



# Innovation in ready-to-eat products: drivers, trends and emerging technologies

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**food**tech  
**Connect09**

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# Outline of presentation

- **Market Trends and Drivers of Ready-to-Eat Products (8 min)**
- **Technological Trends**
  - Cook-chilled technology (5 min)
  - Thermal treatments (5 min)
  - Freezing technology (5 min)
- **The Future (2 min)**
- **Questions? (5 min)**

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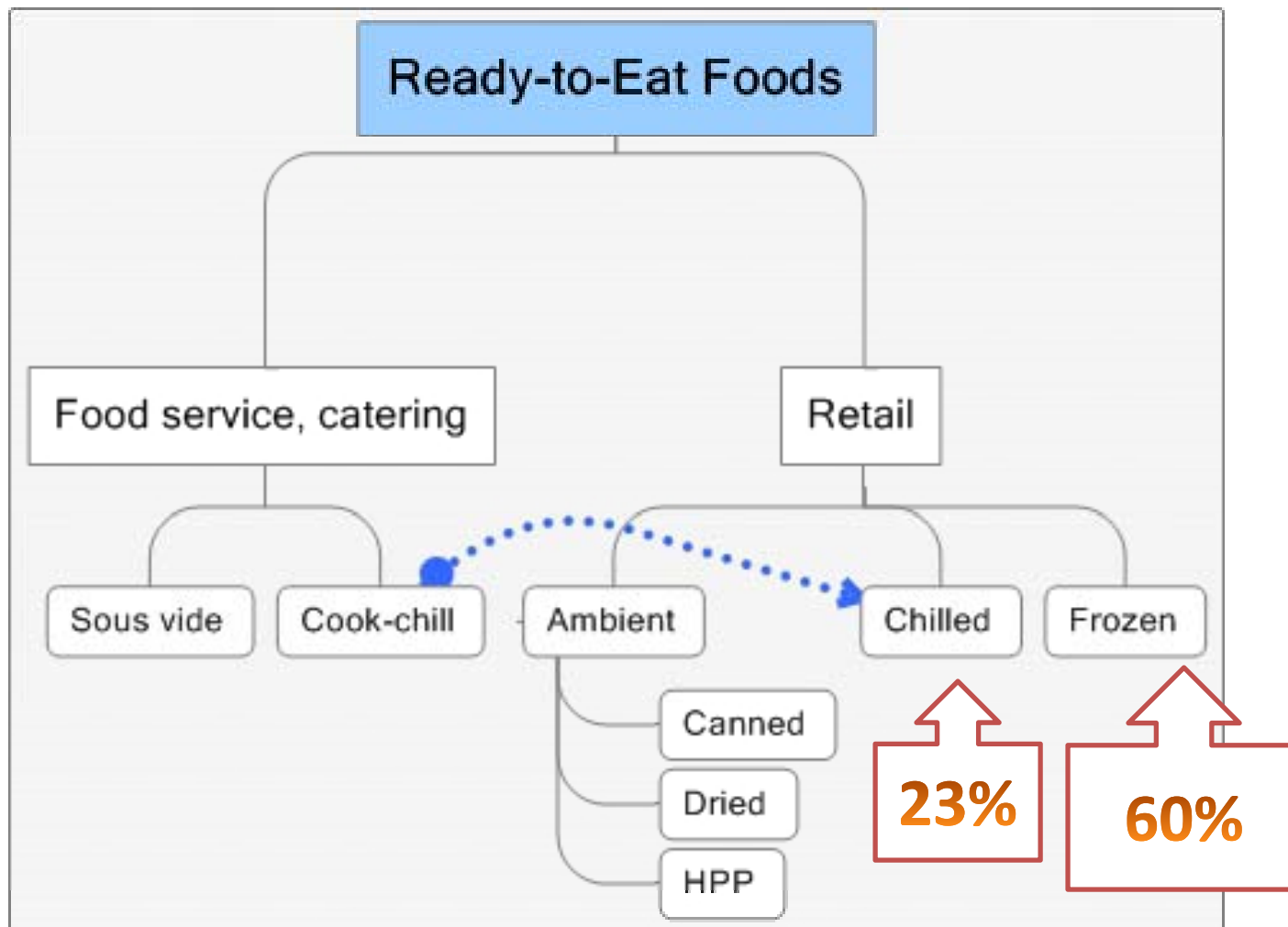
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# Ready-to-eat foods

