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On today's menu: trust and innovation

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PwC/Strategy& report for players in the agri-food industry

strategy&

Dear reader,

We are pleased to present the new PwC report on today's agri-food industry. This year, we have chosen to focus our work on the challenge of dwindling consumer trust in food and the historical players of the agri-food industry. In particular, we have analysed the ecosystem of innovation which is developing to better meet consumer expectations and restore trust in products and businesses.

Companies are working on innovative ways to enhance their ranges, such as offering products with health or nutrition benefits, a guarantee of local origin, or that are environmentally friendly, take into account animal well-being or ensure fair pay for producers. Agri-food players are also focusing on adapting to changes in consumption habits (with renewed demand for home-made food, for example) with the products and services they provide. Lastly, all information relating to products and their journey through to distribution is becoming key data for company supply chains and for consumers, who now more than ever want to know the history of the products they buy.

To take all these changes into account, historical players need to fundamentally adapt the roles they play, and innovation is a key part of this transformation.

A number of innovative techniques are being leveraged to meet new consumer expectations, mostly driven by food tech start-ups. To bring these innovations on board their business models, the major historical players in the agri-food industry are seeking to involve the start-up ecosystem in their innovation strategies. This is not all plain sailing, however: start-ups often lack maturity, and there are various obstacles in the way of big groups and new companies alike.

Nevertheless, the willingness of historical agri-food players to join forces with start-ups is an opportunity to ramp up innovation, and shows a real shift in the way they want to position their products for consumers. For historical players, this means putting in place a clear innovation strategy, repositioning their internal innovation departments and defining a coherent project management framework.

To better understand the areas of innovation that will restore consumers' trust in food and agri-food players, we interviewed some 15 players and surveyed around 50 food tech start-ups. Thanks to the interviews and survey, we were also able to measure the maturity of the relationships between historical players and start-ups and identify opportunities for development. We were also able to draw upon other sources of information, as well as the knowledge and research of PwC experts in agribusiness, consumer goods, the consumer market, supply chains and change management.

We hope you enjoy reading this report.

The PwC/Strategy& team responsible for the report

Main terms used in this report:

- ***Agri-food***: to simplify matters, the term "agri-food" as used in this report refers to the entire chain, from farm to fork, and therefore includes agricultural production as well as distribution
- ***Historical players***: established businesses in the agri-food industry (e.g., collectors, manufacturers/processors and distributors) of any legal form (private companies, cooperatives, etc.)
- ***Food tech***: all start-ups in the agri-food industry that use new technologies to offer innovative products and services

Summary: five key points of this report

01 Consumers are losing trust in what they eat

- Only **28% of French people** say that they **trust their food** today. This figure even drops to **18% for people aged 25-34. (1)**
- This loss of trust is fuelled and exacerbated by the **extensive media coverage** of **food scandals**.
- French consumers are looking for products that are healthier, more respectful of the environment and social issues and, above all, **traceable**. Most of them are **prepared to spend more** to ensure this.

02 To restore consumers' trust, historical players need to change

- The six main focus areas relate to **quality**, **proximity**, **traceability**, **consumption habits**, **marketing** and **food vigilance**.
- To restore consumer trust, players in the industry will need to fundamentally adapt the roles they play in line with these six areas.

03 Innovation is an important tool to transform the roles of players and meet consumer expectations

- **Quality**: **providing natural and simple** products or customised products.
- **Proximity**: helping consumers feel connected to agriculture, **bringing production closer to consumers** (new production methods).
- **Traceability**: centralising information about products' **origins** and value chain, implementing **real time, automated controls** (e.g., packaging, handling).
- **Consumption habits**: meeting renewed demand for **home-made food**, **customised** diets and a desire from consumers to play a **more active role** in what they eat.
- **Marketing**: strengthening **companies' commitment** and **communication** to consumers, positioning ranges and guarantees through **labels.**
- **Food vigilance**: **100% of the players asked say that transparency** is the **key component** in fostering consumer trust.

04 Innovation to promote consumer trust is mainly driven by food tech start-ups

- **70% of the start-ups** asked think that **innovation** in the agri-food industry **would help improve consumers' trust in their food.**
- The food tech industry in France is made up of **nearly 500 start-ups** and more and more companies are launched each year (**44% growth in start-up rate** between 2013 and 2016). [2]

05 Historical players will benefit from developing an open innovation strategy working alongside start-ups

- **Interactions between major players and start-ups are on the rise**, although **only 19% of companies invest in start-ups**[3].
- The **initial results observed are mixed** (41% of the start-ups asked are not satisfied with their relationships with historical players) due to numerous obstacles and **innovation strategies** from major players sometimes **lacking in structure.**

Sources: (1) KEEDN FOOD report – November 2017; (2) DigitalFoodTech and PwC analysis; (3) PwC Digital Benchmark 2017, statistic for the packaged food & beverages industry

Our sincere thanks to all of our contributors

Interviews

Collectors, **processors**, **distributors**, **investment funds** and **incubators**

Survey

Food tech **start-ups**

PART 1 – Contributing to consumer mistrust

PART 2 – Innovation to promote consumer trust

PART 3 – Relationships between start-ups and historical players

PART 1 – Contributing to consumer mistrust

What are the factors contributing to mistrust from consumers and in what ways can agri-food players change to address them?

Various French consumer surveys indicate that they have lost trust in their food and agri-food players

Consumer trust in ***agri-food players***

Farmers — **67%**

Processors — **38%**

Distributors — **40%**

Mistrust is selective and farmers are largely unaffected, whereas **processors** and **distributors** in the agri-food industry have a **much lower trust rate than other industries** such as automotives and pharmaceuticals.

Industry benchmark

Automotive industry	Pharmaceutical industry
47%	*50%*

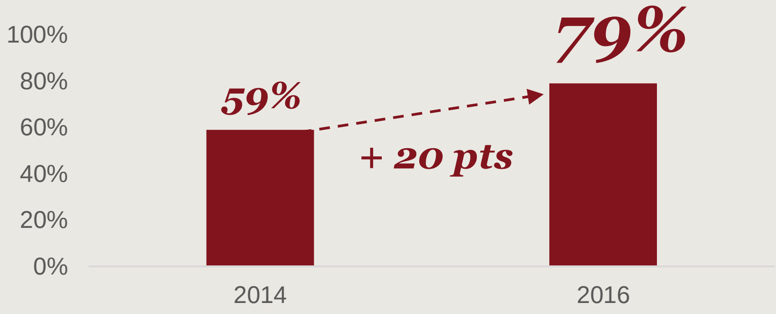
Source: IPSOS (2015), PwC analysis

Consumer trust in ***food***

- Only ***28%*** of French people trust what they eat on a day-to-day basis
- This figure falls to ***18%*** for people aged 25-34

Source: KEEDN FOOD report – November 2017

Risk to ***health*** *as perceived by consumers*



Percentage of consumers who believe it is probable that what they eat is harmful to their health

Source: TNS – Kantar Food360 (2016), TNS – Kantar Food360 (2014)

This lack of confidence is exacerbated by the extensive media coverage of food scandals and alarming publications about certain farming practices

Recent major food scandals

France

- 1996: The mad cow disease crisis affects France, which bans imports of British beef
- 2013: Lasagne made with horse meat (4.5 million prepared meals affected)
- 2017: Mid-2017: Infant milk contaminated with salmonella
- 2018: 2018: Ten food scandals with significant media coverage in the first half of the year

International

- 1996: Mad cow disease epidemic begins in Great Britain
- 2008: Infant milk contaminated with melamine in China
- 2011: Fenugreek seeds contaminated with E. coli – 48 deaths in Germany
- 2017: August 2017: Eggs from the Netherlands contaminated with fipronil

"Trust is hard to build but easy to lose"

Recent food scandals have contributed to this climate of mistrust by demonstrating a certain **opacity** and **complexity** in the **supply and processing chain**, making it **difficult to identify which players are at fault**.

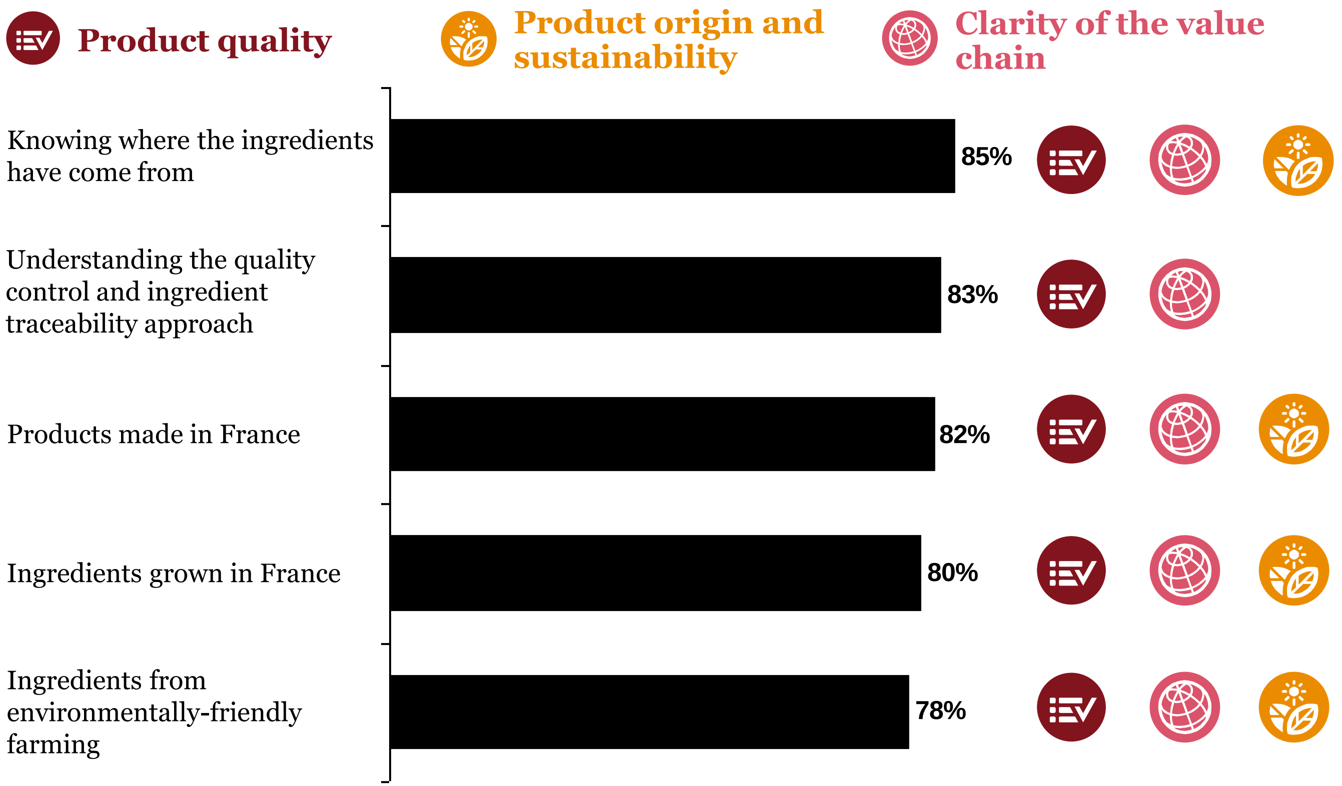
High-impact language is used in the press to make a lasting impression on consumers:

Source: Press, PwC analysis

French consumers need reassurance about where their food comes from and how it is produced

Information that reassures French people about their food:

Topics



"Consumers needs to know where their food comes from and how it was produced"

Consumers want reassurance about the **quality of the food** they eat, where it comes from and the **impact it has on the environment**, as well as a **more transparent value chain**.

