Innovation in Reinsurance

Data Management in Reinsurance as a cornerstone of IoT in Risk Management

Warsaw, 13th June 2017

Many new technologies are evolving, offering new options for customer interaction

Customers / Partners

Core systems

IoT/Big Data analytics
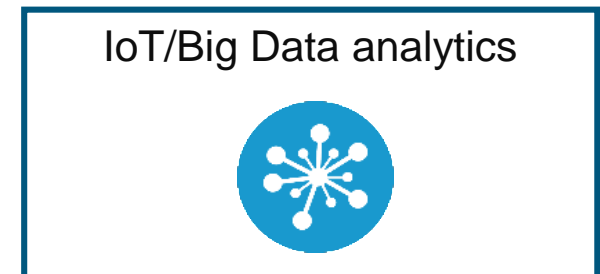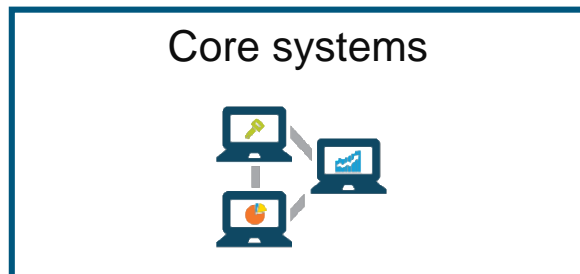
Requirements for new digital solutions are challgenging legacy systems and new technologies must offer new options for systems infrastructure

Technologies open the door to new ways of assessing and managing communication, risks and claims

Enrico Lerza
Director of Reinsurance consulting

- More than **30 years** of experience in insurance and reinsurance

- Successfully conducted several **reinsurance optimization projects** for insurance groups **since 1998**

- Wrote **reinsurance policies** for the boards of several insurance companies

- Involved in **Merger**, **Acquisition** and **Setup** of Insurance companies

- Designed several **Non-Life insurance products**

- Currently focused on promoting a system for the **automatic** accounting and reporting **management of reinsurance**

Marcin Grabowski
Executive Manager

- Over **10 years of Insurance IT** Consulting and Delivery experience

- Executing **transformations and core systems implementations**

- Implementing **Sales applications for Agents, Brokers**

- Implementing **Direct Sales & Service platforms**

- Nowadays focused on **InsurTech solutions** around IoT and Machine Learning

- **Core Reinsurance Management**

- Future of Risk Management

Reinsurance

- Reinsurance. Core Business or Strategic?
- Solvency II & Margin
- Volatility Measured Against Risk
- Forecasting Results
- Loading insurance premiums
- Fast Close
- Managing Internal/External relationships

A structured process with many interactions:

- Internal systems and/or applications

- Internal teams and/or departments

- External business partners
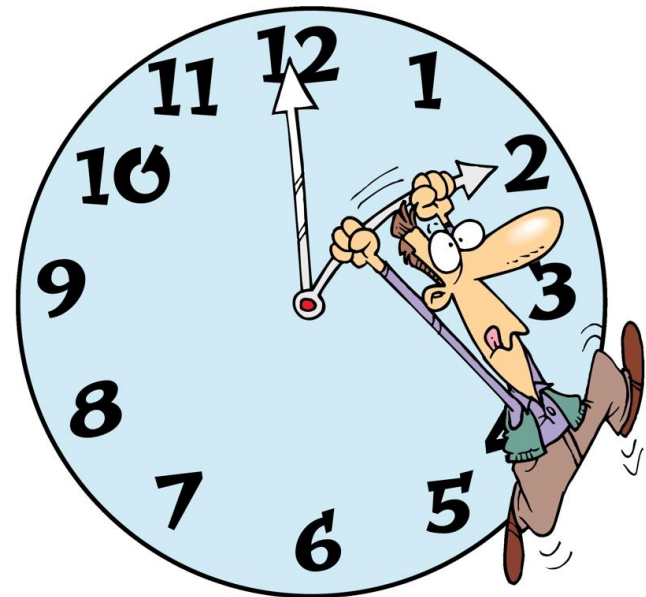
- Audit and Quality

Problems – DATA QUALITY

- Record Entry and Quality.