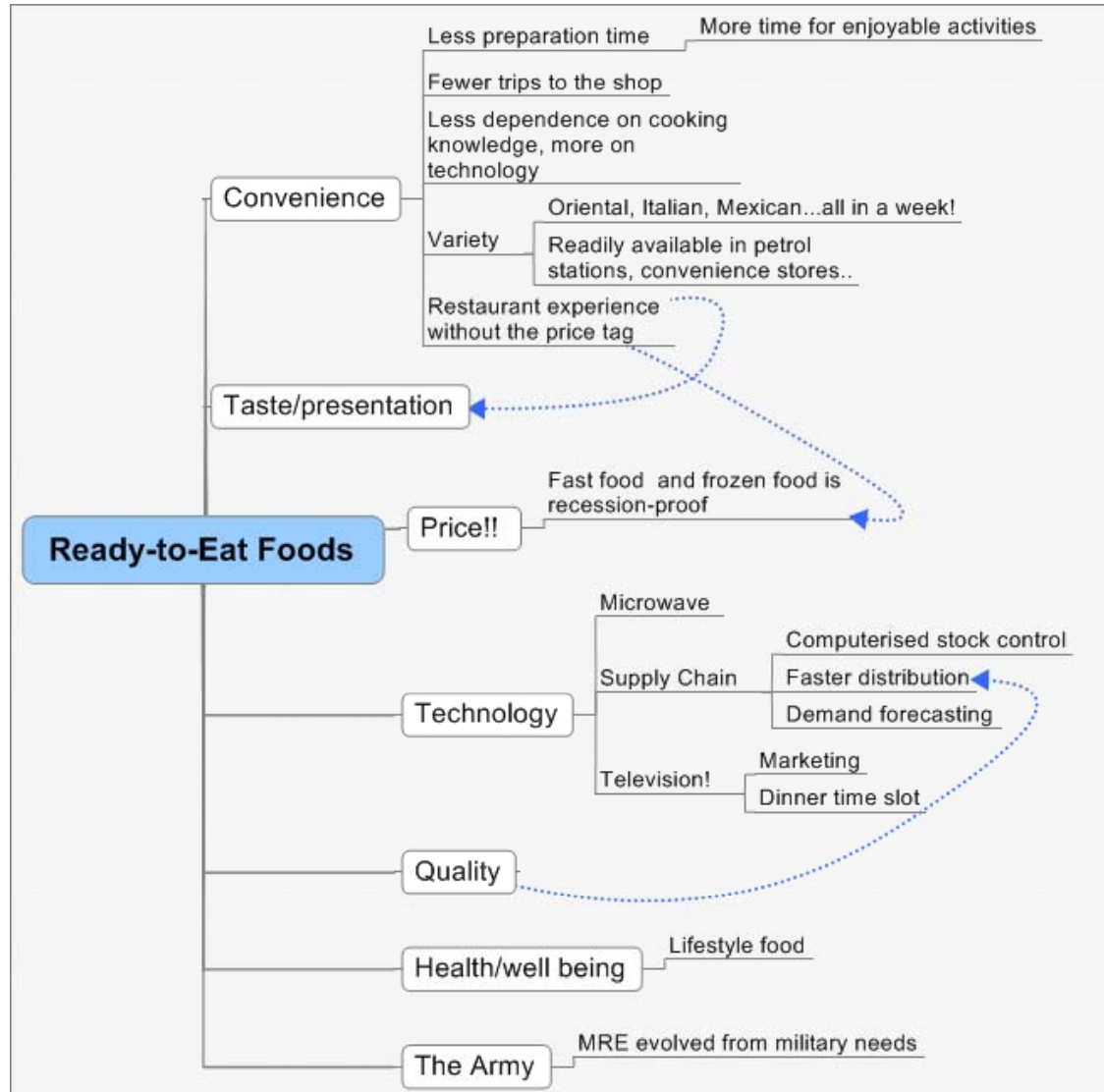
Chilled	Frozen
<ul style="list-style-type: none"> <li>• processed meats</li> <li>• <b>Ready meals by 2012: US\$61.7 b globally</b></li> <li>• smoked fish</li> <li>• pizza</li> <li>• soup and pasta</li> <li>• <b>processed food</b></li> <li>• drinking milk</li> <li>• other dairy (cheese, butter)</li> </ul>	<ul style="list-style-type: none"> <li>• processed red meat</li> <li>• processed fish/seafood</li> <li>• processed vegetables</li> <li>• meat substitutes</li> <li>• processed potatoes</li> <li>• bakery and dessert products (including ice cream)</li> <li>• <b>ready to eat and pizza meals</b></li> </ul>