Source: Ipsos (2015) report on sustainable well-being and brands, PwC analysis

French consumers are increasingly concerned about product quality and are looking for labelled, less processed products using simpler recipes

79% of French consumers believe that what they eat is harmful to their health, so they are looking for:

> *"Technical and crude terms should be removed from labels"*

Less processed products

83% of French consumers express an **interest** in **natural products**

70% of French consumers prefer **simple food** that has not been highly processed

53% of French consumers prefer **food with no colourings** and **preservatives**, or with fully natural colourings and preservatives

40% of French consumers say they consider the **list of ingredients** to be a purchasing criterion (criterion no. 5 of 15)

Labelled products

75% of French consumers are **reassured** by **labelled** products

These labels[1] are considered **90%** useful **79%** credible

49% of French people often or systematically buy products with a quality label

Examples of labels:

(1) Labels that guarantee French farming and processing, respect for the environment and fair pay
Source: IPSOS (2015), TNS – Kantar Food360 (2016), IPSOS (2016) report on sustainable eating, PwC analysis

They are also attentive to the environmental impact of their food, particularly the distance between where it was produced and where it is eaten

77% of French consumers express an interest for ecology and respect for the environment

"If there is no explicit guarantee on product quality, consumers find it reassuring to buy local products"

Geographical proximity	Product seasonality	Waste awareness
62% of French consumers prefer food produced in **their region/near** where **they live**	**75%** of respondents are prepared to eat **locally produced food** whenever possible	**96%** of French consumers think it is important to **reduce food waste**
56% of French consumers regularly buy food produced **near where they live**	**42%** of French consumers buy **seasonal fruit and vegetables** more or less **systematically**	**85%** of French consumers think it is important to buy food with less **packaging/wrapping**

Geographical proximity makes it possible to:

- **Limit transport** and **storage time**
- **Reduce the number** of intermediaries
- Keep production in line with **the country's standards**

Product seasonality makes it possible to:

- **Consume products rapidly after harvesting**, thereby avoiding the need to add preservatives
- **Avoid transporting** products
- **Cut energy costs** in the production stage

Waste awareness makes it possible to:

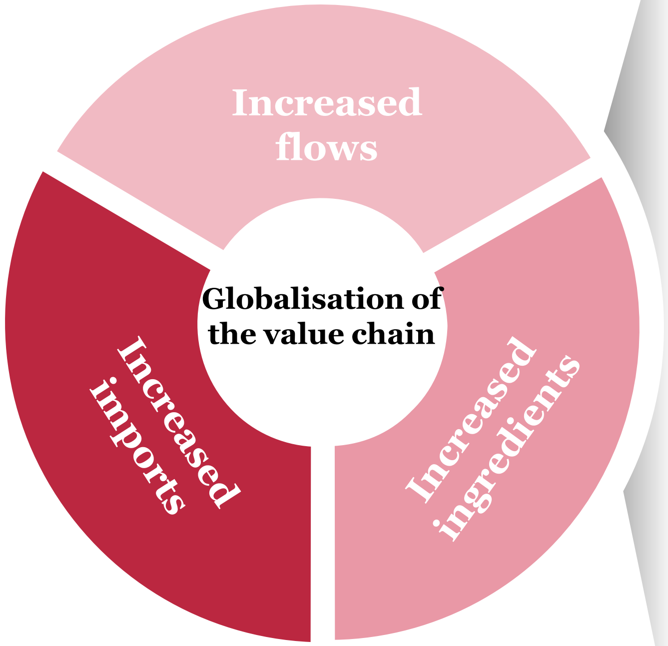
- **Adjust inventory** throughout the value chain by removing intermediate storage points
- **Reduce** packaging and **plastic pollution**, for example, from unnecessary packaging

Proximity, seasonality and natural production reassure consumers
about the safety and nutritional benefits of their food

Source: IPSOS (2015), TNS – Kantar Food360 (2016), Ademe, IPSOS (2016), PwC analysis

Complex and highly segmented, the food value chain is considered opaque by consumers, giving rise to mistrust

Reasons for the food value chain's increasing complexity

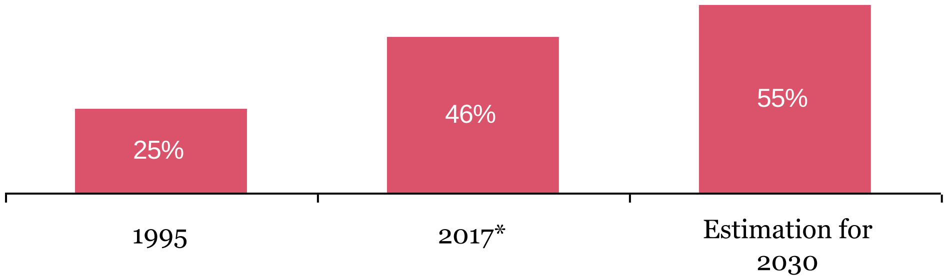


The food value chain is becoming increasingly complex due to several main trends:

- Agri-food players are locating and adjusting their activities to capitalise on comparative advantages (labour costs, cost of capital, proximity to target markets, sourcing facilities, etc.)
- Countries are diversifying their supplies according to their dependency and food security strategies
- The number of ingredients used to make a given product is increasing

"Communication issues have created a discrepancy between the reality of factories and consumers' perceptions of them."

Percentage of countries trading food products with more than half of the other countries in the world



In 2017, **46%** of countries imported agricultural and food products with more than half of the other countries in the world *versus* **~25%** in 1995

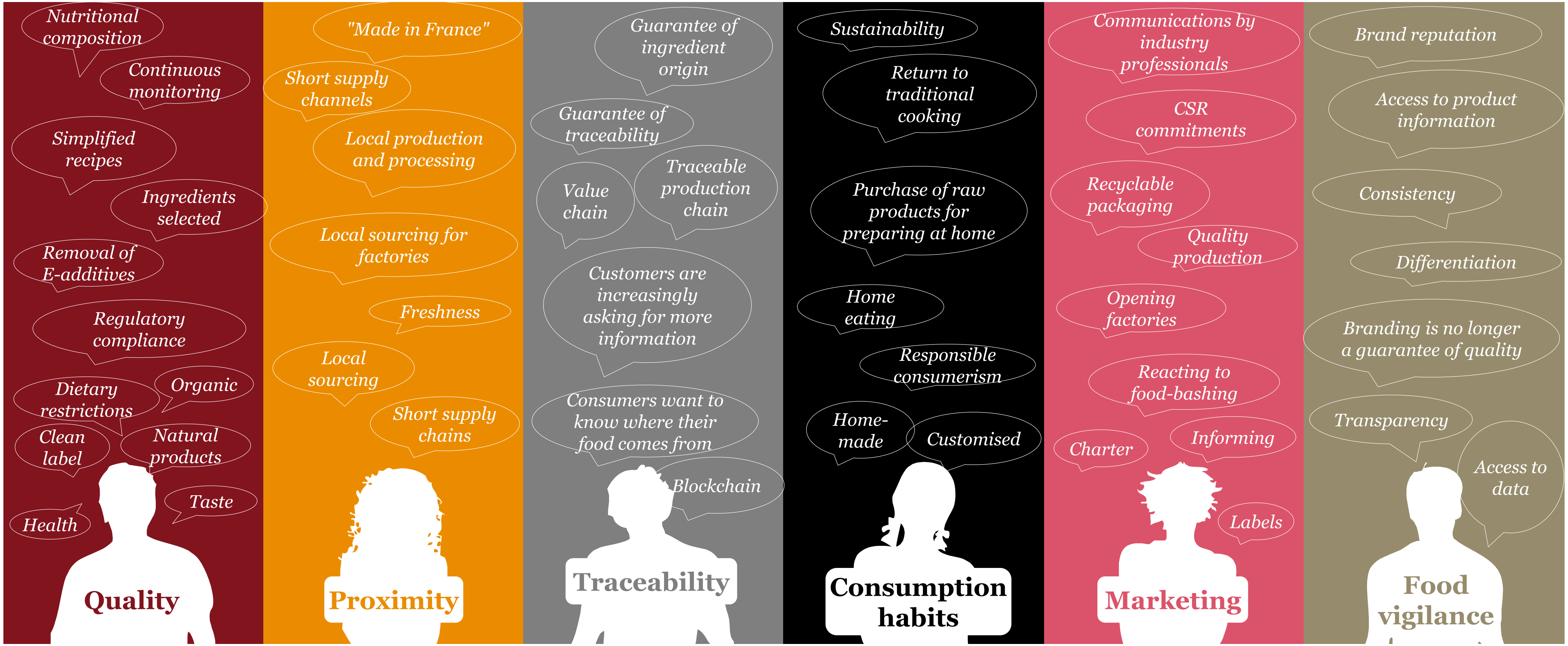
This means that more steps and countries are involved in producing the same product, creating opacity and confusion for consumers

*Note: * 43% exported and 46% imported*
Source: UNComtrade, PwC analysis

Faced with this concern, historical players have identified a number of ways to restore consumer trust…

Source: Quotes from interviews conducted by PwC with historical players in June-August 2018

… which can be sorted into six main themes



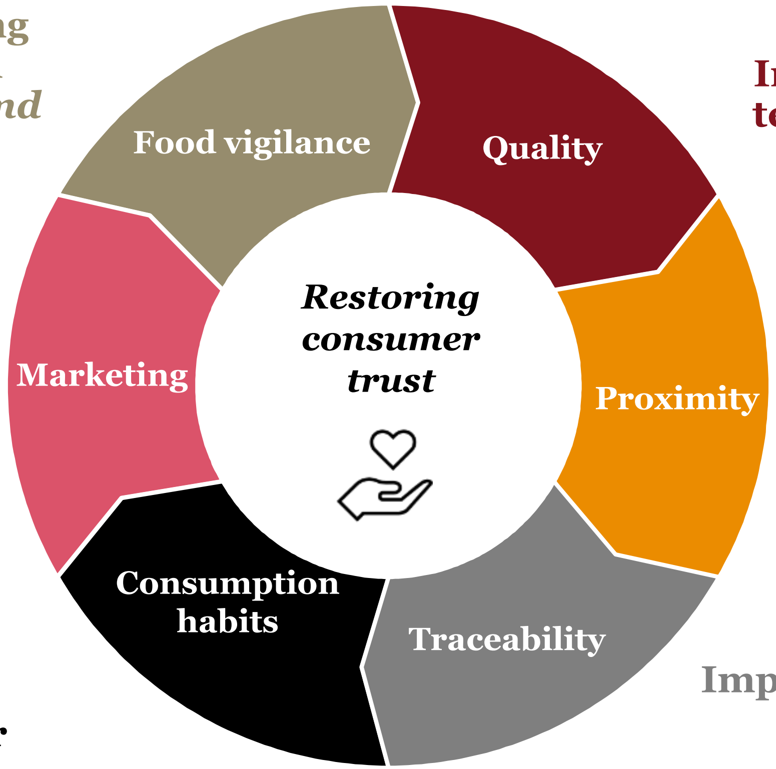
Source: Quotes from interviews conducted by PwC with historical players in June-August 2018

Historical players can restore consumer trust by fundamentally adapting the roles they play in these six interdependent key areas

Increasing transparency and ensuring consistency for consumers between words and actions: *say what we do and do what we say*

Adapting brand image to meet consumer expectations: CSR targets and access to information

Adapting to changes in consumption habits (e.g., renewed demand for home-made food)



Improving product quality in terms of health and nutrition

Simplifying flows and decentralising decisions to promote local supply sources

Improving product traceability from farm to fork

To restore consumer trust,
companies are innovating around all six key areas

PART 2 – Innovation to promote consumer trust

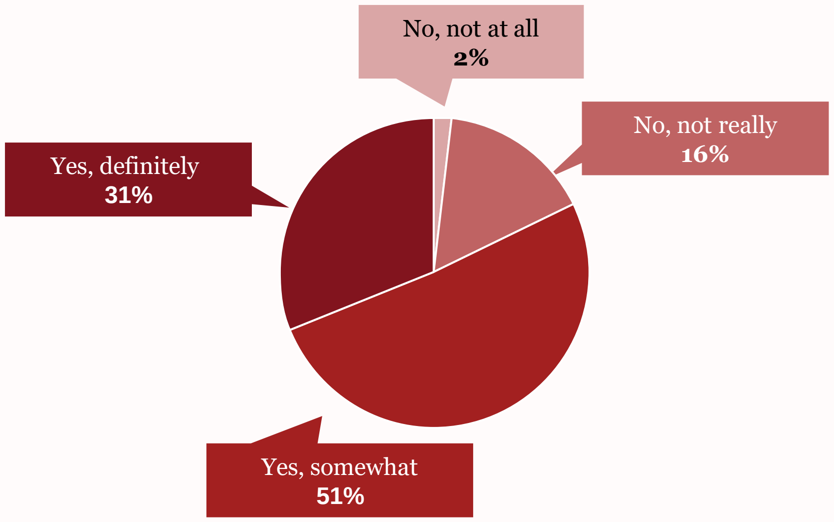
What innovations can be leveraged to restore consumer trust?