- Multiple sources and repositories

- Locating Data from multiple/duplicate repositories.
- Complex, time consuming reinsurance
- Actuaries. Time spent wisely?
- Audit, checks and balances
- Inevitable Delays

Problems – COSTS

- Leakage Costs equate to 2%-4% [(premiums + expenses + recoveries)]*
  This can equate to thousands or millions Euros/year
- Example. Italian companies in 2014, accounted for 7,252 Million Euros in cash flow**
- Staffing levels
- Expensive IT involvement
- Training and knowledge transfer
- Indirect Costs….IT/People/Software

Sources: * Celent 2004; ** ANIA

Problems – OTHER

- Compliance Complexity. Local (Polish), International [EIOPA] regulations
- Fast Close
- Detailed reporting
- Reinsurance credits checks
- Manual Intervention in statistics
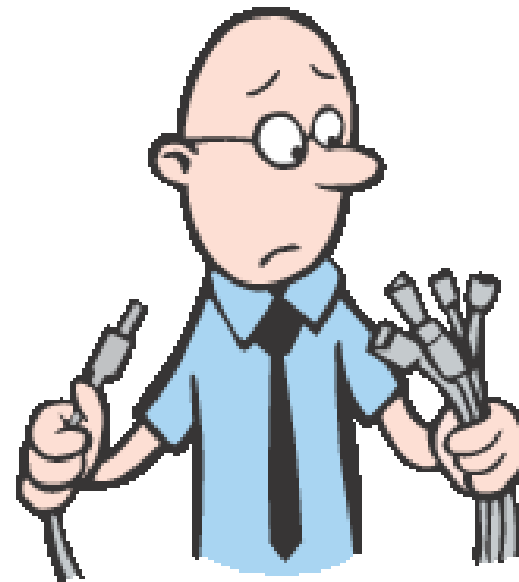
What experts say

"The cost of not having a reinsurance system can negatively impact company results. Without a system, some insurers have discovered that, at best, they could not provide accurate snapshots and projections to senior management, investors, and rating agencies"
(Source. 2016 - Luis Chipana, analyst in Celent's Insurance practice)

"At worst insurers have tens or hundreds of millions of dollars of unrecoverable reinsurance recoverables, or are out of compliance with applicable laws and regulations"
(Source, 2016 - Donald Light, Director in Celent's NA Property & Casualty Insurance practice)

- **CASE A.** Company calculated possible loss of **EUR 1M** in year-in-course recoveries
- **CASE B.** Loss of **EUR 200,000** on ceding Written and not Earned Premiums
- **CASE C.** Claim ran in excess of agreed threshold costs **EUR 300,000**
- **CASE D.** Incorrectly attributed claims over 10 years resulted in **EUR 10M,** unrecoverable
- **CASE E.** Insurer was **SHUT DOWN** by regulator due to insufficient capitalization. Due to poorly applied and used software solution

Move from a Manual to an Automated solution!
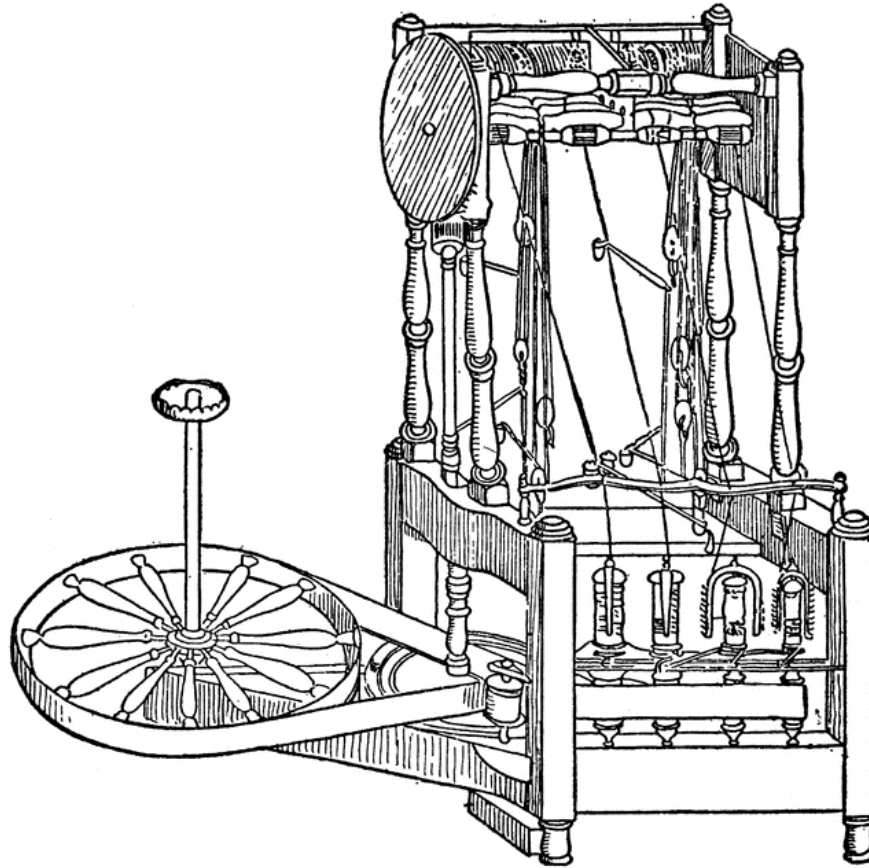
1. In house Development

