetings, or receiving a requested expansion of personnel to drive and support the food safety agenda. The impact of these allocations goes beyond the immediate project. This speaks loudly to employees about the importance of food safety in the organization, thereby boosting the effectiveness of the food safety culture.

An example that we have seen involves a major frozen food firm that decided to ring-fence capital funds strictly for food safety initiatives. Previous management, a private equity firm, had not allocated resources to food safety, and therefore the organization did not believe that the new management team would invest in food safety. The ring fencing of funds sent a strong message to the organization that food safety would be an investment priority.

Another example of food safety investment sending a message is a mid-size confectionary company. The sole plant of this firm needed a new roof to stop roof leaks. A project to fix the roof languished until the CEO came to the realization that this wasn't just a nuisance: The leak endangered consumers. The CEO quickly approved the project. This action helped set the tone that food safety was an important investment.

Practical suggestions for food safety leaders to help senior leaders set the right tone in managing resources:

- Work with the leaders of other functions to forge and maintain continuous dialogue to gain influence and support. The value of food safety in terms of minimizing risk, protecting consumers, and adding value to the bottom line should always be at the forefront of any discussion. Requests for resources should always fit within the corporate and food safety culture model and lead to positive future benefits.
- Proper framing of resource requests can enhance the likelihood of project approval. Researchers in behavioral economics have shown that framing resource requests in a manner consistent with the approver's style increases the likelihood of project approval. Food safety leaders should understand the company's requirements and frame resource requests appropriately.

Practice 3: Transparency

An unhindered view of the 'current state'—the strengths, weaknesses, and vulnerabilities—is an important transformational step in any cultural journey. This clear view requires building and sustaining trust, and reinforcing a mindset that knowledge and information sharing is paramount to achieving excellence. Performance shortfalls and challenges along the journey are important data points to share and reflect upon constructively. This reflection will help build organizational resilience and envision prevention processes from the 'ground up.' This also reduces the likelihood of the same problem being repeated across the organization by another site.

Learning from 'mistakes,' 'failures,' or 'near misses' is an invaluable experience to propel positive culture change. A culture of safety excellence is well documented in the air transport industry and is driven by an uncompromising commitment not only to studying failure and near-miss events in-depth, but also in systematically sharing these across the entire industry.[1]

At Glanbia, the 'GPS' program (Glanbia Performance System) recognizes the principle of 'celebrating and identifying losses.' A leader must be willing to openly recognize and provide an appreciation for the transparency of sharing of the potential losses, incidences, and identified risks. This recognition demonstrates appreciation (not consequences) for the identification of near misses and high-risk conditions that are then systematically shared as part of learning and improvement. Glanbia has developed a global 'near miss' database that aggregates both internally and externally occurring cases, which Glanbia uses as part of analysis, leadership team review, and reflection. Leaders from the individual site reporting the incident will develop the case study, root cause analysis, and key learnings, which are shared in the wider leadership forum. All sites are requested to confirm their scope and potential needed improvement actions from the case.

A question asked in Glanbia is prompted by a concern for a dashboard that is all green—Have we set the bar high enough? Did we aggressively identify emerging risks? Sometimes forcing a bell curve in standard reporting [e.g., reports must have a minimum of 10% of their key performance indicators (KPIs) in 'red' to highlight where work is needed] can create a more open sense to reflect upon vulnerabilities.

Practical suggestions for senior leaders to set the right tone and ensure transparency:

- Embrace the reporting of leading and lagging indicators that both reflects a commitment to 'organizational learning' and removes any filters for good news only.
- Reward and recognize people for sharing their learnings formally and highlight (whenever possible) the savings/avoided losses by the solution they provide the organization.
- Reward and recognize people who aren't afraid to speak up when they see something that doesn't look right.
- Provide insights to your leaders on how other industries excelled by embracing transparency and used challenges as a forum for learning. Two excellent reads are 'Black Box Thinking,'[1] and 'A complaint is a gift.'[2]
- Build trust and transparency by encouraging manufacturing site leaders to share and debrief internally on a routine basis with their entire team—condensing 'what went well' and 'where can we do better.' Creating the dialogue in a smaller, more familiar forum can encourage teams to share more widely.

Practice 4: Appreciation

Positive reinforcement and acknowledging the effort made, even without the desired results, is a winning approach that encourages constructive behaviors. To be effective, feedback must be timely, regular, balanced, and consistent. While appreciation cannot be dished out randomly, a senior leader should not miss the opportunity to praise great results, significant ongoing efforts, and landmark achievements consistent with the corporate values and vision. The positive upward cycle of senior leader support and praise cannot be underestimated. At Glanbia, the values of 'winning together' and 'showing respect' hardwire the principles of praise and appreciation, where appropriate and at all levels.

It is widely known that employee engagement and motivation are amplified by believing their contributions 'make a difference' and when they have a belief in the organization's mission and vision. When setting a path to excellence, recognizing important contributions to further that mission is essential and adds a motivational multiplier across the organization. Land O'Lakes has had an all-encompassing quality recognition program for a number of years and celebrates winning and diverse contributions from across the entire enterprise. Additionally, Glanbia has implemented value-based recognition programs across the business that call out each of their core values in all activities and functions.

It is important to reflect on both the small and large contributions, and ensure that all functions feel able to participate. The recognition forum can be used to reinforce the organizational mantra of food safety cultural

excellence. The individual efforts are not 'random events' but small steps along the journey.

Practical ideas for senior leaders to set the tone for appreciation:

- Establish an awards and recognition program specifically for food safety and quality programs. This can be individuals, teams, or entire departments or locations.
- Provide special training, missions, or assignments for those who have the ambition to grow their careers and for professional development in food safety and quality management.
- Award small, on-the-spot recognition at routine meetings and scheduled events that recognizes individual contributions and behaviors. These can be small gift cards, mementos, clothing with the company logo, or a personalized certificate.
- Create formally structured programs that encourage the identification of solutions (and celebrate them), as well as losses, without fear of negative consequences.
- Work on a "just culture" approach to running the business.[3] The just culture approach focuses on finding why problems happen, not who is to blame. The tone this sets could lead to a positive attitude to uncovering problems and solving them.

Practice 5: Adaptability

Understanding and effecting cultural change within food safety will require adaptation to existing cultures across diverse organizations, which may be geographically separated, have different customer profiles, use different processes, and have different organizational maturity levels. This can also include incorporating new cultures integrated through joint ventures, mergers, and acquisitions.

While some fundamental principles may remain sacred, practicality dictates that there may not always be a 'one size fits all' solution for every type of food safety standard or policy. Adjustments that are necessary for underlying requirements are to be expected and, subject to review, can be acceptable.

When reviewing a specific policy or program deployment, a senior leader must understand the maturity of the operating culture as well as the current food safety programs. Ensuring a top to bottom understanding of hazards and risks is documented in several models of food safety culture, as outlined in Jespersen et al.[4] Having an understanding ensures that credible plans are in place to manage risks effectively. Sometimes, a food safety team might be faced with a situation where there is not yet a definitive plan for full resolution. Adaptability should promote an open and rigorous review of risk mitigation approaches.

Practical ideas for senior leaders to set the tone for adaptability:

- Have an open and challenging discussion of food safety policies and programs with key stakeholders when they are being drafted and through roll out to ensure true alignment. A well-represented review team can often flag significant challenges and possible solutions at an early stage. A senior leader can set the right tone by seeking to ensure visibility and buy in at the earliest stage possible.
- A senior leader should advocate and support standardized risk assessment tools and models that drive local level ownership in identifying risks and solutions to manage them. These will create a robust and factual discussion around deviating conditions and how these are being managed.

- Regular, focused, deep review of specific food safety programs, with the collective subject matter experts, will foster an active and open dialog concerning 'solutions' and the manner in which local adaptations have been applied for achieving the same principle requirements.

Practice 6: Accessibility

Executive and senior leaders must be fully accessible, highly visible ambassadors and advocates for food safety excellence, both internally and externally. A proactive and deliberate approach to ensuring access and good collaboration is a must, especially in larger organizations.

In some sense, a senior food safety leader is a 'hub' position that needs to extend in all directions, hierarchically and functionally, to ensure the message, the program, the progress, the successes, and the opportunities are heard and shared. This is about building a trusting relationship, and it's not always easy. While formal processes like newsletters and electronic updates are useful, a personal touch (through face to face contact) will be needed for building a respectful working relationship between stakeholders.

For senior executives and business leaders, a chronic failure to be accessible by phone, email, or face to face could inadvertently send a message that food safety may not be as important as other topics on the very busy corporate agenda. Accessibility provides a forum for accountability check-ins and a continuity of commitment that will be noticed by the working teams. This element is consistent with communication and also manifests as leadership commitment, which are two important elements in a systems review.[4]

Practical ideas for senior leaders to set the tone for accessibility:

- Senior leaders should aspire to be highly visible ambassadors and advocates for food safety excellence wherever possible.
- Senior leaders should ensure that well organized, agenda-driven food safety review meetings are held routinely—even when there is no significant change or update—to keep everyone on message and focused on the mission.
- Senior leaders should always be available for food safety updates and issues resolution as needed. There are always proactive opportunities to provide succinct and meaningful review, commentary, and potential lessons learned on cases outside of the organization's own walls, but present in the media.
- Senior food safety leaders should schedule routine one-on-one meetings with team members, functional leaders, and executive leads.
- Senior food safety leaders should establish routine reviews among key quality leaders and customer contacts.

Practice 7: Assessment

Regular review of food safety performance can ensure reassurance at the executive level that programs reflect corporate values and demonstrate continuous improvement, as well as provide governance for activities across the enterprise. The assessment and reporting element is a senior food safety leader's opportunity to provide the dashboard, key measures, strategy, and direction to the decision makers and, conversely, provide feedback and direction to the team. The critical importance of setting food safety goals and providing indicators of progress (leading and lagging) has been called out by Yiannas.[5]

Progress, risks, or investment needs that don't always make a byline in an executive boardroom will risk losing visibility in any enterprise. Metrics should be reported upwards in a succinct manner that highlights results, trends, needed actions, and, ideally, the level of risk prioritization. Land O'Lakes, Glanbia, Mars, and others have processes to share this critical information with senior-most executive leaders and with their boards for awareness and action. Any program without governance and routine progress review will quickly lose momentum and risk becoming defunct. Executive leaders must be aware of the risks to the organization's performance and reputation, and it is in the role of a senior food safety leader to ensure the appropriate metrics are in place and routinely discussed.

Practical ideas for senior leaders to set the tone for assessment:

- Senior leaders in food safety must ensure a regular and disciplined review among the organization's most-senior executives. They must also align on the appropriate KPIs and measures, and provide a candid view on progress and challenges, using leading and lagging indicators.
- Senior executives should make time to attend the food safety review meetings and actively engage with other executive leaders. When unable to attend the main meeting, request a one-on-one discussion.
- Having a corporate executive, other than the food safety leader, communicate food safety news, summaries, and activities at every board meeting is a great way to set the tone that every senior leader can and must talk food safety.
- A policy statement, signed off by relevant senior leaders, should be in place that clarifies reporting standards and expectations for the food safety mission.

Helping Senior Leaders Set the Tone for Food Safety Excellence: Conclusion and Final Thoughts

Consumer goods and other organizations are increasingly measured by their commitment to corporate responsibility and accordingly will be held to ever-increasing standards of transparency, ethical behavior, and trustworthiness. Financial results alone—even in the absence of 'issues'—are not enough. That organizations are fostering a proactive and comprehensive view with culture driving prevention and resilience will be increasingly open to scrutiny by external stakeholders. This very public lens will significantly influence the reputation and trust of food and ingredient producers, and calls for evidence and measures of their commitment, in this case, to food safety excellence, are increasingly being heard.

In this frame, food safety is not a result of materials, people, and processes alone, but must be in the organizational DNA and psyche, and safeguarded by embedded cultural 'guard rails.' Well-founded and communicated corporate values are the first, basic building blocks from which food safety culture (and all corporate responsibility themes) can be meaningfully derived. These values must be manifest in the organization and provide a true compass on the direction and decisions that occur every day across the enterprise. How to define, measure, and report this culture of excellence remains a subject of vigorous discussion among the leaders in this field, with several iterations and models available.

