

# The importance of dairy data quality for dairy Advisors

## First Dairy Care Conference

Copenhagen, 23.08.2014

DVM Fernando Mazeris

General Manager DDW



# Dairy Data Ware House (DDW)

## Who are we?

- Spin off from Uniform Agri, a Dutch herd management software company
- DDW is now a stand alone and independent company of the DeLaval Group.
- DDW offers global data management services for the dairy industry.



# Our Mission

Providing access to high quality dairy data

*We live Dairy Data quality. High quality dairy data means for us unmatched *level of reliability and richness of the dairy data set.**

# Our Vision

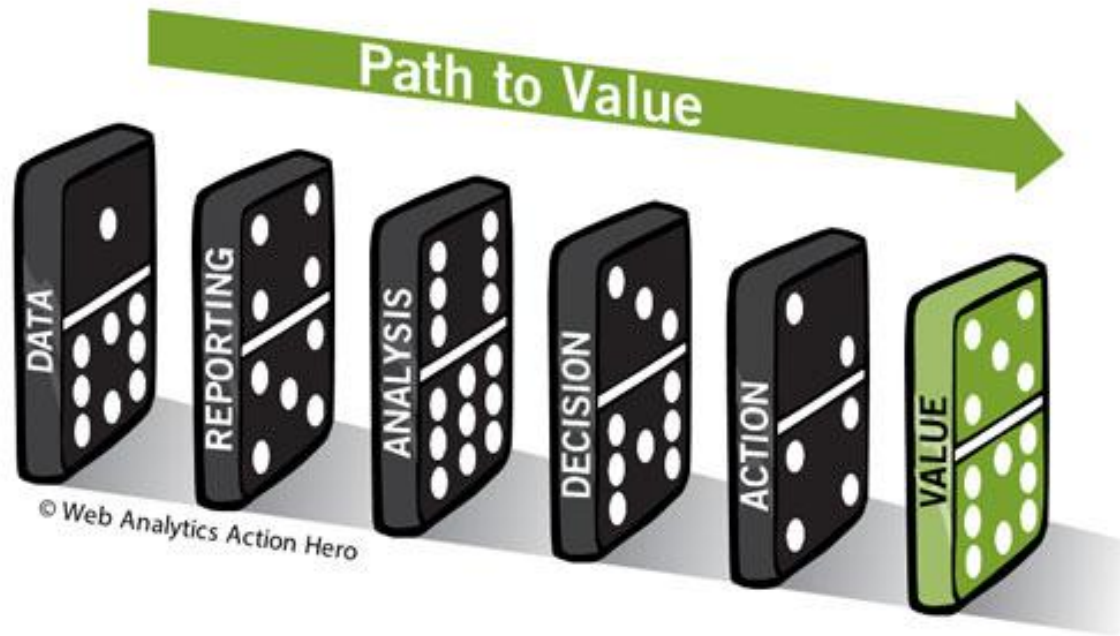
Enable the dairy industry to unleash the power of BIG dairy data

*We believe Dairy Data becomes most valuable, if a broad range of continuously updated and different data sources is combined and enriched with big data driven algorithms.*

*We are passionate about the potential of BIG Dairy Data to transform modern dairy farming.*

