



Lanchang Mekong megatrends in the emerging new generation of processed food industry

Akeanong Jangbua
Senior Advisor, Food Innopolis
Thailand

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Megatrends by 2050 and their impacts

Demographic shift

Africa's population will double, while **Europe's** population will shrink.

The average age in **Japan** will be 53, where as in **Nigeria** it will be 23.

21% of the entire global population aged **60 years or more**.

By 2030, the **middle class** reach 4.9 billion people.

Food Demand

- Increase >60% to feed **9.8 million people**
- Elderly - **Healthier, functional foods**, served in small portions
- Middle class – **wider variety** of meat, dairy, health-conscious and other high quality food products
- Millennials – drive changes in **consumer preferences** towards sustainable and ethical products.
- **Food production** will increase by 70%

Source: Global megatrends and impacts on the food value chain (by PWC)



Megatrends by 2050 and their impacts

Urbanization

Rural-urban migration

6.3 billion people or 66% of population **living in urban areas**

Labor challenges for agriculture

Food Production System and New Technology

- **Labor shortages** and a lack of skilled labor in agricultural sector
- **Supply chains** management, managing food waste and increased need for cool chains
- **Urban food production** (e.g. gardens and vertical farming)
- **Changing life-style**

Source: Global megatrends and impacts on the food value chain (by PWC)



Megatrends by 2050 and their impacts

Shift of Economic Power

GDP of E7 countries will be 2 times that of G7 countries.

7 of the 10 countries with the **highest GDP** are in Asia

Members of E7 will be among the 12 **world's largest economies**

Trade and Business

- **Increased demand for food** as well as growing international trade and local production
- Trade regulations and legislations will pressure to improve **food security and food quality standards**

Source: Global megatrends and impacts on the food value chain (by PWC)



Megatrends by 2050 and their impacts

Resource Scarcity and Climate Change

Demand for water and energy – By 2030, Global population will require 50% more energy and 35% more food

Increase in temperature - Average temperatures are likely to increase by over 2°C over the 21st century.

Circular and Sharing Economy

- Alternative production models which delivering value with less resources
- The use of renewable sources of energy
- The demand for sustainable food
- Efficient use of resources

Source: Global megatrends and impacts on the food value chain (by PWC)



Megatrends by 2050 and their impacts

Technological Breakthroughs

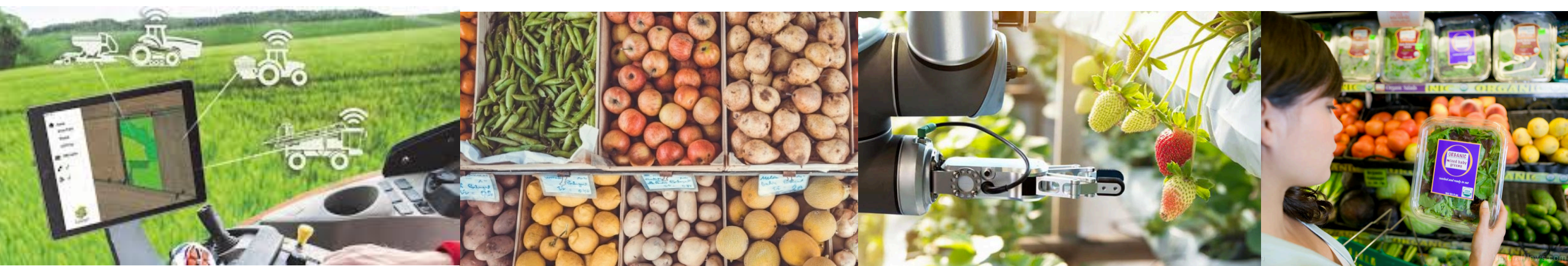
Technology will be a **key enabler** of increased production and efficiency

Information flow, powerful technologies, shifts in established business model.

Internet for Food (IOF)

- New technologies to improve yields
- Blockchain technology to increase transparency along food value chains
- Convergence of technologies will mean new players will enter the agricultural sector.