A great way of thinking about the food safety culture journey is to relate it to the 20-mile march described by Jim Collins in his book "Great by Choice:"[6]

"*Whatever comes at us, we keep moving forward, a bit at a time, every day,*

fully supported by the organization and from the top."

As a leader in food safety, how do you support and encourage the organization's senior leaders in setting a positive tone for food safety in today's environment? Let's review the three take aways:

☑ *Provide candid and regular reviews, education, and measurements:*

- Be completely honest in the assessment and communication of the food safety maturity of the organization. Educate such that the information being shared makes sense and be pragmatic regarding issues and solutions.
- Set up frequent food safety status reviews with senior leaders, either in a group setting or in a one-on-one meeting—both can be very effective. For a group meeting, you'll need to ensure active participation and discussion. In a one-on-one meeting, you'll have the undivided attention of the leader.
- Provide updates on what is happening external to the organization—examples of new technologies and food safety management approaches, as well as examples of other company failures and key learnings, which can be very helpful in keeping interest alive.

☑ *Identify and drive your specific 'must win' food safety priorities:*

- Communicate and agree on well-aligned priorities for strengthening the food safety program. The kind of areas that could be in scope

for prioritization could include: hygienic upgrade of buildings and equipment, technology/systems investments, Hazard Analysis and Critical Control Points program deep dives and revisions, sanitation validation excellence, high-risk raw materials supplier qualifications, environmental risk assessments, or formulation risk review processes. A key is that these are rarely new areas but areas already known and identified as priorities that could be elevated in importance for a 6- to 36-month focused effort to reach a milestone.

- Senior leaders must also align on appropriate KPIs and provide, with one voice, a candid view on progress and challenges against the agreed priorities, supported by leading and lagging indicators, and surfacing hurdles and solutions. The KPIs should be consistent with and aligned to the agreed priority areas of the program.

☑ *Foster ownership among the wide community of leaders:*

- Recruit a senior leader other than the food safety leadership; communicating food safety news, summaries, and activities at senior management meetings is a great way to demonstrate the expectation that everyone, including senior leaders, must own food safety.
- Ensure a clear and intuitive link of organizational values and vision to the food safety agenda. Reputation, consumer trust, and brand integrity are integral to organizational suc-

cess. Ensuring senior leaders in all functions understand this and embrace their role in protecting and building trust through food safety excellence will be a catalyst to cultural transformation.

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By Charlean Gmunder and Bill Cunningham, MBA

The World Is Changing and So Must Your Food Safety Expectations

In today's manufacturing environment, there are significant challenges that face professionals in instituting a food safety culture. Environmental factors such as socioeconomic issues and demographic shifts are transforming the food manufacturing landscape. A robust merger and acquisition atmosphere, given the economic situation today, has a dynamic impact on business today. In addition, the zero-based budget (ZBB) focus brought on by the arrival of 3G Capital's food industry acquisitions has changed how many companies view their expenditures and their business. Simultaneously, changing demographics have impacted the industry, with the shift in the labor market that has changed who the typical manufacturing worker is, for example, multiple generations including millennials and immigrant workers, and what the perspective is on the relationship between the employer and the employed. These challenges should be examined to understand how they will mandate a change to the way you lead your company to adjust and evaluate its approach to changing and sustaining a food safety culture. We will examine each of these challenges and how they impact a food company's food safety expectations (Figure 2.1) and bring forward activities with examples for how to adapt your company's food safety expectations in this changing world.

Mergers and Acquisitions

When we study the socioeconomic forces, the food industry is undergoing a transformational change, with the intense amount of mergers and acquisitions (M&A) that have taken place over the last several years. Stout Advisory, a leading valuation advisory and management consulting firm, reports that M&A activity in the food and beverage industry has seen about 300 transactions annually over the last few years, with "strong food & beverage industry M&A activity continued in the third quarter of 2017."[1] This type of vigorous movement has shaken up the food industry and continues to influence actions within the industry. As these events occur, professionals within food companies must decipher the needs of a changing business and integrate differing company cultures to ensure a food safety culture suitable for the combined corporation. Frequently, the various components of a

Mergers and Acquisitions
Requires deciphering the needs of a changing business and integrating differing company cultures to ensure a food safety culture suitable for the combined corporation.

ZBB and 3G
While scrutinizing every expenditure, must simultaneously work to create and sustain a food safety culture in an organization that may have changing beliefs on the value of food safety.

Changing Workforce Demographics; Immigration and Generations
Change the approach in communicating and training food manufacturing workers to address the changing population.

Employee-Employer Relationship
Fluid employment relationship has created an environment of shorter-term employment and requires a focus on sustaining a culture through means other than legacy knowledge transfer.

Changing Engagement Needs
To truly engage the workforce, involve first-level supervisors and refine training and tools to be job specific and relevant.

Figure 2.1. Challenges for Your Food Company and Their Impact on Food Safety Expectations*

THREE TAKE AWAYS
- ☐ Keep it simple.
- ☐ Make it specific.
- ☐ Communicate, communicate, communicate.

newly formed corporation have vastly different views of roles, responsibilities, and, most importantly, norms of behavior. This requires a professional to determine what the corporation's new standards will be and to initiate change management processes to institute the new norms—very often alienating those who were closely tied to the old set of values. This requires a professional to recognize the need for creating a strong, harmonized food safety culture while tactfully navigating through a set of disparate norms, behaviors, and values.

ZBB/3G

Another perilous minefield to traverse is the "3G impact" on the food industry. 3G Capital is a well-known global investment firm that has purchased several large food and beverage companies such as Heinz, Kraft, Anheuser-Busch, Burger King, and Tim Hortons. It has impacted the food industry through its focus on relentless cost cutting and the introduction of zero-based budgeting.[2] When a company has been acquired by 3G, as Daniel Roberts at Fortune magazine described it, the 3G impact includes "widespread layoffs, lower budgets, new levels of austerity, and a shift in the corporate culture." This "3G impact" includes zero-based budgeting, a process for creating those lower budgets, "wherein every expense must be newly justified every year, not just new ones, and the goal is to bring it lower than the year prior."[3] The influence that 3G has had on the food industry has significantly impacted views on food safety, particularly as it concerns roles and responsibilities, as well as budget for head count and training. While adhering to new requirements to scrutinize every expenditure, professionals must simultaneously work to create and sustain a food safety culture in an organization

that has changing beliefs on the value of food safety. This creates a dilemma when attempting to transform an organization's norms while needing to influence new senior leaders' views on food safety. Presuming success in gaining alignment with senior leaders, the professional must then undertake the process of change management, now under stricter budgeting constraints. Previously used tools for creating a food safety culture (training, development, roles and responsibilities, outside monitoring, advisory and auditing services) are now under additional scrutiny, making the task even more difficult, as greater justification is required.

Clearly, the current economic situation, with increased M&A activity and strong influence from the "3G impact," has created a perfect storm for the professional trying to create a strong food safety culture. These external forces will require a level of creativity beyond what has been thought of in the past.

Changing Workforce Demographics

Changing demographics have also caused headwinds for the professional trying to institute an enviable food safety culture in his/her organization. As we look at the changes in the market today, one of the most influential forces is the changing immigrant population in the U.S. As the U.S. population grows from an immigrant population, jobs taken by these transplants tend towards low-skilled roles—often in the manufacturing industry. At the same time, native English speakers shy away from manufacturing roles, opting for less-labor-intensive roles. In fact, "immigrants are 1.2 times as likely as U.S.-born workers to be employed in the manufacturing sector."[4] This change in the proportion of immigrants in

food manufacturing creates challenges for the professional working towards creating a food safety culture, as there are difficulties in training non-English speakers, as well as aligning norms and behaviors from foreign cultures with differing values. The approach the professional takes in communicating and training food manufacturing workers must be changed to address the changing population.

In addition to the changes in immigrant populations, there are also currently three major generations in the labor force today. Defined as Boomers, Gen Xers, and Millennials, they are almost equally represented in the workforce today. Baby Boomers are defined by having grown up in a time of relative economic prosperity. As a result, they are willing to work hard and sacrifice work-life balance for success. Oftentimes, they are described as workaholics and have a diminished view of others that do not work as hard. Gen Xers have been described as highly independent and less committed to an organization. They are more mobile in the workforce, demonstrating less commitment to a company, and they highly value work-life balance. The third major generational influence is the Millennials who tend to be more highly educated and technologically savvy, with a strong social consciousness. Millennials, having grown up with social media, are confident in sharing information and value diversity. As we view these different generations, it is clear that their differences require varying approaches to engaging them. Communication will need to be carried out using several different tactics, and training will require multiple methodologies.

Employee–Employer Relationship

While these changing demograph-

ics force a modification in approach, simultaneously, there has been a shift in the relationship between employee and employer. Over the last 20 years, the commitment that once existed between a company and its associates has changed, as the previous long-term employment "contract" no longer exists. "At-will employment" has created a new norm where employers are free to hire and fire, and employees are free to come and go. This fluid employment relationship has eliminated the long-term commitment of employees and created an environment of shorter-term employment. This, too, has created challenges for the professional tasked with creating a food safety culture. No longer can one depend on norms and traditions handed down from one generation of employees to the next. And sustaining behaviors by having long-term employees with low turnover cannot be relied on to ensure the food safety culture remains robust.

Changing Engagement Needs

With a work environment that more and more relies on employees who have a shorter-term employment commitment, it becomes more challenging to engage associates in the culture and truly embrace the values. Research shows that people's food safety behavior is most significantly influenced by their supervisor's commitment to food safety.[5] This requires a different approach from our first-level supervisors in engaging the workforce, as they are incredibly influential in terms of developing the appropriate behaviors on the plant floor or at the food-contact locations and in sustaining these behaviors.

Another approach to engaging the workforce is through the use of training, communication, and measurements. To address the entire workforce in a cost-effective and timely manner,

frequently we use a "one-size-fits-all" approach. The challenge with this is that in order to truly engage the workforce, employees need to see things very specifically, not in the generic fashion that we have historically used. Associates need to understand aspects of food safety that are particularly relevant to their role, and they need to be given tools that are useful to them. Not only must we be aware of language differences, 4–6 different generations including millennials and cultural variations, addressing those with customized training specifically using their desired language or recognizing their cultural perspectives, but we must also refine training and tools to be job specific and relevant. This approach is critical to quickly getting the shorter-term workforce up-to-speed with the appropriate norms and behaviors, without relying on legacy knowledge or systems. By making training and tools job specific, the expectations become real to the employee, and they are better able to internalize the requirements of their role.

Combined, the socioeconomic influences and the demographic changes add new complexity to the challenges faced in changing and sustaining a strong food safety culture. To sustain the culture, a level of resiliency must be created in the culture that allows for changing employee populations and business dynamics. It is no longer enough to develop a food safety policy statement and train and educate the workforce with a generic approach. Much deeper leadership commitment, support of supervisors, and engagement of employees will be needed. The battle for a resilient food safety culture, one that will stand strong in the face of socioeconomic and demographic winds of change, will be won through employees' hearts and minds. To be successful,

there are several critical steps to be taken. This includes management alignment, defining and instituting expectations, communication programs, aligned incentives and disincentives, education, and supervisor support.

Unlike strategy and leadership, culture cannot be planned like a rebranding exercise. You can't flip a switch and say "we are now a learning organization or purposeful organization." The company culture is all about employees' behaviors and beliefs—it is how they work and get work done. So changing the culture requires changing the way the company gets work done.

Tricks To Defining or Redefining Your Company's Food Safety Expectations

Faced with the changes described, today's food industry professional has to be constantly on the lookout to learn from others, be flexible to constantly incorporate new tricks, and persistent to stay the course. We want to share some activities that we have found to work effectively to adapt our company's food safety expectations and engage our colleagues. We chose to define a food safety expectation as 'a simple and easy to understand description of how a person is to act specific to food safety and the person's role.'

Creating organizational change can be a daunting task, will take a long time to achieve, and requires relentless effort. For culture change to take effect, the CEO and top management team must align with the target culture desired.[6] The food safety professional must work to create top leadership alignment around a food safety culture that may be new to the organization. Alignment requires management to communicate the new cultural elements through their actions, not just their memos, white

papers, and words. The change must consistently cascade throughout the organization from the top down to the front-line worker.