Quality – Proximity – Traceability – Consumption habits – Marketing – Food vigilance

The first means of restoring consumer trust in food is through quality

75% *of consumers say they pay more attention to the quality of the food products they buy than they did five years ago*

"Do you feel that you pay more attention to the quality of the food products you buy now than you did five years ago?"



Quality covers two types of expectations:

Food safety

French consumers assess **food safety** based on the **non-natural inputs** used in the production process (farms and manufacturers) and the way the product looks. Manufacturers and distributors take care to keep products **wholesome**.

Nutritional value

Nutritional value is increasingly important for consumers. They are paying more attention to the **dietary characteristics of the products** they buy and, more broadly, to the importance of eating a **balanced diet**.

Source: L'ObSoCo, ANIA, FCD, Intermarché, 2016

Innovations to improve consumer perceptions of food safety focus around freshness and eliminating non-natural ingredients or residues

Innovation segments:

Natural products

- **Reduction in number of ingredients:** changing recipes (to decrease additives, in particular)
- **Replacement of non-natural additives with natural equivalents:**
  - Natural gelling agents (e.g., agar or pectin)
  - Natural thickeners (e.g., arrowroot or starches)
  - Natural colourings (e.g., turmeric or spirulina powders)
  - Natural flavour enhancers (e.g, miso or essential oils)

Reducing farming inputs

- **Bio-control: replacing chemical inputs** with natural additions
- **Precision agriculture:** limiting the use of inputs through specific targeting and prediction of needs
- **Modification of production methods**, such as using **conservation agriculture** to naturally regenerate soil
- **Creation of autonomous production ecosystems**

Freshness and monitoring

- **Reduction of transport and storage time; centralising supply chain management** for the whole value chain, helping to **limit intermediate holding stages** and therefore **ensure that products are fresh** for as long as possible
- **Automated and continuous quality control** of products being produced and **exclusion of products that are unfit** for consumption

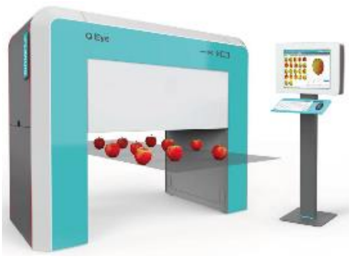
Case studies:

Limagrain
Céréales Ingrédients

To replace the use of additives, Limagrain Céréales Ingrédients (LCI) develops natural ingredients that combine specific varieties, thermal processes and blends. For example, LCI has created **pulse flours** (made from peas, lentils and beans) to replace modified starches.

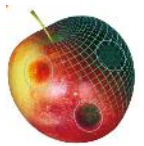
Advantages: *reduced microbial development and a plant-based protein supply*

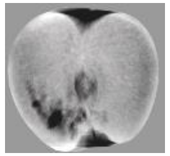
BIOMETiC
a division of Microtec



Development of X-ray machines that **scan fruit** to **identify poor quality products** (on the outside and inside, with or without packaging) and **automatically withdraw them from the distribution chain**.

Advantages: *automated and continuous monitoring, exclusion of defective products, preservation of food safety and freshness*





Source: Press, interviews, PwC analysis

Innovations to improve nutritional value and balance the composition of each food product

Innovation segments:

Compensating for deficiencies

- Food supplements ("Fortified with...") to ensure a **deficiency-free diet**
- **Products customised by:**
  - age category
  - pathology
  - type of physical activity
  - and more

Reducing unhealthy content

- Focusing on **free-froms** to address specific **diets** or food **intolerances**:
  - no added sugar
  - no salt
  - fat-free
  - gluten-free
  - lactose-free
- **Diversifying** children's diets

Developing new ingredients and recipes

- **Nutritional benefits of new foods** (e.g., insects, algae, kale or moringa leaves)
- Replacement of animal proteins with **plant-based proteins**
- **Complete/balanced and individual meals** in drink form that cover all nutritional needs
- Foods with an **appetite-suppressing effect** (e.g., chia, konjac or agar)

Case studies:

G nutrition — CÉRÉLAB Centre de Recherche & d'Application

G-Nutrition brioche bread is a **food supplement high in energy, proteins and vitamins**. It is designed for elderly and/or malnourished people with an illness (cancer, HIV, etc.) or muscle wasting. The result of ten years of research and development with a number of public and private partners, this bread is now **reimbursed by the French social security system**.

Advantages: *compensates for deficits and deficiencies in elderly or malnourished people*

JIMINI'S — Think bigger, eat smaller.

Jimini's is a start-up that markets insect-based products that are rich in proteins, sources of minerals (iron, zinc and calcium) and that contain all essential amino acids.

Advantages: *appealing products with nutritional benefits*

Source: Press, interviews, PwC analysis

Proximity to producers (either geographically speaking or through a short circuit arrangement) is also an important factor for reassuring consumers

To recreate links with producers and farmers...

"[Short circuits are] a response to ever-increasing demand for local products, ***tradition*** *and* ***authenticity****, restoring the* ***social link*** *between consumers and producers, enhancing the freshness, innovation and nutritional benefits of production, and helping consumers* ***learn more about products and the way they are produced***(1)

"We shorten the chain by creating integrated channels'

... consumers are increasingly turning to local products

80% of French consumers say they give preference to local products(2)

34% of French people believe they would be more inclined to consume local products if this information was more visible on the packaging or if they were in direct contact with the producer(2)

Source: (1) "Circuits courts de commercialisation" working group report, March 2009; (2) "L'empreinte alimentaire de Paris en 2030", Gilles Billen, Josette Garnier, Sabine Barles, 2011, IPSOS survey, January 2014.

Innovations to improve proximity between producers and end customers, both geographically and in terms of the value chain

Innovation segments:

Increasing geographical proximity

- Solutions to **improve the geographic proximity of producers** to consumers
  - Urban farms: on-site sale and/or consumption, both B2C and B2B (e.g., collective catering)
  - In consumers' homes: connected and autonomous indoor vegetable gardens
- **French production**
- Renewed demand for **regional products** and **seasonal** (therefore local) produce

Simplifying the value chain
-
Reducing the number of intermediaries

- **Solutions to reduce the producer-consumer value chain**
  - Development of short circuits
  - Products sold directly at the farm
  - Proximity of distributors to farms
  - Community-supported agriculture baskets
- Implementation of **short circuits** for B2B trading (e.g., direct contact between farmers and self-managed collective catering companies)

Source: Press, interviews, PwC analysis

Case studies:

Agripolis

Agripolis designs and runs **urban farms** on roofs and flat surfaces using **aeroponics** technology. The **products** are **sold on-site** (hypermarkets, baskets for employees) or **consumed on-site** (collective catering)

Advantages: urban production, short circuit, proximity

E.Leclerc — **LES ALLIANCES LOCALES** *

Finding that **consumers** were more attracted to local products, E. Leclerc developed **short circuits** through its **Les Alliances Locales** brand, which brings together 5,500 producers through 10,500 store/producer partnerships. The farm or production site must be located within 100 km of the store.

Advantages: short circuits on a large scale, limited transport

* *The Les Alliances Locales initiative, created in 2011, was **recently relaunched**, demonstrating a return to local supply sources by major distribution players.*

Innovative techniques have sprung up around traceability, allowing consumers to know more about products, producers and the supply chain

Initially a response to regulatory requirements, traceability has become a service offering and a way for companies to provide consumers with transparency about the origin, processing and distribution chain of the food they eat

59% *of consumers consider that **product origin and traceability** are important choice criteria*

In 2004, the Codex Alimentarius (FAO, WHO) defined traceability as "**the ability to follow the movement of a food through specified stage(s) of production, processing and distribution.**"

Guaranteeing traceability requires solid technical innovations from agri-food players

Main challenges:

- Ensuring reliability of input data
- Preventing fraud
- Incorporating the systems in place by all players
- Tackling the risk of losing information at the various product processing or distribution stages
- Recovering final data
- and more

Traceability approaches are generally initiated by three types of players:

Agri-food manufacturer with brands

A traceability system is implemented to monitor the manufacturer's **supplier ecosystem**. Producers are **required to be included in the traceability programme** to preserve their relationship with the manufacturer.

National/regional authorities

A traceability system is created for all producers in a given region for a sourcing channel or product type (certification, designation of origin, etc.). Public authorities fund the creation and maintenance of the system and certifications. Producers pay to use it.

Consortium of producers

Several producers are brought into contact within a consortium to invest in implementing a platform to ensure the **traceability of their products** and **market them to large manufacturers**. The consortium is certified and sets its member farmers apart from competitors.

Source: Harris Interactive study, "Les pratiques alimentaires d'aujourd'hui et de demain", January 2017; Codex Alimentarius of the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO), 2004

Traceability innovations make it possible to gather information from players in the chain and guarantee the continuity of conservation and handling precautions

Innovation segments:

Tracing the entire value chain

- System for **certifying product origin** (e.g., name and location of producer)
- Tools recording **production conditions** (e.g., production/breeding method, inputs used/feed received, use of antibiotics)

Ensuring the traceability of processing, conservation and handling conditions

- Platforms for **recording and tracing**:
  - the **number and type of players** involved in production
  - the **number and type of processing stages**
  - the distribution system
- Tools to monitor **conservation conditions in real time** and visualise any disruptions
- Systems to ensure **compliance with regulations** and general safety requirements
- Environment for **capturing and exchanging data** between trading partners in the processing chain

Case studies:

value go — pwc The Food Trust Programme

Integrated system for **tracing products from origin to consumption**

Advantages*: information about the value chain for use by companies and consumers*

Carrefour

Carrefour has developed traceability for its **chicken sourcing channel**. Thanks to a **QR code**, consumers can access various information such as where and how the chicken was bred, fed, and whether it received antibiotic treatment.

Advantages*: consumers can access information easily*

CRYOLOG

Topcryo is a **temperature-sensitive microbiological label** that can be affixed to products to **guarantee the cold chain**.

