



CHANGE FACTORS:

SORTING OUT GLOBAL DISRUPTION
AND NEW STANDARDS OF BUSINESS
IN FOOD PROCESSING





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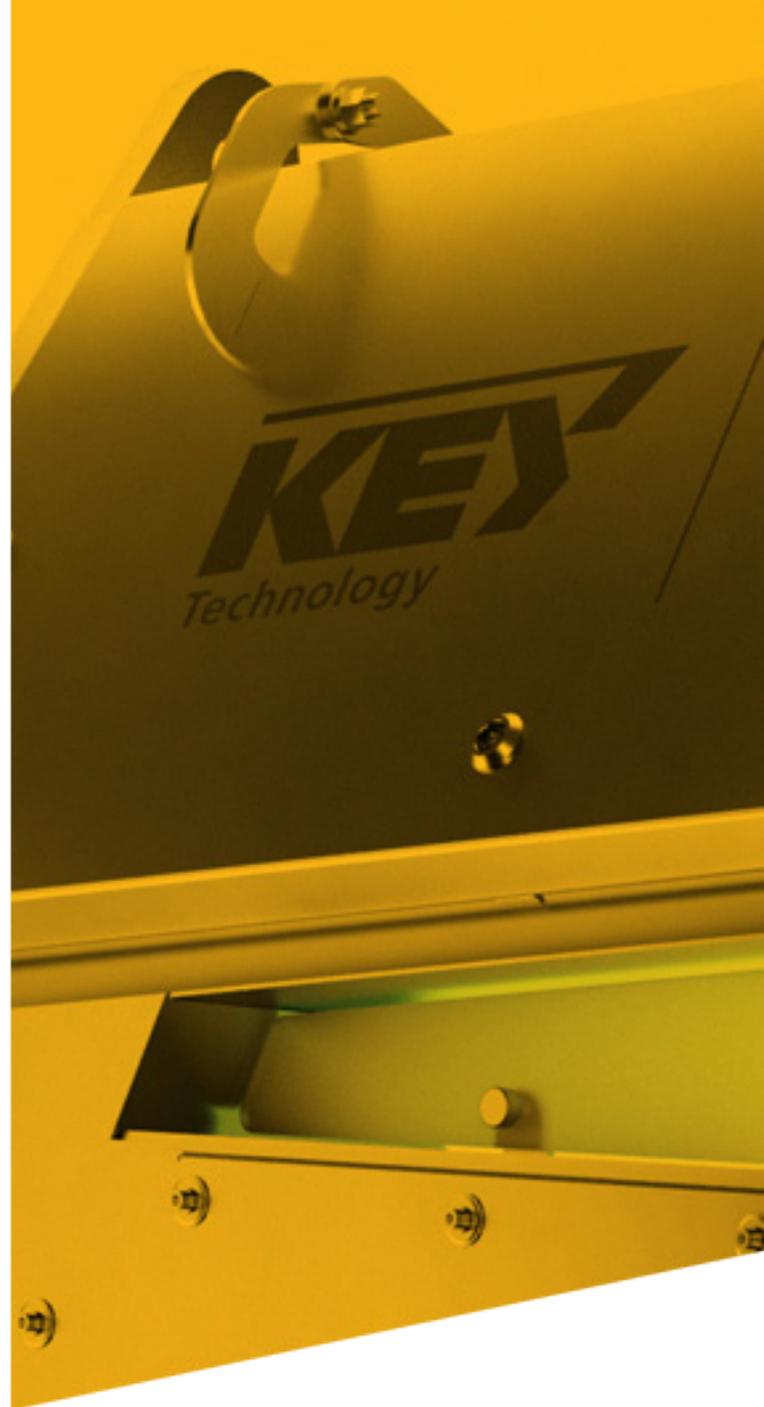
INTRODUCTION:

“NO ONE EVER STEPS IN THE SAME RIVER TWICE.”

The renowned philosopher Heraclitus professed the persistence of change from the streets of ancient Greece. Today, he could just as easily be shouting from the floor of a food processing plant.

Whether you're a multinational processor or the proprietor of a single facility, you face a world of growing and unprecedented transformation. Growing demand for greater and greater throughput and yield. Heightened attention to product quality and safety. Increasing skills gaps and labor shortages. Navigating and mitigating the combined impact of each of these dynamics in order to drive efficiency and profitability. In sum, a new and higher standard of business excellence is being set.

