NGen Supply Chain Summit

Report- Out: Food

June 17, 2021

NGen Next Generation Manufacturing Canada

Report-out: Food

Moderator: Bill Greuel, CEO, Protein Industries Canada

Panelists:

- Mohammed Ashour, Co-Founder & CEO, Aspire Food Group
- Phillip Stephan, VP, Business & Client Development, Vineland Research and Innovation Centre
- Gillian Sheldon, Director, Investment Partnerships, NGen
- Olga Pawluczyk, CEO, P&P Optica

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Supports for robust Canadian supply chains and reshoring

Session 1: Current State

- During COVID it became really apparent that there is an interdependence within food supply chains and adjacent supply chains for example, shortages in certain materials, ex. lumber for pallets, impacting pricing and disrupting distribution
- Reactive industry, unpredictable
- Canada is a good food producer but not a food processor, much of our raw meat is exported for processing and then imported back into Canada

Session 2: Future State

- Acceleration of Adoption of Automation and Digitization
- Canada is a knowledge leader in the automation and digitization we have real opportunity to link existing technology providers in other sectors to the food production sector to improve Canada's food security and to export these solutions globally
  - Organizations like NGen can help facilitate these connections for companies to collaborate.
- Automation and technology will make it possible to integrate supply chains and increase predictability and efficiency.

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Technology & Digital Workflows

Session 1: Current State

- Very little automation in harvesting, some adaption of technology in food processing/packaging
- Hard for food industry to adopt new technologies because of food safety and regulation challenges
- Desire to adapt, recognizes the anticipated increase in demand.

Session 2: Future State

- Focus on optimization to reduce the impact of issues with the production line, and to reduce the energy, materials, and waste (efficiency & sustainability)
- Adaption of AI will make it possible:
  - adopt automation in food, which is a product with the challenge of a lot of variability.
  - Analyze data for optimum harvesting
  - 100% quality checks instead of spot checks
- Apply existing automation technologies tried and true in other industries to agriculture and food processing
- Digital -Traceability of products through the supply chain which can provide better data to inform on the quality of the product, expiry date, how the product can be used, expected production levels, etc. This can reduce the waste, improve safety and sustainability.

Workforce & Labour

Session 1: Current State

- Labour shortages, high turnover, high degree of manual labour in agriculture and food processing. Processing plants have a 200% overturn in workers.
- Reliance on foreign workers - COVID presented the challenge of government restrictions on bringing in foreign labour
- Workforce is the current largest restraint in agriculture - increases need for automation

Session 2: Future State

- Automating processes requires connection between the food industry and STEM industries with knowledge to adapt. Creating exciting new jobs.
- Automation does not reduce jobs, but reskills and retains workers by improving working conditions.
- Increase in number of minds involved in the process as a tradeoff for manual labour

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Sustainability & Circular Economy

Session 1: Current State

- Food production levels shrinking but demand increasing
- A lot of waste throughout the entire supply chain - 40% food waste in processing
- Food prices and supply can change dramatically because of environmental issues, flood drought, or diseases for example swine flu.
- Widespread awareness of issues with food production energy requirements and environmental impact

Session 2: Future State

- If we can manage some of the waste, we can reduce the pressure on production requirements
  - Waste reduction
  - Waste conversion
- Trend of indoor agriculture to reduce reliance on outdoor environment
- Awareness of the bi-products created in processes and find a function for them - allows creation of value-added processes

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Standards, Infrastructure & Best Practices

Session 1: Current State

- Not discussed in the first session

Session 2: Future State

- Automation improves food safety - "lights out" processing reduces human interaction and triggers safety processes
- As automation becomes prevalent, increased management of cybersecurity required
- Will need to address data ownership concerns

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Other

Session 1: Current State

- Countries are putting policies in place to address food insecurities in their country.
- Canada's Food system was highly resilient in handling COVID demand shifts/shortages. Showcased human behavior in consumption is incredibly unpredictable

Session 2: Future State

- Creation of local food hubs
- Greater interdependence in the industry and between countries