Advantages*: ensures that products are properly conserved*

Source: Press, interviews, PwC analysis

Blockchain, a leading traceability technology

Blockchain in a nutshell:

a database

A blockchain is a **chronological sequence of transactions**. It is used to store data and share them with various players

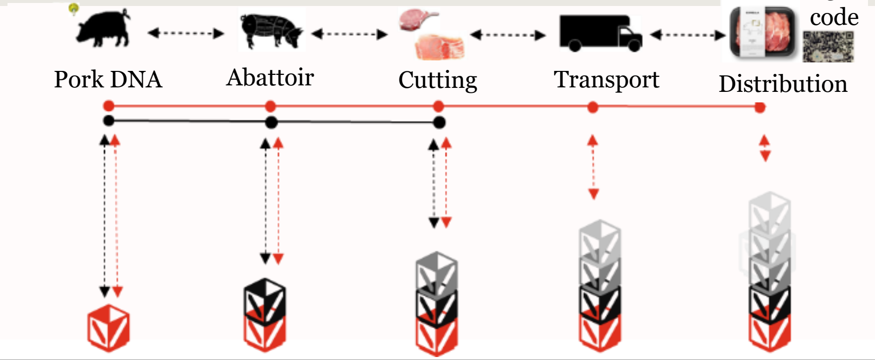
shared between members

All members of the network (the players) have a **copy** of the register (a node)

that saves modifications to data according to rules set by its members

The **sequence** of transactions is **confirmed** by all players or a defined majority

Traceability along the entire supply chain (multi-player):



Several blockchain options exist and it's important to choose the right one:

Distribution*	Advantages	Disadvantages
(Open source)	• Leverages a **number of developments** made by a wide community • **Many developers** are able to program **smart contracts** on Ethereum	• Transaction **data** are **not private** • **Number of transactions** per second is quite **limited** • **Proof-of-work** algorithm, **high energy consumption**
(IBM software solution)	• **High scalability** • Implementation and maintenance **support offered by IBM** • IBM is a leading player in the field	• **Possible reliance on IBM** • A **complex tool** that can be difficult to access • Does not integrate cryptocurrency; not optimised for managing tokens
(R3 software solution)	• Implementation and maintenance **support offered by R3** • R3's reputation is reassuring	• Its **architecture** is **difficult** to implement • **Data** are only shared between nodes that **participated in the transaction**; data partitioning • **A distributed solution that ensures data monitoring at the cost of putting in place a governance system**

** Distribution in a private blockchain. Other technologies exist and are worth examining according to the desired applications (e.g., Stratum, Quorum and Iota).*

Our recommendation: Choosing the right technology at the inception of the project according to the business model and desired user experience avoids a complex and costly process to change the tool when it is rolled out on a large scale. *For more information, scan the QR code:*

Source: PwC

Consumers want to play an active role in the selection, customisation and preparation process to regain trust in their food

The expectations consumers have for their food are multiplying

- **Dietary regimes**
- **Allergen-free** diets
- **Specific nutritional requirements** (fortified foods, whole foods, etc.)
- **Environmental impact** (organic farming)
- **Societal impact** (fair pay for producers)
- and more

And yet consumers are spending less and less time on their food

61% of French people say they want to save time in their lives

51% of French people feel that they are wasting time when they take care of household tasks, including cooking

Between 1986 and 2010, the average daily time spent cooking decreased by 18 minutes, falling from 1 hour 11 minutes to 53 minutes.

Changing consumption habits helps consumers regain **control over what they eat** and **save time**

Source: Harris Interactive study for Volvo, online study conducted from 9-11 January 2018 on a sample of 1001 people, INSEE

A number of innovations help consumers with limited time to spare take control over their diet and its impact

Innovation segments:

Renewed demand for "home-made"

- **Cooking kits**
- **Cooking lessons**
- Increase in **kitchen appliances** (food processors, juicers, etc.)

Personalised diets

- **Nutritional assessment**, follow-up, and **recipes suitable for**:
  - Illnesses
  - Allergies
  - Specific dietary regimes (vegetarian, vegan, etc.)

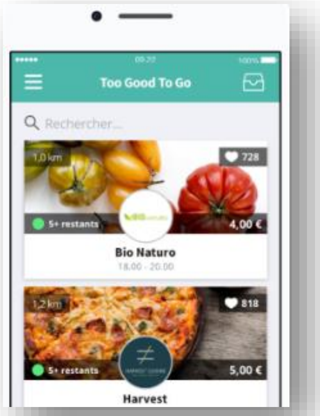
Saving time without losing out on quality

- **Home or work delivery** of fruit and vegetable baskets or **meals prepared** using fresh produce
- Development of **catering stands (e.g., salad and pasta bars)** in supermarkets where the food is prepared as you wait

Positive externalities of food

- Environmental impact: local, seasonal products, sale of unsold goods and prevention of **food waste, products sold loose**
- Societal impact: **fair products** that guarantee fair pay for producers

Case studies:



Too Good To Go is an application that puts consumers in contact with sellers in their neighbourhood to **organise the sale of unsold goods** to help prevent food waste.

***Advantages**: positive impact on the environment by preventing food waste*

Quitoque provides **easy-to-cook recipes** using seasonal produce and delivers the ingredients directly to consumers. Carrefour increased its interest in Quitoque to a majority stake in March 2018.

***Advantages**: time saved through the delivery of the right quantities of ingredients for the chosen recipe*

Source: Press, interviews, PwC analysis

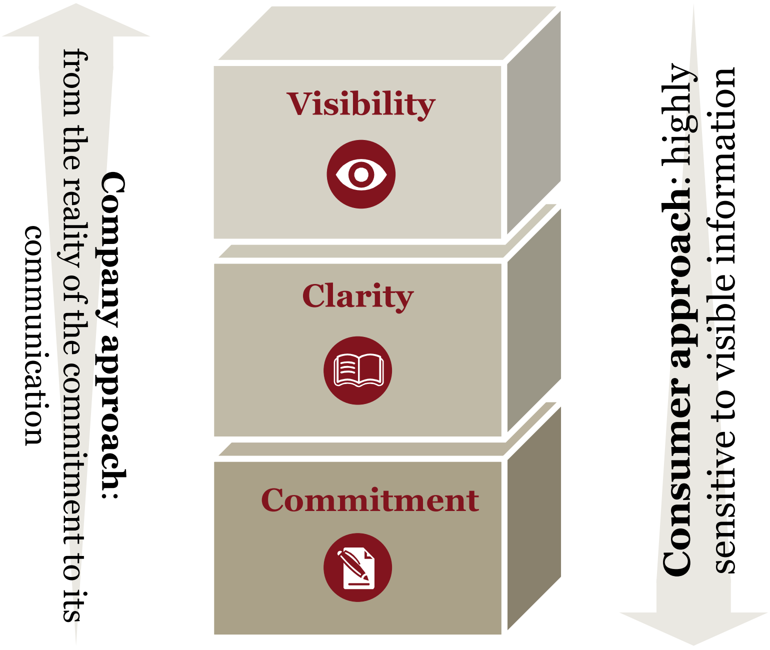
Acting on clearly-defined commitments is vital in (re)establishing trust in a given company as a choice criterion for consumers

100% of the players asked say that transparency is the key component in fostering consumer trust

- **Unclear** company **commitments**
- **Sometimes limited information** on where products have come from and how they were processed
- **Confusion** from too many labels and designations

Consequence: consumer trust in the company, brand or label no longer plays a key role in deciding whether or not to purchase

In order to have a positive impact on consumers, companies must work not only on their **commitments** but also on **how to communicate them to their consumers**: to help restore consumer trust, commitments must be **clear** and **visible**.



Visibility
- Bringing company commitments to the attention of consumers
- Standing out from other agri-food players

Clarity
- Informing consumer choices (e.g., through product information and comparative analyses)
- Making company commitments easier to read (e.g., through labels)

Commitment
- Fulfilling consumer expectations in line with company values
- Complying with regulations

Industry players are adapting their communications to restore consumer trust by being more transparent with consumers

Innovation segments:

CSR

- Strengthening of CSR approaches by historical players, internally and/or through external acquisitions
- Emergence of players with an inherently strong CSR footprint

Labels

- Emergence of **new labels** to help consumers find their way around the products available

Packaging

- Growing interest from consumers in **alternative packaging** to help reduce the environmental impact of plastic food wrapping
- Development of packaging in formats suitable for individual consumption (smaller packets, products sold loose, etc.)

Communication

- Development of **new ways for companies to communicate** with consumers:
  - Factory visits
  - Social media

Source: Press, interviews, PwC analysis

Case studies:

Fleury Michon #VENEZVERIFIER

Launched in 2014 to provide greater transparency, the "Venez Vérifier" (come and check) initiative gives consumers the opportunity to visit five Fleury Michon factories producing deli meats, prepared meals and seafood products. The third season of #VENEZVERIFIER was launched in April 2018.

Advantages*: a strong image of transparency associated with the company and brand*

AXEREAL La terre, les hommes, le futur

In 2018, Axéréal launched Cultiv'up, a sustainable development charter certified by an independent body. Through this charter, Axéréal's agri-food manufacturer customers can use the concept of sustainability in their product communications and use visuals on their packaging to show that products are from cooperatives, made with French grains, or guaranteed to be free from a certain component.

Advantages*: clear communication of CSR production commitments throughout the value chain*

Product information innovations are aimed at enhancing the clarity of the product offering so that customers can make an informed decision

Innovation segments:

Clarity of information on product composition

- Applications to inform customers **in real time** about **product characteristics** (e.g., nutritional characteristics, impact on health, allergens)
- **Product comparisons**, recommendations of the most suitable products

Information on products and how they were produced

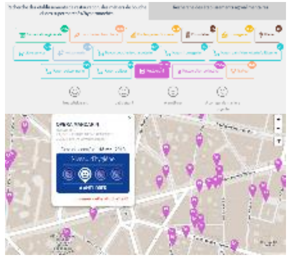
- Consumer information on how the product was produced and the **level of hygiene** at the production, processing and distribution sites
- **Creation of a database** assembling available information on food products, accessible to consumers, public authorities and professionals (via a website, application, etc.)

Consumer review forums

- Use of new media to discuss products or catering establishments (e.g., restaurants) within a community of friends, family, etc.

Case studies:

Alim'confiance



A mobile application from the French Ministry of Agriculture where users can consult the results of official checks on the hygiene of catering establishments, food trades, supermarkets and hypermarkets, abattoirs, industrial sites, etc.