With real-world insights from top plant engineers and owner/operators around the world, as well as experts from Key Technology, this eBook will explore the major change factors impacting food sorting/processing globally - and examine how these factors are connected and affect a business, individually and collectively.



FACTOR 1: GLOBALIZATION

It's a big world out there, and it's only getting bigger. Most estimates put global population at more than nine billion by mid-century – that's two billion more people in just three decades.¹ At the same time, increasing prosperity in nations such as China and India is dramatically increasing demand for more, as well as more kinds of food.

This population boom quite literally opens a world of opportunities for processors. Most obviously, the increased demand for product from global consumers means more product that needs to be processed. According to Food Engineering's 2015 State of Food Manufacturing survey, 71 percent of respondents believe gross throughput will increase an average of 14 percent this year, citing new products and lines as the drivers of growth.²

"It's not just about being regional or national anymore, it's a global economy," says Bob Pedracini, Plant Manager for Heinz Ontario, "Communication is faster, and movement of product from point A to point B has to be faster as well."

At the same time, research indicates the number of new plant construction and expansion projects is the highest in the nine-year period from 2006-2014, as globalization unlocks new markets and paths to growth for manufacturers of all sizes.³

KEY TAKEAWAYS:

GROWING DEMAND YIELDS FIERCER COMPETITION. SEEK SORTING PROCESSES AND SOLUTIONS THAT NOT ONLY AID IN MEETING INCREASING CUSTOMER NEEDS, BUT THAT ALSO CREATE DIFFERENTIATION AND COMPETITIVE ADVANTAGE GLOBALLY.

"If you're multinational, now you can move products around the planet based on efficiencies," says Steve Johnson, Senior Director Latin America and Asia Sales at Key Technology. "For smaller players, their opportunities aren't so small either. They can look to grow their businesses in export markets that may offer higher value for their products than the areas they produce in."

With globalization also comes increasing competition. This makes differentiation an even more essential aim for processors – as well as a closely guarded advantage.

"I have customers in South America who I can't bring to North American plants to see our equipment anymore," recalls Johnson. "Today, the plant in Argentina and the customer in the U.S. may both ship to Japan – and now they see each other as competitors."

FACTOR 2:

STANDARDIZATION

Globalization is a factor that goes hand in hand with standardizing processes and benchmarks for throughput, yield and quality. But variation is an extreme barrier to standardization, and it can be a very high and costly one.

“In addition to dealing with differences between different locations – from regulations to labor quality to equipment – the biggest challenge food processors continue to struggle with is variability of seasonal raw materials,” observes Eric Geling, Senior Sales Director for Key Technology in EMEA.

“Every year, the crop is slightly different. Every season is slightly different. Which is why, many of our customers are looking for a very standard and consistent product. They need process equipment that’s able to deal with variations in inbound product in such a way that the output of the line will be very consistent, predictable and reproducible.”

But mitigating variability can be even more complex than that. Changes in weather and growing capacity can obviously vary not just the quality of inbound product, but also quantity – which adds tremendous pressure on plants to be effective. Key’s Johnson cites current conditions in California as an example:

KEY TAKEAWAYS:

CONTROL WHAT YOU CAN, NOT WHAT YOU CAN'T. EXPLORE SORTING TECHNOLOGIES THAT EQUIP YOU TO FLEXIBLY AND CONSISTENTLY HANDLE THE VARIATION IN RAW MATERIALS FROM YEAR TO YEAR.

“There are many peach growers who are enamored with the price per pound that they’re seeing for tree nuts. And with the drought conditions as they are, the growers are converting their peach orchards into nut orchards, which is reducing the peach supply. So, of course, the processor needs to extract more yield from the peaches they do get in order to fulfill their contracts.”

FACTOR 3: EXPECTATION

Manufacturers are setting new and higher standards for themselves – but that’s only the beginning. FDA Food Safety Modernization Act (FSMA) compliance, customer pressure to adopt Global Food Safety Initiative (GFSI) schemes such as BRC, SQF and FSSC 22000, and empowered consumers with more discerning tastes are forcing processors to closely reexamine what is “acceptable” from their sorts.

“When you look at food safety,” says Eric Geling, “removing foreign material has become far more important, and will continue to be important. The removal of FM is something that is a factor throughout the entire supply chain. For example, farmers nowadays aren’t allowed to drink tea out of a glass cup on their farm. In a food plant, glass is not permitted anywhere. But regardless, some FM in your sort is unavoidable – and you need to have an inspection system that is as close to 100% accurate.”