After obtaining senior leadership alignment, one of the first steps in instituting a new culture is to define expectations. It is important to set up clear expectations so that each individual understands how food safety—and even quality in its broader sense—fits with their job. Expectations are key to setting up clear accountabilities. They help get results and drive the right behaviors. Most importantly, the message needs to be credible to people at all levels in the organization.

In setting expectations, there are several challenges to overcome. First and foremost is the need to adapt to the audience. This means that you must ensure that you target everybody. It is critical to make the message specific to each person's role; in this way, they will be more engaged in the culture change, having a full grasp of the expectations specific to them. It is also important to remember that expectations should not be only about standards or tangible outputs but also about mindset and behaviors. Also important to understand is that one company's set of expectations does not fit every company. Tailoring expectations to roles and to an organization is critical to ensuring the successful implementation of them.

Make Leadership Decisions

Mission and vision statements

These guiding principles should be short, memorable, and core to all activities in your plant. Employees should not have to look at a poster or pull a card out of their wallet to read their mission statement. Simply put: This is how we work—every day, every job, everyone. Simple is always better; it helps to ensure understanding and retention.

Organizational norms: See something, say something

Create a safe environment for employees to identify and even correct unsafe situations without fear of retaliation. Too many incidents have occurred because a worker did not take action when they could have. While no one in the plant wants to see a production line stopped, everyone should want to see a zero tolerance for potential recalls and poor-quality product going out the door. Create a safe climate for fixing the problems rather than "shooting the messenger."

Organizational design

Position titles and job descriptions should include food safety expectations. Ideally, food safety responsibilities should appear in everyone's job description. These responsibilities should be clearly defined and role-specific. Identifying food safety leaders with titles such as "Food Safety and Quality Assurance Supervisor" demonstrates your commitment. Food safety committees involving line workers as well as supervisors and managers also communicate your seriousness of purpose in creating a strong food safety culture.

Changing culture requires hard work, persuasive buy-in from the organization (especially at the top), and a comprehensive approach for implementation. Determining your current culture and then defining your target culture shows you the gaps you need to fill. Using some of the tools above and others you may create, fill in the gaps to make steps toward your target culture. Use a layered approach—that is, don't try to eat the elephant all at once but take bite-sized steps to reach your goal.

Take inventory

To begin the process of implementing food safety expectations and making food safety an integral part of the company's day-to-day fabric, as an initial step, you must take inventory of where you are today. After assessing the current state, describe the food safety targets you would like to weave into everyone's behaviors and actions. For instance, you might set expectations of more rigorous Good Manufacturing Practices. One company decided that they would not just have good practices but great manufacturing practices. Remember that your target culture must align with your business strategy—what works for other companies might not work for yours. Finding the right targets can be critical to success.

Set targets

Ensuring that you have the right targets and overall expectations is not enough. To have a greater chance that people will truly engage in the expectations, they have to be relevant and clear for them. It is important that they give purpose and provide a clear link to the company mission. Critically important is that you clarify expectations for every function and every person across the organization. Do not provide broad-brush expectations, thinking that people will be able to link them to their own roles. Do not leave this for them to do: This leads to misunderstandings and a lack of engagement in the culture. It is incredibly beneficial to use role models to show people exactly what it looks like, to truly involve people in helping to define expectations specific to their roles. Standards and policies are not sufficient; they have to be translated into clear behavioral expectations for each employee according to their role.

Once you have identified these targets, you must broadcast the expectations of the new food safety culture. While you may begin by personally

communicating the new practices and habits, you may want to include recognition and reward systems for changing behaviors and disincentives for resisting the changes. To make this happen, take a note from Peter Drucker's playbook: "What gets measured gets improved." Personalizing the new practices and measuring them will increase participation.

As part of your rollout, determine the leaders at all levels of the organization who will most closely align with the target culture. Remember that we need to manage expectations and enthusiasm at all levels. It is very important to have appropriate leadership emphasis on the principles, but any cultural initiative cannot only be executed 'top-down.' Change agents are critical, and they won't always be your designated managers. To truly own the culture change, employees must decide for themselves that it is the right thing to do. For this, they need to hear, feel, and see the engagement and involvement of their peers who influence them. You will need these champions to live, eat, and breathe the new way of working. Managers that are not aligned can be further energized and inspired by training and development, demonstrating the value that the target culture brings to business success. Those managers who may never become comfortable with the change may choose to leave the organization. However, having negative forces in the company will ultimately sabotage your plan for success.

Broadcast Specifically and Constantly

With the appropriate champions lined up (and aligned with the new changes), it is now necessary to create a vocabulary that fully supports your target culture. Communication becomes critical, and there are numer-

ous ways to accomplish this. Remembering that only 8 percent of communications occur through words and 58 percent through body language (and actions), your activities to educate must be compatible with your target culture. It is important to keep in mind that this requires a resilient and relentless attitude toward communication.

Here are some "How-To's" to assist you in your quest:

- Integrate into company mission and vision statements
- Create a tagline or slogan that is memorable and impactful
- Product-use communications
- Reward and recognition programs to promote food safety culture
- On-boarding and continuing education
- Talking kits for supervisors
- Weekly training refreshers
- Certifications in food safety
- Social media posts – Facebook, Twitter, email
- Buddy system on-boarding
- See something, say something
- Organizational design

Taglines

While this may take some creative minds, a tagline that highlights food safety can be a "mantra" of sorts that gains mindshare of everyone in your organization. It is easy to remember "From Farm to Plate, Make Food Safe!" Frequent reminders through digital/traditional signage, food safety meetings, and even a note in the comments section of a pay stub increase awareness.

Product-use communications

Making the job real to employees makes all the difference in the world. Instead of just running a bacon slicing machine, what if they knew they were creating breakfast for families all over the world? Don't use a Hollywood

stock photo of the perfect family in their suburban California house. Instead, make the image a photo of the demographics of your workers. If you have the capability, use your employees and their families. Knowing the result of their efforts and connecting what they do with their life situations can increase their engagement and focus on food safety. Using tools such as digital or traditional signage, emails, and social media as well as developing an understanding of the end products during onboarding will change their perspective.

Talking kits for supervisors

Frequent (weekly or even daily) "scripted" meetings to cover specific topics can be very effective refreshers. The meetings could be one-point lessons or 2 minutes during the beginning of a shift. Visual aids such as Huddle Guides can create a professional learning experience for every supervisor without a lot of preparation. The point is repetition, repetition, and more repetition; take a lesson from the advertising industry that believes it takes 16 impressions or views before a consumer stores information in long-term memory.

Social media posts – Facebook, Twitter, email, and others

To the extent that your workforce uses social media, daily messaging can reinforce learning. It can also be very beneficial to provide stories of success. Judicious use of email can be a great refresher for information recently acquired but not yet in long-term memory.

Engage Creatively

Rewards and recognition

Incentives work, and they raise awareness. Rewards don't have to be extravagant–lunch with the president/plant manager, an extra day off, T-shirts and other wearables, a raffle

for a big prize quarterly, gift cards, preferred parking spots, and competitions can all create positive awareness of food safety.

Continuing education

Companies that invest at the front end and continue that investment will change their food safety culture quickly. Using technology such as online courses that track training can be effective in promoting food safety. The online course industry is moving to mobile and "micro learning" courses that can be accessed anywhere, anytime in short bursts. The industry also recognizes the forgetting curve, the notion that students will not remember 90 percent of the material 24 hours after consuming it.[7] This can be diminished by reviews, refreshers, and boosts. Refreshers such as emails, posters, digital signage, food safety floor meetings, and other reminders will increase retention and build the culture.

Buddy system on-boarding

Since the food industry has relatively high turnover compared to other manufacturing industries, a buddy system that provides experienced workers as mentors and teachers to new employees can be very effective. To be a "buddy," the employee must be certified by a supervisor that they can teach well and provide guidance. Buddies can be incentivized to do a great job by providing additional "buddy training pay" and a retention bonus to the teacher if the employee stays for 6 months.

Certifications in food safety

As mentioned above, measurement can create improvement. A simple system at one of SugarCreek's plants creates a scorecard called an OLPT Flex-Chart for each employee. For each skill or task, a rating of Observer (O), Learner (L), Proficient (P), or Teacher (T) is assigned by an instructor. The observer has never tried the skill and wants to learn. The learner is beginning to understand the skill by classroom or online learning, followed by a hands-on session with a teacher. The proficient employee has mastered the skill and can perform it on their own. The teacher has not only mastered the skill but also can teach others to perform it. You can incentivize employees by providing opportunities for advancement to leads or supervisors based on their OLPT Flex-Chart performance.

Conclusion

Earlier, we defined a food safety expectation as 'a simple and easy to understand description of how a person is to act specific to food safety and the person's role.' You now understand how critical it is to clearly define the desired behaviors and to make these expectations role specific. Each individual must understand what they must do in their role to live up to the food safety expectations of their position. It could be as simple as following GMPs in their preparation for work, or it may involve monitoring critical temperatures and stopping a process should there be a deviation. Regardless of the role that each person plays, they must be very cognizant of the expected actions they should take and the behaviors that they should display. There is no room for ambiguity in creating food safety expectations.

We've also defined the activities necessary to change and sustain a food safety culture: align top leadership, make leadership decisions, take inventory, set targets, broadcast specifically and constantly, and engage creatively. It is critical to ensure that the company's senior leaders all support the food safety culture. Shared documents like mission and vision statements must demonstrate this alignment too. Words are not enough; further support must be demonstrated by ensuring a safe climate exists to call out food safety issues. Job titles and job descriptions are also important ways to convey further alignment with the desired culture. All these things reinforce the transformation in behaviors and actions that is expected. To get started with any type of culture change, a baseline assessment must be conducted. This helps to set everyone on the starting point. Then it is easier to set targets for where you want to be in the future. One key aspect that is often undervalued is the need to communicate incessantly. And finally, no culture change could be successful without actively engaging the entire workforce in the transformation.

Today's business environment is more challenging than ever for anyone trying to create a strong food safety culture. With the economic forces of increased M&A activity, zero-based budgeting focuses, changing demographics, and the transformation in the traditional employer-employee contract, there are compelling influences that make it difficult to engage an organization's leadership and employees in instituting and sustaining a food safety culture. This requires different approaches in this climate to be successful. Many companies have tackled these same issues and have developed successful approaches to deal with these challenges. There are common threads among those successful organizations around leadership alignment, role-specific expectations, active communication, incentive/disincentive programs, heavily supported education, and employee engagement efforts. While there is no "one-size-fits-all" approach, we can learn from those companies that have been successful and "pick and choose" the

programs that would best be utilized in our own organizations.

Beyond the recommended activities, we reiterate three key themes that resonate with all and should be remembered:

☑ Keep it simple. Make sure the message is easy enough to be well-understood and communicated effortlessly. Ensure that you aren't trying to do too much. Limit the objectives to ensure you don't make it too complex and confusing.

☑ Make it specific. Ensure that you cascade expectations down so that they touch each individual. Make sure that they're role specific, so each person understands their part of the change and you get everyone engaged. Don't leave the expectations ambiguous.

☑ Communicate, communicate, communicate. Use every available method to communicate the message. Never underestimate how much communication a culture change requires. Overcommunicate!!

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*Charlean Gmunder is former vice president, manufacturing, prepared meat for Maple Leaf Foods. **Bill Cunningham, MBA**, is dean of SugarCreekU.*

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By Bertrand Emond, M.Sc., MBA, Julia Bradsher, Ph.D., MBA, and Laura Nelson

The "A" in Culture: A Toolbox to Drive Positive Food Safety Behaviors

Ensuring the safety of food products for consumers is a key goal of a food safety culture, and food companies are increasingly challenged to manage a robust food safety culture that consistently delivers safe food.

Getting things wrong can have devastating effects not only to the business (e.g., cost of rework, recalls, handling consumer complaints, fines, reputation loss, etc.) but also to consumers (e.g., illness, death) and society (e.g., cost of health services). Every day, new cases seem to be emerging.