Fruit juices normally in separate category

# Ready-to-eat foods



# RTE Foods: Drivers







Ready Meals & Fast Food Surge - BBC Documentary. Feb 2009

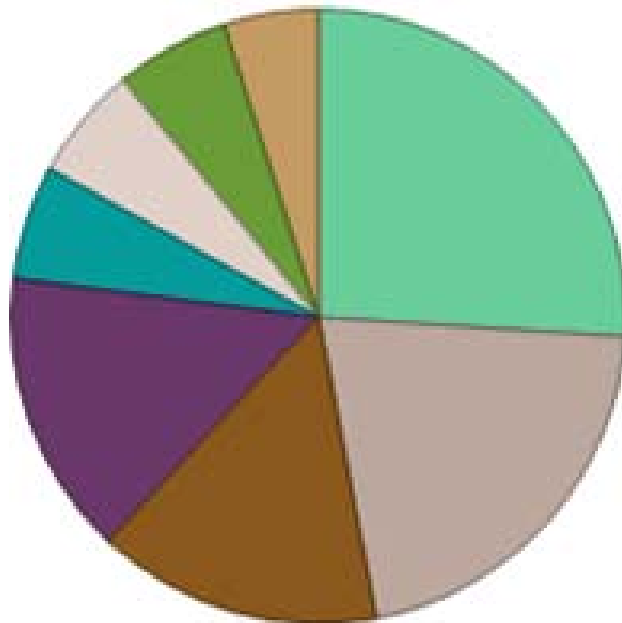
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# Ready-to-eat foods

Product	Weight (g)	Energy (kJ)	Fat (g)	Carbohydrates (g)	Salt (g)			
	420	2,000	12.6	58.8	0.9			
		<b>ENERGY</b> 870 kJ DI* 10%	<b>PROTEIN</b> 4.5 g DI* 9%	<b>FAT</b> 0.7 g DI* 1%	<b>SAT FAT</b> 0.25 g DI* 1%	<b>CARBS</b> 27.9 g DI* 9%	<b>SUGARS</b> 9.5 g DI* 11%	<b>SODIUM</b> 115 mg DI* 5%
								
	255	936	7	27.6	0.7			

# RTE Foods: Trends



Product/Services	Share
Tea and Coffee	26.0%
Pre-prepared Meals	21.0%
Salt	15.0%
Yeast and Yeast Extracts	15.0%
Herbs and Spices	6.0%
Industrial Flavour Essences	6.0%
Sauces and Salad Dressings	6.0%
Other	5.0%

