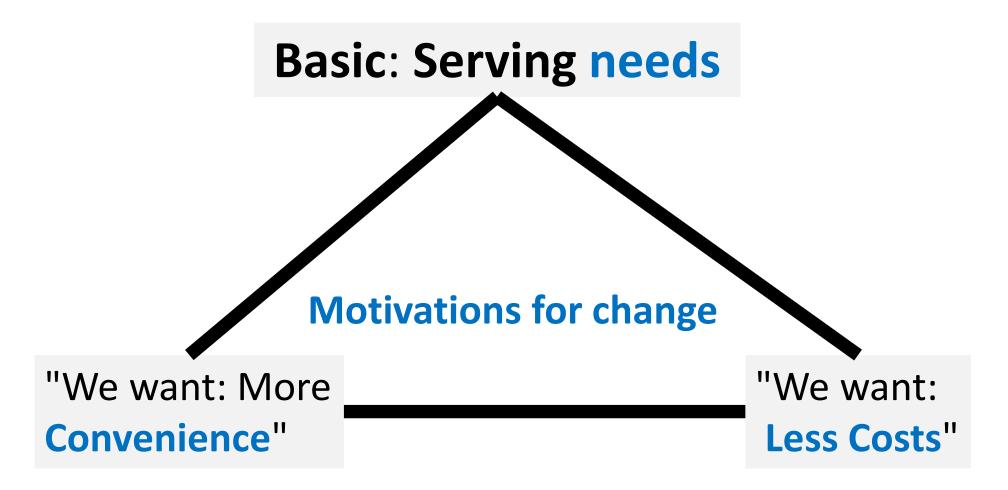
# Today's opportunities: Drivers for change meet Enablers for innovation

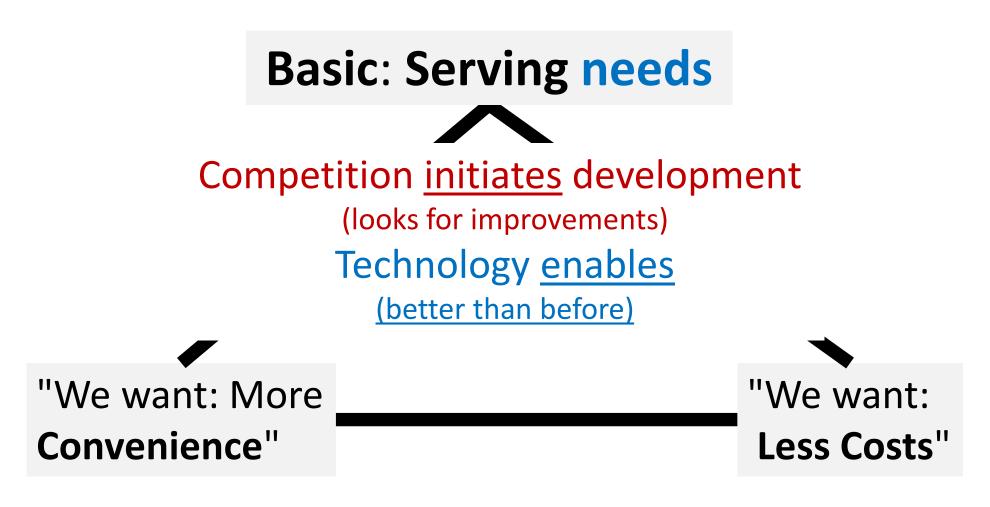
Prof. Dr. Gerhard Schiefer University of Bonn, Germany

#### Business/human drivers that "drive" development



# Society ←→Producers ←→ Consumers

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# Society ←→Producers ←→ Consumers

Technology solutions available for dramatic change in agri-food sector that **covers needs** of **society/producers/consumers** while providing **improvements in convenience and costs** for **all** 

> Precision agriculture (Society, producer, consumer)

- > Food Processing (Society, producer, consumer)
- > Product-Logistics (Society, producer, consumers)
- > Information-Logistics (Society, producer, consumers)
- > Sales organization (Society, producer, consumers)