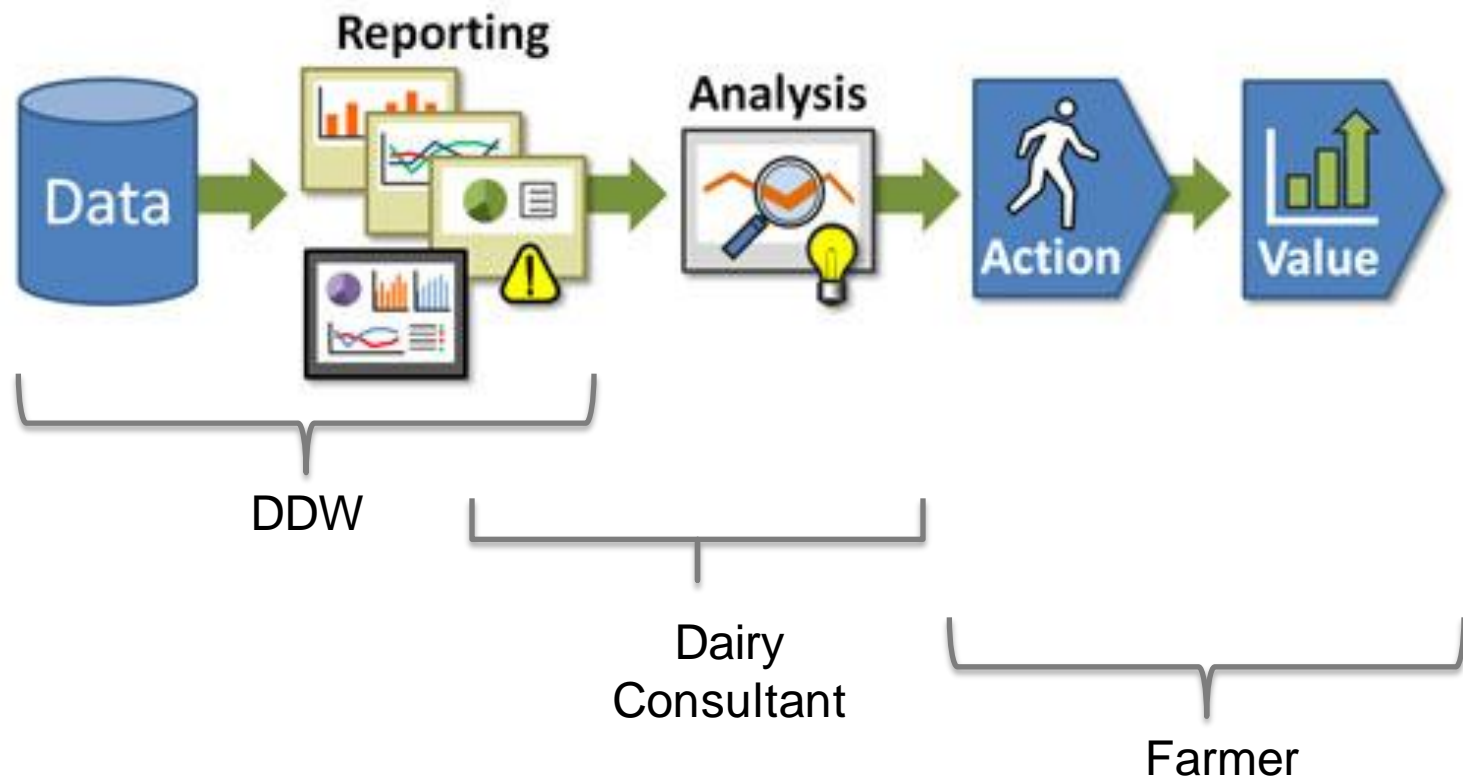


It all starts with having the  
**right data that is complete and accurate**



If one domino is missing no value is created.