Consider food recalls as a measure of food safety. In data published by the U.S. Food and Drug Administration (FDA) examining the root cause of food recalls,[1] about 26 percent of food recalls were the result of improperly following Standard Operating Procedures (SOPs), and 32 percent were caused by inadequate training. More recently, a global food safety training survey found that 67 percent of food safety respondents agreed that "Despite our efforts, we still have employees not following our food safety program on the plant floor." The extent to which all employees internalize and apply consistent food s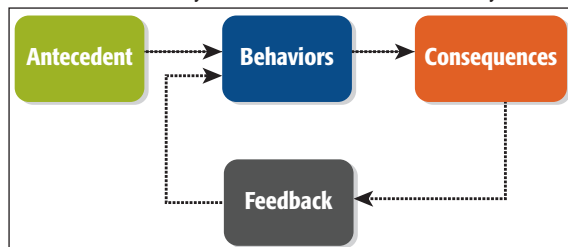afety behaviors is influenced by their own cultures, attitudes, values and beliefs, training effectiveness, as well as those of their peers and their business.[2]

These factors, among others, are examples that fit into what is called the ABC model[3] and stands for Antecedent, Behavior, Consequence (Figure 3.1). It is a simple and powerful model when trying to understand and change behaviors, and it a useful tool that can be used to strengthen an organization's food safety culture. Ultimately, managing behaviors within the workplace will reinforce and ensure the safety of the food being grown, transported, manufactured, or served.

An **antecedent** is something that comes before a behavior and is required for an individual to understand what is expected and how to perform a behavior, for example, stimulus, policy, stated expectations, training, job aids, circumstances, event, and past experience. A practical example could be a policy and procedure communicated to employees on proper handwashing techniques.

A **behavior** is anything an individual does and is observable. A practical example could be washing hands using the procedure that has been taught to me, all the time, every time.

A **consequence** is something that follows the behavior and is caused by a behavior. There is a feedback loop into the behavior, as what happened last time you behaved in a particular way will have an effect on how you will behave the next time. Depending on the consequence, you will either sustain or change your behavior. A

Figure 3.1. The ABC Model[3]

THREE TAKE AWAYS
- ☐ Set the right conditions to drive and sustain the right food safety behavior.
- ☐ Expand your use of additional antecedents from the toolbox provided in this article to address your employee behavior gaps.
- ☐ Garner strong management support to get the needed support for you to implement the tools.

practical example of a consequence could be positive feedback from a supervisor because you showed a colleague the right way to washing hands and why it is important all the time, every time.

In this article, we are focusing on the "A" or antecedent to provide you with examples of how what we know drives what we do and how antecedents connect to helping us better understand what is expected and how to deliver on these expected behaviors.

We need to do what we do better and smarter to optimize the return on investment and effort; for example, we need to apply the learnings from the health and safety arena that have gained a lot of experience in the use of behavior-based approaches to drive compliance.

We also want to share some specific challenges related to training as an antecedent and how we think you can get more out of your training investments.

Importance of Managing the Antecedents Effectively

As part of this effective management, and to choose and set the "right" and most effective antecedents for your company, it is critical to undertake a robust root cause analysis in a case of poor performance or unacceptable behavior, or when needing to introduce a new behavior.

Potential findings of your root cause analysis

Typically, when analyzing why a group or person behaved in a particular way, there are two generic cases: They did not know what to do or they knew what to do. For each case, there are several root causes. For case 1, I am not trained and I am new to the company; I was trained but it was complex and boring, and I lost interest. For such situations, antecedents

like dedicating time and scheduling training consistently for new hires or conducting a training needs analysis to better understand the learning need, learners, etc. will help to correct wrong behaviors caused by 'I did not know.' It is essential to perform robust training needs analysis for each employee based on the job they are expected to do and develop a competency framework detailing the knowledge, skills, and behaviors expected for each job role.

For case 2, 'I do know what the right thing to do was…,' root causes could be I was not physically able or I did not bother. For each, there are again antecedents that would help drive the wanted behaviors. For example, are the tools for the job actually fit for purpose? Is there a rewards and recognition program specifically designed to motivate and inspire teams and individuals to behave in the expected manner?

As illustrated, the root cause analysis can lead you, potentially, to quite different root causes that would require completely different corrective actions. Traditional classroom training/retraining is not always the answer, and you must select your antecedents based on a detailed root cause analysis and needs assessment. When selecting, designing, and implementing your antecedents, you should also consider in your needs assessment a couple of key factors: national cultures and impact of generations.

National cultures and impact on antecedents

It is imperative to take into account the deep culture (nationality, where they were brought up, religious beliefs, ethics) of your employees. Hofstede's national cultural dimensions,[4] the Lewis Model,[5,6] and Meyer's Culture Maps[7] are very useful for the identification of some of the chal-

lenges you might face when trying to improve the culture of your business. It will also help you understand why an employee has behaved in a particular way:

- Communication: Some deep cultures prefer precise, simple, and clear messages taken at face value (e.g., Germany or U.S.); others prefer more nuanced messages and reading between the lines (e.g., Japan or Korea).
- Giving feedback: Some prefer direct and blunt feedback (e.g., Netherlands); others prefer private softer feedback (e.g., Japan).
- Persuasion: Some prefer a practical approach with executive summary and facts (e.g., U.S. or UK); others prefer to cover the theory/concept first then move to the facts (e.g., France or Italy).
- Leading: Some prefer a flat organization (e.g., Denmark or Sweden); others prefer a clear formal hierarchical structure (e.g., Japan or Korea). This would have an impact on the level of autonomy and ownership felt by those working for the company and their authority to deal with potential food safety or quality problems; achieving "empowerment" might be more challenging for some.
- Decision making: Some deep cultures prefer consensus that might take a while to achieve (e.g., Japan or Sweden); others prefer the decisions to be made by the boss—it can be much quicker but then time will be needed to get everybody else on board (e.g., China or India).
- Scheduling: Some prefer clear time-bound deadlines for each activity (e.g., Germany or Switzerland); others prefer a more flexible multitasking approach (e.g., India or China).
- Rewarding: some prefer individual

rewards and recognition (e.g., U.S. and UK); others prefer team rewards (e.g., China or Mexico).

Impact of generations on food safety culture and effectiveness of antecedents

As already mentioned, antecedents like training should be designed by use of a needs analysis to understand the learning objectives and the specific characteristics of the learner generations. The workforces of most sites now span four generations [Baby Boomers, Gen X, Millennials (Generation Y), and the new Generation Z!]. The generations have different values, aspirations, attitudes, and behaviors. This has implications for managing a site's culture. One antecedent might not have the same effect on all.

Differences between the generations mean that interpersonal relations, teamwork and collaboration, and effective communication can be affected. Different techniques might be required to drive engagement and loyalty for each group.

For example, the Millennials and Gen Z employees are true digital na-

tives (addicted to their devices) with the ability to multitask and embrace new technologies quickly; but they are often described as self-centered, impatient, immature (finding hard to manage others), and less focused; craving regular feedback and recognition, they seem to be more concerned about values and are more sensitive.

Antecedents: Your Toolbox!

Antecedents need to address all the specific root causes that you uncovered in your analysis. This will increase the performance of your overall food safety plan and create a better connection between why the company sets expectations around food safety behaviors. We have listed some of our favorite antecedents for you to consider (Figure 3.2). We also strongly recommend that you have a look at your health and safety (H&S) activities and pick up useful tips from them. In fact, industry food safety leaders are partnering with their colleagues in H&S, Operations, Human Resources, Maintenance, etc. to collectively determine the appropri-

ate employee behaviors required to achieve the business goals and objectives.

1. Senior Leaders and Managers

Need to show their clear and consistent commitment to making safe food, which includes dedicating time and effort to train and educate staff, and ensure that all people involved in food production (e.g., staff, contractors, agencies, etc.) realize that they play a part in food safety and that they are accountable.

This covers on-boarding of new staff, agency staff, and contractors, and ensuring timely refreshers and relevant training following the installation of a new piece of equipment.

2. Trust and Openness

Need to have a trusting and open environment that empowers employees to speak up if they feel that food safety is being compromised and corners are being cut for production's sake.

3. Hazard and Risk Awareness

The company needs to be aware of all relevant hazards and risks that might have a food safety impact on its business and communicate this to their staff in an effective manner, with regular updates. Consider applying some of the techniques used by the H&S team.

4. Communications and Messaging

Good communication ensures that a company's food safety strategy and expectations are received consistently and understood by all employees within the organization. The goal is to educate, inform, and raise awareness among all new and existing employees of safe practices so they assume ownership of their role in ensuring consumer safety and brand protection.
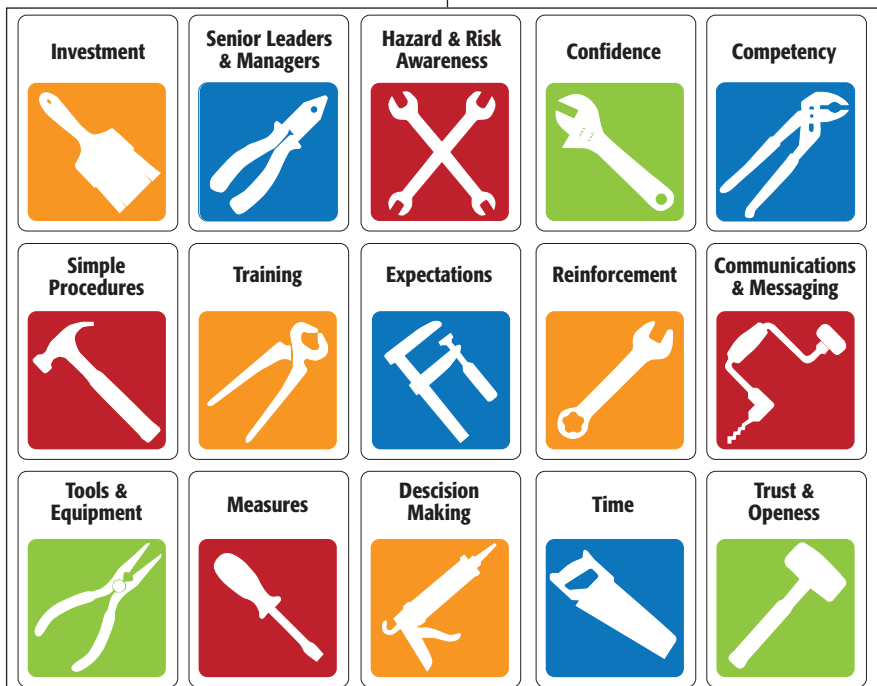
Figure 3.2. The Antecedent Toolbox

It must occur regularly, be tailored to the organization's various audiences, accessible wherever the desired behavior should occur and measured for effectiveness (e.g., via online surveys and employee focus groups).

Examples of available food safety communication channels include: posters, meetings, briefings, videos, phone calls, conferences, huddles, digital coaching, mentoring, feedback/suggestion processes, company intranet and message boards, corporate website, competitions, buddy program, gemba kaizen circle meetings, awards and recognitions, and consequences, including disciplinary actions up to termination.

Consider leveraging the functional expertise of industry experts and your colleagues in marketing to help to segment the workforce and develop targeted food safety messaging taking into account deep culture, generations, job type, etc. Fonterra, a large dairy cooperative in New Zealand, has been using this approach of "internal customers profiling" to great effect, as highlighted by Joanna Gilbert of Fonterra at a Campden BRI/TSI Culture Excellence Webinar in October 2016.

When a supervisor is able to have a two-way conversation with an employee, bad habits, poor training, and misinformation can be identified and corrected.

5. Simple Procedures

The tasks to perform and the SOPs to follow should be as simple and easy as possible, and the amount of effort and time required to execute them should be optimized. For example, forms to complete should not be too long and complex. Consider use of pictures rather than text for instructions or specifications.

6. Decision Making

Consider creating an independent escalation path that allows the food safety team to report directly to senior leadership rather than senior operations staff, so that food safety is not compromised when the production and/or commercial teams are under pressure and "cutting corners" is on the table and in conflict with business objectives.

7. Measures

The key performance indicators used across the business should not drive the wrong behavior that might compromise food safety.

8. Tools and Equipment

Employees need to have fit for use/fit for purpose clothing and equipment, and work in fit for purpose premises/buildings.

