COMGO FOOD™

How COMGO Food can re-shape food track and trace
Author: COMGO Team

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Summary

COMGO is the platform of the Common Good Ecosystem (CGE)™ where individuals and organizations of all sizes participate to achieve the common goal of improving the common good index of the world. Comgo provides the platform to create a trusted network powered by blockchain, stable common good economy model, stack of common good solutions and strong business partner network providing a number of benefits to individuals and organizations participating in the common good chain. The platform will host a stack of common good solutions from different sectors aimed to provide transparency, trust, accountability, provenance and auditability.

Comgo Food™ is the Comgo solution for the food sector. Tracking and tracing food is still a big challenge for the companies in the supply chain. Current tracking solutions and systems are complex, not homogenous, not transparent and have demonstrated slow and inefficient in times of crisis. Globalization and complexity of the supply chain have amplified the challenge.

More than ever, consumers demand greater transparency and safety. This is also an opportunity for agricultural producers, industry and retailers. In a very competitive market, agents of the value chain able to ensure quality, sustainability, "free-from" or any other differential attributes, will have a clear competitive advantage.

Comgo Food™ is the platform powered by blockchain that will allow farmers, industry and retailers to meet consumers expectations in a transparent and trustable way, opening up opportunities to a fairer and safer food market.

Purpose

The purpose of Comgo Food™ is to make any action or component of a food value chain visible in a reliable, unalterable and efficient way by providing the right tools and technologies.

The food market: tracing and tracking

Globalization has brought in unprecedented opportunities for the consumers and for the food industry. Global trade of food items is steadily growing, offering an enormous variety of products everywhere, at any time, from anywhere. Consequently, supply chains are becoming longer and more complex, with plenty of suppliers distributed across the world.

The particular characteristics of the agri-food supply chain make it substantially different from other supply chains:

- The primary production is geographically dispersed across very small units
- Still highly influenced by weather and soil conditions
- Products are more or less perishable
- There is still a relevant lack of differentiation, or it is difficult to differentiate
- The number of participants in the value chain is huge, and they are extremely heterogeneous, with a varied capacity to manage data

The regulatory authorities have historically attempted to safeguard food safety and avoid frauds. But traceability systems currently in place are complex, lack of transparency and have demonstrated slow and inefficient in times of crisis. With a globalized, distributed supply chain, the current institutional, centralized, not harmonized traceability systems seem to be insufficiently armed to fight permanent threat of fraud over food. Food borne illnesses and food fraud are part of everyday news.

The bovine spongiform encephalopathy ('mad cow disease') crisis marked a turning point in Europe. Regulation was reformed (year 2000) in Europe. More than 125 people died and millions cattle were slaughtered. Consumer's perception of food safety changed forever. It is not such a long time ago.

In May 2011, around 51 people died and more than 4,000 were sickened in 16 European countries due to an Escherichia Coli outbreak, initially blaming Spanish cucumbers. The World Health Organization estimated the total loss was $1.3 billion and emergency medical care cost another $236 million. The source was not confidently traced.

In 2011, the listeriosis outbreak from contaminated watermelons in USA resulted in 30 deaths. The subsequent FDA investigation could not reveal how the listeria bacteria first came to be in the plants. It appears that the farm had passed a food safety audit by an outside agent few days before the outbreak began.

From the point of view of business, the food market is traditionally defined as a mature one. But this is progressively changing driven by health, environmental and social conscience. It could do even better if consumers had the information they need. The new generation of food buyers knows very well what they want to eat, but there is a lack of trustable information frequently diluted in a brunch of mandatory data, claims, advertising and promises printed on a small label. Consumers get disoriented and trust is eroded by contradictory information.

Consumers demand safe food, which in turn justifies any effort and prioritization. When they purchase food, consumers are not solely buying nutrients. More and more, they are concerned about health, and know that the first step to health is food.

Food allergies and intolerances is another growing source of concern. The "free-from" products (GMO, gluten, sugar, fat, lactose…) are on the rise globally.

Consumers, in general, want to know where foodstuff comes from. Sometimes they also aim at supporting local farmers or rural communities, or contributing to improve the environment. When consumers pay an extra-euro for any food attribute, they want to be sure that such attribute is real (origin, ingredients, processing method…).

The agri-food supply chain should be circular. Reducing waste is becoming another major driver to change production and consumption patterns within the food supply chain.

There is a lot of vale there. Farmers and producers in general are willing to adopt new methods to ensure safety, healthiness, sustainability… But differentiation is difficult if the producers cannot communicate it effectively.

COMGO FOOD™ value proposition

Safe, healthy, sustainable, "free-from", local, zero-waste… are major trends shaping food markets. There is a lot of fragmented information generated during the food journey from the farm to the fork. How to bring together all this information in a systematic, transparent and trustable way?