# DDW delivers data, reports and analytical tools for Dairy Farm Consultants and the Dairy Industry



# When it comes to Dairy Data, dairy farm consultants have 3 pain points

## 1. Dairy Data Quality



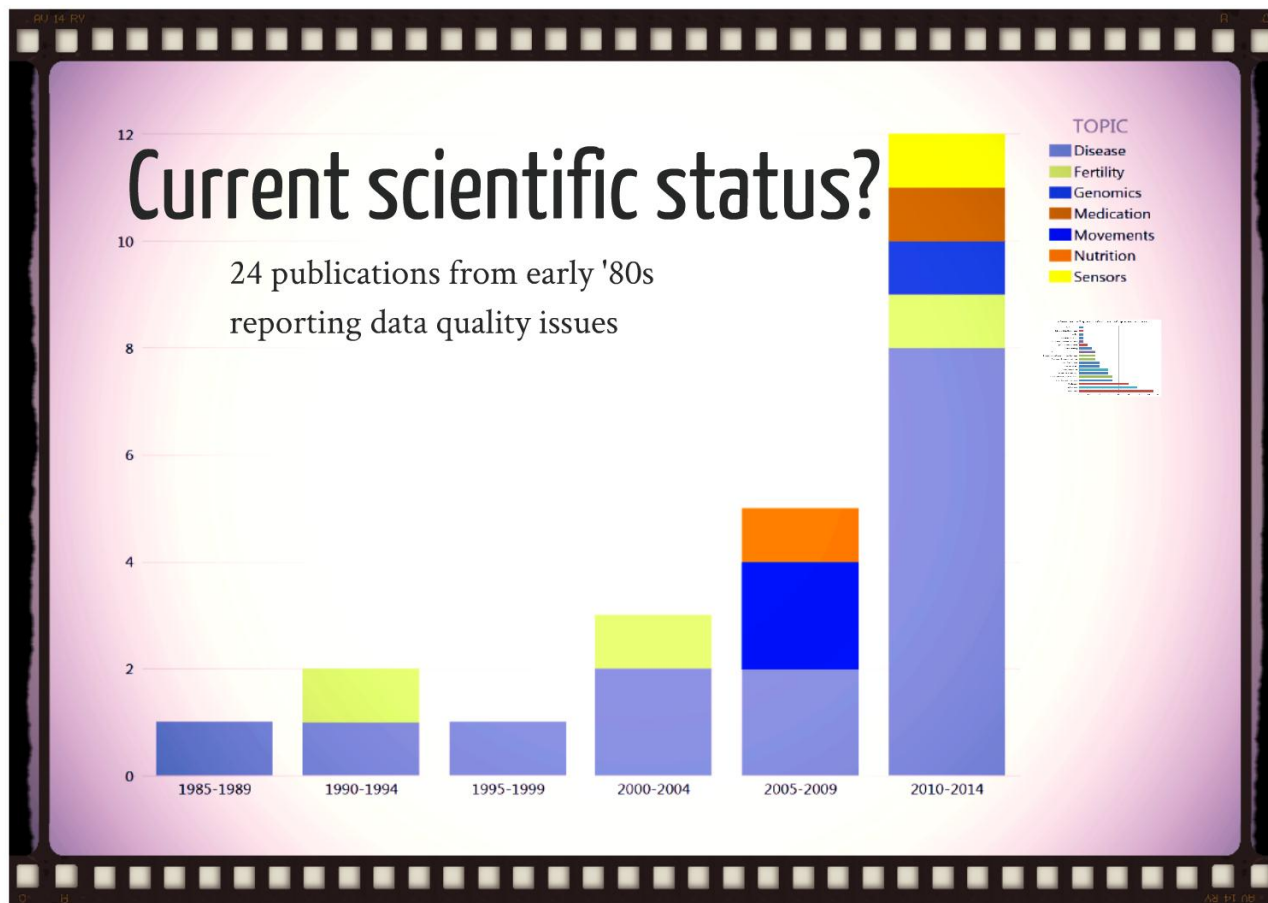
## 2. Dairy Data Access



## 3. Dairy Data Comparability



# Dairy Data Quality



Source: Dirty Data , Dr Miel Hostens, Ghent, Regional NMC 2014



# Dairy Data Quality

## Examples

Up to 25% of sire misidentification

Banos et al., 2001

Between 25 and 55% of data submitted by US producers is eliminated for genetic evaluation because of data errors

Bertrand and Wiggans

Source: Dirty Data , Dr Miel Hostens, Ghent, Regional NMC 2014

# Are health records “Good” in the US? It depends on who you ask...\*

John Wenz , DVM , MS Field Disease Investigation unit, Washington State University