2. Purchasing a module of the insurance policy management system
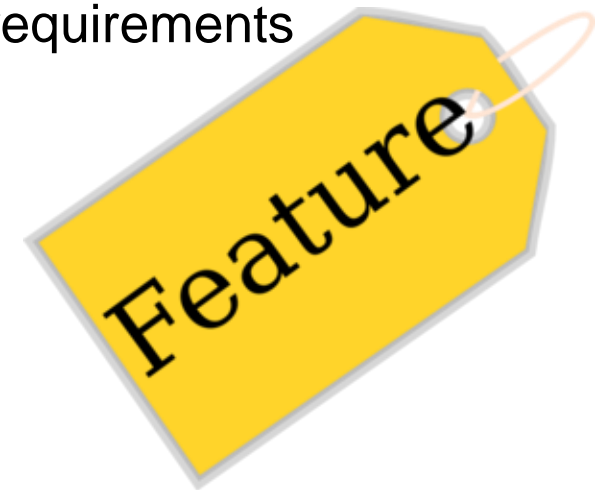
3. Purchasing specific industry solution

How to select the right vendor?

- Expertise and Track Record of deployment
- Industry skills with real reinsurance background
- System architects and analysts who know the system extremely well
- Purpose built solution for outward/inward reinsurance
- Referenceable, real customers
- A solution which is easy to administer and use
- On going support

What features are essential?