#### Message:

#### To be done:

- 1. Pick up a solution of others
- 2. Copy a solution
- 3. Copy and adapt/improve a solution (convenience/costs)
- 4. Integrate available solutions (convenience/costs)
- → Less of relevance: Design new solutions

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Sources:

- Project developments (e.g. FI-PPP: several hundred):
   → trials with failures and successes
   2 Emerging start-up business solutions (real-time trials)
- 2. Emerging start-up business solutions (real-time trials)
- 3. Emerging **big business** solutions as models

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**Examples** ales organization (Society, producer, consumers)

> Linking farms with consumers: → Farming colors, OrganicNet, ...

> Transparency along chain: -> KAT, ...

> Monitoring along chain: -> Tenso, Babbler, ...

> Trading sustainability: -> book and claim, ...

> Sensor based purchase and payment: -> Billa retail, ...

> Online sales and home delivery: -> Ocado, Amazon, ...

> Sales and logistics organization: Sur+, Walmart, Loblaws, ...

> Virtual company: → Amazon, ...

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#### OrganicNet

Find organic, locally grown food Build real connections with your local farmers

#### **Consumers meet farmers:**

Product exchange Knowledge exchange



A social marketplace and knowledge sharing platform to connect organic food producers with consumers

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# KAT: Eggs are followed through from farm to fork (central database)

#### What is on the egg?

WHAT IS ON THE EGG

In 2000, the Association for Controlled Alternative Animal Husbandry created the first traceability system in the food industry, with the stamp on the egg. In 2004, the so-called egg code became the statutory labelling specification within the European Union. The first number in the stamp provides information on the rearing method of the hen, then comes the country of origin, and finally the number of the laying farm. Our database covers all eggs monitored through KAT from barn, free-range and organic production all over Europe. Alongside the name of the farmer, you can find up-to-date pictures of the laying farm. Further information on the KAT labelling system, KAT-controlled rearing methods and marketing at the weekly markets can be found on the following pages.

**KAT – THE ASSOCIATION** 



ALL ABOUT EGGS

CONTACT

Enter the stamp on your egg and find out its origin:

Form of Rearing Country Laying Farm SEND 0 - Organic Rearing DE (Germany)

**BECOMING A PARTICIPANT** 

NEWS

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#### **Quality monitoring: sensor in food container**



#### Storage and Transport

The wireless BST sensors are suitable for temperature monitoring of sensitive goods during storage and transport... »



+ Temperature monitoring along chain+ Microbacterial simulation

Collects temperature, but other information could be collected as well

# Logistics Sensors (containers)

Track and trace



Cost-effective sealing, temperature logging and track & tracing of cargo containers for shippers