## Farmer

- Cow-level management
- ~84% are Satisfied



## Veterinarian

- Herd-level management
- ~15% are Satisfied



\*Survey of WA and ID farm personnel and veterinarians

# When it comes to Dairy Data, dairy farm consultants have 3 pain points

## 1. Dairy Data Quality



## 2. Dairy Data Access

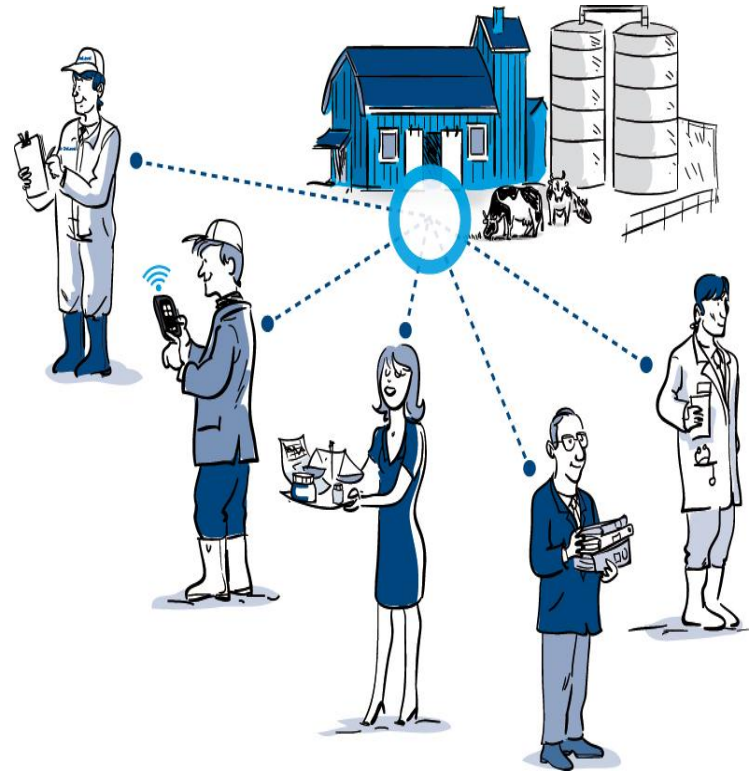


## 3. Dairy Data Comparability



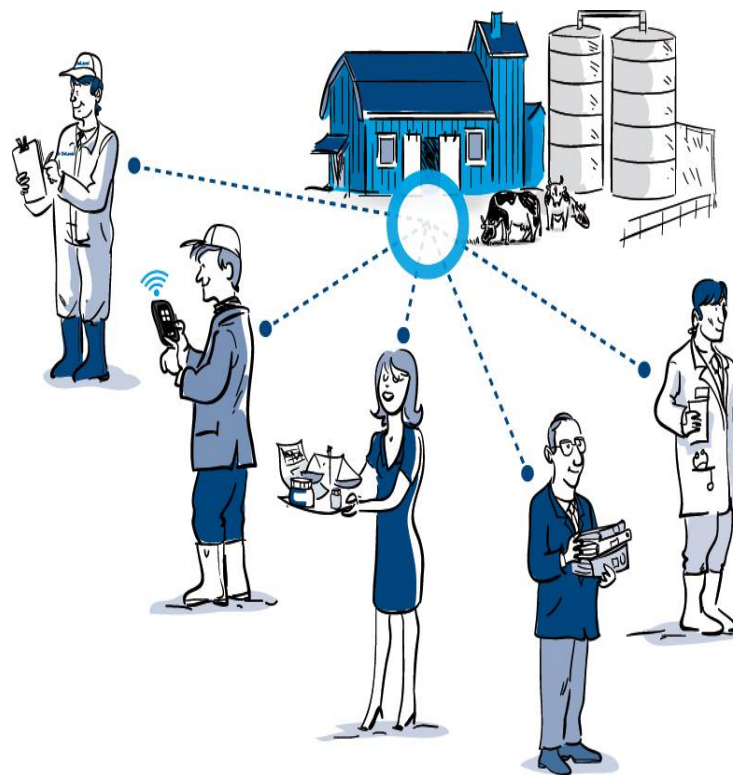
# Dairy Data Access – Farm Consultancy Advisor

- Information flow to consultant
  - Printouts at farm
  - E mailing database
  - E mailing reports
  - Remote PC access
- Information navigation and interpretation
- Information storage



# Dairy Data Access – Farm Consultancy Advisor

- Work with updated data
- Work with a known and the same user interface
- Knowing where the data is
- Knowing what the data means
- Access it from online from different places