Advantages*: direct information for consumers about the product and how it was produced*

SCiO by Consumer Physics

A pocket scanner for consumers to instantly obtain details of products' molecular composition on their mobile phones

Advantages*: consumers can instantly consult the exact characteristics of each product*

far

When the product packaging is scanned, the application advises consumers on food and recipes suitable for their individual diets

Advantages*: gives consumers points of reference for their needs and the products available*

* Available in the UK and the US only

Source: Press, interviews, PwC analysis

A number of innovations to promote consumer trust are driven by food tech start-ups

Consumers' trust in their food is the number one innovation objective for start-ups

70% of the start-ups surveyed think that **innovation in the agri-food industry would help improve consumers' trust in their food…**

… more than new products, a reduction in environmental impact and changing food habits

The advantages of start-ups in promoting consumer trust:

- **Innovation as their *raison d'être***: innovation is the *raison d'être* for start-ups, while historical agri-food players have to bring innovation into their existing strategies
- **"Trusted third party" image for consumers**: in a climate of consumer mistrust of historical agri-food players, start-ups are seen as trusted third parties with a more positive image for consumers
- **Agility**: more flexible structures compared to the size and organisation of historical agri-food players in France
- **Rapidity**: development times tend to be shorter in start-ups than in traditional companies. This is because, since start-ups are specialised and entirely dedicated to innovation, they can devote all their effort and resources to quickly bringing their innovation to the production stage
- **High financing potential**: start-ups offering a promising solution with a clearly identified market can count on significant financial support from external partners (such as funds), whereas historical agri-food players would not be able to invest a similar amount to diversify into such a highly targeted area (except corporate venture capital structures)

PART 3 – Relationships between start-ups and historical players

3.1. Food tech start-ups in France
3.2. Innovation strategies implemented by historical players
3.3. Relationships between historical players and start-ups

3.1. Food tech start-ups in France

What is a food tech start-up? (1/3)

Maturity, revenue and financing

Numerous young start-ups, at a creation rate that's still growing

472 food tech start-ups identified in Q3 2017[(1)]

44% annual growth in the number of new food tech businesses launched between 2013 and 2016[(1)]

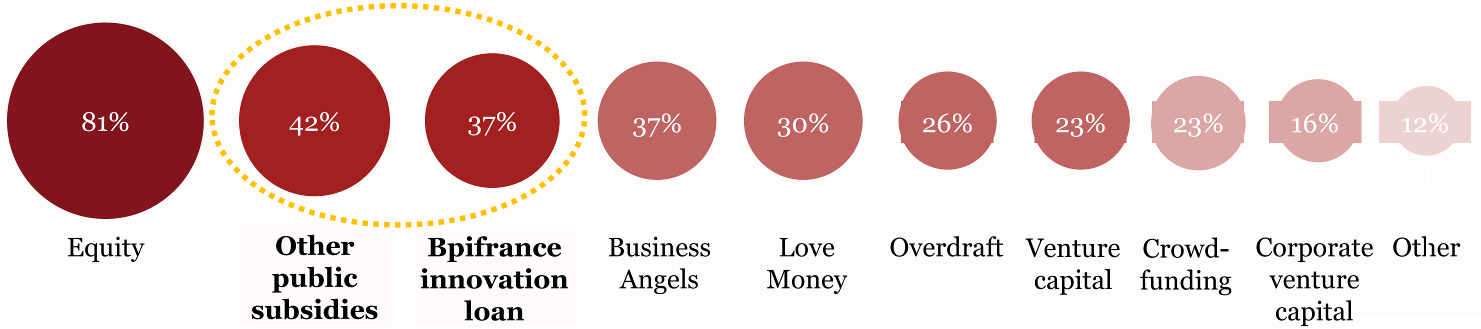
42% of the start-ups which responded to our survey (July 2018) were **founded in 2017 and 2018**[(2)]

(1) Source: DigitalFoodTech, PwC analysis
(2) As reported, 43 respondents

49% of start-ups in the industry generate less than €100 thousand in revenue[(3)]

(3) As reported, 43 respondents to this question (88% of survey total). See appendix

Financing based mainly on equity and public subsidies[(4)]



56%[(5)] **of start-ups on average use public subsidies, which is in line with the age of these young companies.** Public subsidies are mainly provided at the early stage ([see PwC study (in French) on financing start-ups](#)).

Source: PwC analyses and survey

(4) As reported, 43 respondents

(5) 24 start-ups benefiting from both a Bpifrance innovation loan and other public subsidies

What is a food tech start-up? (2/3)

Breakthrough innovations beyond the agri-food industry

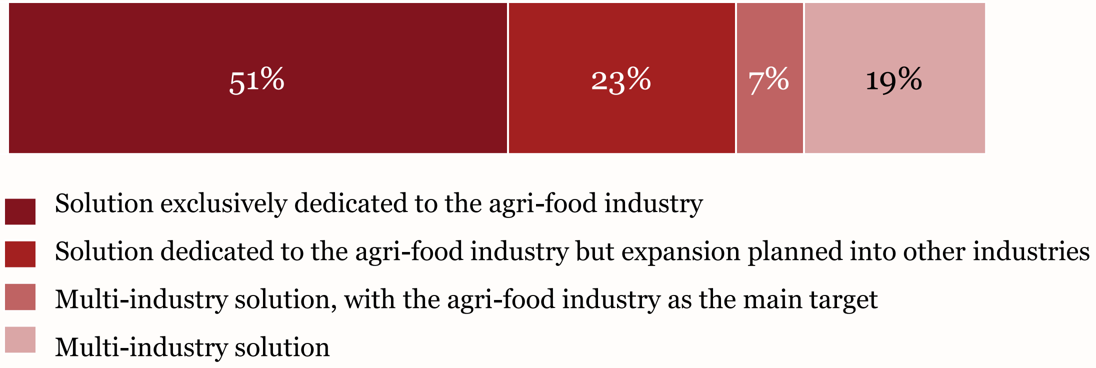
Innovations for the agri-food industry and other industries

81% of food tech start-ups consider agri-food to be their priority industry

49% of food tech start-ups have developed a solution that is (or will be) used in other industries

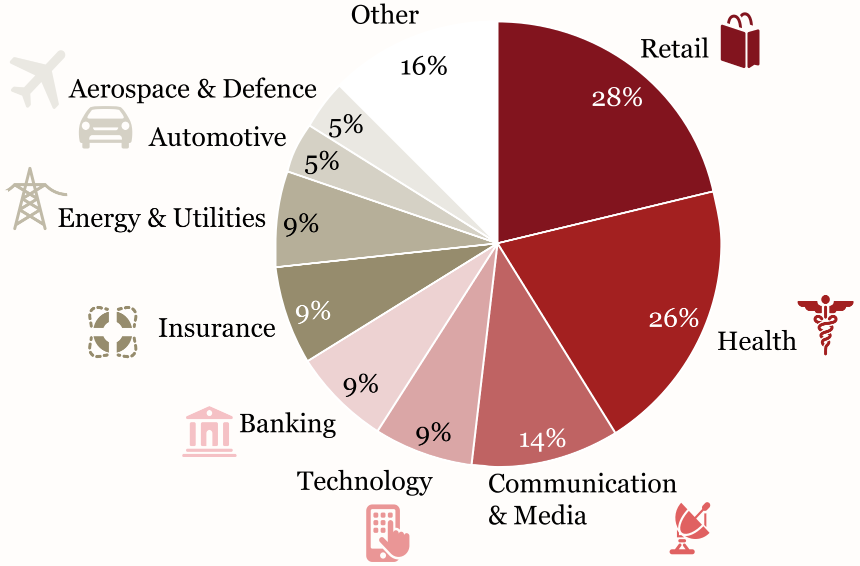
Positioning of food tech start-ups in industries other than agri-food

Results based on a survey of 43 start-ups (see appendix)



Percentage of food tech start-up activities in other industries

Results based on the 43 start-ups which responded that their solution is or will be used in other industries. The total is higher than 100% because respondents could select more than one industry.



Source: PwC analyses and survey

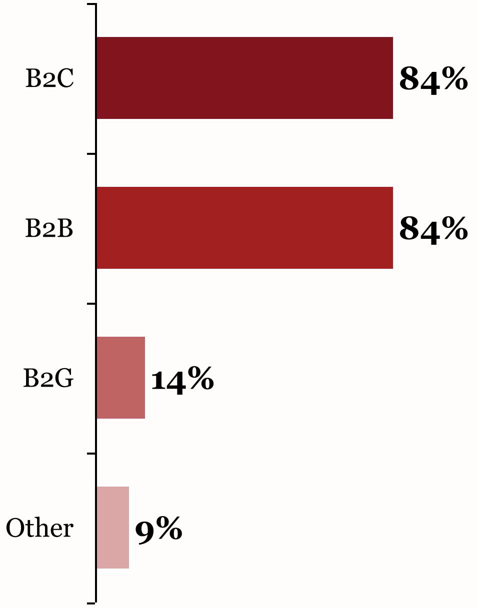
Summary: 28% of the start-ups who responded to our survey also operate in the Retail industry

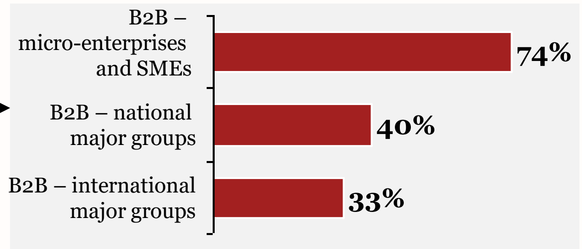
What is a food tech start-up? (3/3)

Customers and international presence

A balanced customer base between B2B and B2C, but still very few institutional or government customers

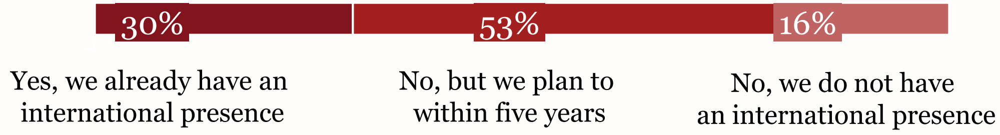
More than 8 in 10 start-ups provide B2B solutions



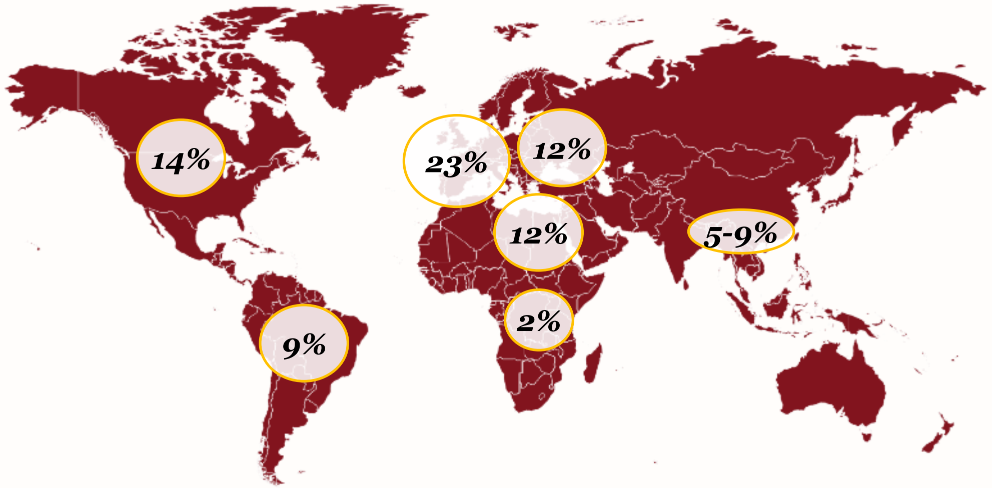


"Other" includes, in particular, sole trader B2B and start-ups, as well as B2B2C solutions

International activities in 30% of cases



Majority presence in Western Europe (around 400 million consumers) and **limited development in Asia** (4.5 billion consumers)



Results based on the 43 start-ups which responded that they had an international presence. Percentage in relation to the 43 start-ups which took part in the survey.