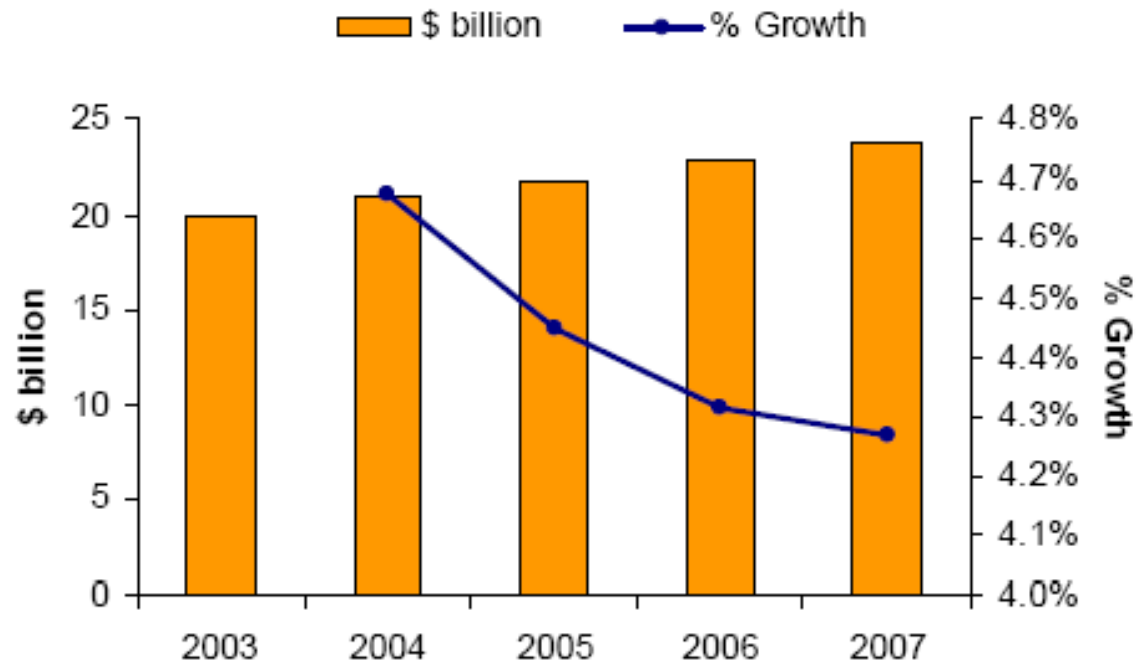
IBISWorld, 2007

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# RTE Foods: Trends

**Figure 1: Australia Packaged Foods & Meats Market Value: \$ billion, 2003-2007**



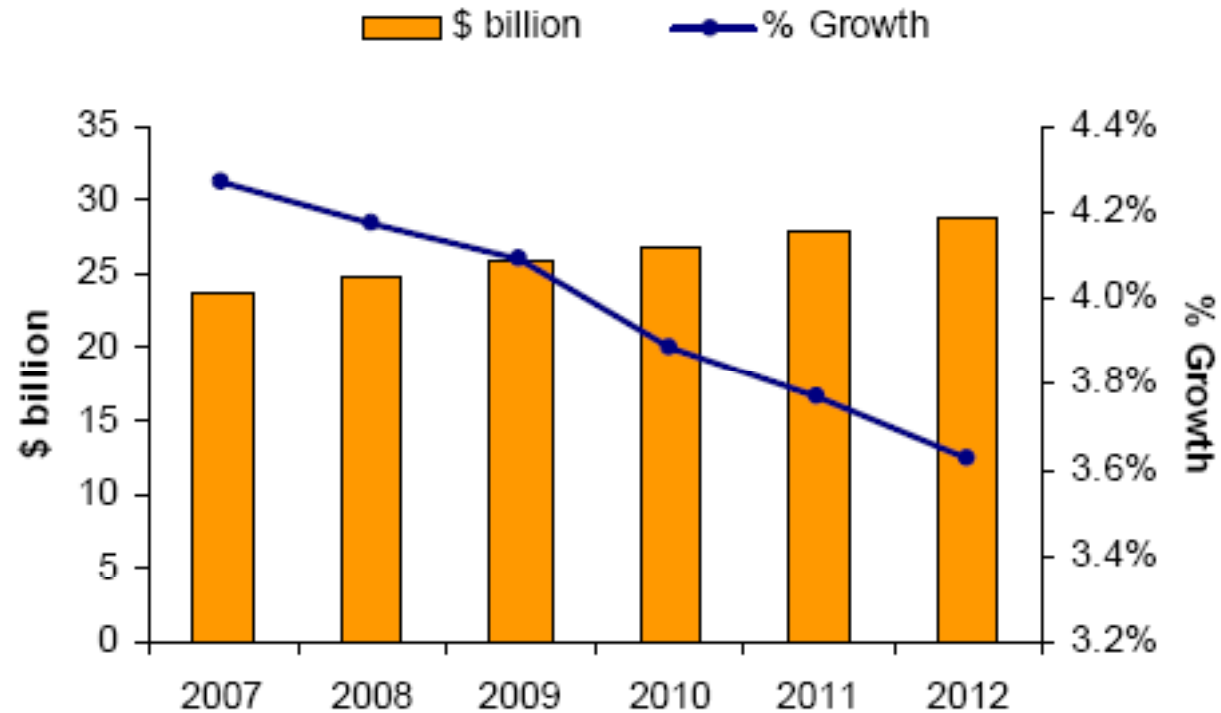
Datamonitor, 2008

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# RTE Foods: Trends

**Figure 8: Australia Packaged Foods & Meats Market Value Forecast: \$ billion, 2007-2012**



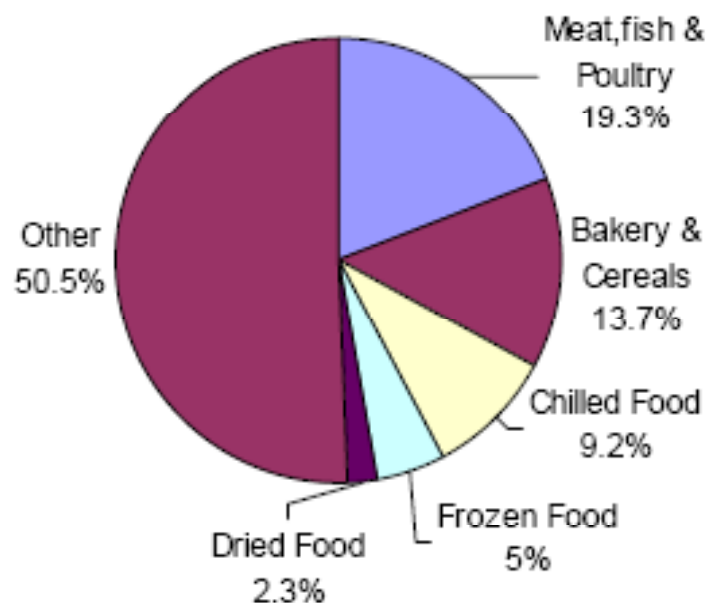
Datamonitor, 2008

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# RTE Foods: Trends

**Figure 2: Australia Packaged Foods & Meats Market Segmentation I: % Share, by Value, 2007**



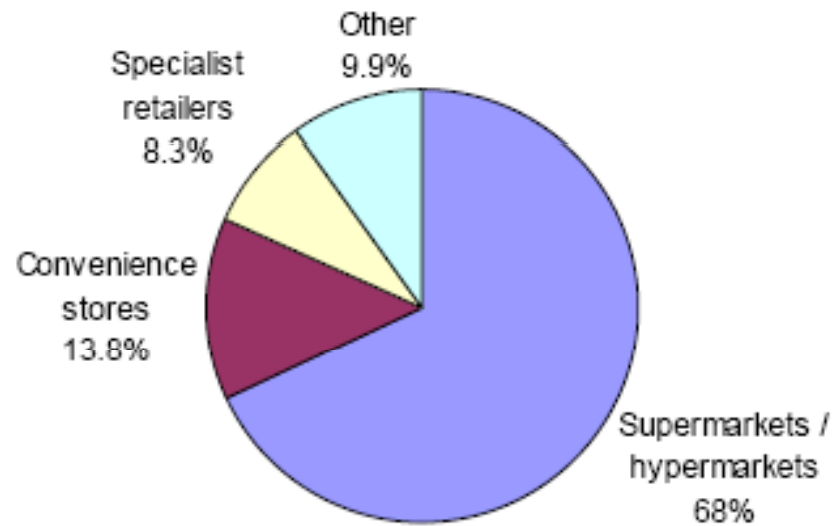
Datamonitor, 2008

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# RTE Foods: Trends

**Figure 7: Australia Packaged Foods & Meats Distribution: % Share, by Value, 2007**



Datamonitor, 2008



# Processing Innovation: Cook-Chill Technology

[cook-chill1.wmv](#)

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# Processing Innovation: Cooking Technology

[Cooking2.wmv](#)

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# Processing Innovation: Freezing