Have we provided each employee with the appropriate environment to achieve success? For example, one company had an employee in receiving who was inaccurately assessing produce condition. Only after a discussion and evaluation was it discovered that the employee was color-blind and physically unable to distinguish red- and green-colored produce. Another employee job was to empty ingredients into a hopper without touching the edge of the hopper with the ingredient box exterior. Her supervisor observed the employee routinely leaning the ingredient box onto the hopper and would write up the employee for the behavior deficiency. Finally, after some discussion with the employee, the supervisor realized the ingredient boxes were too heavy for the employee to consistently meet this food safety procedure, and the process was re-engineered. Companies intent on enhancing their food safety culture understand the value in actively soliciting routine employee feedback to insure the employees have the ability and the tools neces-sary to execute the appropriate food safety behaviors.

9. Investment

Need to commit to a decision-making process related to budget, capital expenditure, and investment that does not compromise food safety, thus ensuring the right level of resources and fit for purpose/use of equipment.

10. Time

Need to ensure that employees have enough time to do their task properly and are not forced to take shortcuts to keep up.

11. Expectations

Employee should understand that they are accountable and responsible for ensuring food is safe; they should know the risks and the right thing to do as a matter of course at all times. They should not be able to get away with unacceptable behaviors.

This should be achieved via training and education but also reinforced by an effective reward system. Also consider buddy or team approach where one or several employees look out for each other so no one can operate "in the dark" (e.g., CCTV cameras); important to show desired behavior as the social norm.

12. Competency

How do you define the knowledge, skills, abilities, and behaviors that workers need to perform their food safety roles effectively? How do you know if they are qualified and competent for the job/task?

You need to define a competency framework that includes the set of competencies required for each role in your business to be performed effectively. Benefits experienced include:

• Employees are clearer on what

is expected of them
- Clearer accountability
- More effective recruitment and new staff selection
- More effective performance evaluation
- More efficient identification of skill and competency gaps
- Helps provide more customized training and professional development
- More effective succession planning
- More efficient change management processes

When you develop these frameworks, make sure you understand the roles fully and get input from the job holder, supervisors, and also and crucially HR. Your HR colleagues can provide support, expertise and tools that will be invaluable.

13. Training

Training is essential to ensure that the employee is competent. It includes a range of learning opportunities, such as education, experience/ on the job, coaching and mentoring, networking, workshops and conferences, job shadowing, standardization, and others, *not* just the dreaded PowerPoint, classroom, once a year talk! Consider using training needs analysis/cycle and competency-based learning systems. Make sure your human resources team is fully engaged and supporting you.

14. Confidence

Coaching and mentoring as well as having a buddy system are good ways to improve confidence (assuming that the employee is competent and capable). It is vital to determine how well people both understand and have confidence in the training and education they receive. Only through complete comprehension and confidence are they likely to implement

safe-food behaviors and influence others around them to do likewise. Having a structured approach to provide consistent feedback, coaching, recognition, and corrective actions enhance two way communication.

Wrong fit: If all fail, employee should be redeployed!

15. Reinforcement

Reinforcement relates to the use of rewards, incentives, and disincentives to shape and manage correct behaviors. Rewards, when paired with fair and transparent recognition programs, can help management guide desired food safety behaviors. Such programs should be designed to accommodate cultural differences and different personalities within the organization. Your human resources colleagues should be able to provide you with valuable support to design effective reward systems. Clear accountability and compliance foster commitment, empowerment, and ownership. Companies can use various incentives and deterrents to achieve consistent compliance, including:

- Positive and negative feedback
- Sharing best demonstrated practices
- Learnings from failures
- Recognition programs
- Individual and team awards
- Corporate, peer, and self-recognition
- Monetary and time compensation, praise
- Incentives to report failures and near misses
- Promotion and demotion

When Training Is Needed, It Needs to Stick!

As food safety professionals, we commonly focus and rely on food safety training as a key antecedent to drive the appropriate food safety behaviors we expect from our em-

ployees to support our food safety protocols and procedures. Considerable time and resources are devoted to food safety training each year, but we don't often consider whether we are presenting the right content, with an effective delivery, to achieve measured, correct employee behaviors.

So, how are we executing on this key antecedent? Even though 83 percent of global companies reported positively on their ability to drive consistent food safety behaviors, 67 percent responded that despite their best efforts, they still have employees not following the food safety program on the plant floor.[2] The question becomes "Have we just come to expect inconsistent employee behaviors as the norm?"

Companies that are driving a strong food safety culture within their organization have expanded the traditional classroom training toolbox to include additional tools to more effectively drive consistent employee food safety behaviors. For example, 46 percent verify that training is applied correctly on the plant floor, while 36 percent of the innovative respondents acknowledged they were actively measuring employee performance or behaviors.[2] A small but growing number of companies recognize the value of measuring employee behaviors to the effectiveness of training so that correction actions can be applied. Assessing and observing employee behaviors allow for a two-way conversation between a supervisor and an employee to address incorrect behaviors. Reasons mentioned why employees did not follow food safety programs consistently include bad habits (62%), preference in doing things the old way (54%), and following other employees' directions (34%).[2]

Lack of engagement (30%) was also cited as one reason employees do not

consistently follow food safety protocols. An astounding 51 percent of the American workforce is *not* engaged.[8] Companies focused on improving their food safety culture recognizes this challenge and applies many different antecedents to improve employee engagement, including food safety communication campaigns using digital signage, supervisor huddle guides, posters, and incentive programs. These different campaigns are all designed to keep food safety top of mind days, weeks and months after the initial classroom training. This food safety reinforcement drives food safety awareness and indicates the continued importance of food safety throughout the year. Green Valley Pecan Company, one of the world's largest growers and processors of pecans, deployed a communication campaign and experienced a 17 percent increase in knowledge retention across all employees and a 36 percent increase in correct knowledge recall among their employees who needed it the most—those who did not initially perform well in the knowledge pretest. Deborah Walden-Ralls, co-owner and vice president of risk management for Green Valley Pecan Company, noted that the program "helped us improve the overall quality of our product."

Sometimes, training program shortcomings may not be what training you are providing but *how* that training is provided. Are you training employees on your allergen program do's and don't's, your critical control protocols, receiving procedures, personal protective equipment program, and the list of Good Manufacturing Practices (GMPs) each January and then wonder why you see GMP violations by June? To aid our food safety culture, we must acknowledge that our employees, many of them millennials, learn in short chunks, and tailor

our training event in shorter timeframes, 20 to 30 minutes, throughout the year.

Are you conducting training at the end of 10-hour shifts, before holidays, or on the weekends when employees are tired and less engaged? Some companies found that moving their training time to mornings or mid-week, and recognizing those employees that demonstrate their comprehension of the training, helps employees stay more focused and receptive to food safety education.

Are you delivering training in English, even though over 50 percent of your workforce has English as their second language? Bigelow Tea, a family owned company, has 70–80 percent Spanish-speaking employees and wanted to make sure that all employees received the same quality training. By adopting a training platform that provided training in multi-languages and was able to be customized for their different departments, Bigelow was able to insure "everyone knows how they are critical to Bigelow's success" per Bruce Ennis, vice president of human resources for Bigelow.

It is worth remembering and highlighting that "training" includes a much larger list of learning opportunities that happen both inside and outside of the training classroom, as listed earlier. An effective "training cycle" (Figure 3.3) follows a model much like
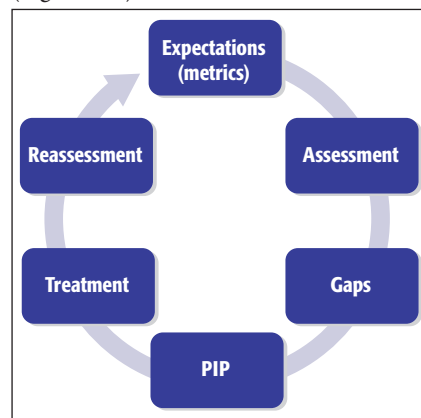
the ABC model with opportunities along the way for assessments and performance improvement programs.

We also find that the most mature organizations use approaches based on competency-based learning. Competency-based learning systems focus on front-end analyses to determine the desired knowledge, skills, abilities, and behaviors necessary for high-level job performance. Such systems emphasize the use of assessments to determine the level of competence against desired outcomes and focus learning and developmental efforts on helping the individual determine a learning path and identifying the learning experiences that help the individual attain the desired competencies. The instructional design methodology known as ADDIE (analysis, design, development, implementation, and evaluation), coupled with stakeholder input, learning experience review, and support systems make the system robust, efficient, and effective.

Conclusion

The ABC model is a useful model when trying to understand and change behavior in order to strengthen the food safety culture of an organization.

To achieve a strong food safety culture, you need to manage the antecedents effectively in order to drive and sustain positive food safety behaviors.

Key success factors include not only robust training needs analysis and cycle, competency/capability framework, and root cause analysis when an employee has not behaved in the right way, but also involves strong leadership. Senior leaders and managers need to show their clear and consistent commitment to making safe food, which includes dedicating and investing resources, time and effort to train and educate staff, and

Figure 3.3. Training Cycle

establishing an effective system of rewards and key performance indicators. They need to ensure that all people involved in food production (e.g., staff, contractors, staffing agencies) realize that they play a part in food safety, that they are accountable, and that they are empowered to take action to prevent a food safety failure. Employees need to have fit for use/fit for purpose clothing and equipment, and work in fit for purpose premises/buildings. They need to be aware of all relevant hazards and risks that might have a food safety impact on their business and communicate this to their staff in an effective manner, with regular updates.

To keep food safety top of mind and engage employees fully, senior leaders as well as food safety and technical people need to leverage the functional expertise of peers in other functions, including:

- H&S, to pick up on tips and techniques, as they have a lot of experience in behavior-based approaches to drive compliance.
- Marketing, to help to segment the workforce and develop targeted food safety messaging taking into account deep culture, generations, job type, etc.
- HR, to help with developing and managing the continuing professional development of each employee, the competency framework, and the various training and learning activities required.
- HR usually has access to dedicated software packages and tools, as opposed to battling your way through an Excel spreadsheet when you can squeeze it in your busy schedule. HR support is also valuable when designing effective reward system to reinforce desired food safety behaviors.

We need to do what we do better and smarter to optimize the return on investment and efforts. As Benjamin Franklin said, by failing to prepare, you are preparing to fail. So, by getting the antecedents right, we are setting the optimum conditions to get things right first time and be as efficient as possible.

This is a continuous improvement journey; as the conditions and antecedents adapt to changes in the business, the toolbox provided in this article will be particularly useful. We are here to support you. Over to you!

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By Melanie Neumann, J.D., M.Sc., Marie Tanner, M.Sc., Randy Huffman, Ph.D., and Mike Liewen, Ph.D

Measure What You Treasure

The single biggest threat to food safety is *culture*. Robust food safety plans and quality systems become ineffective when they are undermined by the wrong, or immature, culture. What is culture? Culture is the learned behaviors one extracts from their environment. It can be described as the collective values of an organization, family, and society. Culture is learned from the environments in which we operate.[1]

Leadership has a strong influence on the overall food safety and quality culture of an organization. Employees pay attention to behaviors that are rewarded and what goes unnoticed by leadership. They see who gets promoted and who does not advance. They hear what leadership emphasizes and what they fail to acknowledge. Employees absorb the overall values of the organizational environment and adjust.

It is imperative for leadership to walk the talk when it comes to food safety. Leadership behavior and actions that are inconsistent with the values of the organization can have dire consequences on the effectiveness an organization. A culture of food safety is an environment where employees hear, feel, and see food safety all around them. These values are propagated by cultural "carriers" who visibly prioritize and bring focus to food safety.[2]

What is the business case to build the right culture? The Conference Executive Board has stated that for every 5,000 employees, improving culture can save a company up to $67 million. Improving the food safety/quality culture leads to fewer mistakes, more accountability, and drives an environment of continuous improvement.[2]

Changing the culture of an organization is a burdensome task at best. There are many factors you will need to take into consideration before you embark on this journey. First, don't assume the entire global organization has the same culture. Societal/regional differences will have an impact on your corporate culture. Second, measure your culture across the organization to obtain a baseline. Third, create cross-functional focus groups to pull insights from the raw data. Different groups will have different interpretations of the same question. Fourth, start by making a few simple changes that are spearheaded by the top of the organization. Different plants regions may need a different emphasis. *One size doesn't fit all* when measuring and maturity culture.

