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

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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

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

MOA-CSF
Ministry of Agriculture - China State Farm

GFG
Guangdong Farm Group

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.

• 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
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 constict 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 stand alone
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 INTELLIGENT 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:
  \[\text{<--> genetic supplier}\]
  \[\text{<--> feed supplier}\]
  \[\text{<--> consumers}\]
  \[\text{<--> contract farmers}\]
• fearlessness: 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 friendliness
  - animal welfare
  - contract farmer benefit
- ...business grow
TODO

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

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