[Frozen.wmv](#)

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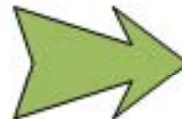
# The Future: New Processes



FILLING



VALVE  
APPLICATION



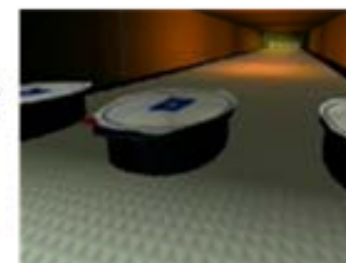
FILM  
APPLICATION



RE-HEATING AT  
HOME



COOLING



MICROWAVE  
PROCESSING

**Cooked, pasteurised and vacuum-packed product**

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# The Future: New Processes

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THE BUSINESS OF HOMELAND SECURITY

Thursday, 8 October 2009

## The food we eat

### Raytheon uses millimeter-wave radiation to keep food safe

Published 2 October 2009

**Missile and defense contractor Raytheon offers a solution which uses millimeter-wave radiation to pasteurize food; new method is both healthier and more energy efficient than current pasteurization technologies**

Raytheon is associated with missiles and defense-related technologies, and millimeter-wave radiation is associated with full-body security scans at airports' check points. Raytheon and millimeter-wave radiation together, though, would from now be associated with healthier food.