There will be societal differences within different regions that will influence your culture and approach to driving change. According to Hofstede,[3] societies are classified based on the following social factors they tend towards: 1) collectivism vs. individualism; 2) masculinity vs femininity; 3) relationship to authority and acceptance of social inequality; and 4) uncertainly avoidance. You need to be aware of these differences and take them into consideration when designing your solution to drive change.

Leverage a tool that measures the culture of food safety and quality across your company. It is best to utilize a survey that you can benchmark against other companies for purposes of creating a baseline and a competitive comparason. Don't accept data at face value. Create focus groups to draw meaningful insights from the data, champion the process, and help define and implement the changes. Employee engagement is critical to a successful resolution. Visible leadership—walking the talk—is also needed to reinforce the desired change. This needs to be a bottom-up and top-down endeavor.

THREE TAKE AWAYS
- ☐ Identify and implement meaningful metrics.
- ☐ Routinely review and take action on the results.
- ☐ Observe, coach and institute consequences-both positive and negative, if necessary.

A Case for Metrics

Measurement is a cornerstone of the food industry, every other industry, and arguably nearly every actiity human beings undertake. We are bombarded with data and information from measurement throughout our day: the amount of sleep I got; how fast is my car going; how many unread emails are in my inbox—the list is almost endless. We measure things in our daily lives to drive improvement, attain goals, mitigate risk for ourselves and our loved ones, and comply with laws and regulations. Some of the metrics in our personal lives are things that we have consciously chosen to measure; others are metrics put in place by others.

Simply measuring something but not using the data and information generated make the data and the act of obtaining the data wasted. Even worse is the scenario where data are generated, but the people who need the information do not see it or chose to ignore it.

Drive Decisions, Actions, and Behaviors

Food industry metrics exist for many of the same reasons that we have metrics in our personal lives, and there are many of the same challenges in using the data generated. Most food companies have metrics to ensure that appropriate laws and regulations are complied with; that products are manufactured to formula or specification; that appropriate Standard Operating Procedures are followed; and that products are meeting the expectations of customers. An entire industry comprised of many successful companies has been established around developing and executing food safety audits and using the data generated by those audits. The Global Food Safety Initiative was started to drive consistency and efficiency in food safety audits around the world. Most food companies require annual audits and proof of com-

pliance from their various suppliers. Yet there are many incidents every year of food safety problems where companies have successfully conducted audits, have measured all of the right things, and still have food safety issues. In many cases, the problem was not that the right programs or measures were not in place, but it was that the proper actions or responses were not recognized or taken. The missing element is often the culture of the company.

Scientists are trained to measure as a way to identify and quantify a problem, drive solutions, and quantify progress against goals. Yet measuring food safety culture is a difficult and often foreign concept for scientists who are comfortable with hard data but often unfamiliar with social sciences that drive human behavior. But the culture of an organization that drives engagement and action from senior executives to the technicians and line operators is often the most important and missing factor in a food safety plan. Data are obviously useless if not used and acted upon.

Companies measure and collect data for many reasons: 1) they are required to conduct audits by regulation and/or customers; 2) they have internal policy requirements to comply with that are driven in large part by brand and consumer protection; and 3) in some cases, the reasons for measurement are historic or even unknown. Yet measurement itself accomplishes little other than generating data. What is *done* with data is the key to compliance and risk mitigation. The decisions, actions, and behaviors that are driven by measurements like audits and product testing are what make measurement useful.

We Get the Results for which We Reward

Over-reliance on metrics and data points comes at a risk, so a delicate balance must be achieved. A natural human desire is to want to achieve

the best possible score on a measurement, regardless of what we measure. We are conditioned to do that from an early age–we want to perform well on exams in school and when we grow up to become food safety professionals, we want to score well on factory audits. Many facilities incentivize their management and operators through financial bonuses to perform well on food safety audits. This strategy of incentivizing performance on audits may actually be counterproductive, however. While audits can measure the presence of programs and deficiencies on a single day, they do not directly measure overall compliance with policies and procedures, and they do not measure the enthusiasm of a company's workforce for ensuring that safe products are produced or doing the right thing, even when no one is watching. Simply incentivizing a company to perform well on an audit one day out of 365 without an expectation of continuous, positive performance and behaviors that exude proper risk identification and mitigation skills on an ongoing basis throughout the year is a risky and dangerous place to be. But, who can blame the plant manager and quality assurance manager if that is how they are incentivized and how their bonus structure is based? We obtain the results through decisions, actions, and behaviors, for which we reward. A challenge is to motivate and incentivize companies and individuals to recognize problems and issues identified in audits, internal assessments, measurements, or observations, and proactively address them rather than just measuring and recognizing "snapshot in time" successes. Rather, companies should consider using additional measures that must be met on a daily, weekly, and monthly basis, and place equal weight on these expectations and behaviors as you do that one audit score that happens on one day out of 365 in a year. Establishing

incentives, rewards, as well as positive and negative consequences, if the expectations are not met, aides in implementation and accountability. Consequences are often a sensitive topic; many companies are uneasy to hand them out. Note that consequences are easier to issue when you have the power of data to back you up and are incentives for behavior change.

Choosing the "Right" Metrics

Creating simple, understandable measures is important for buy-in and support at all levels of an organization. This is easier said than done. The reality is continuous improvement and mature cultures in food safety require a robust, comprehensive measurement system, with timely review cycles, dashboards, early indicators and alerts, root-cause investigations, corrective actions, and detailed documentation. Yet, remaining keenly focused on the metrics that are most critical to success, that is, the "critical few," will go far in ensuring success.

The right metrics also allow meaningful benchmarking of performance across multiple facilities. This is encouraged because it can create an opportunity for knowledge sharing as well as healthy competition between operational units. When benchmarking is leveraged, standardization and normalization of the metrics is required to achieve fair and meaningful comparisons.

The metrics chosen in any food safety benchmarking tool (e.g., executive summary, dashboard) will likely be a mix of lagging and leading indicators that provide management the right perspective on how the food production and sanitation processes are working and how well the people in that system are performing their jobs. Behavioral observations are important to get a view to the culture of the operation. And, from a big picture standpoint, a great indicator of culture in the company and/or plant is to as-

sess how the metrics and measurement systems are used by management! In other words, we can select the most appropriate, "critical few" metrics and design a perfect measuring tool, but if it is not reviewed and acted upon effectively, in a timely way, with consequences associated with missing performance criteria, it will have little impact on food safety performance. In sum, any measurement system is worthless unless it is paired with a rigorous and timely cadence of review, by the right people, at the right times, and is tied to short-, medium-, and long-term goals.

An Enterprise-Wide Approach to Making Food Safety Risk Metrics & Reviews a Ritual in Your Culture

Goal setting is critical in everything we do in business. Food safety performance is no different. The key to success in achieving a goal is to first gain alignment from all key leadership stakeholders in the business, including the CEO, on the long-term improvement goal, how it will be measured, the agreed-upon time frame for achievement, and the attached incentives for attaining the goal. And, if the CEO becomes an active participant in setting the goal and vocal champion, then all the better!

Goals must be challenging but attainable. This balance is important, and the leadership team must be prepared to adjust the goals based upon learning and insight over time. Business scenarios change, production processes change, product innovation creates new challenges, supplier capability may fluctuate over time, regulations may affect a process or outcome, and teams can improve or decline in performance over time. All these factors, and more, should be considered when the long-term goal is set and when a decision is made to adjust a long-term goal. Gaining alignment from the line operators, quality supervisors, and sup-

porting cross-functional departments who have an impact on food safety like R&D, marketing, purchasing, and others becomes an important next step. Once long-term goals are agreed upon, then appropriate short- and midterm milestones can be set and tracked, and these can become the ongoing mechanism to determine if a team is meeting, exceeding, or falling behind the goal.

The cadence of food safety metric review is vitally important to success. This separates the great operators from the good. Ad hoc, inconsistent, and nonstandard approaches to tracking and reviewing food safety metrics will lead to poor performance and potentially tragic food safety errors. Food safety reviews should become a *ritual*, just like brushing your teeth morning and night, every day. Rituals can provide a powerful mechanism for achieving consistent and constantly improving results. Leadership teams are encouraged to hone the process of food safety metric review at each level of the organization.

Every organization and facility functions differently—one size does not fit all—and it is critical to work within the natural rhythms of the business to coordinate the food safety reviews with the other major operational reviews where appropriate. These reviews must be developed for each level, from the line level "within shift reviews" to the daily, weekly, monthly, and quarterly reviews with operators, supervisors, managers, and the senior leadership team *(including the CEO)*. Be all-inclusive in this process of developing the review cadence to achieve collective support from the business. This is the chance to hold functional area leaders accountable to deliver against key aspects of food safety performance. These venues provide the opportunity to recognize great performance and identify opportunities for improvement.

Case Study: Meaningful Metrics and Cross-Departmental Collaboration at PepsiCo

One area that has historically received more attention than food safety culture in the food industry is environmental health and safety, specifically worker safety. Certain parallels and learnings can be made from this space. The benefits of these programs are tangible and easy to understand. A measure commonly seen and publicized in most factories is lost-time accidents. Reducing and eliminating lost time accidents generate personal motivation for operators and economic motivation for management. One tool that engages management and operators in managing lost-time accidents is measuring and recording "near misses"—those incidents that might have resulted in a lost-time accident.

PepsiCo has a policy of encouraging the recording and reporting of near miss incidents. Every near-miss incident must be reported, recorded, and investigated, the root cause identified, and preventive measures put in place. Additionally, factories are incentivized by the number of near-miss incidents that are recorded. Specifically, the more near misses that a factory records, the better their rating is in this area. This system encourages the identification and reporting of risks that can lead to lost-time accidents. PepsiCo also believes that encouraging the reporting of near-miss incidents improves the culture of safety in a facility by involving the entire workforce in risk reduction activities and making them all owners of the process.

The near-miss program has been extended to food safety near misses as well. The food safety near-miss program, like the worker safety near miss program, encourages the reporting of food safety near misses by incentivizing reporting—the more near misses reported, the higher the score. And

like the worker safety program, each near miss is required to be investigated and the issue mitigated if appropriate. PepsiCo is finding that factories with food safety near-miss programs have higher food safety audit scores and better engagement of the workforce in food safety issues.

As part of its food safety culture journey, PepsiCo has found many synergies between its worker safety culture program and its food safety culture program. As such, the company is combining the two programs into one "Culture of Safety" program that takes the best of both programs and uses common tools and measurements.

Case Study: How Maple Leaf Foods Measures Food Safety Performance

Maple Leaf Foods has launched a comprehensive food safety metric referred to as the Food Safety Incident Rate or "FSIR." This is an indexed, normalized, single numerical metric that has six components that its teams deemed the most important, key indicators of food safety performance. Some of these metrics have been weighted more heavily in the overall index to account for severity and risk. Once the FSIR baseline for the first year for each of the 21 facilities was established, alignment with all stakeholders to a 3-year goal for improvement was formulated (for Maple Leaf, a 75% reduction in FSIR from the baseline year). The CEO played a key role in pushing the team to seek this significant improvement over the 3-year span but also allowed a modest ramp-up improvement goal in the first year as the team adapted to this new measurement system—signifying the importance of senior management commitment.

This FSIR result is tabulated each month, and the 21 company-owned facilities are placed into quartile positions based upon their quarterly FSIR result—using a green, yellow, amber, and red zone. These quartile rankings

are reviewed monthly by senior leadership in food safety and operations, and a quarterly review is held with the CEO and all plant and food safety managers. And finally, three times per year, the FSIR metric results and trends are reported to the Maple Leaf Board of Directors committee on safety and sustainability. This comprehensive review process creates an opportunity for dynamic dialogue between the plant leadership team and senior leadership on a routine basis about food safety performance and plans to address gaps and to celebrate successes.

But the CEO quarterly review of the FSIR results are just the "tip of the pyramid." The real change happens within the plant, with the operators, supervisors, and managers who are responsible for producing safe food every day. The FSIR has six components, that are highly objective, numerical measures, but are mostly lagging indicators. The plant teams identify their key leading indicators that they believe will drive improvement in one or more of the top line FSIR measures. These indicators get the focus at the in-shift, daily, and weekly operational performance meetings that occur at the facility.