- Accurate management of outward reinsurance (including retrocession)
- Auto-feed of data
- Management of all types of traditional reinsurance contracts and formats
- Guarantee activity in case of mergers
- Management of run-off business and inward reinsurance
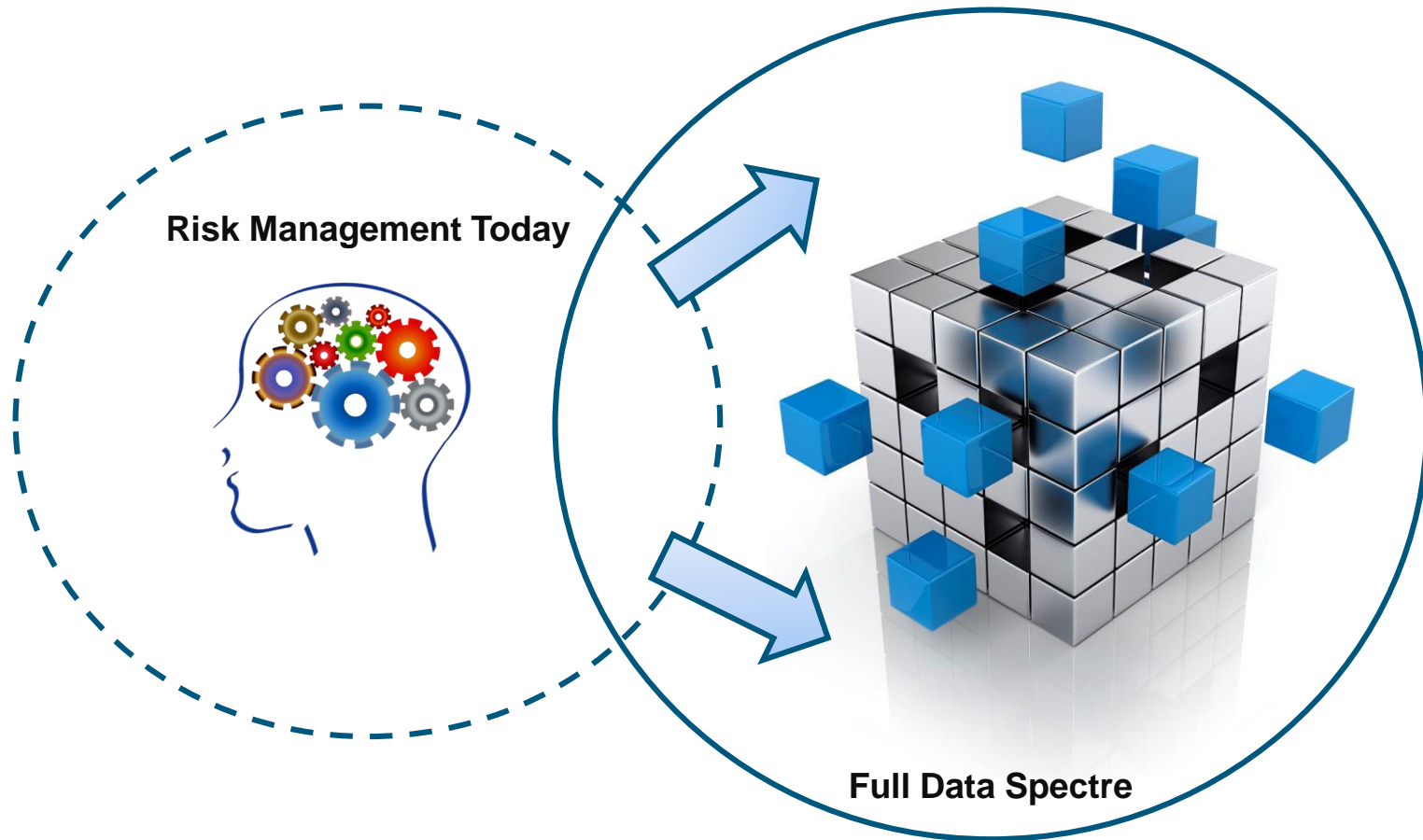- Flexible; key to your specific reinsurance requirements

- Reliable Data = Accurate Automation

- Accurate Automation = Compliance and Cost Control

- Business efficiency = Shareholder delight

- Reinsurane Management

- **Future of Risk Management**

Risk management in the data-based industry

Risk Management Today

Full Data Spectre

Current risk models are based upon deep industry expertise of people and only a limited part of data available nowadays. With the help of modern technologies a higher spectre can be aquired and digested in order to refine and boost their accuracy.

Cross-industry data gathering

Relevant data is the corner stone of decision making.
Technological ubiquity helps in gathering various information in multiple industries

Data connected with public and private transport aids solving traffic congestion, helps insurers to tailor better products and provides insights for manufacturers within the vehicle design process

Usage of sensors and tracking solutions within factories helps streamline manufacturing lines, supports quality control and infrastructure optimization, safety