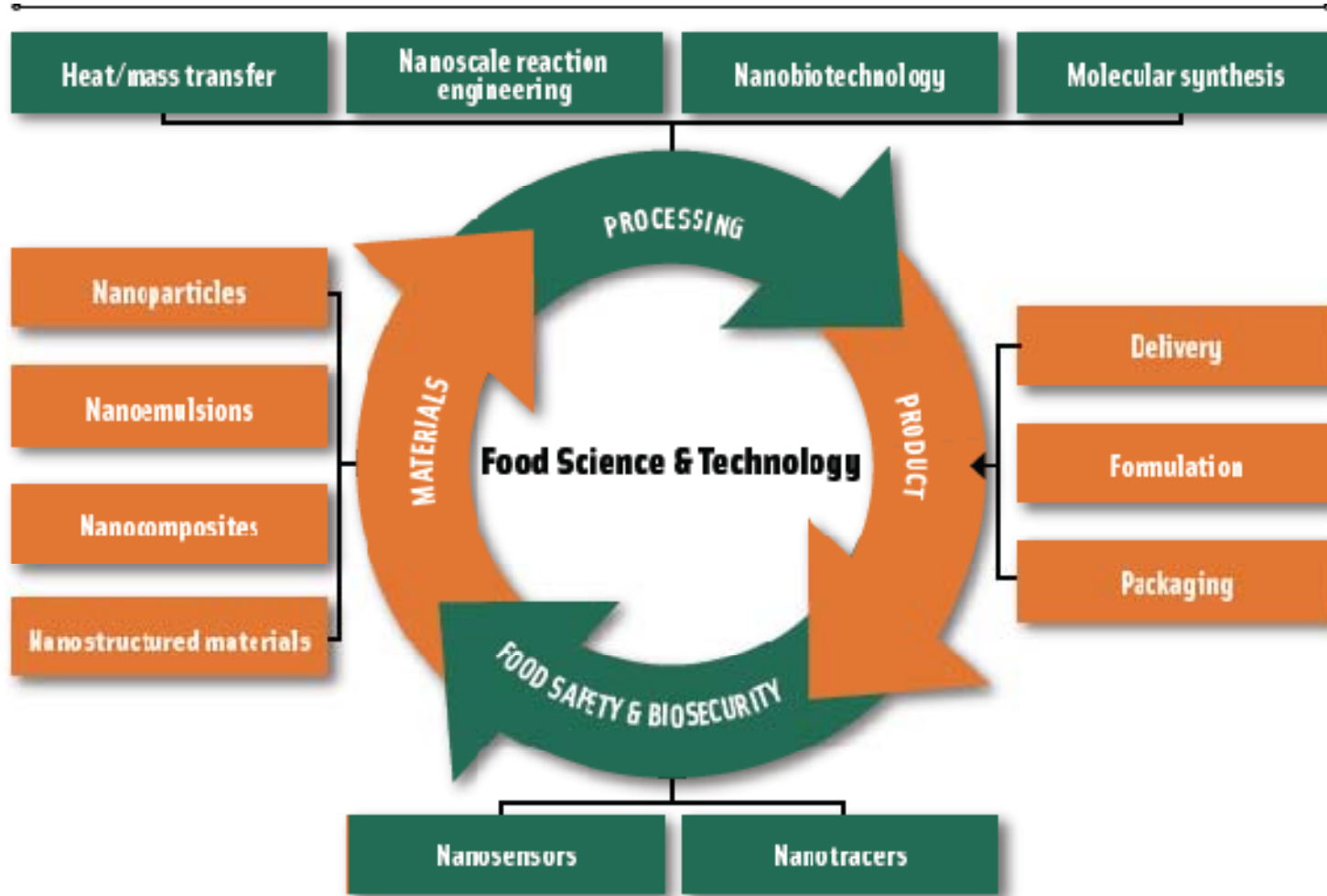
Raytheon Company (NYSE: RTN) has developed a pasteurization technology that can be integrated into the food supply chain resulting in both energy reduction for the food production market and healthier and safer products for consumers.