Leveraging a Risk Based Approach: Enterprise Risk Management in Food Safety

Some companies have elected to incorporate the philosophies and principles of enterprise risk management (ERM) when designing and striving to achieve a more integrated, mature food safety culture.

ERM seeks to identify risks that may adversely impact a company, then create a top-down, enterprise-wide view and approach to manage those risks within the company's risk tolerance. It is a process of coordinated risk management that places a greater emphasis on cooperation among departments to manage the

enterprise's full range of risks, rather than as independent units or "silos," as the industry has come to refer to such an approach. While ERM was initially adopted by accountants and internal auditors to implement internal controls in the wake of certain financial scandals, the model has since been adopted into policy and regulation, and subsequently developed into a framework to assist companies to effectively identify, assess, and manage nearly any type of risk.

Applying this ERM definition to food safety and food safety culture programs, and witnessing its application, whether intentional or not, in the case studies above, one can quickly surmise that food safety is, and should be, viewed as an enterprise-level undertaking. Beyond the historic and obvious need to control for microbiological food safety risks, food companies today are faced with myriad additional operational, reputational, and regulatory risks (e.g., implementing new food safety regulations, being inspection and audit ready all the time, managing the impact of evolving science such as the use of whole-genome sequencing, dealing with increased social media and mainstream media exposure of outbreaks and recalls, and supplier and co-manufacturer management-related risks, etc.). All of these risks must be effectively managed on a daily basis. A cross-departmental approach to successfully managing these various exposures is necessary in the new age of changing risk. Engaging departments outside the typical food safety and quality staff such as marketing, R&D, purchasing, legal, and the C-suite is crucial to tomorrow's thriving food safety programs and creating an integrated, mature culture where food safety becomes embedded in the everyday behavior of the entire organization.

As such, applying ERM principles to food safety culture programs is highly advantageous. Using this approach, the food safety organizational structure and long-term goals are sculpted by senior leadership and the Board of Directors, much like the Maple Leaf Foods and PepsiCo case studies. This top group weighs in on food safety strategy, ensures alignment with the overall corporate strategy, participates in the risk identification and assessment process to identify potential events that, if they occur, will affect the organization, and identifies ways to manage risk within its organization's risk appetite.

PepsiCo's near-miss program and Maple Leaf Food's FSIR metric review process are both part of a broader hazard and risk awareness program, serving as good examples of an ERM approach to food safety program implementation. While most companies already have parts of these programs in place, proper verification is necessary to confirm that the effort to generate hazard and risk awareness is succeeding.

Conclusion

As extensively discussed above, one critical key to success is using meaningful metrics to ensure each facility and the company as a whole are on a path of continuous improvement. Metrics measure behavior. But the master key? The one that has the potential to unlock nearly endless learning opportunities? *Action*. It's what we as industry *do* with the *outcome* of those metrics—this is the master key.

Equally important is collaboration—who we take action with on those meaningful metrics to create actionable information. This is where cross-functional ERM principles can be applied to this process, which ultimately contribute to a mature food safety culture. The food safety and quality team cannot do everything alone, and should not, as other departments are dependent on the success of making safe food every day.

As seen, we need to be smart about what and how much we measure. Data overload is a real concern and can lead to an environment of generating data that are ignored and not turned into action. Driving a culture of safety in an organization is often most effective when the metrics and programs are simple, straightforward, easy to understand, and when results are generated that are valuable and immediately used and turned into actions.

The old saying that "what gets measured gets improved" is often misinterpreted when one does not explicitly understand that implied in "measuring" is the imperative that a team must carry out timely and ritualistic review of those measures with the intent to take specific actions to improve on identified deficiencies. That is the only way to create the accountability model necessary to drive food safety improvement to its most mature state where food safety culture is embedded in the organization; where doing the right thing, even when no one is watching, becomes an inherent behavior that everyone, from the CEO to the line operator to R&D and marketing, just do the right thing because it's built into the fabric of the inner workings of the organization.

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By Carol Wallace, Ph.D., Neil Bogart, Mike Bartikoski, MBA, and John Butts, Ph.D.

Food Safety = Culture Science + Social Science + Food Science

Food safety culture works at the intersection of food science, organizational culture, and social cognitive science.[1] We need to understand the interactions between traditional food sciences, including food safety, and the sociocultural sciences to determine what food safety culture is and how it can be measured and improved. Although everybody is talking about it, food safety culture is a relatively new concept for the food industry, and it is useful to look back at food safety assurance developments in recent history to understand our route into food safety culture and why it is so important today. In this article, we will consider how thinking in food safety culture has developed and how blending the food and sociocultural sciences together helps us improve food safety performance.

The Path to Food Safety Culture through HACCP

Starting with food safety management systems and, in particular, Hazard Analysis and Critical Control Points (HACCP), most people will know very well the history of HACCP through the U.S.-manned space program and the work of the Pillsbury Company.[2] Integrating failure mode effects analysis (FMEA), which has been used since WWI,

this pioneering work in the 1960s and '70s laid the foundations for food safety systems and practices that still form the mainstay of food safety management today. Thirty years ago, a new graduate entering food manufacturing would have been lucky to get involved in early HACCP if they worked for one of the early adopting companies. Remember, this was before publication of the HACCP principles by Codex and the National Advisory Committee on Microbiological Criteria for Foods,[3,4] and it was through these texts and guidance, as well as some early regulatory and private standards, that HACCP really started to take off in the 1990s. Early on, HACCP was reportedly an effective and economical way to prevent foodborne disease by the World Health Organization (WHO),[5] and this was a widely shared view that led some governments to believe that its implementation was a remedy for all of their country's food safety issues.[6] In some markets, HACCP was microbiology and compliance driven, while others recognized its role in continuous improvement and doing the right thing.

Through the 1990s, there was much focus on HACCP training and the development of formal HACCP plans, with the later understanding of the importance of also formalizing the supporting prerequisite programs to control the general operational hygiene conditions. However, foodborne

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THREE TAKE AWAYS

☐ Food science, including food safety, needs to be applied together with social and cultural sciences to assure effective food safety management.

☐ A strong food safety culture achieved by properly analyzing business processes and building systems to be proactive and continually evolving.

☐ The social science toolbox helps us to engage the workforce using transparent and effective communication and behavior change tools to establish company values and implement personal commitments to food safety.

illness outbreaks continued to occur, and auditors of HACCP systems started to see problems, both with the design of HACCP plans and their implementation.

HACCP was, and is, a logical approach to food safety control. By identifying up front the hazards that could occur and potentially make consumers ill, appropriate control measures could be designed and implemented to stop this from happening. While great in theory, this was not working so well in practice; steps needed to be taken to ensure systems were working effectively and were not just a check-list approach.[7] What was missing was the social science side and an understanding of the crucial role of people from a scientific perspective.

Some aspects of people systems, such as knowledge, skills, and training, have long been associated with effectiveness of food safety management systems and HACCP in particular,[3,6,8–10] and these are also items that have been identified as barriers to successful food safety management.[11] Also identified as important in early HACCP guidance was management commitment,[3,4,8] which was thought to come from an understanding of the potential impacts of unsafe food on the consumer and the business, in other words, senior managers seeing food safety management as the right thing to do. HACCP awareness training was often suggested for senior managers and the workforce in general to help share this understanding and commitment throughout food companies, and the demonstration of commitments by managers was seen as important for workforce commitment and behavior. These early clues to the impact of people and culture on effective food safety management systems (FSMSs) have evolved into the considerations of organizational

and food safety culture today.

Even though the U.S. started implementing the Food Safety Modernization Act (signed into law in January 2011) and numerous other countries have implemented or are implementing modernization attempts to their food safety systems, we continue to have increasing numbers of major foodborne outbreaks. According to the WHO, there are about 420,000 deaths a year from foodborne disease and about one-quarter of those deaths (~125,000) are children under 5 years old.[12]

Some key questions on the table are: Do HACCP-based FSMSs (HACCP-FSMSs) still work? Is the problem with the core principal of our HACCP-FSMS? Or is our food safety culture not truly developed? We propose that HACCP-FSMSs work, but our food safety culture is currently in disarray. We need both to be working hand-in-hand to deliver safe food 24/7 and, of course, we need goals and measurement systems to understand the maturity and effectiveness of both the food science and culture science elements.

Some Symptoms of a Food Safety Culture in Disarray

Food hazards and business risks

While we might have good systems to identify, assess, and control food safety hazards through HACCP, we need to recognize that our systems might not work if our food safety culture is poor. We also must recognize business risks where procedures are not effectively understood, honored or enforced. Economic adulteration is a good example where food safety may not initially appear to be an issue, but the melamine incident[13,14] and others have proved otherwise. Another business risk example relates to the arbitrary extension of shelf life of frozen meat to prevent

financial loss. Food safety science may not have had a problem with extending the code life, but customers receiving the finished product and the consuming public reacted differently. Through not understanding the potential consequences, the loss for both the manufacturer and its customers was extreme. These two examples have their roots in culture. The foundation of a company's food safety culture is defined in corporate values, but other factors such as customs of a population may play a role in employee actions. Managers of food safety must recognize the scope of actions that can create a food safety hazard and business risk.

Quality department is the policing department

In the two prior examples, loss of life and loss of business were the consequences of failing to have science and values effectively deployed. These are extreme examples, but each recall, withdrawal, and food safety-based embargo represents a failure to effectively deploy the necessary process to prevent. Does our organizational culture promote prevention? Do programs and projects reflect an understanding of our values? Has food safety and quality taken on the role of the Good Manufacturing Practices/hazard police? Our goal in manufacturing is to create habits within our employee based on doing the right thing. This applies to every production worker and management associate or team member rather than just food safety and quality. When correct actions are performed without thinking, then the culture has reached a new level of maturity.

Settling for executing programs at the existing level – Compliance vs. continuous improvement

The development of preventive

practices designed to address defined hazards and reduce business risk is primarily led by the food safety department. Some misguided management priorities that we have encountered include team members not having time to work on a project that will significantly improve food safety as well as providing data to reduce risk because they are too busy preparing next month's customer or third-party audit. In the absence of effective or strong leadership, managers often tend to stay in their comfort zone and work to set requirements rather than making continuous improvements.

Food safety measurements based on prevention and prediction vs. verification of the effects of the loss of control are simply not practiced enough. Most environmental monitoring programs by design are only verification driven. Verification positives mean we have lost control of the process and food safety issues can arise. Finding indicators of the potential loss of control vs. finding a zone 2 or 3 verification site, contact surface, or product positive should produce different reactions. We must recognize risk and measure the critical factors and indicators of process control for continuous improvement.

Lack of personnel and cross-functional team involvement

Let's take a 20,000 ft. view of communication systems in plants. Daily production and quality paperwork is generated by operations and food safety and quality. The information moves upward in the organization in the form of various reports. Some results are shared with the workforce, typically volume and efficiency, along with problems encountered. The workforce often gets the opportunity in some form to re-inspect, recondition, or rework product that management doesn't want to ship. This downward only communication chain can make individuals feel like mushrooms: "Keep me in the dark and feed me manure." This may be an extreme example, but the most common employee complaint is the lack of communication and/or feedback, in other words, personnel are not involved.

Often missing is an open transparent discussion between leaders and employees about what's most important to individuals and their companies. This will lead to conversations about competing priorities and different expectations. On the team side, many of the program maintenance issues raised in audits today can be addressed easily and quickly by cross-functional teamwork. The problem is that we don't do enough of it, so we are losing the chance to enhance employee engagement and buy-in while driving involvement through the organization. These management actions help define accountability as well as enhance food safety culture.

Imbalance between use of positive and negative consequences

In many food companies, plant managers are recognized for their ability to make quick decisions and create drive to get it done. Food safety management's role is to deploy science to help plant management promote safe food production through the organizational culture, values, and norms.

The successful use of consequences helps in continuous improvement of food safety culture. The outcomes of our measurement systems need to create more positive reactions than negative. Overwhelming negative consequences drive negative reactions and a disengaged workforce.