Agricultural data allows to boost crop yield, optimize equipment usage and bolster the decision making process.
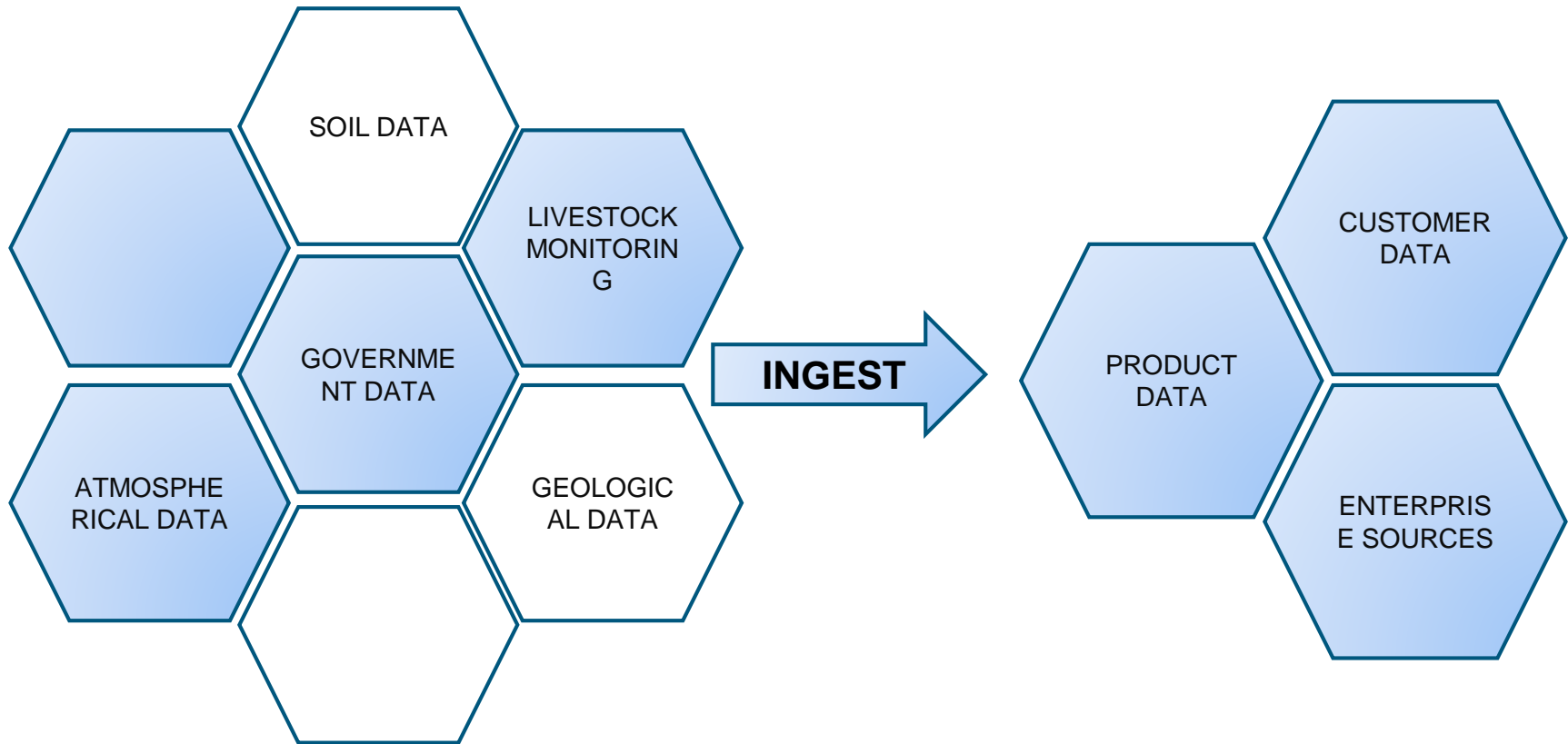
Smart Farming