Source: Global megatrends and impacts on the food value chain (by PWC)



Opportunities arising for the agribusiness sector



Cloud services

Data sharing and cloud analytics platforms will provide the agricultural sector new insights on weather, crops, fertilisers, products and customers.



Eco-innovation

Eco-innovation is an opportunity for agricultural businesses to create a competitive advantage through improving resource efficiency and strengthening brand.



Global customer acquisition

Agricultural companies have more opportunity to engagement directly with customers and improve product differentiation.



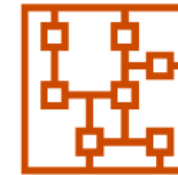
Digital technologies

The adoption of digital technologies such as drones, sensors and IoT devices will create fully interconnected supply chains.



Urban farming

Vertical urban farming has the potential to deliver food for urban demand with significant environmental benefits.



Food safety certification

Opportunities in traceability and integrity of food production including blockchain, automation and other supply chain quality assurance and certifications.

Trends for Food Products

Source : Shikhar Aggrawal, Frost & Sullivan

Key Trends will define a new consumer expectation and innovation

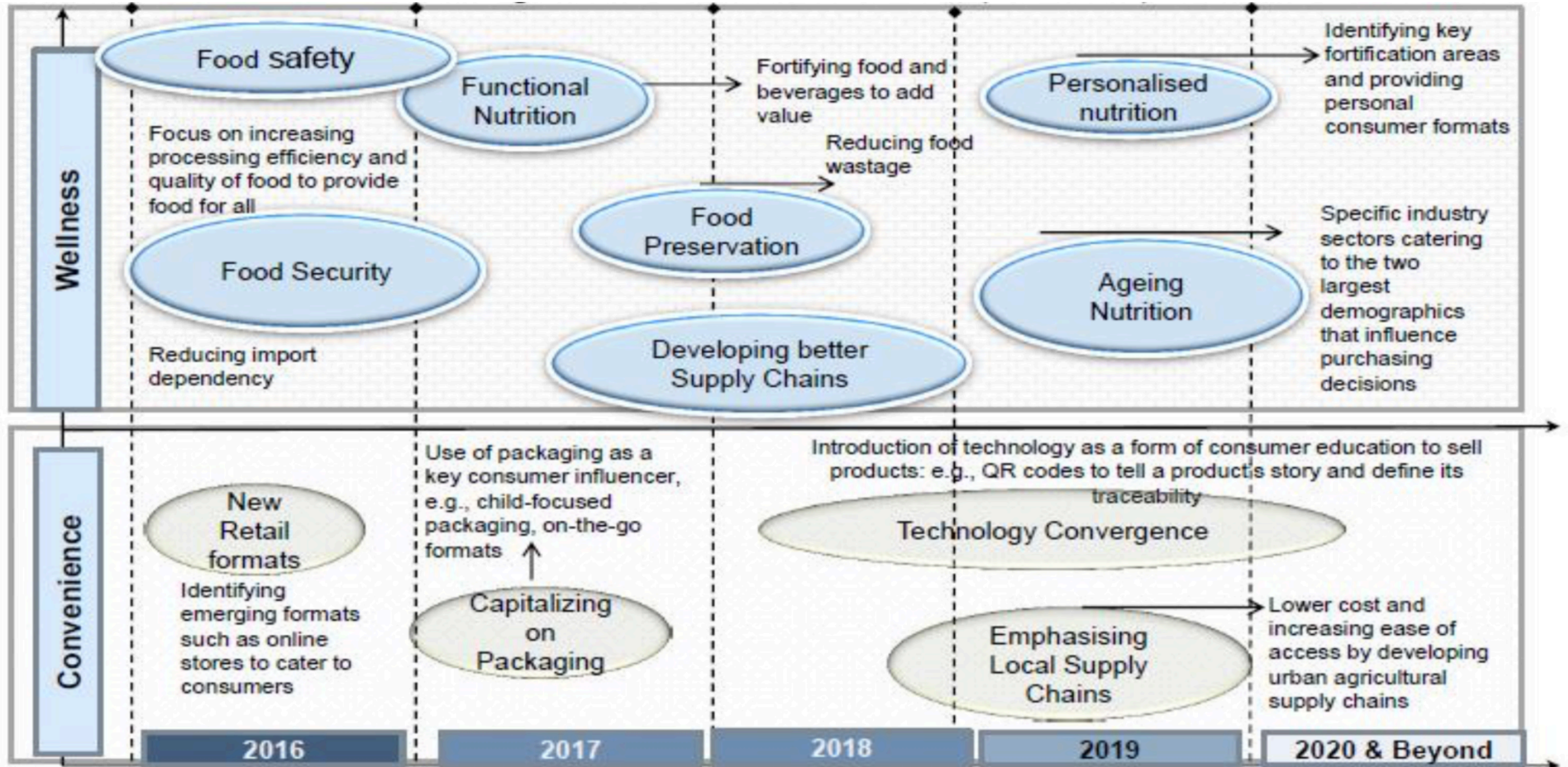


Key food innovations being talked about



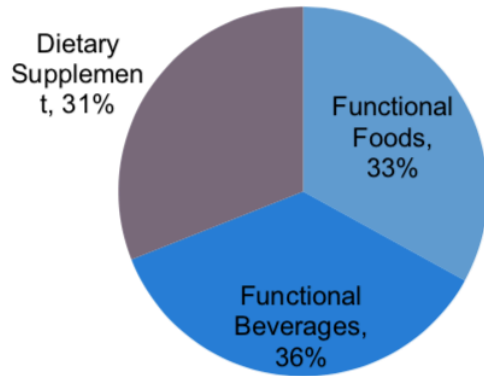
Future Roadmap—Future Focus Areas

Convenience and wellness will continue to be the two main Mega Trends that will drive sales and innovation



Nutraceuticals initially focused on condition nutrition but have increasingly moved towards demographic nutrition over the last 5 years

Nutraceutical Market: Split by Product Type, (World), 2017



Condition Nutrition



Demographic Nutrition

Active as a lifestyle choice

			
Maternal Health	Geriatric Health	Kids Health	Sports nutrition
Growing importance of products focused as an essential nutritional aid for new mothers	Focus on ageing nutrition products to provide supplementation against osteoporosis and improving metabolic functions	Addressing developmental concerns in bone & joint health and focusing on the Asian micronutrient deficiency challenge	Addressing demands for supplemental nutrition across an active lifestyle focusing on providing healthy energy sources for consumers