Issues with food safety skills and technical training

Would you knowingly allow a surgeon to do surgery on you or your family when the surgeon has only had 18 hours of training to be a surgeon? We rely on individuals in the food industry with as little as 18 hours of training on HACCP to develop our FSMSs. Even with new FSMA training requirements, only 18–20 hours of training are needed to get your Preventive Controls Qualified Individual certificate required for every manufacturing facility selling into the U.S. or manufacturing goods sold in the U.S. Are 18 hours enough?

Some of us get calls asking if we know of someone that can step into a company's open food safety and quality manager position, but oftentimes the company only wants to spend a certain figure for their FSMS expert that would attract a graduating food science college student. Often the response to such an inquiry is "students don't know enough," but rather than increasing the salary budget, companies will promote someone from inside, frequently with no formal food safety education or training into the position. Then, these new hires are sent off for the 18-hour HACCP course and are suddenly the company's food safety expert. On the other hand, the lack of appropriately trained graduates is a real and significant problem, partly because food science curricula often don't include enough food safety science or social science content, and partly because students see other work areas, such as product development, as more exciting career paths.

We can have the best knowledge at the corporate office, but if we do not have effective, robust, and continually improved training programs, we will not succeed. These problems occur in both small and large companies. The small company may not be able to afford to train employees, even though one issue could shut them down permanently, and the large companies

Food Safety =
Culture Science + Social Science + Food Science

Drive food safety through:

Company & Personal Commitment

Workforce Engagement

Food Safety Habit

Transparency & Communication

Figure 5.1. Some tools from social and organizational sciences to help you in your work to improving food safety performance.*

can afford the food safety professionals, but sometimes the information is kept at corporate and not disseminated down throughout the processing facilities.

Making Science-Based Improvements

Use the social and organizational science toolbox to bring your food safety culture back on track

Acknowledging that we have challenges with connecting the proven principles of food safety management such as effective and dynamic HACCP programs, what can we do? We suggest four areas (Figure 5.1) from the social science toolbox that have worked in our experience to improve food safety performance and continually improve the food safety culture.

Drive food safety through your company and personal commitment

Science and values define the right

thing to do. Our friend, Dave Theno, carried a picture of Lauren Rudolph, who died at age 6 from the Jack in the Box outbreak, in his briefcase. He would pull it out and ask "what would she want me to do?" when faced with a significant food safety decision. This made the value of the decision real and helped guide him to his decision. Does each of our company values enable us to put a human face on our decisions? When we educate or train, do we make it real and explain "why"? Do we use or engage the company values when we make decisions? Are the effects and potential impacts of our programs evaluated against our company values?

Does company management, including food safety management, realize how to drive the company and food safety culture away from firefighting and into a preventive and predictive state? Can the effects of those preventive and predictive prac-

tices be internalized and become a key component of the overall business strategy? The consideration of these questions when establishing food safety goals is essential for continually improving your food safety culture.

Our programs and procedures must be in concert with company values. We must interpret and deploy values on a daily basis and show through our actions that they are what we stand for. Leadership is leading by doing and 'walking the talk.' Food safety leaders must expect value-driven actions and accountability. These words make a lot of sense on paper, but how often have you held your supervisor or boss accountable or challenged them regarding a decision, procedure, or activity that had food safety implications? Our ability to hold those above, below, and equal to us accountable for food safe actions and decisions is key to driving the appropriate food safety culture.

As food safety leaders, our management obligation is to use those values at all levels in the organization to drive food safety culture.

Workforce engagement

Engaging the workforce in teams promotes our ability to increase accountability and responsibility. Engagement through tools such as brainstorming, cause and effect diagrams, and root cause analysis helps create and allows us to understand preventive controls. Diligent use of such tools leads to the capability for more advanced tools such as FMEA and/or other options from the lean manufacturing toolbox. Effective use of teams and teamwork helps move the organizational knowledge to the frontline while enabling cross-functional communication and sharing of ownership of change.

Communication tools are a major part of improving engagement. Food

safety engagement in daily team huddles as well as longer, for example, weekly team meetings is critical. Food safety metrics along with human health and safety must be top agenda items in these communication activities. Food safety and quality must ensure the communication includes recognition of project work to improve quality and productivity as well as food safety. Use of these tools to close the communication loop is an essential component of improving food safety culture. This approach also addresses the need for better communication and provides employees with channels for more direct dialogue on critical issues. This increases the employees' sense of impact on the job, which drives engagement.

Practice and success demonstrates two fundamental changes are required of us as food safety leaders at all levels to attain results through engagement:
1. We must abandon the view that we are or should be the sources of all solutions in the food safety space and truly open up to the reality that inclusion of broader teams leads to more and better ideas and solutions. Therefore, we need to evolve from direct knowledge holders to coaches and facilitators who steer cross-functional group actions from our informed food safety perspective, developing real understanding in our teams closer to the issues through the use of, for example, huddles and Gemba walks, to find out and address what is really happening.
2. We must ensure that the emphasis shifts away from cost in the short term to the improvement of process and other variables that focus on making the attainment of the finished goal easier for the teams—eliminating steps, changing methods, changing lay-outs, and giving more control at the point of decision and adjustment, within the framework of food safety.

Eventually, costs and value will be improved. Leaders who put people first, ensure their teams know what is expected, and give the teams the tools to attain those expectations will have greater success then those that put cost first.

The difference is in how management sees itself—as the sole creator of solutions or as a coach, facilitator, and conduit for the teams to actively transform how they do their jobs each day, which ultimately improves their value delivery (and engagement) at work.

When these systems reinforce company values, alignment to corporate initiatives strategic plan and initiatives can be realized. Food companies with a high food safety maturity level have a preventive mindset, and accountabilities and responsibilities are aligned for everyone. Employees feel empowered and understand why food safety procedures must be practiced. When an employee in a highly mature company enters the factory, their commitment is consistent to the company's values and results follow.

Make food safety a habit

Social science teaches us how to turn instructive actions into habits without thinking. Habitual actions to situations need to become acceptable norms within the various work groups in the plant and company. Acceptable norms mean the leaders of these various work groups accept and expect these actions in response to the situation. Think of street gang activity and their ability to establish acceptable norms. Take your memory back to high school and the cliques that autonomously formed. Street gangs and high school cliques create value-driven reactions to situations. The effects on new members initially changes beliefs then creates habits. How do we, without imposing gang

activity, address the work groups to recognize, accept, and react in a food-safe manner?

Behavioral change tools from social science can help with this, such as those from the 4Es model,[15,16] which considers the systems and capacity to enable change, working with trusted intermediaries and networks to engage change, the shared responsibility needed to exemplify change, and the need for incentives and disincentives to encourage change.
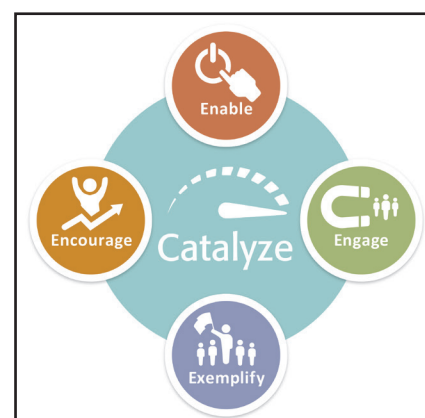

Figure 5.2. The 4Es Model of Behavior Change*

Figure 5.2 shows that we need to: **Enable**, making it easier by providing people with the support they need to make the right choices; **Engage**, getting people involved early on so that they understand what they need to do and helping them develop a sense of personal responsibility, developing new 'social norms'; **Exemplify**, leading by example in line with company values and policies; and **Encourage**, giving the right signals, reaffirming benefits of change and providing regular feedback. Looking at all the 4Es, we need to consider if the overall package of interventions is enough to catalyze change; it is important to review this on a regular basis as progress is made.

Transparency and communication

Scientific, technical, and societal elements are different today than they

were 10–20 years ago. Twenty years ago, social media did not exist as it does today. Transparency was not a norm. "What you don't know won't hurt you" was more the norm. Today, we all operate in glass houses. Every action and reaction has some level of visibility. Our current state of communication technology has enabled cell phone pictures and videos to touch thousands in just minutes. Getting the culture right is one way of protecting business in this arena.
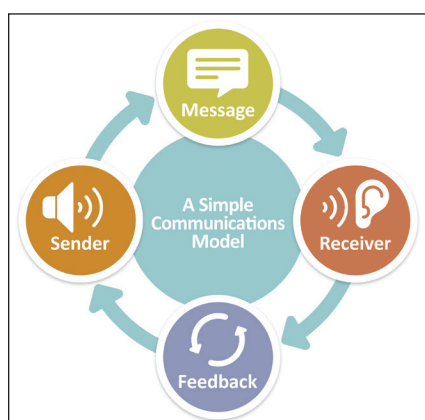

Figure 5.3. A Simple Communication Model*

When you ask "What can we as a company do better," the very common response is "Provide more communication." As usual, the devil is in the details—understanding what sort of additional communication is needed along with what the receivers expect and interpret from the communication are crucial (Figure 5.3). The truth is that most companies that increase the number and frequency of communications don't move the needle—it isn't about *more* communication, it is about *better* communication—and to make communications better, we need a fundamental understanding of how the communication process works, what folks expect and need from communications, and how that differs from what they are getting. Without that understanding, many attempts to improve communications will fail.

Figure 5.3 shows the communication cycle in its simplest form, but we need to remember that the receiver has to decode the message to his/her own understanding,[17] and this might be affected by the chosen communication channel, for example, email, telephone, in-person briefing, etc., and by nonverbal signals. In other words the chosen communication channel can add 'noise' that interferes with the intended message being understood.

Our current methods for sourcing feedback—annual engagement surveys and survey technologies like SurveyMonkey®—often take too long and because of the design, build, deploy, analyze, and report-out cycles required of our current feedback processes. Leaders are too slow to take action—it takes 3–6 months on average to move from data collection to action planning on a typical annual employee survey. Many companies don't even get to developing action plans, which erodes organizational trust. The bad news is that our organizational feedback processes are entrenched by habit and woven into the fabric of core business processes. It takes a progressive and forward-looking leader to spot this trend—you have to be courageous to try something new!

The risk to companies who don't adapt to the real-time feedback trend is great. After all, in the modern knowledge economy, employee engagement is the capital that keeps the economic engine running. If we don't know how our employees feel today, we need to find out and ask them what they think. We need to respect them for their unique perspectives and experiences. In this way, employees feel connected emotionally to the purpose of their organizations and know how their contributions are driving their businesses forward. We can't foster this type of culture just by

checking in once or twice per year.

How to blend the food and social science together for food safety effectiveness

The ease of implementing new food safety programs is directly proportional to the maturity level of the food safety culture. Is the ease of implementing new food safety programs then a measure of food safety culture? The elements affecting ease of implementation include trust, engagement, buy-in, intention, belief, understanding, and behavior, among others. We have discussed these issues and some of the questions in the thought process of those who are tasked with implementing, complying with, and maintaining changes. People ask "Is this the right thing for me, for my department, for the company"? "Will this make my job easier or harder"? "Are we capable of accomplishing and complying"? "Is this really going to a sustainable"? Addressing these questions as part of the implementation process helps address the culture or social science side of the proposed change.

To implement effective change, we must blend practical knowledge from organizational culture science, social sciences, and food safety science. For example, a company value reads 'the customer always come comes first.' Senior leaders act on this value by holding sales accountable for engaging key customers to brainstorm new product ideas or improvements to existing products. Sales knows how to assess food safety hazards and ensures that representatives from both customer and company food safety are involved in the brainstorm. A new product is developed, and the product development team assess hazards and physically conducts brainstorming sessions at the production site with involvement from the leadership team to frontline employees and, together,

they proactively identify hazards and risks when producing the product. As this example shows, there are two prevailing change management principles at play: planning and involvement. We all go through the same emotional spectrum when experiencing change that is important to us, and, as leaders of change, it is our responsibility to use the known principles of social science to make the 'pain' of change be short and controlled.

Conclusions

Food science, including food safety, needs to be applied together with social and cultural sciences to ensure effective food safety management for consumer and brand protection. A strong food safety culture makes strong business sense and is achieved by properly analyzing business processes and building systems to be proactive and continually evolving rather than reactive and static. This includes utilizing the social science toolbox to engage the workforce using transparent and effective communication to share and establish company values and personal commitments. In this way, it is possible to drive food safety forward and continually improve standards, making food safety a habit for every employee every day.

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