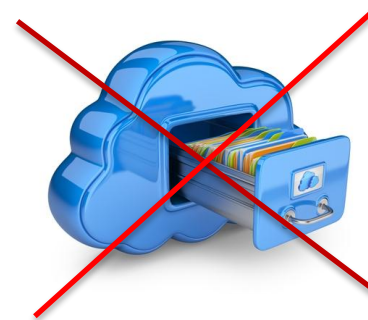


# When it comes to Dairy Data, dairy farm consultants have 3 pain points

## 1. Dairy Data Quality



## 2. Dairy Data Access



## 3. Dairy Data Comparability



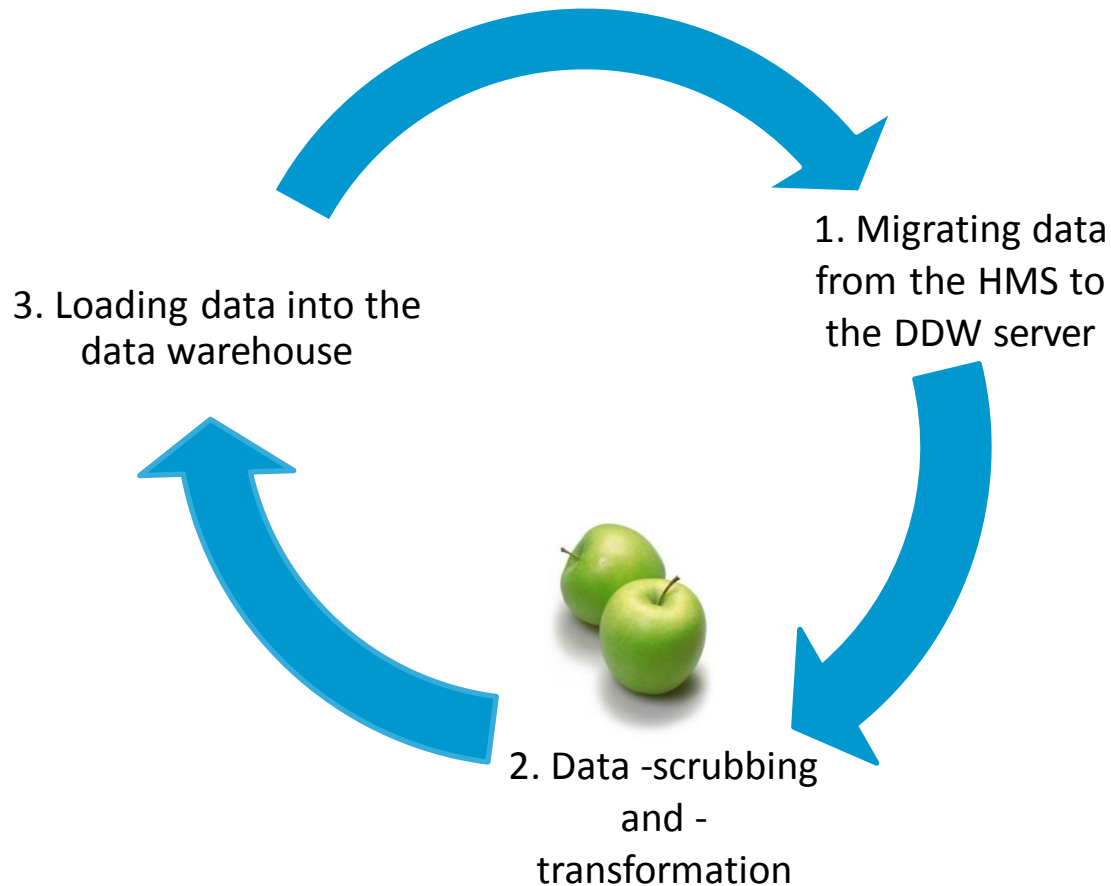
# Dairy Data Comparability

- Same Key Performance Indicators (KPIs) but
  - Is the same formula?
  - Which are the inclusion and exclusion rules?
  - What is the time perspective?



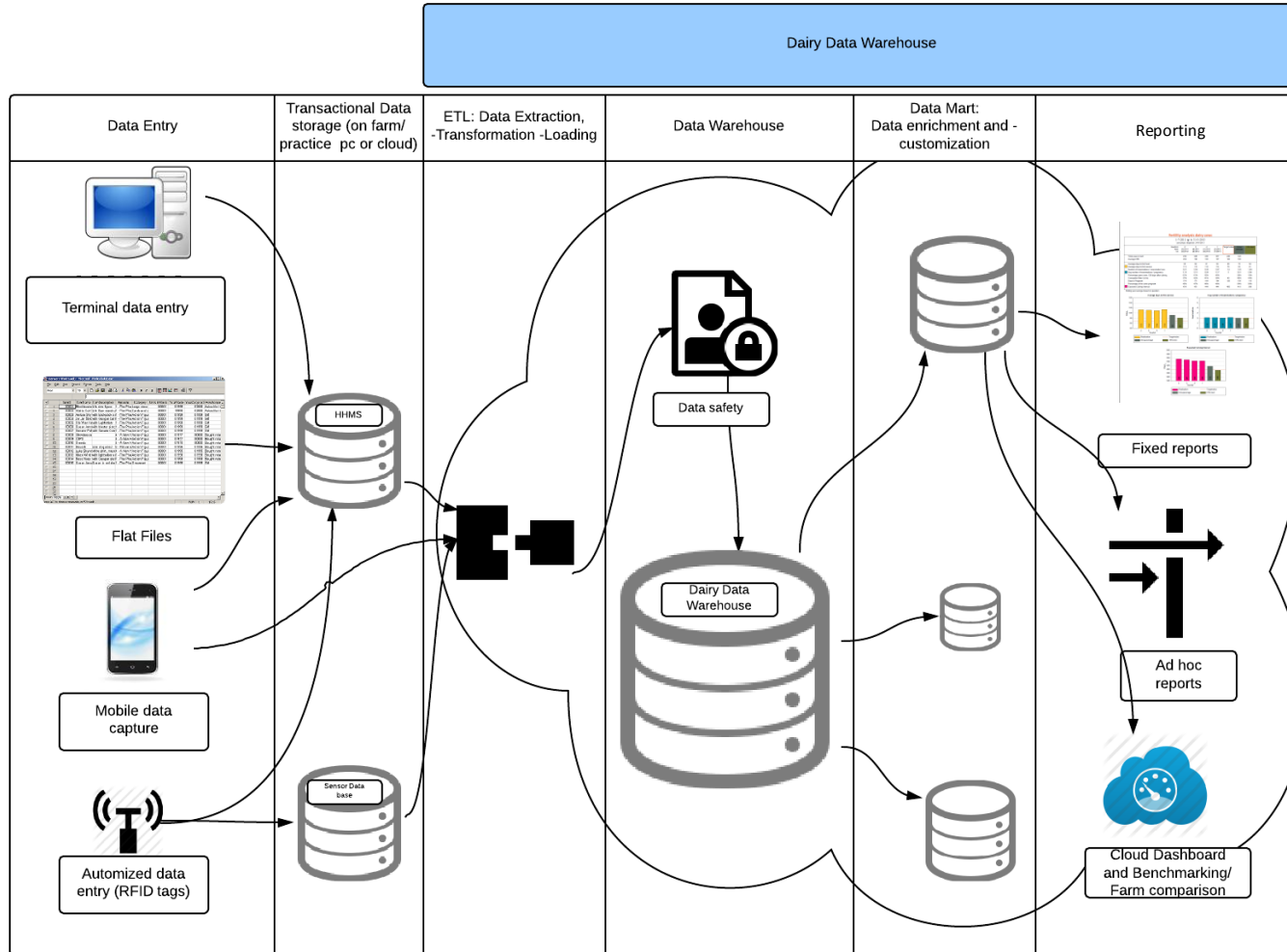
# Dairy Data Ware House (DDW)