Active Nutrition: “A form of nutrition that involves a lifestyle that provides the body with optimal physical and mental stimuli via food”

Going Natural: key area of focus

US-FDA

“nothing artificial or synthetic (including all colour additives regardless of source) has been included in, or has been added to, a food”

EU

Only defined in context of flavourings- “Source material must be vegetable, animal, or microbiological. Must be produced by a traditional food preparation process.”

APAC

Limited in market natural definitions- natural is often confused with organic, free from and clean label



Consumer Buzzwords

Fresh/Clean

100% Natural

Free- From

Farm Fresh

Organic

Pure/Real

Increasing focus on natural



From Spice to Latte



From Coconut to Plant Water

- Aloe Vera
- Birch
- Cactus
- Maple
- Watermelon

Key drivers for protein : Growing interest in alternative protein



End-user Focus on Health and Fitness Drive Protein and Nutraceutical Fortification of Foods

- Proteins can play an extremely important role in fitness (burning fat and satiety)
- Weight management is the largest positioning platform for proteins in health and wellness food and beverages



Shift Toward Vegetarianism Drives Market Growth for Plant Proteins

- Plant proteins are also slowly gaining traction in sports nutrition market. Cost advantage of plant protein over animal proteins is a moderate driver for market growth



Health concerns over Cardiovascular Disorders and Diabetes Drive Proteins and Nutraceuticals Market

- Protein ingredients are gaining traction in medical foods for diabetics as it helps in regulating blood glucose level.



Increasing Consumer Correlation of Beauty and Healthy Eating

- Protein ingredients are finding a lot of uptake within the nutricosmetic sector. Collagen, a structural protein of human body is vital for skin elasticity and maintaining its firmness.



