Automated Platforms Workshop

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Agenda

● Discuss Deliverable Timelines
● Define Scope
● Discuss Elements
● Discuss Project Management Plan Revisions
Deliverables

❑ Initial Data Dictionaries of Market and Logistics Data Streams .................. (6 months)
❑ Initial Platform for Market and Logistics Data ..................................... (12-16 months)
❑ Open Access Agronomic-Potential Module ........................................... (12 months)
❑ Open Access Planting and Planning Module ......................................... (12-16 months)
❑ Initial Market Intelligence and Analytics Module .................................... (18 months)
❑ Beta Prototype of Supply Side Platform ................................................. (24 months)
❑ Initial Market Negotiation Platform ...................................................... (24-26 months)
❑ Prototype of Integrated Platform ......................................................... (24-32 months)
Platform Scope

Supply Information
Other data
Market/price Information
Tracking Sensors
Climate
Social Networks
SC status
SC and Infrastructure Information
Agronomic Information
Local Conditions and risk profile

Raw Data gathering
Data refinement, standardization and storage
Analytics Module
Central Decision Platform

Estimates
Trends
Alerts

Targeted basket of products

Spin off of Virtual Enterprises around specific products

Supply Logistics agent designation
Demand Logistics agent designation
Investing Opportunity Assignment
Monitoring agent

Investment needed and Profit Assessment
Initial Crop, planning timing and investment allocation
Elements

- Data Collection, Processing and Visualization
- Assessment of Opportunities
- Formation of Virtual Enterprises
- Matching Investors with Right Opportunities
- Transparency
- Traceability
Automated Data Monitoring and Retrieval

Additional Data Sources?

- Google Analytics API
- USDA API
- News/Events

- Tracking Sensors
- Currency Exchanges
- Transportation Prices

- NOAA API (Historical)
- Climate Forecasting
- Input prices

Market \( \lambda / t \)

Logistics \( \alpha / t \)

Production \( \beta / t \)

Data Ingestion/Standardization

Data Lake
Automated Processing and Analytics

Data Lake

Querying

Processing

Enablement

Analytics Module

Other useful insights?

Market
- Market Price Trend/Forecasting
- NLP-based Sentiment Analysis
- Market Demand Estimations
- Quality/Waste Monitoring
- Rate Trends (e.g. transportation)
- Agent Profiler (e.g. logistic availability)
- Weather Pattern Trends
- Input cost trends (e.g. labor, water)
- Crop Profiler (e.g. agronomic reqs.)

Logistics

Production

ASU Arizona State University
Opportunity Construction and Assessment

SC Design Constructor

- Planting/Harvesting Schedules
- Logistics/Transportation Routing
- Market Selection
- Agent Identification
- Service Level/Product Requirements
- Investment Requirements
- Profitability Estimation
- Minimum Negotiation Requirements
- Risk Assessment

Modeling and Analytics

Framework

Agents

Profitability/Risk

Business + Legal

Vet Business Opportunities

8
Matching Investors with Vetted Opportunities

Vetted Business Options

Virtual Bidding Platform Block

Option 1
- Framework
- Agents
- Profitability

Option 2
- Framework
- Agents
- Profitability

Option N
- Framework
- Agents
- Profitability

Bull Pen

Things to Consider?
Automated Data Processing Services

Data Transformation and Analytics

Dynamic Opportunity Exploration and Discovery

Virtual Enterprise Constructor

Cloud Intelligence Platform

Virtually-Enabled, Enterprise Formation

E2E Enterprises
- Long-term planning
- Larger Investment Requirements
- Long-term partnerships

Seasonal Partnerships
- Seasonal opportunities
- Mid-level investments
- Seasonal partnerships

Transactional
- Arbitrage opportunities
- Low cost
- Minimal partnership requirements

Arizona State University
… With Transparency in Mind

PLANTING/REAPING SCHEDULES
LOGISTICS/TRANSPORTATION ROUTING
MARKET SELECTION
...

AGENT IDENTIFICATION
SERVICE LEVEL/PRODUCT REQUIREMENTS
INVESTMENT REQUIREMENTS
...

PROFITABILITY ESTIMATION
MINIMUM NEGOTIATION REQUIREMENTS
RISK ASSESSMENT
...

☐ TRANSPARENCY
✔ Requirements
✔ Levels

☐ CONTRACT
✔ Enablement mechanisms
✔ Hands-off vs. “Fairness”
Thank you.
Research presented partially sponsored by:
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