## How does it work?



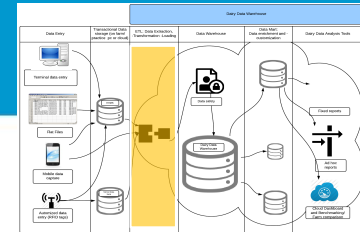


# Dairy Data Warehouse – IT architecture



# DDW

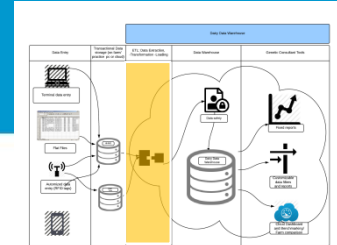
## Data Extraction and –transformation



- Before raw dairy data can be stored in a data warehouse, it must be transformed and cleansed so it has consistent meaning.
- This transformation may involve redefining, filtering, combining, recalculating and summarizing data fields from different data sources.

# DDW

## Data Extraction and transformation



### Data scrubbing:

- Process of cleaning up data in a database that is incorrect, incomplete, or duplicated.

### DDW ETL engine:

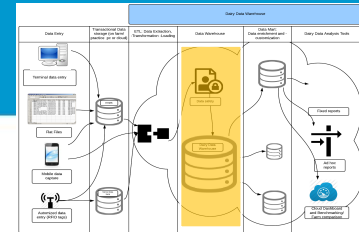
- Under daily surveillance of a dedicated team
- Frequent updating due to constant data base format changes of outside data sources, previously unknown data input errors of farmers and new scientific insights into dairy data handling



# DDW

## Data Warehouse

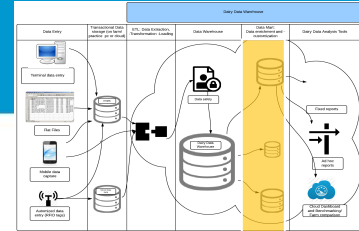
### Dairy Data Aggregation in a single data base