Comgo Common Good Solutions aim to solve some of the key challenges listed below (*COMGO CGE White Paper*):

– lack of transparency in supply chain
– increased forgery and fraud
– increased cost of audit
– poor accountability
– increased inefficiencies due to lack of automation

Comgo provides the platform to create a trusted network powered by blockchain. How does it work?

Different actors in the supply change can define their own traceability resource unit (TRU), the smallest unit (a lot, a batch) that they are able to uniquely identify. Each one of these TRUs is an individual block (Comgo Food™ Block, CFB™).

The Comgo Food™ (CF) allows any actor to create a CFB™ that will be since then inalterable.

For example: a bottle of wine. This wine is produced with a minority grape variety: a local variety, in risk of extinction that the growers of a small rural area have recovered. In addition, they practice organic viticulture.

A winemaker in the region buys grapes from different producers. He makes the wine following the rules of organic production and does not use sulphites. He uses sustainably produced cork stoppers from another region.

The farmer, sending an SMS from his smart phone, can generate the CFB™ as small as his TRU. He can start from planting the strains, tracking the whole process (origin of the strains, date of planting, operations).

Any certification that is made throughout the process can be included in a CFB™. Just taking a picture with smart phone and sending it to the Comgo platform. For example, soil analysis that ensures that there are no contaminants for organic production.

The Internet of Things (IoT) allows to monitor the treatments or cropping activities. For example, a moisture sensor that the farmer uses to control irrigation can record the water applied to the vines (soil moisture is a determinant of the level of sugars in the grape and the quality of the wine). A drone could periodically take pictures of the state of evolution of the crop.

Farmers have a field notebook, sometimes mandatory, to record all the cropping activities (pruning, fertilization, pesticides). In many cases this exploitation notebook is on paper. Comgo Food™ enables a book based on CFB™, unalterable and always accessible.

Transparency and confidentiality of information can be balanced between the participants in the supply chain. The information contained in the CFB™ can be made visible or not to the different actors. For example, some details of grape production may be visible only to certain customers.

The winemaker can carry out individualized fermentation of those grapes from the best winemakers, and generate new CFB™, to sell those wines differently and at a higher price. The consumer could at any moment quickly access the unalterable information that was contained in each CFB™.

Meanwhile, the cork producer has marked with GPS position each one of its cork oaks and the Comgo platform generates a CFB™ by means of a SMS every time that the cork is extracted (for example, every 10 years). A picture of the operation could also be attached.

Similar operations can be carried out in relation to the packaging or to the destination of the waste. For example, if growers remove the scraps, they compost them and apply them back to the soil as an organic fertilizer. This way, the circular bio-based value chain becomes real and verifiable.
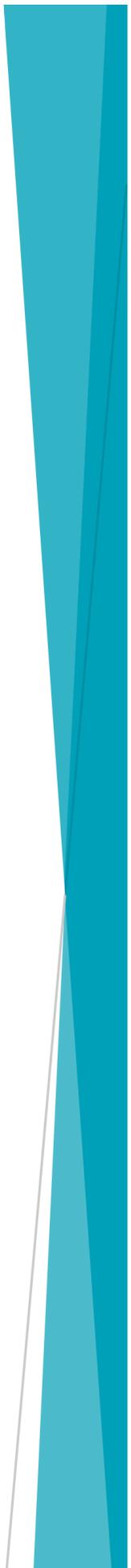
The consumer, at home or in a restaurant, can trace all available information through a QR code. Thus, while tasting the wine he can enjoy the complete experience of knowing from beginning to end all the history and work that dozens of people have done to put it on the table. If the experience is satisfying, he can pay tokens to directly extra-compensate producers. This is a very powerful way of directly market the product and get rewarded when the consumer has verified the full experience.

All this information is organised and accessible, with many applications:

- o It allows to search for products that meet a set of conditions.
- o Likewise, it allows the automated configuration of menus and diets in a safe way, especially for people with intolerances or allergies.
- o Different users could have different access to the information contained along the chain of CFB™. Such access would be granted based on their interests, type of license or profile. For example:
  - General information to general consumers, about origin, varieties, cropping procedures…
  - Regulatory authorities and inspectors of food traceability may wish to have access to the information that enables recalls. The transit from the current centralized system to the decentralized one would be natural because Comgo Food™ exceeds the legal standards of required information in different countries.
  - Certain premium customers could access exclusive information. To simplify the pricing and make it more direct responsive, 'Comgos' can serve as a means to compensate the extra-efforts made by producers to assure the special attributes of their products. With 'Comgos' the farmers could purchase inputs or machinery. The benefit of this extra-price goes directly to the producer and rural communities.
- o Smart contracts can provide access to confidential information that triggers a purchase process without disclosure of such information.

Conclusion

Trust in security, safety and quality is the engine of the agri-food sector. Comgo Food™ brings together consumers and producers of any size anywhere in the world. Comgo Food™ will make food trade safer and fairer.