Role of Technology to Reduce Food Waste in the Home

G. Tavill 01/11/2019
Why is this important to us?
Corporate Citizenship Focus Areas

**Better Planet**

The health of the planet and availability of natural resources is intricately linked to every part of our business, so we’re focused on taking action on climate change, preserving water resources, and eliminating waste.

**Good Food**

We want nothing more than to make safe, delicious, affordable and nutritious foods while providing the information you need to make choices for a healthy lifestyle.

**Responsible Sourcing**

Purchasing ingredients and materials is about more than just cost and quality. Responsible sourcing means considering environmental, social and economic impacts across our supply chain.

**Stronger Communities**

Creating shared value with our community of employees, investors, suppliers and business partners — as well as the places where we live and operate — is critical to our long-term success.

Materiality: Relative Priority of CSR Topics to the Company

- Better Planet
- Good Food
- Responsible Sourcing
- Stronger Communities

Significance to External Stakeholders

Significance to Conagra Brands
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<tr>
<th>Economic Impact</th>
<th>Social Impact</th>
<th>Environmental Impact</th>
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<td>• Growing, processing, and transporting food of which 25 - 40% is ultimately wasted</td>
<td>• Up to 50 million Americans are challenged with food insecurity</td>
<td>• Inputs: Energy, water, and land use associated with food production</td>
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<tr>
<td>• Disposal costs, retailer shrink, consumer out-of-pocket costs, etc.</td>
<td>• Enough nutritious calories are grown in the US each year to feed every American</td>
<td>• Outputs: GHG generation when food degrades in landfills</td>
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Conagra Brands Endorses the US EPA Food Waste Recovery Hierarchy
And in November 2016, we committed to be Food Loss and Waste Champions with USDA, FDA & EPA to reduce food waste by 50% by 2030!

Primary focus avoiding waste generation

Animal feed is our most accessible and efficient by-product diversion outlet

Some organics, like wastewater sludge, are best suited for soil amendments via composting or direct land application

In addition to traditional donations of packaged goods, we seek novel ways to donate semi-finished & bulk foods

We recover energy from used cooking oils and continue to seek options for anaerobic digestion

Last resort is to destroy materials without any value recovered. Our Zero Waste Champions do a great job of avoiding this!
The following toolkit was developed to help guide companies through the basic steps in food waste reduction. Included are sections on how to get started, as well as suggestions for how to identify diverse solutions.

Executive Summary

Introduction to the Food Waste Challenge

Getting Started: Best Practices to Keep Food Out of Landfills

Solutions to Donation Barriers

Diversion Beyond Donation

Reducing Food Waste Generation

Acknowledgements

http://www.foodwastealliance.org
Shifting to In-Home & the Consumer
Food Waste Reduction Alliance - Phase II Assessment: Where / Why Are Losses Occurring?

* Does not include waste from Agriculture
Technology Levers to Reduce Food Waste in the Home

• Product Design
  • The Food
  • The Process
  • The Package

• Connected Kitchens / Consumers
  • Mobile apps (software)
  • Smart appliances (hardware)
  • Hubs that bring it all together

• Managing Unavoidable Wastes

• Bonus Food for Thought
Product Design Levers to Prevent Food Waste

**The Food**

#1 Make it DELICIOUS
- Recipes that preserve food throughout intended life and prevent spoilage
- Single serve products prevent plate / consumption waste
- Emerging focus on “clean” label recipes that deliver these benefits

**The Process**

#1 Make it SAFE
- Traditional techniques work: freezing, aseptic processing, canning, etc. extend shelf life and protect food safety
- Emerging techniques may bring future product benefits: microwave, HPP, etc.
- And old may be new again: pickling / fermentation, smoking, etc.

**The Packaging**

#1 Make it FUNCTIONAL
- Barriers extend shelf life
- Reclose features prevent spillage
- Portion control prevents spillage & spoilage
- Dispensing features limit over use and spillage
- Cooking features; like microwave susceptors; enable making food delicious
- Labels communicate prep and usage information
- Emerging sensor technologies can help identify loss of freshness and avoid premature disposal
25% of US homeowners live in a smart home; in 5 years will >2x

59% Of US 24-34 year-olds cook with smartphones or tablets handy

Samsung, Whirlpool, LG & GE say that most, if not all, of their kitchen appliances will have connected capabilities by 2020

1 in 5 US homes own a voice-activated smart speaker & the same proportion has used voice to shop

Software – Like Cooking & Shopping Apps

Hardware – Like Smart Refrigerators

Hubs – Like Alexa & Google Home

Connected Kitchens Prevent Food Waste Through Better:

**Planning**
Help me decide what I need
Inventory management reduces over-purchasing and helps manage expiration dates to remind you to use products

**Shopping**
Help me with grocery shopping
Online shopping reduces impulse purchases of items that may ultimately go uneaten.

**Preparation**
Help me be a successful cook
Enables better success in cooking and recipe outcomes, positively impacting plate waste
Managing Unavoidable Wastes
Can Technology Provide In-Home Adaptations for the Food Recovery Hierarchy?

1. Source Reduction = prevention, addressed in Product Design & Connected Consumers
2. Donation apps exist to connect companies with donee agencies, but consumer options haven’t emerged… yet
3. Animal Feed can work for some, but most can’t manage pigs in their yards 😊
4. **What if we could make small scale anaerobic digesters or fermentation processes to capture energy?**
5. **How can we make home composting easier?**
How do we establish the difference between “edible” and “inedible” part of foods?

The answer.... As of today, it depends – on social & cultural norms

What if it was based on nutrition science?

http://www.flwprotocol.org/, WRI
Parting Thoughts

**Product Design**
- Although often maligned as “processed” - modern product development, processing techniques and packaging innovations have had decades of positive impacts on the US food supply and have prevented waste on many levels.
- Technology innovation on all 3 fronts continues

**Connected Consumers**
- There’s an APP for that!
- Will increasingly help consumers with planning, shopping & preparation – all should help prevent wasted food in home

**Unavoidable Wastes**
- “Appliance” innovation to turn trash into treasure in home is starting to get traction

**Challenging Norms**
- Social and cultural innovation are needed to reinforce the inherent value of food and food systems
Thanks! & Questions?