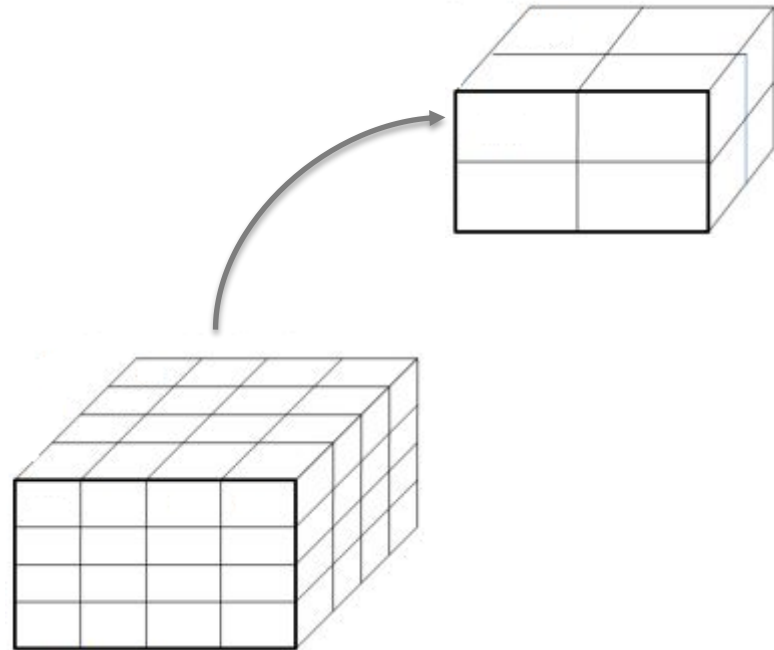
- Once the data are transformed into a common, single data format they can be aggregated in our dairy data warehouse
- Now data from different data sources can be compared, analyzed, benchmarked ..
- Data stored with the maximum security level



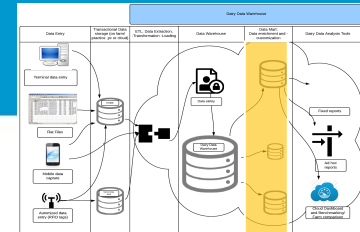
# Data Mart (I)



- The DDW data marts are subsets of the vast dairy data warehouse data cube oriented to a specific dairy business partner.
- The better matched the data mart to your reporting needs the faster the execution of your queries (end user response time).



# DDW Data Mart



- Data marts can be enriched and customized using customer specific data, DDW sensors and DDW algorithms according to customer needs.
- Deeper insight: The enriched data set allows you to leverage the insight from proven algorithms and to differentiate yourself in the market place.





## Stay connected to your herds

The screenshot displays the HerdNet web application interface. At the top, the 'HERDNET' logo is visible, followed by the text 'Powered by DDW'. Below this, a large blue banner reads 'Stay connected to your herds'. The main content area shows a web browser window with the URL 'https://test.dairydatawarehouse.com/Apps/MilkProduction/Overview'. The page title is 'Milk Recording'. The interface includes a navigation bar with 'Quick Start', 'Overview', and 'Graphs' tabs. A sidebar on the left lists various metrics: Milk, Fat, Protein, FPCM, DIM, F/P<1, F/P>1.4, <60, Lact 1, Lact 2, Lact 3+, 60-120, 120-200, 200-305, >305, Urea, SCC, Net Profit, 305 Milk, 305 Fat, and 305 Protein. The main table displays data for these metrics across months from May 2013 to January 2014. A 'Filters' panel on the right allows users to select lactation stages (Lact 1, Lact 2, Lact 3+) and days in milk ranges (<60, 60-120, 120-200, 200-305, >305). The bottom of the screen shows a Windows taskbar with various application icons and the system clock indicating 12:15 on 31/03/2014.

Group: \* Favorites - Armin Pearn | Herd: 19/03/2014 | Ax: (101-88120)

### Milk Recording

Armin Pearn | Log out

Quick Start | Overview | Graphs

	05-2013	06-2013	07-2013	08-2013	09-2013	10-2013	11-2013	12-2013	01-2014
Milk	42.7	42.2	37.3	31.7	39.6	34.9	36.0	42.7	
Fat	2.64	4.14	3.90	4.93	4.11	4.49	3.97	3.22	
Protein	2.41	3.27	2.98	3.24	3.28	4.09	3.59	3.26	
FPCM	33.7	42.7	36.1	35.0	40.1	38.5	36.5	38.7	
DIM	31	29	42	23	30	26	22	32	
F/P<1	29%	0%	0%	0%	17%	25%	33%	57%	
F/P>1.4	14%	33%	25%	43%	33%	25%	8%	0%	
<60	14%	33%	25%	43%	33%	25%	8%	0%	
Lact 1	0%	100%	0%	50%	0%	50%	0%	0%	
Lact 2	0%	33%	50%	0%	33%	0%	0%	0%	
Lact 3+	33%	0%	0%	100%	50%	33%	20%	0%	
60-120									
120-200									
200-305									
>305									
Urea									
SCC	32	84	77	519	176	60	292	60	
Net Profit	2846	2765	2853	2672	2793	2125	2515	2815	
305 Milk	10839	10532	10861	8814	10158	10345	10565	10932	
305 Fat	420	419	414	382	429	407	387	381	
305 Protein	369	363	364	314	364	360	362	372	