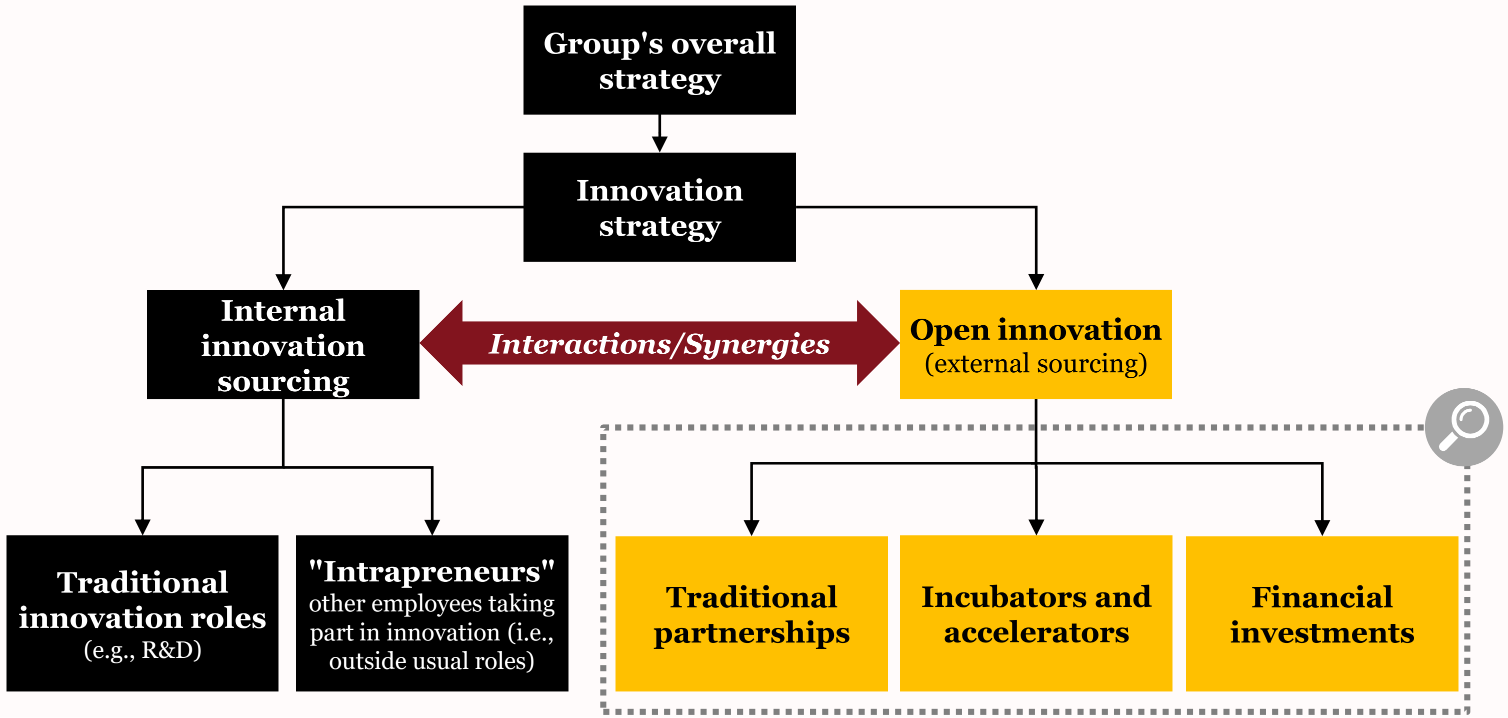
Sources: Results based on a survey of 43 start-ups (see appendix)

3.2. Innovation strategies implemented by historical players

For their innovation needs, agri-food groups rely on internal resources and a deal of external support

An innovation strategy that is both internal and external

51% of companies in the industry **decentralise part of their innovation** through partnerships, universities, external incubators, etc.(1)



Key motivations for cooperation between major groups and start-ups:

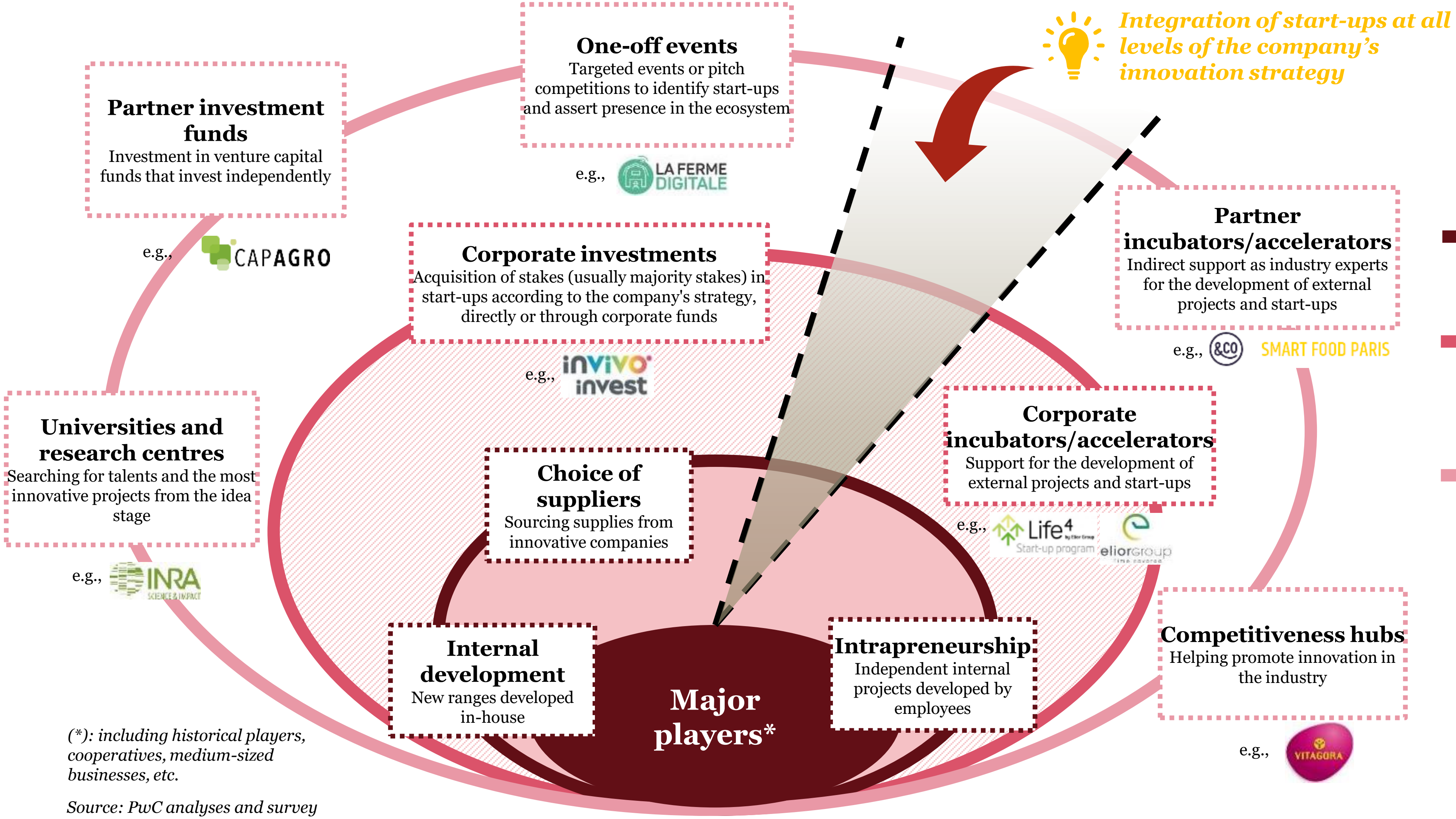
- For **start-ups**: validating their business model and developing the solution on an industrial scale
- For **major groups**: sourcing innovation to boost their own initiatives

The next part of this report focuses on the **relationships between historical agri-food players and start-ups for innovation purposes.**

These relationships may take the form of partnerships, investments, or cooperation through start-up incubators or accelerators.

Sources: (1) Statistics for the packaged food and beverages industry from the PwC Innovation Benchmark 2017 report

To benefit from the many innovations in food tech, major players are adapting to bring start-ups on board



(*): including historical players, cooperatives, medium-sized businesses, etc.

Source: PwC analyses and survey

Innovation strategies put in place by players in the industry can be broken down into three different levels:

- **Internal level**: all innovation projects developed in-house are driven by company employees
- **Intermediary level**: the company develops structures dedicated to supporting external projects (e.g., incubators)
- **External level**: the company establishes partnerships with non-corporate players in the ecosystem, such as research centres, event organisers, etc.

Innovation departments are set up by historical players to centralise their first contact with start-ups and **link them up with the company's business lines.**

A clear strategy and appropriate governance and project management are the keys to a successful innovation approach

Establishing and presenting a clear innovation strategy:

Innovation strategies should address **various complementary focus areas**:

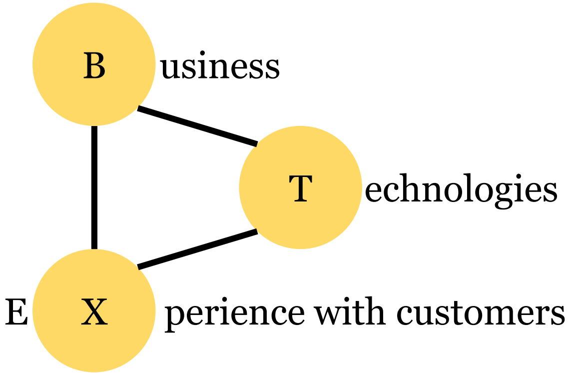
- **External**: Agile development of new solutions, support for innovation as it becomes mature/lean start-up method
- **Internal**: Support for internal innovation in each business unit (BU)
- **Financial**: Management of investments
- **Visibility**: Partnerships, events, publications
- **People**: Acculturation, skills development, attractiveness

Redefining the innovation department's role in the company:

Increasing the visibility and attractiveness of innovation in-house:

- Ensure it has a **direct link with the executive committee** and general management
- Build a **limited talent team** at the central level
- Adjust (if necessary) the **company's open innovation culture**
- Promote **attractiveness**
- Maintain internal/external **visibility**

Three pillars around which to build projects:

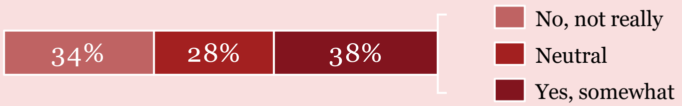


Main performance indicators to monitor:

- **Income and profits** generated by innovation
- Status of the **project pipeline**: number of projects/target income
- Number of **discontinued projects**

Start-ups are divided on the role played by innovation departments in decisions made by groups

"Do you think that innovation departments (or their equivalent) in agri-food groups play a significant role in decisions made by the groups' business lines?"



Sources: PwC analyses

Sources: Results based on a survey of 43 start-ups

The majority of agri-food players have not yet established a strategy for collaborating with start-ups and are in an active monitoring phase

Collaboration strategies reach a mature phase in three phases:

Three phases	1. Observation	2. Action	3. Establishment
	Acquisition of one to three majority or total shareholdings in start-ups	*Several investments and initiatives Define expected ROI*	*The management of collaborations is an important undertaking for the company and has an impact on all BUs*
Stance	• **Defensive** • Fairly active, organised monitoring • **Opportunistic**	• **Aggressive** • Very active monitoring	• Organised • Wanting to **stay ahead of competitors** through collaborations • Developing **new markets**
Characteristics	**Ready to acquire a start-up if it**... - is successful - corresponds to our strategy - encroaches on our market share	• A **number of initiatives are carried out at the same time**: – Incubators and accelerators – External funds – Corporate venture capital • Multiple **collaboration tests** • Intensive external/internal **communication**	• A **master plan** is drawn up, supervised by the management committee • **Open innovation is driven by the entire company** and centralised in a department that is a member of the management committee • Clear and rigorous **selection, monitoring and elimination processes** are in place **for collaborations**

View: positioning of the majority of historical agri-food players

"We only work with start-ups in which we have a majority interest"

"Our innovation is divided between marketing and R&D"

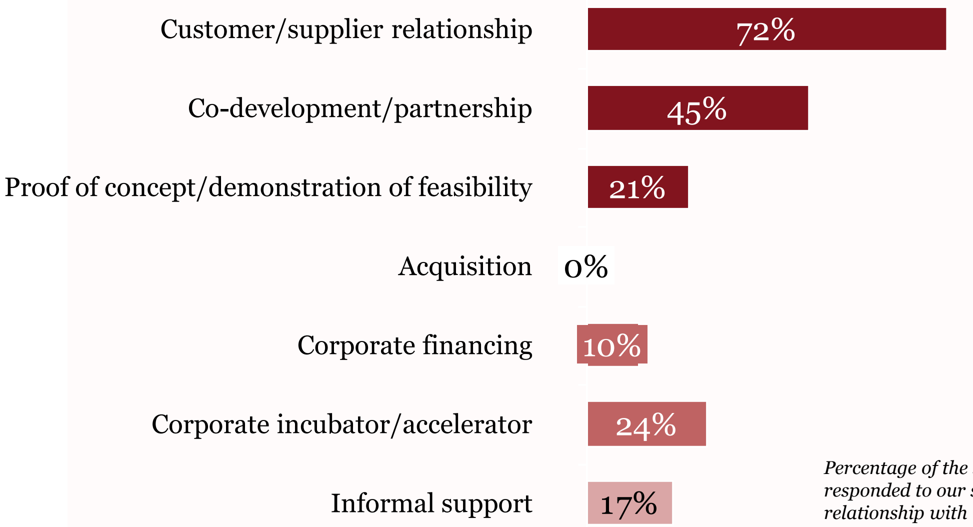
"We are in the process of structuring our open innovation approach in a broad sense"

3.3. Relationships between historical players and start-ups

Interactions between major players and start-ups are on the rise, but developing these into business relationships is still often difficult and is mainly carried out in a traditional way (customer/supplier relationship)

67% of the start-ups surveyed are developing or have developed relationships with historical players

Types of relationship with major players, according to the start-ups surveyed:



Percentage of the start-ups that responded to our survey that have a relationship with major players (67% of respondents). More than one possible answer.