Protein Source Trends—Focus on Insect Protein



Bugsolutely's cricket pasta made with cricket flour



Cricket Flour's brownie mix made with brown rice flour and cricket powder



Zoic's insect protein bar made with mealworm flour



Crik Nutrition's protein powder made with crickets



Insekt's cricket apple ginger juice



Nutribug's crisps made with rice flour and locusts



Damhert Nutrition's insect nuggets made with Buffalo worms



Micronutri's insect biscuits made with wheat flour and mealworms

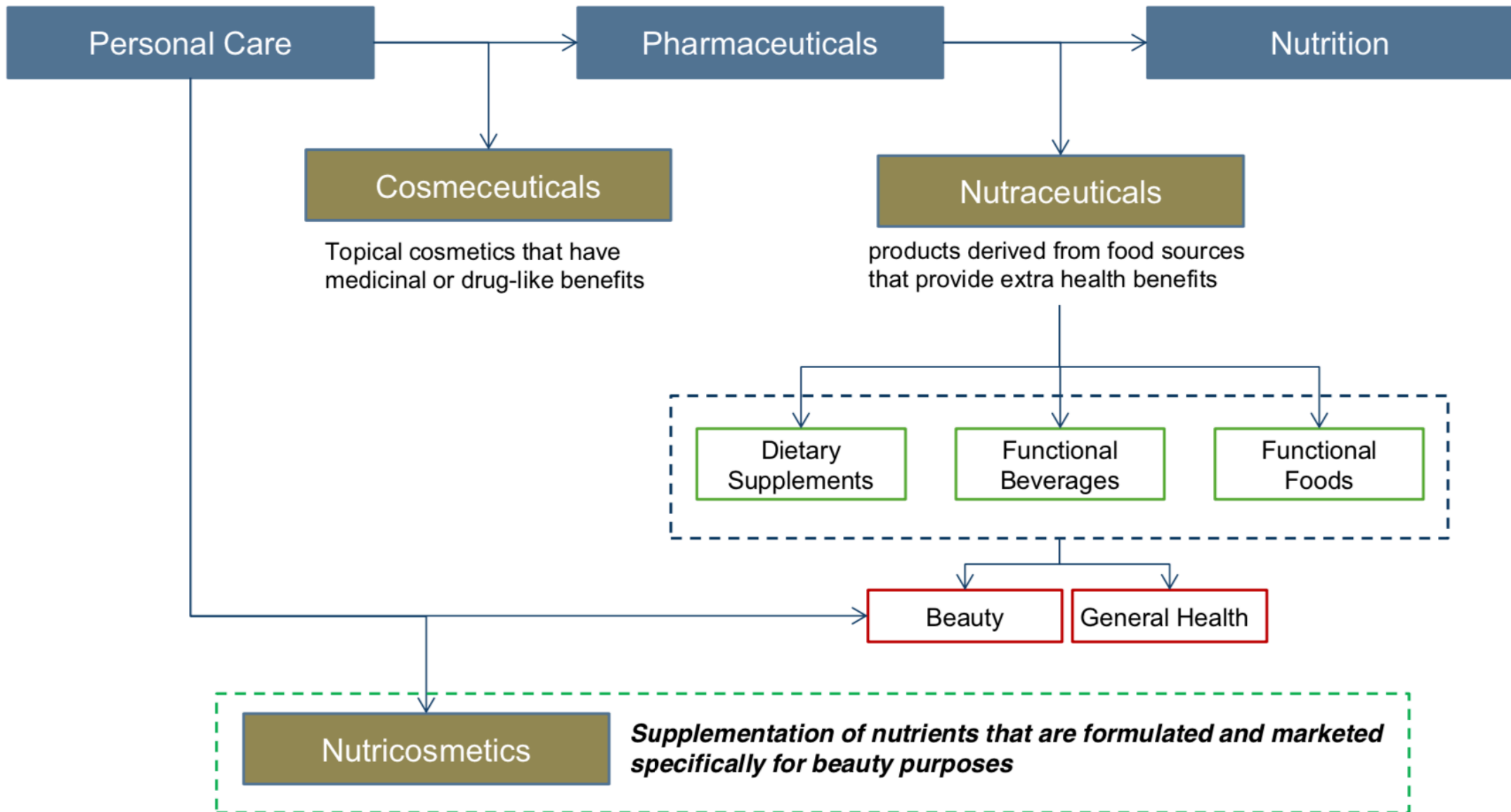


Green kow's mealworm spreads (with carrot/ tomato in savoury versions and chocolate in sweet versions)