DATA CLOUD

FARM MANAGEMENT AUTOMATION
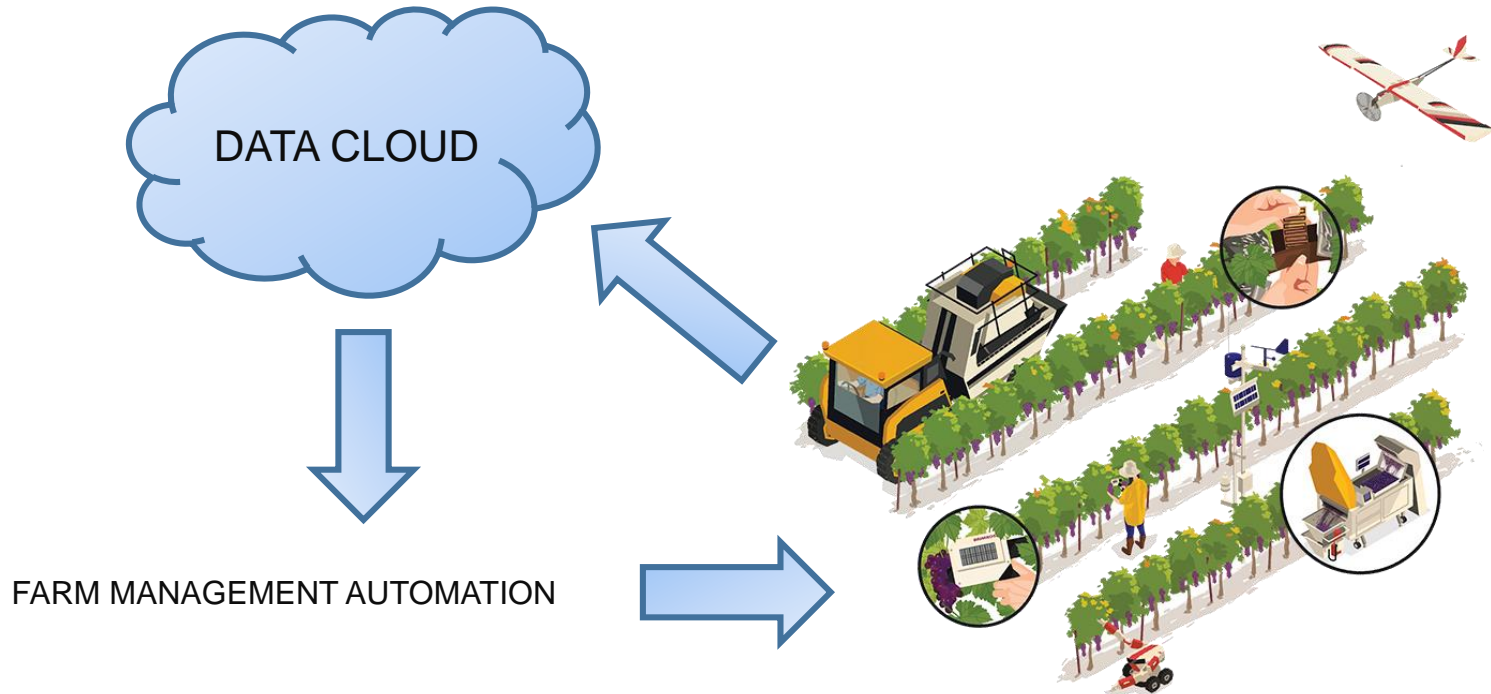
Smart farming elevates cultivation into the future, by helping optimize all agricultural activities with the use of modern technology. Starting from the ground up with **sensors for soil, crop, livestock and atmosphere** the data can be used to **optimize equipment usage, fertilizer distribution and crop structure**.

It enables the farmer to make **better decisions** in order to achieve **higher quality yield** with **savings in watering or other materials usage**.

Extended risk management data

SOIL DATA

LIVESTOCK MONITORING

GOVERNMENT DATA

ATMOSPHERICAL DATA

GEOLOGICAL DATA

INGEST

CUSTOMER DATA

PRODUCT DATA

ENTERPRISE SOURCES

Risk Management and Machine Learning

Data gathered from external sources is is being ingested and fed into the Data Lake. This initially clasified data, together with other sources of data managed by insurance company can be used by dedicated Machine Learning Engine.

Machine Learning Engine is the **heart of the data management architecture** being an intelligent solution generating in **automated or semi-automated way new risk models** that are:
- Leveraging on widers scope of data
- Predictive due to AI-algorithms
- Self-adjusting to the complex industry ecosystem changes