“People’s expectation of quality as a whole has gone up. Everyone expects things to be good, no matter where you are in the world,” comments Steve Johnson. “When you eat a French fry from a quick service restaurant, for example, you expect the quality of that fry to remain consistent at all restaurant locations, in every part of the world. There are no such things as ‘secondary’ markets who get a pass in the globalized economy.”

KEY TAKEAWAYS:

SORTING ACCURACY IS EVERYTHING. REGULATORY NON-COMPLIANCE CAN BE COSTLY – AND CONSUMER BACKLASH CAN BE EVEN COSTLIER TO YOUR LONG-TERM REPUTATION AND YOUR BOTTOM LINE.

What’s more, the global advent of social media has exacerbated the demand for quality infinitely. Now, a single online post can create a brand and public relations disaster with long-lasting impact.

“Years ago, maybe you’d hear about an FM incident at a quick serve restaurant once in a while, and the news stayed pretty local,” says Johnson. “Today, the feedback loop is instantaneous and detrimental. Any FM incident, people are Tweeting about it and you see it everywhere. It’s a global phenomenon.”

FACTOR 4:

LABOR

Your ability to adapt to changes in demand, standardization and quality largely falls on the shoulders of plant personnel who have to execute your strategies and operate your sorting technologies. But a perfect storm of circumstances is making the always-critical issue of labor even more difficult.

In the face of growing population and demand, processors require more skilled people to operate their plants. However, labor costs are rising globally, which can impede that growth. At the same time, the qualified talent pool is shrinking as the global workforce experiences a generational shift. These swirling dynamics are only compounded by on-going advancements in technology.

“Increasingly in Europe and North America, it is hard to get skilled labor to work in the plant,” says Geling. “Equipment gets more and more complex. Processes get more and more complex. But the level of expertise among operators gets less and less.”

Heinz’s Pedracini says, “The race for talent is getting harder and harder. It’s not just about finding ‘white collar’ versus ‘blue-collar’ laborers anymore. What we need are white collar workers with the technical skills required to operate our machinery.”

Having equipment that is easy to train on, use and maintain – or that has automation capabilities to provide alerts of imminent failures, self-adjust

KEY TAKEAWAYS:

KEEP IT SIMPLE. CHOOSE SORTING TECHNOLOGIES WITH USER-FRIENDLY INTERFACES, PREDICTIVE MAINTENANCE SYSTEMS AND LOW OPERATOR INTERVENTION/MAINTENANCE REQUIREMENTS, SUPPORTED BY HIGH LEVELS OF AVAILABLE SERVICE AND TRAINING.

and self-run – has become the Holy Grail for processors. It’s no wonder automation ranks as the top trend that will change manufacturing operations this year in Food Engineering’s State of Food Manufacturing survey.⁴

“The thing we’re all looking at is operator interface on our machinery,” says Pedracini. “If we’ve got a bagger or a sorter or a shaker with an issue, nobody has time to sift through a 700 page online manual. Like a photocopier that has a paper jam and tells you exactly how to unjam it, we need an interface that tells us what’s wrong and how to fix it.”

“The future will be sorting technologies that have such clever analytical, optical systems that they can run and improve without intervention,” adds Geling. “Like the Google Self-Driving Car, I see process lines that do the same thing – deciding when to speed up or slow down, or increase or decrease settings, so that the final product meets quality and yield requirements.”

FACTOR 5:

EFFICIENCY

The golden thread that pulls through all of these factors is the need for efficiency: to optimize processes and minimize expenses in order to get the greatest return on investment (ROI) across the board.

Aside from labor costs, waste is a leading source of inefficiency. The Food and Agriculture Organization (FAO) of the United Nations estimates that up to one third of food produced for human consumption worldwide is lost in the supply chain each year.⁵ The impact of reducing waste to feed more people is obvious. The business benefits of yielding more good product from the sort could be equally tremendous.

“When it comes to removing defects, processors often end up removing more product than necessary,” states Key’s Geling. “For example, as potatoes get older throughout the season, the defect level usually increases until the next crop comes. What’s required are systems smart enough to make finer discriminations throughout the season in order to adhere to quality standards, not overshoot them. That can significantly increase yield.”

Greater efficiency for processors today also means getting more from their plants and their sorting machines for less. More energy efficiency. More uptime. More flexibility. More machine life. All with less capital expense, less labor and less maintenance.

