

Future Food-Tech London

October 18, 2017

Keynote: Feeding the 99 Percent

Michael Locatis, CEO 915 Labs

Former Assistant Secretary, Energy Department and
Homeland Security, Obama Administration



Michael Locatis, CEO of 915 Labs, gave a keynote presentation at Future Food Tech in London on October 18, 2017. A transcript of his presentation follows.

I'm the CEO of a food technology company but I have to admit, I'm not worried about the food you here in this room today are eating.

I'm reasonably sure that each of you is able to get the required calories you need. You may have had one too many croissants this morning, or not enough protein, or one too many cups of coffee. But that's between you and your scale, or maybe you and your doctor.

Bottom line, everyone in this room has access to and can afford to buy fresh fruits and vegetables – all organic if that's your preference. You're able to order literally any food you want online and have it shipped to your door.

So let me tell you who I am worried about.

The Food Insecure and Malnourished

I'm worried about the one in seven people around the globe who do not get enough to eat. That's 1 billion people. What's more, malnutrition is pervasive and growing. Today, 30 percent of the world's population is affected by malnutrition. By 2035, that number is expected to increase to closer to 50 percent.

Worldwide, 160 million children are stunted by malnutrition. 790 million are undernourished. A whopping 2 billion people have micronutrient deficiencies and another 2 billion are overweight or obese. As you know, these are not just third world problems: Malnutrition comes in several different forms and transcends income, class and geography.

Fast-growing middle-income countries have some of the highest malnutrition rates. In these areas, the price of fruits and vegetables have risen significantly over the last few decades, while the price of foods with low nutritional value like fast food, bread and snacks have decreased.

We too often overlook the fact that many of our own neighbors, tragically including children, do not get enough to eat. In my home state of Colorado, one in four children are food insecure. They are among 48 million Americans who don't get enough nutritious food on a regular basis.

The food insecure include people with modest means who shop at small local stores – not at supermarkets that offer variety and competitive prices. They are people who pass up fresh vegetables for canned alternatives because they are cheaper, and people who reach for rice and noodles because they help stretch a meal. And still others who live in food deserts where all that's available are empty-calorie, low-nutrient and low-fiber packaged foods – all of which are associated with obesity, diabetes and heart disease.



Mike Locatis delivers the keynote address, *Feeding the 99 Percent*, at Future Food-Tech London.

Food insecurity and malnutrition have devastating affects not only to individuals and families, but also to the health and stability of our communities and economies. As a member of the Obama administration, I was exposed to the machinations of regimes that used hunger to radicalize new recruits and the destabilizing effects of food insecurity around the globe.

Food Waste

My next worry, and one I know many of you share, is for the sustainability of our global food ecosystem. Today, millions of people go hungry, while the UN estimates that one-third of all food produced is lost or wasted. As we've seen just recently, between droughts and record-breaking tropical storms, climate change and volatile weather patterns are brining additional threats to the world's food supply.

It's exciting to watch solutions emerge from academic institution, non-profits and innovative collaborations. We need innovation more than ever in the food industry today, along with more discussion around policy and additional investment in promising technologies that address each aspect of our food ecosystem.

To my mind, there are two areas facets of the ecosystem that don't get enough attention: packaging and logistics. By focusing on these two important facets of the

food ecosystem, we can go a long way toward addressing the concerns we all share for hunger, malnutrition and food waste.

Our Packaging & Logistics Problem

First and foremost, we need to redouble our efforts to capture and extend the shelf life of the produce we're growing. Let me give you an example. In the state of Washington where asparagus is grown, the harvest season is short – from early April to late June. Once harvested, the texture of asparagus deteriorates rapidly, becoming more fibrous and bitter over time. Asparagus is sold fresh and also preserved through canning, pickling, freezing and drying – none of which have huge commercial sales.

With a better means of quickly preserving and packaging produce like asparagus, we could reduce post-harvest losses and increase economic returns for farmers – while providing a shelf-stable asparagus that is appealing to consumers and that expands distribution opportunities.

Are Fresh and Frozen The Answer?

Fresh and frozen foods offer indisputable nutritional value, but there are also huge costs and significant waste associated with these distribution methods, especially when we're talking about scaling and mass distribution.

While I laud the idea of buying locally produced fresh food and cooking from scratch, it is not the sustainable solution for feeding the globe today or in 2030. Fresh foodstuffs are big part of the 1.3 billion tons of food wasted per year throughout the supply chain, from the farm to individual households.