Cloud Applications

External Data / APIs

Machine Learning

Data Lake

SFA, CRM

LoB
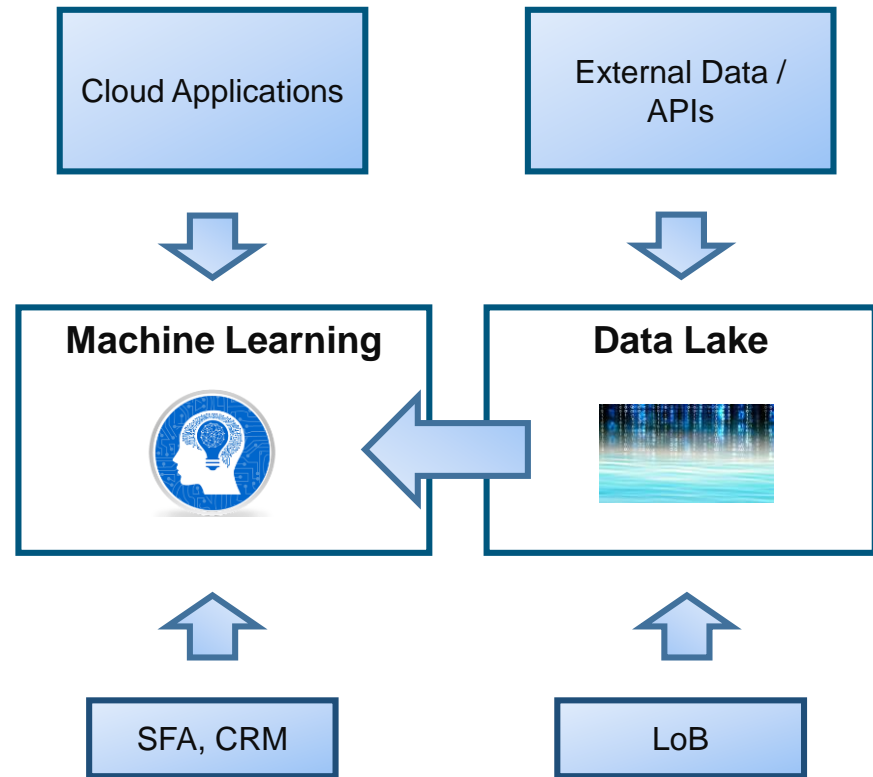
Smart Farming concept challenges

FARM SIZE
Solution beneficial only for large area agriculture? What about small, highly specialized and already technologically dense farms – breweries, wineyards?

DATA OWNERSHIP
Is it beneficial to keep the data ownership strictly separated between companies/farms? Or due to complex statistical analysis a broader, more diverse data pool will benefit all of the involved?

HARDWARE DISTRIBUTION AND MAINTENANCE
Who should distribute and maintain the hardware used for such a large scale solution? Can the hardware be subsidized and lent to the end-user in order to ease the entry cost and help with boosting the reinsurance process?

Sample Implementation process overview

Phase 1: Foundation
Initial phase of the integration – implementation of the data lake, APIs, initial data feed from external sources (farm data)

Phase 2: Enrichment
Previously implemented data lake is enriched with internal data – line of business application data and customer data.

Phase 3: Accuracy Boost
Data accuracy is further boosted by additional algorithms and external decision engines.
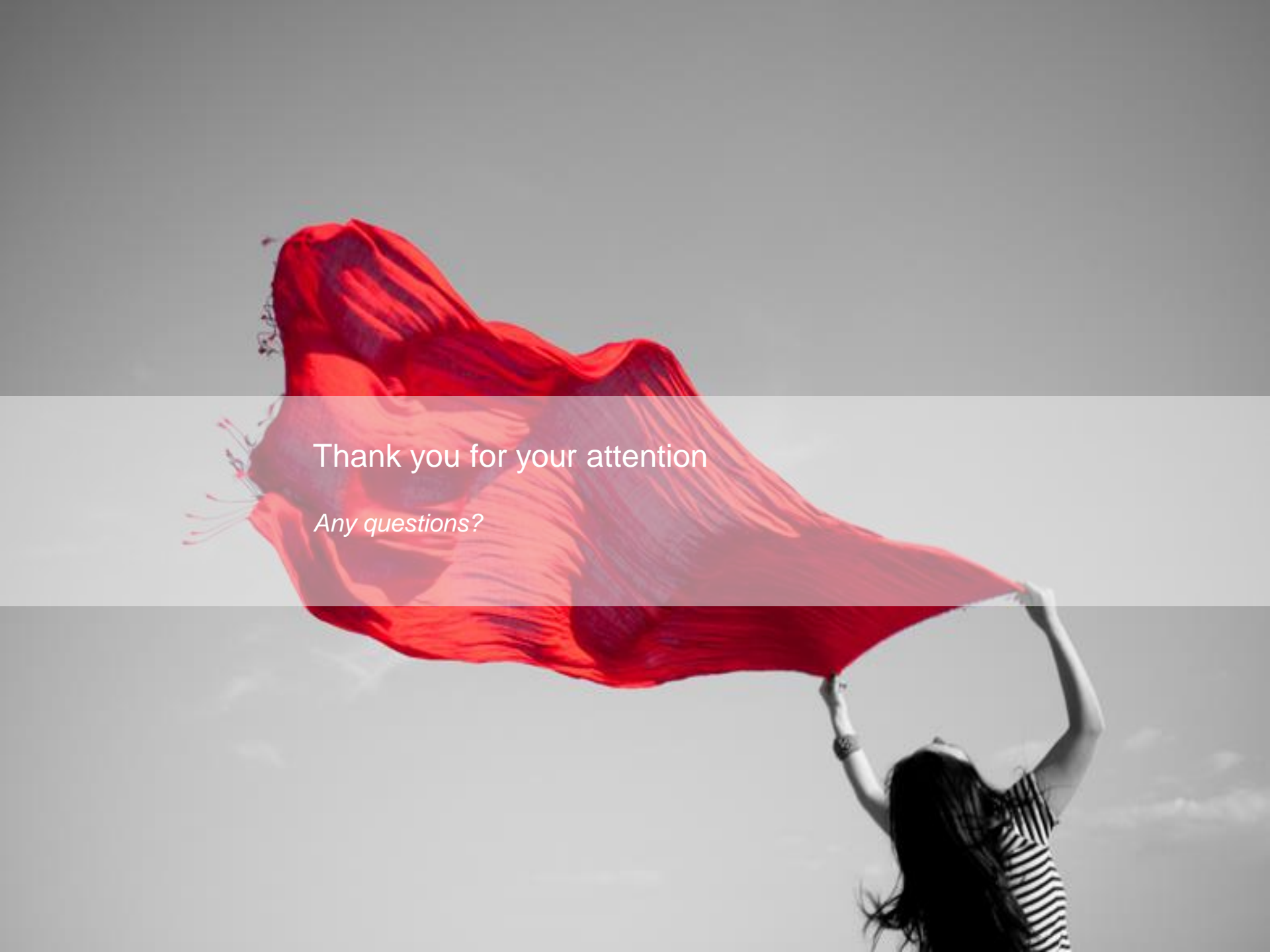
Phase 4: Further integration
Addition and integration with a myriad of solutions in order to boost analytics and provide an omni-channel approach.

