

Blocks for Bees: Solving Bee Business Problems with Blockchain Technology

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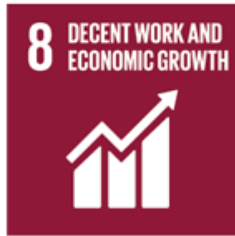


Team Leader **Introductions**

- Brandy Hadley, Ph.D.
 - Finance and Economic Development
 - Area Director for Economic Outreach
- Ed Hassler, Ph.D, Associate Director
 - Center for Analytics Research and Education
 - Extensive I.T. Industry Experience
 - Information Systems and Data Science
- Joseph Cazier, Ph.D and CAP, Director
 - Center for Analytics Research and Education
 - Chief Analytics Officer for HiveTracks
 - Agroecology, Bio-Tech and Data Science
- James Wilkes, Ph.D
 - Professor of Computer Science
 - CEO and Founder of HiveTracks
 - Sideliner beekeeper in Blue Ridge Mountains of NC



U.N. Sustainable Development Goals





Theory of Innovation



There are three types of Innovation

- **Product Innovation** - Improves an existing product
- **Process Innovation** - Improves the process of making a product (lower cost, faster, fewer materials etc)
- **Business Model Innovation** - Creates new industries by having new models for business

The greatest economic growth stems from improving and creating **new industries and economic opportunities** (**Business Model Innovation**)



New and Improved **Industries**



Blockchain Technology has very high potential to create new **Business Model Innovation** due to the following possible features.

- **Integrity:** confirms that your data is unchangeable from what it was as of the time it was recorded
- **Anonymity:** preserve privacy while sharing helpful data
- **Analytics:** large volume of valid data allows for prime analytics

This presentation focuses on the value from **data integrity**





How it Provides **Data Integrity**



- **Hashing** - Each “block” of data is created using one-way hashing algorithms and cryptography
- **Sequential Addition** - Blocks are then added to the chain in sequential order
- **Preceding Block Data Integrations** - Creation of each block relies on data of preceding blocks
- **Open Access** - Stored on an open ledger which enables all parties to view and verify the integrity of the “chain” in real-time





Blockchain Enabled Technologies



- **Honey Traceability and Adulteration** - Can prove real, pure honey with blockchain integrity by having **verifiable** honey certifications
 - Price Premiums for proven “real” honey
 - Includes variatels, locals and organic honey
- **Smart Contracting** - Move from patronage to efficient market for open pollination services
 - Create new markets by making exchange and payment binding and automatic
- **Industry Insurance**
 - With provable management and best practices, data can reduce risk for insurance markets as an expanding industry
 - Allow for business continuity





Next Steps



- **Adoption** - Adoption of Current Open Software Systems to lay groundwork for a platform to build upon
- **BeeXML** - Standardized extendable data to begin to build the infrastructure to make this possible
- **Partnerships** - Working with groups like the U.N. FAO IZSLT & Apimondia to test and develop these ideas



Food and Agriculture
Organization of the
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HiveTracks
KNOW YOUR BEES



Thank you!

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