➔ Most interactions with major players are still "traditional", i.e., customer/supplier relationships, partnerships

100% of the players surveyed are developing or have developed relationships with start-ups…

… but **only 19%[1] invest in start-ups**, and they all accept that **maturity is lacking** in their identification and confirmation of business relationships or investments

*"We are acquiring a few **majority stakes**, particularly with a view to strengthening our presence in certain markets"*

*"Working with start-ups is a **defensive approach** to make sure we don't let an innovation slip through the cracks"*

*"We have an active approach as a **member of a regional incubator**"*

*"Start-ups can **serve as a stimulus** and an accelerator in some cases"*

*"We invest in start-ups **through an external fund**, which also helps us **monitor the industry**"*

*"We carry out targeted research to **obtain specific skills**"*

*"Our collaboration strategy is opportunistic, based on **skills contribution**"*

*"We collaborate with start-ups through minority stakes via funds, with a **short-/medium-term disposal objective**"*

Sources: Results based on a survey of 43 start-ups, (1) PwC Innovation Benchmark 2017, statistic for the packaged food and beverages industry

Note: Quotes taken from interviews.

On the whole, start-ups and historical players seem to be aware of their respective strengths and weaknesses when they collaborate…

According to start-ups, the length of historical players' processes is the major obstacle to collaboration…

… but the sharing of values and major groups' three innate qualities (brand image, product quality and expertise) **are key facilitators**

Classification of criteria as obstacles or facilitators for collaboration:

Obstacles		Neutral		Facilitators	
66%	Length of processes in major groups	55%	Sharing of intellectual property	62%	Brand image of major groups
		55%	Decentralisation of major groups	52%	Sharing of values
		55%	Minimum volumes in major groups	55%	Customer perception of the quality of group products/services
		55%	Sharing of data between start-ups and groups	55%	Expertise of major groups
		55%	CSR strategy of groups		
		52%	Price of start-ups' solutions		

Source: based on responses to the question "Are these 14 criteria obstacles or facilitators for collaboration between start-ups and historical players?"
Summary: 55% of the 43 start-ups that reported collaborating or having collaborated with historical players do not think that the start-up's intellectual property is an obstacle or a facilitator for collaboration between start-ups and major groups
Note: the responses do not show a trend for three criteria: (i) Centralisation of major groups, (ii) Digital culture of major groups, (iii) Differences in company culture and values

The players surveyed are careful in the way they manage their relationships with start-ups…

… so as not to slow down the start-up's innovation momentum or hinder their development potential

*"Thanks to our **strong culture of decentralisation**, the start-ups with which we work appreciate the **autonomy** they are given"*

*"One success factor is **thoroughly understanding the start-up's business model** and discussing the **sharing of values** from the outset"*

*"We give them autonomy while still taking part in **strategic decisions**"*

*"To coordinate our respective objectives, we ensure that the **start-up's assumptions are in line with our historical business lines**"*

*"One of our success factors is **defining** the **expected objectives** and **operating methods** with the start-up from the outset, as well as establishing **mutual trust**"*

*"We are aware of the importance of **not locking in** the start-up (e.g., not granting exclusivity rights for too long a period) to maintain its momentum"*

*"One of the risks is that, once integrated into the group, the **start-up loses its DNA**"*

Note: Quotes taken from interviews.

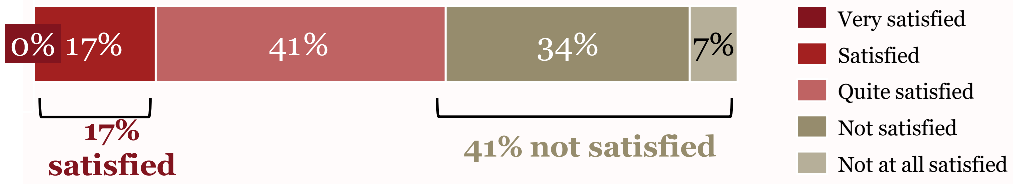
Source: PwC analyses and survey

... but operational implementation is complicated, with the various players expressing reservations as to the collaboration's success

Only 17% of start-ups are satisfied with their relationships with major players...

... while more than 40% of start-ups say they are not satisfied

Satisfaction levels of start-ups with their collaboration with major players



Success factors:

- **#1** A co-construction approach between start-up and group (60%)
- **#2** An influential point of contact within the group (53%)
- **#3** Sufficient maturity of the start-up, and risk-taking by the group (27%)

Failure factors:

- **#1** The group's response time (69%)
- **#2** A non-influential point of contact within the group (54%)
- **#3** Risk aversion from the group (38%)

Major players are still dubious as to the success of a collaboration with a start-up...

... but some encouraging feedback is emerging from players who have already structured their innovation approach

*"Start-ups are **very far away from mass production** at reasonable prices"*

*"It is **difficult to measure the externalities** of a collaboration"*

*"The **return on investment** does not live up to expectations"*

*"We find it **difficult to decode the start-up environment**, but we concede that **they are a threat**"*

*"Start-ups are **not yet mature enough**"*

*"The **contract of trust was fulfilled** and the initial business plans delivered"*

*"After a lot of communications and financial investments, we have entered into **very few concrete collaborations**"*

*"**The expectations** of both parties **are too high**"*

Sources: Results based on a survey of 43 start-ups (see appendix). Percentage of the start-ups that responded to our survey that have a relationship with major players (29 start-ups).

Note: Quotes taken from interviews.

Source: PwC analyses and survey

Historical players are increasingly incorporating start-ups into their innovation approaches, using collaboration methods that are still being developed

Food tech is now clearly identified as a source of innovation by historical players, who use it to ramp up their innovation policies and improve their image

Collaboration with start-ups: an essential part of the innovation policies of historical players

- **All the historical players surveyed said that they work with start-ups**, with most of them saying that **they had not yet sufficiently developed the collaboration**
- Collaboration with start-ups is most often **prompted by**:
  - **Monitoring** by major groups
  - **Often limited in-house innovation resources** (specific skills, budgets, etc.)

Yet collaboration is still often fragile and poorly structured

- **Major group/start-up relationships are often weakened by the group's lack of agility** (decision-making/response times, non-influential points of contact, risk aversion)
- Currently, **customer/supplier relationships are the preferred form of collaboration**, as they allow the start-up to retain its autonomy and agility and limit risk for the group

Appendix 1

Methodology

Methodology used for the study

- This study was carried out by the **PwC and Strategy& teams in France**, with support from various industry and technology experts from the international PwC network
- In order to gain a thorough and broad understanding of the issues, **we interviewed 18 players in the agri-food value chain in France: cooperatives, processors and distributors.** The people interviewed were mainly from innovation departments. The purpose of these interviews was to analyse their **perception of consumer trust and how this perception is taken into account in their innovation strategies**. The interviews were also used to establish an overview of collaboration between historical agri-food players and start-ups in the industry, as well as the key success factors in these collaborations
- Alongside this, some **45 food tech start-ups in France replied to an online survey**. The results were used to determine the **typical profile of start-ups in the industry**, the **way they collaborate with historical agri-food players**, their perception of these collaborations, key success factors and obstacles
- We also **interviewed** other players with a link to food tech in France, such as **incubators/accelerators** (SmartFood Paris, ShakeUp Factory), a food tech **investment fund** (Capagro), and a player that monitors and facilitates relationships between start-ups and historical players (DigitalFoodLab)

18 players interviewed

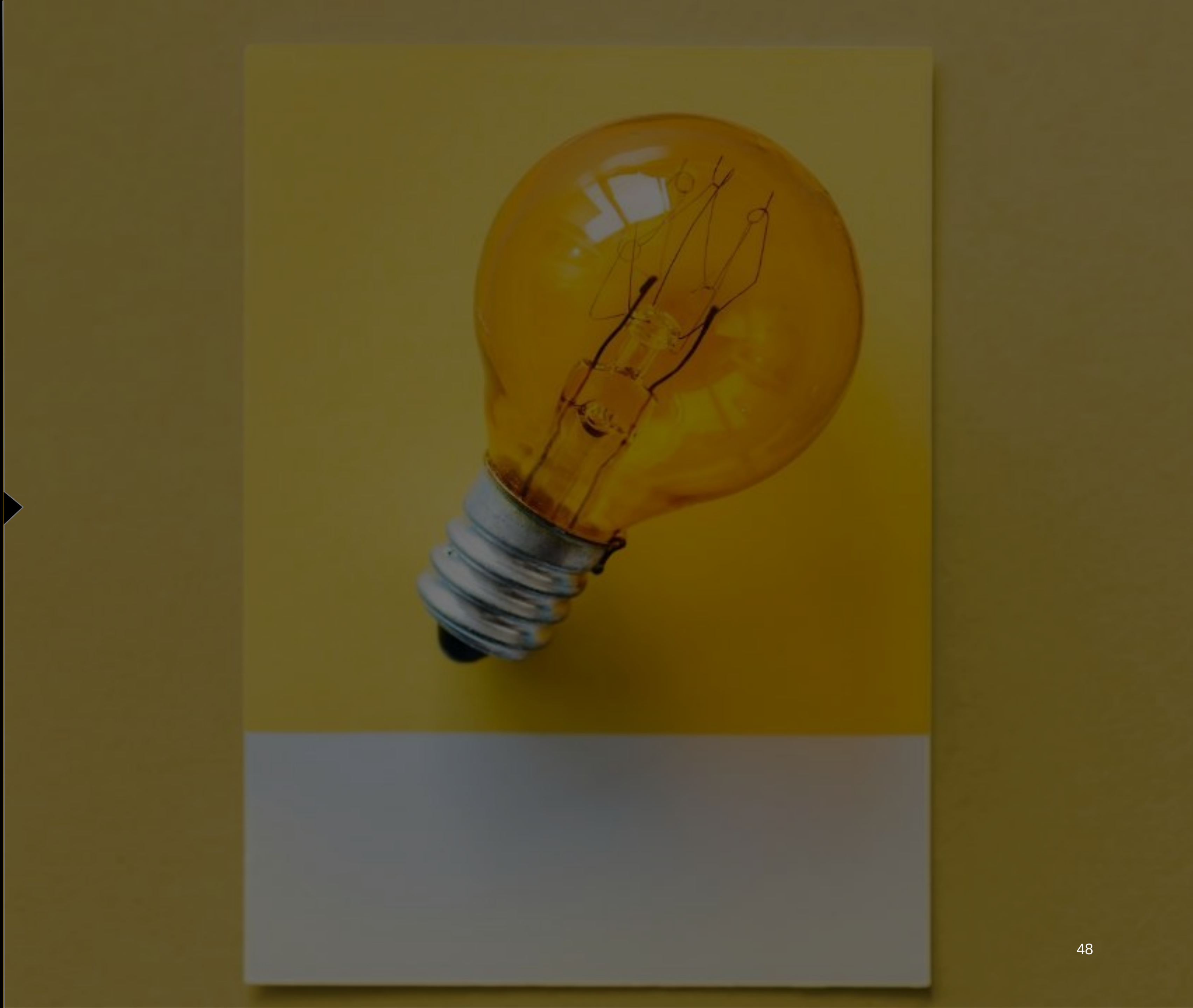
- **Trust** in the agri-food industry
- Industry-wide and group-wide **innovation momentum**
- **Collaboration with start-ups**