Cloud Applications

External Data / APIs

4

1

Machine Learning

Data Lake

3

4

2

SFA, CRM

LoB
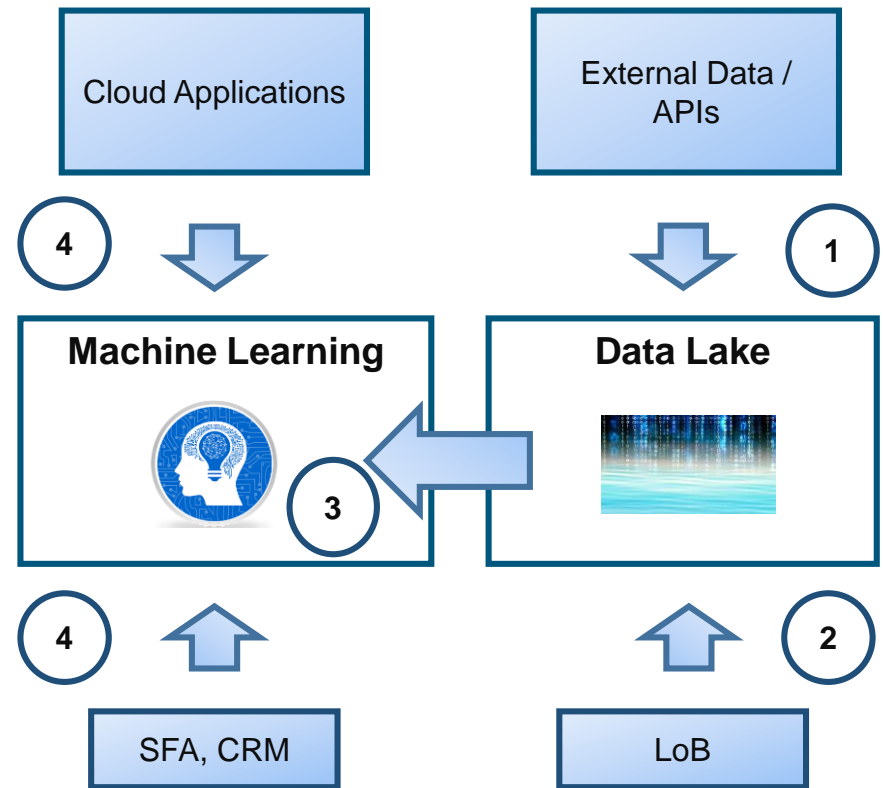
Conclusions

- High Spectre of Data = More accurate statistic models

- Risk Management Automation = Time efficiency in decisions making

- Cross-industry approach = High social value for multiple LOBs

Thank you for your attention

Any questions?