gryllies pasta sauce made with cricket flour

Innovations creating new product categories



Most common ingredients



Beta-carotene

From plant materials such as carrots, algae for healthy skin



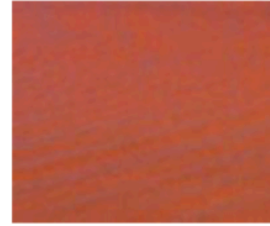
Lycopene

From tomatoes, watermelon, olives for skin and antioxidant



Lutein

From green veggies, marigold, egg yolks for eye health and sun protection



Astaxanthin

From algae and seafood for sun protection and anti-aging



Phytosterol

From rice bran, wheat germ for anti-aging



Fruit extracts

From different fruits for skin care and antioxidant



Vitamin C

From citrus produce for antioxidant, sun care, anti wrinkle and anti aging



Vitamin E

From nuts and green veggies for anti oxidant, skin repair and hair fall care



Collagen

From bovine, piscine, porcine, chicken for skin health



Omega 3

From seafood and nuts for skin care, sun care and hair care



CoQ10

From beef, spinach, soybeans, salmon for skin repair



Aloe Vera

From aloe Vera for skin health, sun care and moisture balance

Digital Disruption Continuing to Transform How We Eat

Autonomous delivery

Unmanned vehicles choose the best route based on analysis of map data; it even has the ability to take the elevator to deliver to the customer's doorstep



*Meituan
Dianping*



*JurongHealth
Food Log*

Is this good for me?

Using AI to match consumer images to a database of local dishes to provide a health indicator; pilot program launched with pre-diabetic testers

AI + DNA

AI-powered apps provide recommendations for supplements based on customer's health condition, genetics, and daily meals



Nestle Wellness



Lotte

Flavor trend predictor

New flavor chosen by an AI program that analyzes data based on consumer preferences toward ingredients, resulting in a new product before competitors do.

Emerging Technological Applications to Enhance Food Safety

Within next 3-5 years, these technology will be the most impactful in ensuring and enable food safety



**Artificial
intelligence**



Blockchain



**Point-of-care
devices**



Print electronics



Synthetic biology



Gene editing



**Intelligent
packaging**



**Advanced
encapsulation**



Biosensors



Thermosonication



MINDFUL CONSUMER

Want to know much more about where their food comes from, and desire for local, home-grown and sustainable choices



BALANCED CONSUMER

Aware of what's in their food and prefer less sweet products and plant-based dishes



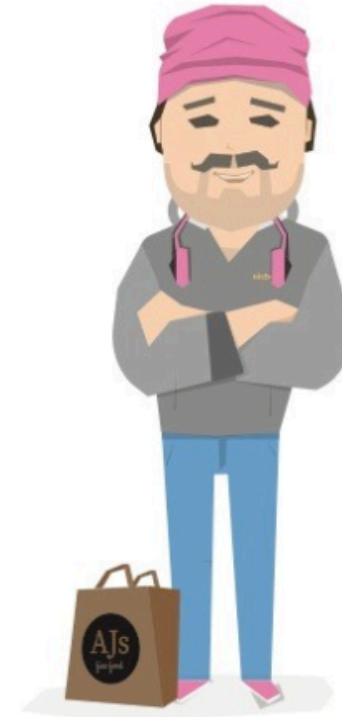
ADVENTUROUS CONSUMER

Seek new culinary experiences (e.g. flavor pairing, unusual sensory) and focus on authenticity



CONNECTED CONSUMER

Avid social media user and look out for the latest food trends



REVOLUTIONARY CONSUMER

Always on the go and loves to try new things and want rarer, more premium treats

2020 Global Trends

<https://uk.synergytaste.com/blog/2020-consumer-trends-future-food-drink>