KEY TAKEAWAYS:

OPTIMIZE RELENTLESSLY, FROM THE SORT TO THE TECH TO THE PROCESS. SEEK TECHNOLOGIES THAT LET YOU REMOVE WHAT YOU NEED, AND NOT ANY MORE. INVEST IN TECHNOLOGIES THAT ENABLE YOU TO EASILY UPGRADE RATHER THAN REPLACE.

“To be competitive on a global scale, processors need higher performance – especially smaller operations,” says Steve Johnson. “No one can get by with ‘best of good enough’ technology anymore. In order to offer a great product at a competitive price point, efficiency is king. That means technology that can scale with their needs and that can be customized.

“If you can increase throughput from a given amount of input, waste less and do it with fewer people, then your ROI will obviously will be higher than a like scenario with less efficiency and more people.”

SUMMARY:

NEW STANDARDS DEFINED

In today’s new world of global competition and hyper-connectivity, it’s clear that new standards are required of food processors in order to survive and thrive. What is required are processes and technologies that deliver greater yield, quality and efficiency. What is imperative is a shift in focus from what’s worked well enough before to what will enable performance at the highest levels, now and for years to come.

With this in mind, Key Technology engaged in a year-long Voice of the Customer initiative, speaking in detail with nearly 50 customers across Europe, North America, Latin America and Asia. The goal: to help define new standards of sorting technology performance to help processors globally to meet the challenges created and impacted by the five factors outlined in this eBook. The results are outlined below.

As you evaluate strategies and technologies to help mitigate the change factors outlined in this eBook – and look to increase quality, efficiency and profitability – consider the standards outlined above. Ask yourself if the technology and processes you’re investing in are still just the “best of good enough,” or if they can deliver the transformative capabilities required to adapt to today’s rapidly changing requirements. In order to meet today’s higher standards of customer and consumer expectations – and your own standards of increasing business excellence – the answers must resoundingly be “yes.”

THE NEW STANDARDS AS DEFINED BY KEY TECHNOLOGY’S CUSTOMERS

SORT CAPABILITY	PROCESS AUTOMATION	SYSTEM DESIGN
<ul style="list-style-type: none">• 100% sort based on total product surface inspection• New and better detection of product quality defects/foreign materials• Unique ID/discrimination of critical foreign materials• Sort with verification	<ul style="list-style-type: none">• Recipe-driven operation for consistent sort across systems• Automatic adaptability to changes in system/product/plant environment• Information analytics and integration with plant automation• Predictive diagnostics and smarter system alerts	<ul style="list-style-type: none">• Increased sustainability of system performance in production environment• Minimal sanitation & maintenance• Cost effective and serviceable design

SOURCES

¹ “A Five-Step Plan to Feed The World,” National Geographic’s The Future of Food:

<http://www.nationalgeographic.com/foodfeatures/feeding-9-billion/>

^{2,4} “The State of Food Manufacturing: It’s all about throughput,” Food Engineering:

<http://www.foodengineeringmag.com/articles/94287-the-state-of-food-manufacturing-its-all-about-throughput>

³ Food Engineering’s 38th Annual Plant Construction Survey:

<http://digital.bnpmmedia.com/publication/?i=261210&p=48>

⁵ Food and Agriculture Organization (FAO) of the United Nations:

<http://www.fao.org/food-loss-and-food-waste/en/>

ABOUT KEY TECHNOLOGY

Key Technology (NASDAQ: KTEC) is a global leader in the design and manufacture of process automation systems including digital sorters, conveyors and processing equipment. Applying processing knowledge and application expertise, Key helps customers in the food processing and other industries improve quality, increase yield and reduce costs.

With its new VERYX™ digital sorting platform, Key is setting a new standard for transformational intelligence, offering, for the first time, a comprehensive solution that delivers 100% sustained product inspection, pixel data sensor fusion, intuitive user experience and advanced automation and analytics.

An ISO-9001 certified company, Key manufactures its products at its headquarters in Walla Walla, Washington, USA and in Beusichem, the Netherlands; Hasselt, Belgium; and Redmond, Oregon, USA. Key offers customer demonstration and testing services at five locations including Walla Walla, Beusichem, and Hasselt as well as Sacramento, California, USA and Melbourne, Australia; and maintains a sales and service office in Santiago de Queretaro, Mexico.



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