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Mini Review

Developing BioScanner of the Future - BNDEP/BioNeta Data Exchange Protocol/, BNRFID/BioNeta Radio-Frequency Identification/and Achieving Open Standards Reflecting Best Solutions in Organic Farming

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Abstract

The main goal of developing a BioScanner of the Future - BNDEP/BioNeta data exchange protocol/and BNRFID/BioNeta radio-frequency identification/and achieving open standards reflecting the best solutions in organic farming is to investigate the opportunities, challenges, and prospects of applying Radio Frequency Identification (RFID) [1] technology to the food supply management context where food safety issue is highly valued. BioPass developed in the IoT philosophy and Industry 4.0, based on AI and ML, related to cloud and blockchain for traceability of raw materials, goods, operations in bio-agriculture and bio-based industries. This is a solution for achieving a circular economy and resource - efficient and sustainable food systems.

Keywords: *BioScanner; BNDEP/BioNeta Data; BNRFID/BioNeta*

BioScanner of the future

BioPass is a roadmap for developing and achieving open standards. We also focus on its economic value, the cost and the possibility of multiplication, according to the market mechanisms for the success of the product market in the next years based on IoT. BioPass prevent consumers of organic raw materials and products from completing their choice with an organic (bio) box of milk or eggs produced by an "organic scammer" [2]. With just one click away from a smart phone, in realtime, it will be able to make informed choices and make sure that all participants in the production chain are protected by an organic seal. BioPass can alert food suppliers and retailers about developing issues worldwide and help them introduce mitigation procedures before a crisis develops. Taking Walmart as an example, it took nearly a week to trace the origin of their mangoes [3]. In BioPass, through the blockchain, this time is cut to a no more 2 seconds. This will happen for the first time through developing the BNDEP/BioNeta data exchange protocol/, BNRFID/BioNeta radio- frequency identification/, and achieving open standards reflecting the best solutions in organic farming. BNDEP and BNRFID provide end to end authentication and encryption algorithms can be used to handle different levels of security as required, should manage Fault, Configuration, Accounting, Performance and Security (FCAPS) of their interconnected devices and account for each aspect, standards based on their layer of operation to: datalink layer, network routing standards, network encapsulation layer, session layer, and management standards, RFID. BNDEP and BNRFID are a unique identifier for physical objects or locations. BioNeta radio-frequency identification is used for items tagging on food product instead of barcode that currently widely used. The advantages of BNRFID tag compare than barcode and QR code make the system is more applicable to use in food traceability. The cost of BNRFID tags and readers is expected to go down.

Challenge and solution

What can consumers do to ensure that the certified organic products they buy meet existing organic standards? And how do we, as consumers, fight back against efforts to weaken those standards? Consumers want stronger, not weaker, organic standards. They have a

direct interest and the market shows that they need an informed choice and strong prevention of food fraud [4]. Bad actors harm consumers and legitimate organic producers and undermine confidence in organic printing.

BioPass is a disruptive innovation solution [5] with an ambition to protect consumers from "organic scammers." BioPass is based on tracking the processes and behaviors of processors of the bio-based industries to get to the ended organic product. Here we talk about all the operators who put their organic stamp on the chain and offer the end product for the consumer-bio-pharmacy and healthcare, organic food, especially the sensitive sector are the children's bio-foods, bio-textile, cosmetics, etc. We create a Road map for developing and achieving open standards reflecting the best solutions in the field of organic farming. Our solution is "clothed" with cloud technologies. In the BioPass, "things" talk. BioPass can help to minimize risk, speed time to market and encourage increased experimentation to enterprises. The standard provides production rules encoded on operations and the ability to generate real-time information to be transformed through the use of technological cards, IoT technology and Smart technology solutions for production and marketing and management of the agricultural business. Our road map will allow real-time monitoring and forecasting of the expected yields and flood-resistant crops. BioPass combining new technologies in genomics and ICT (AI, IoT) provides a solution to how to achieve soil, water, land, healthy plants and live stock.