The technology delivers concentrated energy to the surface of the food, reducing the amount of wasted energy that exists in current pasteurization methods. Unlike current solutions, this technology does not rely on chemicals or ionizing radiation to destroy harmful bacteria, but rather uses the heat produced by millimeter waves to kill harmful bacteria. A more efficient solution, 95 percent of the energy produced is directed to the food surface. This is particularly useful for ground meats and citrus, which commonly have higher risk of bacterial contamination.

## Food Chain Intelligence

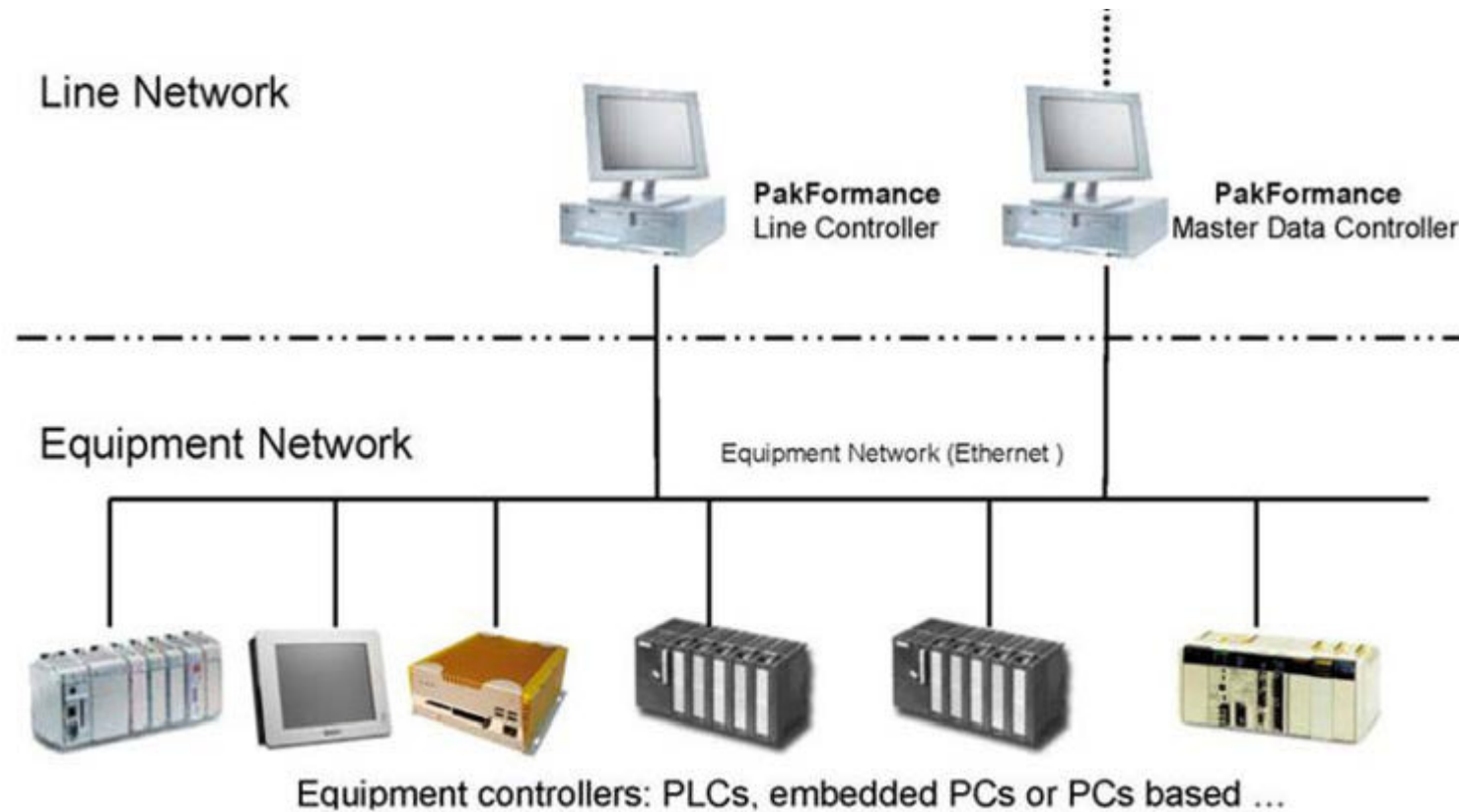
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# The Future: Nanotechnology



T. Tarver. 2006. Food Nanotechnology. Food Tech. 60(1):22-26.

# The Future: Process Integration Through ICT



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Thank you!

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