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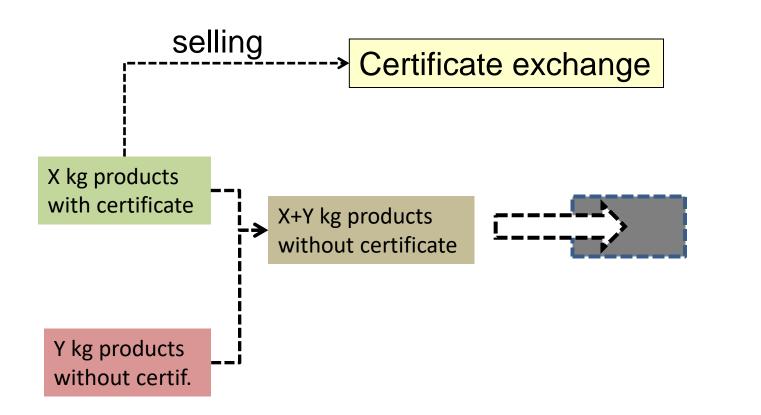
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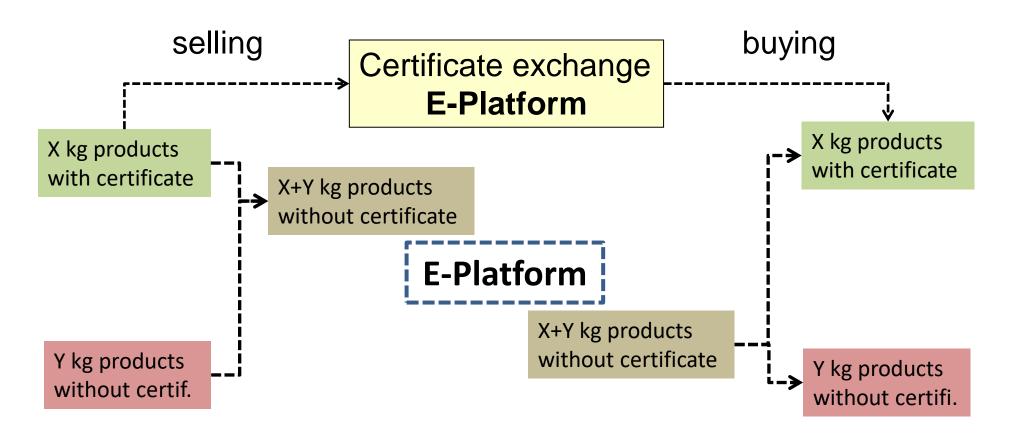
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# **Logistics: Book and Claim**



Producer - Processor - Wholesale - Retail

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Sensor-based payment (eliminating cashier) Walking through cashier space → convenient, lower costs

Automatic scan of products in carrier at cashier

Billa experience: "Elderly"



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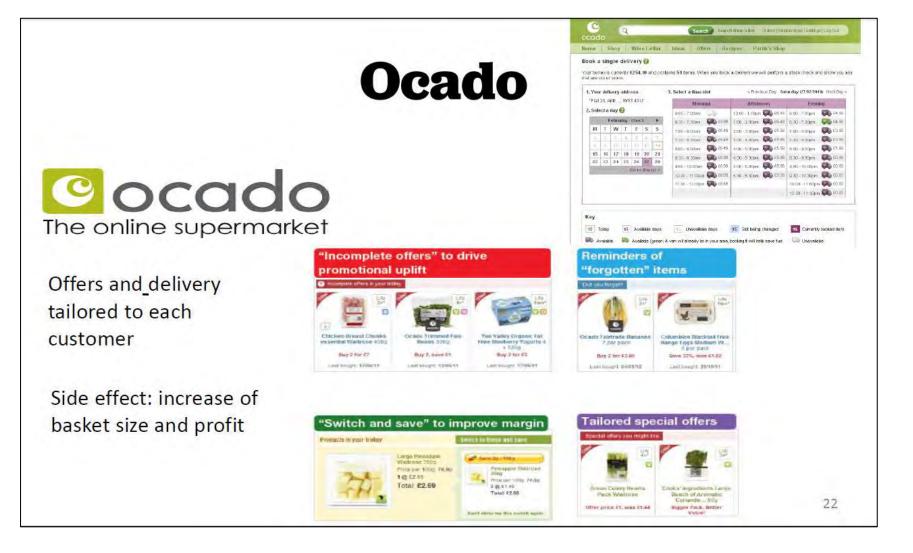
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Ocado is a British online supermarket. In contrast to its main competitors, the company **has no chain of stores** and does all home deliveries from its warehouses.

