How Many Information Systems A Pig Hoggery Needs to Have (and How to Make Them Useful)?

WANG Zhong (Burley)

the Guangdong Guangken Animal Husbandry Engineering Research Institute

(GKAH-ERI)

Who are we?

- **the production of food and important agro-products for the nation**
- **food supply and market stability for large cities**
- **territory security and sustainable ecosystems**

MOA-CSF
Ministry of Agriculture - China State Farm

GFG
Guangdong Farm Group

1st industry
- rubber, sugar, sisal, tea, fruit
- milk, aquaculture
- animal husbandry (GKAH)

2nd industry
- rubber products, food production, medicines
- agro-machinery, civil stuff

3rd industry
- travel & hotels, real estate
- housing & logistics
- im & export, TAXI business

- 0.26 million hectares farming areas in easter and western wing of Guangdong
- > 3 million hogs produced yr.
- self owned forage factory, hoggeries, hog sales company and retails, slaughter house, and food processing companies

GKAH-ERI
Engineering Research Institute
- Founded in August 2016
- GKAH 100% invested and owned
- technology R&D and transfer for ecological and intelligent cultivation, data-driven simulation and application, capacity building, etc.

Who we are?

- 1 nucleus farm, 4 multiplier farm
- 1 feed manufactory
- 30+ hoggeries (10K~20K hogs/per/yr)
  - 300+ (1K~3K hogs/per/yr)
- 400+ retail shops
- 1 reginal slaughter house (5K hogs/day)
- 1 meat processing and logistic unit

Growing potential

- Private, small sized pig farms will ceased in China --> scaled size companies (with contract farmers-->staff)

- environmental polices constrict new farm development

- The largest state-owned pig cultivation company
  - 3 million. pigs .yr is not a large number, but is something
  - 10% contribution to the total pork supply in Guandong province, mainly Perl River Delta cities and HK SAR

- A huge land space for waste utilization:
  - 0.26 million hectares farming areas in easter and western wing of Guangdong
  - rubber, sisal, sugarcane

Hoggery does not standalone data is everywhere

- **Genetics:** breeding performance --> imported sperm, local breeding
- **Nutrition：** feed profiles, raw material --> newborn, piglets, farrowing/weaned sow, herd boars, all stages for fatten hogs
- **Cultivation:** everything before sold -->manual feeding, immunization, death processing, cleaning, delivery, health record
- **Machinery:** facilities, housing, welfare --> automated feeding, living conditions, behaviour monitoring
- **Capacity building:** technical and management training for staff --> courseware, knowledge base, online know-how
- **Marketing and selling:** proper price --> regional price log (including feed material)
- **Quality feedbacks:** future business and public duty --> classifications, health inspection in slaughtering process, comments from client and consumers
- **Environmental issues:** sustainability, public duty --> health status of air, soil, water, plant
- **Animal welfare:** health issues, public duty --> are they well treated?

Similar things in another universe

Role changed

- days in university
  - lack of data to evaluate the LOD techniques

- days in enterprise

Information system we (are going to) have

- NFI: Not Fully Implemented

- **Supply-chain covered ERP system** (phase I: covered all hoggeries)
  - feed productions and transportation
  - hoggery daily cultivation --> intake, death process, feed consumption
  - vouchers processing: shipping, selling, materials mgt

- **Specific systems**
  - breeding management (NFI: vendors alters from A to B to A)
  - food traceability (NFI: hoggery to slaughter house)
  - local market price log and early warning (NFI: price data collected)
  - environmental monitoring (NFI + zombie)
  - capacity building system (NFI: on paper)
  - video monitoring system (NFI + frequent fixing)
  - staff performance evaluation (Excel quarterly)

Burley...

- well, I have
  - weekly, monthly reports
  - queries on database
  - metrics to see the difference from competitors
- but I'm still hungry... even new systems deployed in future
- there are INLTELLIGENT this and SMART that, CLOUDY this and BIG that, tell me how to make good use of these DATA?

It's not just data, Stupid!

- GREAT! You had it completely nailed!
- Dynamic data provides the profile of the health status of the hoggery
  - dash board
  - chart
  - statistics
- LINK-->insights -->solutions for improvement

So what's problem?

- Silos: poorly linked
- Opaque:

  <--> genetic supplier

  <--> feed supplier

  <--> consumers

  <-->contract farmers
- fearness: uncertainty

Not so bad: other facts

- level 0 in FAIR principle --> FAR within enterprise
- level 0 in LOD 5 star criteria --> ~2.5 within enterprise
- data ownership:
  - Enterprise
  - Contract farmer (at least shared)
  - external partners (share model required)
- sustainability and security:
  - bundled with the KPI

Where is the value? --> Trust comes first!

- within the enterprise: we don't know
- outside the enterprise: partner trust, public trust
  - food safety
  - environmental friendness
  - animal welfare
  - contract farmer benefit
- ...business grow

TODO

- data governance model
- triplize them first
- inner open --> half publicly open

Thanks!

burley.wang@gdgkxm.com
+86 13924268908