+43 start-ups surveyed in a questionnaire

- **Data about start-ups**: positioning, size, type of customers, international presence, financing
- **Relationships with historical players**: obstacles/facilitators, satisfaction
- **Innovation momentum in the industry**: addressing consumer trust, technological solutions

Appendix 2

Other examples of innovation around the six key areas for transformation



Innovations to improve consumer perceptions of food safety focus around freshness and eliminating non-natural ingredients or residues

Examples of innovation

Company	Innovation
Nestlé Herta	Nitrite-free ham, reduced-salt ham
Sonneveld inspiring bakery solutions	Sonneveld has developed two "Clean Label" additive-free preservatives
Ynsect	Production of insect-based products, particularly for aquaculture, to provide aquaculture farms with natural nutrition
ALKION BIO INNOVATIONS	Production of natural food additives, natural flavourings, essential oils and biopesticides
MyEasy Farm	Tool for visualising input prescription per plot and mapping weather conditions to prevent unintended propagation
PRECIFIELD	Scanners to measure organic matter and generate inter-plot maps
ecorobotix	Completely autonomous machine for ecological weeding of crop rows

Company	Innovation
Carbon Bee	Sensors to detect weeds and optimise weeding
AIRINOV L'avenir de vos terres est dans le ciel	Using drones, Airinov technology can map fields with a high level of accuracy and check production quality
CitizenFarm	Production system using aquaponics for individuals in the form of an aquatic vegetable garden: herbs, fruit and vegetables can be produced without chemicals through this fish-bacteria-water-plants ecosystem
elementum	Software for real-time management of inventory levels for multiple players (a single safety stock point for the entire chain to limit intermediate holding stages)
EKIM Robots in the city	Development of a robot capable of autonomously preparing and cooking a pizza, thereby preventing health problems linked to handling by humans
PAYET&RIVIÈRE LA RÉUNION	Use of an old method of producing sugar (galabé) without additives, colourings or preservatives

Natural products

Reduced inputs

Freshness and monitoring

Innovations to improve nutritional value and balance the composition of each food product

Examples of innovation

Company	Innovation
gula	Healthy snack subscription service
MonGrillon	Products made from crickets (which are highly nutritious), free from pesticides, GMOs, colourings and preservatives
	Les Nouveaux Affineurs are launching a range of gourmet cheeses that are 100% vegan
Institut Danone	Design of a documentary kit to raise awareness among parents of the importance of diversifying their children's diets
	A number of brands offer plant-based (soy) drinks with added calcium to help compensate for deficiencies

Company	Innovation
TRYBU	Vegan protein blends and superfoods
Nestlé	Development of plant-based prepared food (e.g., sausages) that still taste good thanks to the use of natural additives (e.g., herbs)
Algama	Food products made from highly nutritious microalgae (e.g., spirulina, algae containing 65% protein)
Afineur	Afineur selects and prepares suitable microbes for use in a controlled natural fermentation process that can improve product characteristics and enhance nutritional value
Danacol	Danone has created a range of Danacol dairy products enriched with plant sterols to reduce cholesterol

Compensating for deficiencies

Reducing unhealthy content

Developing new ingredients/recipes

Innovations to improve proximity between producers and end customers, both geographically and in terms of the value chain

Examples of innovation

Company	Innovation
Localizz	With Localizz, the producer and distance from the consumer are indicated for each product so that consumers can buy products that were produced or processed in their region
locavor.fr	Community where users can purchase local products via a short circuit from nearby producers and craftspeople
Pousse Pousse	Monthly subscription box containing seeds, fertilisers and tips on how to garden and grow ingredients in the best conditions, on balconies and terraces or in gardens
Les Parisculteurs – Mairie de Paris	• In 2016: the **Objectif 100 hectares** charter aiming for 100 hectares of green space in Paris, with one third devoted to urban agriculture. • In 2017: launch of the **Chapelle International** project to develop an urban farm of 0.7 hectares, including a 1,200 sq.m greenhouse for hydroponics, a permaculture area and a local distribution network in the 18th *arrondissement* of Paris through local Franprix convenience stores

Company	Innovation
Chapeau de Paille	Chapeau de paille is a coalition of farms where consumers can directly pick their own vegetables, fruit and even flowers
mooveat – reconnectons-nous	Collaborative search engine that indexes and geolocates all sustainably farmed local food solutions by product category and type of solution for B2B customers (farmers and self-managed collective catering companies) to promote local short circuits
Carrefour	Carrefour runs urban agriculture projects, such as installing vegetable gardens on the roofs of its stores
PlantOburo	Creation of collective gardens at companies' premises, managed by employees to help them reconnect with nature

Geographical proximity

Simplified value chain

Traceability innovations making it possible to gather information from players in the chain and guarantee the continuity of conservation and handling precautions

Examples of innovation

Company	Innovation
OSITRADE Agri Blockchain	Ositrade is an **online marketplace for grain trading**, launched in September 2018. Thanks to blockchain and its variations (e.g., smart contracts), it can **digitally draw up trading contracts** and ensure **optimum traceability** for all parties in the chain (collectors, storage operators, traders, processors, etc.)
MyEasy Farm	For traceability purposes, the data recovered for each plot can be used to **map out input prescription** (maps of sowing density and the modulation of fertilisers or plant health products)
Bureau Veritas	Bureau Veritas provides supply chain traceability certification using blockchain technology. The **tuna supply chain** was traced in this way, from fishing to the end consumer

Company	Innovation
ePROVENANCE	Eprovenance is developing a solution (sensors + algorithm) to manage **storage conditions** for high-end products (e.g., exceptional wines)
Transparency-One	Platform for **modelling the entire supply chain**, keeping track of compliance certifications and generating analyses to actively manage company risks, in particular by reducing fraud, the number of non-compliant sites, CSR risks and unknown sources

Traceability   Circuit

A number of innovations to help time-limited consumers take control over their diet and its impact

Examples of innovation

Company	Innovation
Care eat	Blog where consumers can consult **dozens of recipes made using out-of-date ingredients**
buyfresco	Weekly service delivering five recipes and **organic**, high-quality, seasonal **ingredients** to make them
far	The application scans the product packaging and uses augmented reality to **advise consumers with a selected or personalised diet**
Allergobox.com	Web portal where users with allergies and food intolerances can **identify products and recipes that are compatible with their dietary restrictions**
KITCHEN TROTTER	Subscription to a monthly box containing the **ingredients and recipe** to make a **meal from a different destination each month**

Company	Innovation
FRICHTI	Frichti delivers **meals prepared** by chefs in its own kitchens, using **seasonal** ingredients, to customers' homes
Avec Plaisir	Platform where consumers can find **places to eat allergen-free meals**, for people with food intolerances, diabetes, or a vegan diet
GOODMIX Manger & bouger plus sain	Platform for **personalised health plans**: users can determine their health profile and evaluate their food habits and the platform then **suggests suitable recipes**
Ma Yummy box	MaYummyBox is a **baking box** for **children** aged 4-12. It includes dry ingredients, baking accessories and recipes to learn how to bake
hoplabon	Consumers **choose a recipe** on the application and specify a number of portions (the quantity of ingredients is calculated automatically). This is then delivered to their home, where **they can cook the meal** using explanations from the application. Seasonal ingredients are used

Home-made · Personalisation · Saving on time · Positive externalities

Industry players are adapting their communications to restore consumer trust by being more transparent with consumers

Examples of innovation

Company	Innovation
Labels – République Française, Liberté - Égalité - Fraternité, Conseil économique social et environnemental	In 2018, the French Economic, Social and Environmental Council voted in favour of creating a new official sign of the quality and origin of food products with a new organic, local farming and traceability label
Labels – NUTRI-SCORE A B C D E	In the 2016 French Health Act, the French government recommended introducing information on the nutritional value of food products. 73 food manufacturers and distributors have already committed to displaying the Nutri-Score logo on their products
Packaging – day by day, Mon épicerie en vrac	Day by Day is a network of greengrocers selling products loose, so that consumers can buy just the quantity they need, with an environmentally friendly approach (no packaging)
Communication – Nestlé	Launched in 2017, the "C'est moi qui fabrique" (make it myself) initiative aims to introduce consumers to the commitments made by the Nestlé group and its brands. Nestlé has opened up five factories for consumers to visit and take part in production alongside employees

Company	Innovation
Labels – Ferme France	Created in 2017, the purpose of the Ferme France association, founded by historical agri-food players, is to set up a labelling system assessing products' societal characteristics based on five themes: traceability, health and nutrition, animal well-being, the environment and fair pay
CSR approach, Labels – C'est qui le patron?!	The brand aims to protect pay for producers and develop products with specifications requested by consumers
Packaging – JusteBio, le bio pour tous	Un Air d'ici offers a range of self-service "Juste bio" (simply organic) products by providing equipment, bags and loose products for supermarket chains
CSR approach – e-rse.net, un nouveau regard sur les entreprises	On e-RSE's online CSR index, companies share their CSR approaches in a conversational format within communities. e-RSE supports companies in their corporate and CSR communications, from strategy to image management

CSR approach | Labels | Packaging | Communication

Product information innovations aimed at enhancing the clarity of the product offering so that customers can make an informed decision

Examples of innovation

Company	Innovation
Allergobox.com (Clarity)	Web portal where users with allergies and food intolerances can identify products and recipes that are compatible with their dietary restrictions
ania – Association Nationale des Industries Alimentaires (Information)	In its "1000 jours pour manger mieux" (eating better in 1000 days) manifesto published in May 2018, the French National Association of Agri-food Industries (ANIA) undertook to develop a digital platform bringing together available information about products for consumers, public authorities and professionals. The roadmap will be finalised on 31 October 2018
Open Food Facts – l'information alimentaire ouverte (Information)	Open Food Facts (a not-for-profit citizen project) is a database on food products that anybody can contribute to or consult
Scan up (Clarity, Sharing)	With this shopping list application, consumers scan product bar codes to see their Nutri-Score, allergens, additives, etc., as well as equivalent healthier products. The list generated can then be shared with family and friends

Company	Innovation
foodz (Sharing)	Digital word-of-mouth application to find trusted restaurants based on the opinions of friends, family or the community, rather than a generic online review
Yuka (Clarity)	Launched in 2017, the application Yuka can be used by consumers to scan products and analyse their impact on their health. In the blink of an eye, it automatically deciphers the labels to show consumers which products are healthy and which should be avoided. When consumers scan a product with a negative health impact, Yuka recommends an equivalent, better quality product. The application recently reached 4 million downloads
Kwalito (Clarity)	Kwalito helps consumers understand food product labels so they know exactly what they're eating and can find suitable products

Clarity   Information   Sharing

Appendix 3 The authors of this report

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