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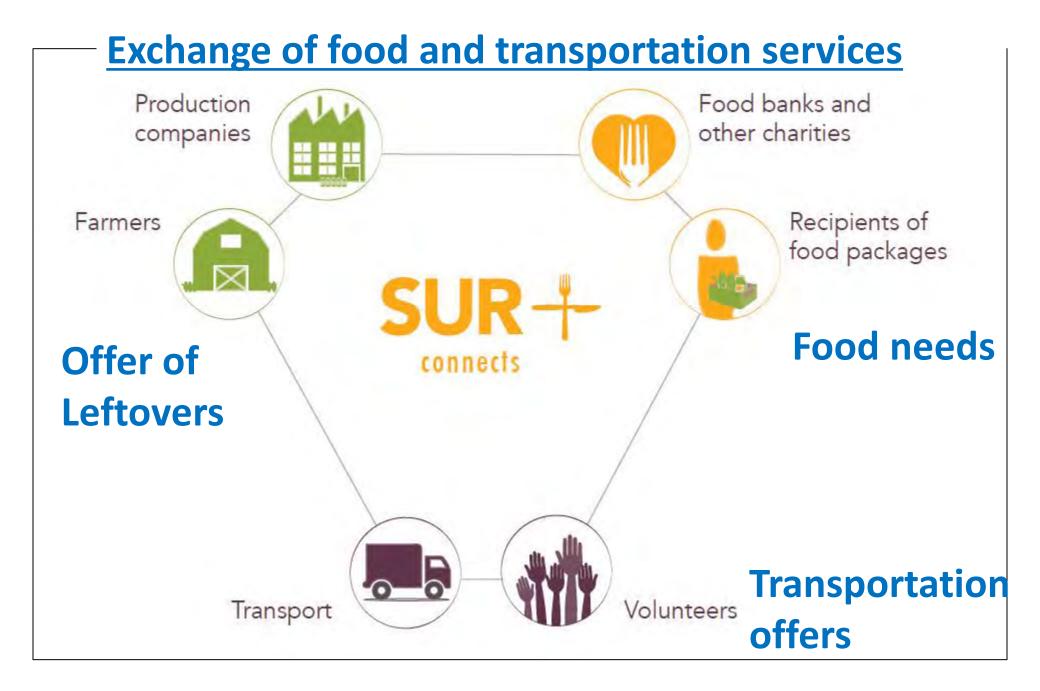
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#### **Grocery chain: Pick-up at established stations**

#### Walmart to Open 1,000th Online Grocery Pickup Location

Nachrichtenquelle: Business Wire (engl.) | 06.09.2017, 18:56 | 198 @ | 0 🗭 | 0 🥐

#### f 🗾 🚰 ⊀ 💼 🖻 🜌 🗅 🖨

Walmart is making grocery shopping across the country a lot easier. The company is opening its 1,000<sup>m</sup> Online Grocery Pickup location tomorrow. The free service, which was initially piloted in Denver in 2013, enables customers to order groceries online and pick them up at their local Walmart store without leaving their cars, and will open locations 995<sup>m</sup> through 1,000<sup>m</sup> in Seattle, Washington.

#### **Grocery chain: Pick-up at public stations**

# **Commuters can soon order** groceries online and pick them up at GO stations

Loblaws and Metrolinx are bringing shopping for groceries t starting this spring.



#### **Real Canadian Superstore**

Official logo after brand relaunch on September 21, 2017

Туре	Subsidiary
Industry	Supermarket retail
Founded	October 16, 1977; 40 years ago
Products	Bakery, beer (select locations), charcuterie, clothing, dairy, deli, frozen foods, gardening centre, gasoline (select locations), general grocery, general merchandise, liquor, meat & poultry, pharmacy, photolab, produce, seafood, snacks, wine
Parent	Loblaw Companies
Website	realcanadiansuperstore care

realcanadiansu

#### Start-up: Pick-up at private stations

<u>Total</u> <u>service</u>:

**Producer** service platform connected with Consumer platform connected with **Delivery** services



Buy food online directly from producers and get it delivered to a convenient location near by

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#### **Virtual company**



A temporary network of independent companies, linked by information technology, is known as a virtual corporation. This network helps companies share skills, costs and marketing, according to "Business Week."

#### Virtual company: Umbrella platform



#### **Amazon:** from online store to virtual company

**AmazonFresh** has rolled out its services gradually, targeting specific parts of various metropolitan areas and partnering with **local speciality stores** for delivery of local items.

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Message: Making aware of available "world of solutions"

#### → find, → evaluate, → adapt/improve, → use