BioPass generates interest and that contains bio-based industry insights. This has proven our participation in Boston in 2017 at the Bio-IT World Conference and Expo, organizer Cambridge Healthtech Institute. where we are awarded for BioPass [6,7] in the IoT category, and in 2018 two big companies, Phizer and The Jackson Laboratory for Genomic Medicine were awarded the same category [8]. The Bio-IT World Community is increasingly open, and the partnerships and projects are shown here demonstrate our dedication to collaborative excellence. For us this debut at a global forum and the nomination we received for BioPass and cooperation we have built there shown that our decision has a future and a demand. Hoping that we show not only to raise the critical role of information technology in modern biomedical research, but we have also highlighted the role of IoT platforms and strategies that can be widespread in bio-based industries to improve the quality, pace and scope of digitalization of the bio-industries. The BNRFID and BNDEP protocol is set up it represents an efficient tool for sharing information. Moreover, its real value is represented by the shortened time needed to intervene in the case of a food safety incident to recall an entire stock from the market and individuate the real problem origin. Nevertheless, such systems can reduce transaction and displacement costs. BioPass is an economic and technological solution because writing codes is an achievable task; it is important for the model to be mature and ready for programming through new technologies such as clouds, blockchain, AI. The BNDEP and BNRFID are the tools and key to recognizing the innovation that we can quickly deliver through technology-friendly IT tools in the industry, overtaking even powerful developers such as CRAFT and others. Developing a BioScanner of the future - BNDEP, BNRFID and achieving open standards reflecting the best solutions in organic farming. Precision farming is a challenge as European economies and in the world. This is a revolutionary way to manage crops and livestock on farms for sustainable food supply within the environmental, economic and social boundaries. Economic efficiency in organic farming is achieved with proven tools for managing processes using IoT (The Internet of Things) technology and Smart technologies in agriculture management and control. Technological cards are a reliable tool for obtaining better results in the implementation of agro-technical activities in their correct keeping and reporting. They are a proven scientific and practical method of technology and IT products. Based on the technological tool- Technological cards are agricultural control method, created by Harvard University - USA, in 1998, it was realized investment project for the creation of new vineyards Winery Svishtov - terrain Gorchivka and terrain Sovata [9] together with MITSUI and CO., Tokyo, Japan - broker on the project. This technological product then was upgraded and complemented by us and was successfully applied.

The responses to our survey show that of the Industry sectors, only several are in no doubt about the need to be involved (Food chain, Bio-Based Industry, and Pharmacy and Healthcare).This is being driven by the advent of smart metering, enabling real-time access to consumption data, to be presented to consumers. By presenting this information to consumers it is believed that they will change their consumption, reducing the need for investment in new infrastructure. The contribution this type of technology could have to the success,

time and cost will surely give competitive advantage within this industry. Uptake of Big Data and Analytics continues to grow It is no surprise that 88% of our Pharmacy respondents are showing maturity in their big data and analytics. The value of the Internet of Things is recognized. IoT is moving from far-fetched sci-fi to reality in 2017, as more and more companies take a serious look at how they can capitalize on the technology. The way is Technology adoption-adoption levels of current and emerging technologies across industry sectors.

Conclusion

Technology: BNDEP and BNRFID are a unique identifier for physical objects or locations. BioNeta radio-frequency identification is used for items tagging on food product instead of barcode that currently widely used the advantages of BNRFI tag compare than barcode make the system is more applicable to use in food traceability. The BNDEP and BNRFID, a unique number similar to the Global Trade Item Number (GTIN) on GS1 barcodes, is the key that contains information to identify specific items in the supply chain. However, unlike GTIN, which can distinguish a can of soup from a box of chocolate chip biscuits, BNDEP and BNRFID can identify a specific can of soup or box of biscuits by its unique ID number. An infinite amount of dynamic data can be associated with the BNDEP and BNRFID and made available by providing access to databases where supplementary information is stored. The BNDEP and BNRFI are encoded in the microchip of Radio Frequency Identification (RFID) tags. When unique BNDEP and BNRFID are encoded onto individual RFID tags, radio waves can be used to capture the unique IDs at extremely high rates and at distances well in excess of 10 meters, without line-of-sight contact. These characteristics of RFID can be leveraged to boost supply chain visibility and increase inventory accuracy. BioPass have multiple representations, including binary forms suitable for use on RFID tags, and text forms suitable for data sharing among enterprise information systems. There are a series of advantages in using RFID in relation to the more traditional barcode one since an increased automatism in tagging and reading will allow users to: (a) reduce stock and the sales personnel costs (e.g. reduced labor cost of products identification); (b) increment efficiency in stock turnover; and finally, (c) reduced larceny occurrence. Benefits of BNDEP and BNRFID: 1. Facilitates interoperability, scalability, vendor independence and lower deployment costs of RFID implementations; 2. Provides real-time visibility of stocks in transit and in warehouses/distribution centers. 3. Enables counterfeit detection across product categories. 4.Enables real-time stock taking in retail stores.

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