Frozen foods not only require costly cold chain distribution and storage and chilled cases at the point of retail, they also create storage problems and packaging issues for consumers. My colleague recently ordered frozen mac & cheese and received 8 pounds of product along with 32 ounces of packaging. It also arrived on her door step a day earlier than scheduled where, had she not retrieved it in time, it would have most likely spoiled. Here's another example, from the popular meal plan and better-for-you good category. Nutrisystems executives, on a recent earnings call with analysts, reported weak sales because subscribers were running out of freezer space for their diet meals.

Overcoming the last mile to deliver fresh and chilled produce direct to consumers without waste is a huge challenge with new and existing players entering the space. We're all waiting to see how the new direct-to-consumer grocery channel will shake out.

Meanwhile, many of the meal kit companies, which have sucked up a significant share of VC money in the last several years, have struggled because so much of their revenue is eaten up by spoilage and waste. We're learning from these companies that

busy consumers don't want to cook every night – they don't even want to spend 20 minutes chopping up vegetables. A professional chef we've collaborated with at 915 Labs admits he occasionally serves packaged foods to his family – he simply doesn't have the time to cook every day.

Packaged Food Is Here to Stay

The bottom line is this: packaged food will continue to be part of the global food ecosystem. Consumers from all walks of life are dependent on convenience foods. This is particularly true of young consumers from the Millennial generation who are used to doing everything online.

Food ecommerce is a fast-moving train that has food manufacturers and retailers scrambling. Online grocery shopping is estimated to bring in \$100 billion in sales by 2025, which is equivalent to the sales of about 3,900 supermarket stores. We've heard from many ecommerce providers who are working hard to ramp up their inventories of quality, shelf-stable packaged food options that can be sent direct to consumer.

We've got consumers with on-the-go lifestyles, we have food deserts – where even when presented with fresh produce, shoppers continue to buy packaged convenience foods—and we have a rapidly changing retail landscape... and each need not the status quo in packaged food, but a new category of packaged foods that are high quality, nutritious and both sustainably produced and distributed.

And therein lies the challenge.

Packaged food is an extraordinarily sustainable option, but it's often associated with unhealthy, processed food. 'Food processing' has become a pejorative term. And for good reason. There's a lot of food out there that's highly processed and overprocessed. Today, too much processed food starts with poor quality ingredients and as a result of thermal processing, is further stripped of valuable nutrients. And then unhealthy ingredients like sodium, fats and artificial ingredients are added in.

I want to pause for a moment and give conventional thermal processing its due. Food sterilization technology was a significant scientific achievement for its time – in the early 20th century. But the industry and consumers today are in desperate need of a new and improved way to safely preserve food, one that keeps food closer to its natural, nutritious state and without artificial additives and excess salt. There's just one technology that delivers that today: microwave assisted thermal sterilization or MATS.

Food Preservation for the 21st Century

MATS uses the gold standard in food preservation – heat – but it utilizes microwaves to shorten the time food is exposed to high temperatures. This makes all the difference in the quality and nutrient profile of food. It's a complete change in the way food has been processed for the last 100 years and I think we all agree, it's a technology that's long overdue.

915 Labs acquired the license to MATS in 2014 and has quickly commercialized the technology. MATS systems are now installed around the world and have begun producing clean-label packaged food. I firmly believe that in the near future, MATS will change both the term 'food processing' and the way food is preserved and distributed around the globe.

Technology Is the Solution

To close, I'd like to leave you with an example of the power of healthy packaged food. I serve as an advisor to Hunger Free Colorado, a non-profit dedicated to eradicating food insecurity in my home state. Hunger Free does great work throughout Colorado through advocacy and nutrition programs and operating a network of food pantries.

I recently observed a woman visiting one of those food pantries on Denver's historic Colfax Avenue. She was a single mother raising two children and trying to create a sense of normalcy in their lives, even though they were temporarily living in a single motel room. At the pantry, she received a pound of white rice and I wondered, given her circumstances, what would she be able to do with that?

As CEO of 915 Labs, I envision a day when she and others will instead have access to a complete meal in a package, similar to our MATS-made frittata – a protein-rich meal with a long shelf life that is ready to heat and eat.

When the food industry embraces technology, we will move the needle on food insecurity, malnutrition and waste. And we'll all have a few less things to worry about.

Sources

Food Systems for Nutrition

Centers for Disease Control & Prevention

NHS/Government Statistical Service

IFPRI (2015) Global Poverty Report

Wiggins and Keats (2015)

Food Marketing Institute

The Food Marketing Institute and Nielsen

The 2017 Y-Pulse Modern Consumer: Understanding Tomorrow's Tastemakers Today Study

<https://www.qsrmagazine.com/news/study-millennials-continue-shaping-food-industry>

Food Chemistry 100 (2007) 813-819

www.elsevier.com/locate/foodchem

Food and Agriculture Organization of the United Nations

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