**Settings**

**Filters**

- ☒ Lact 1
- ☒ Lact 2
- ☒ Lact 3+

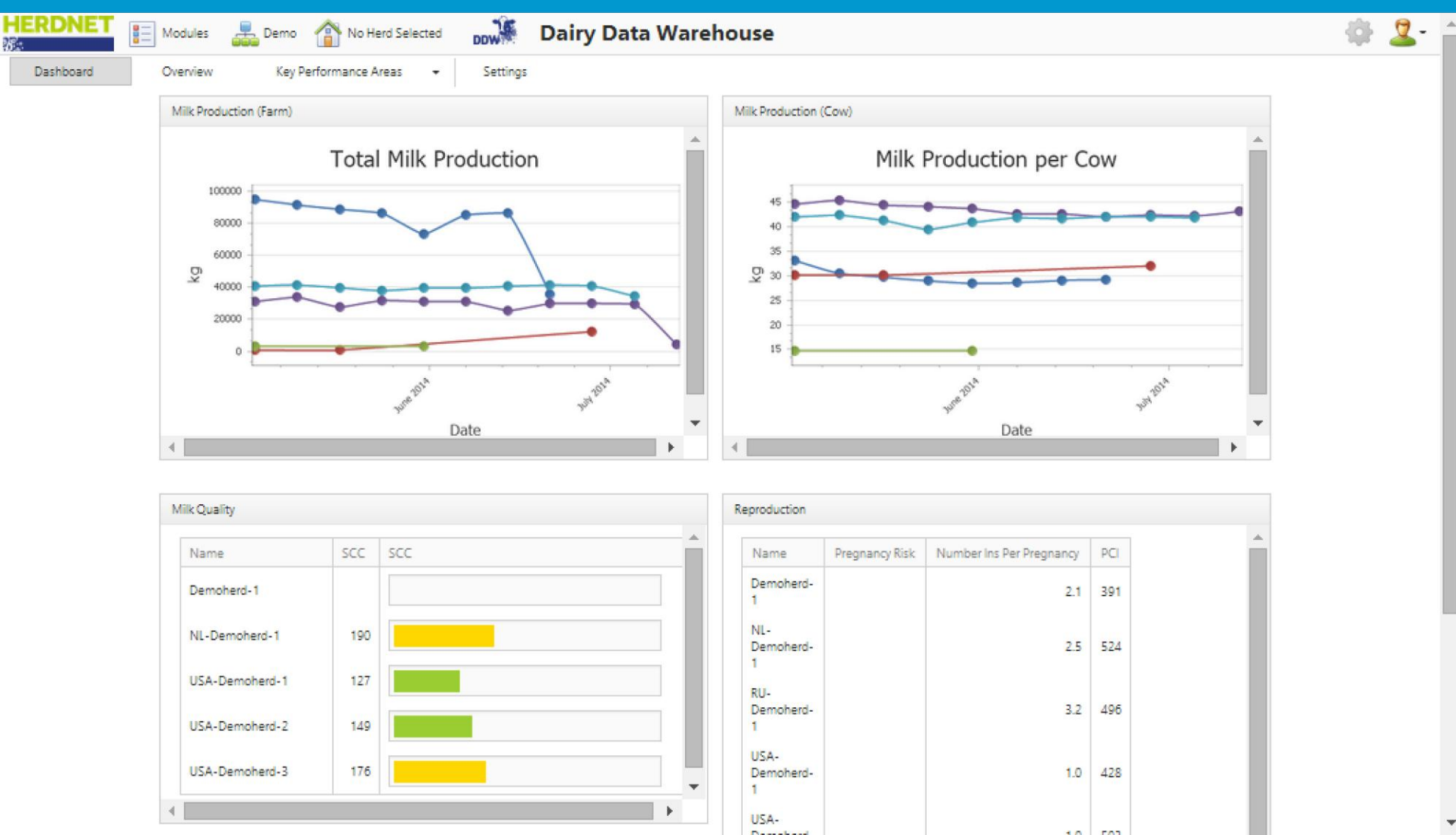
Days in Milk

- ☒ <60
- ☐ 60-120
- ☐ 120-200
- ☐ 200-305
- ☐ >305

Apply

# DDW Functionality Module Farmcomparison (I)

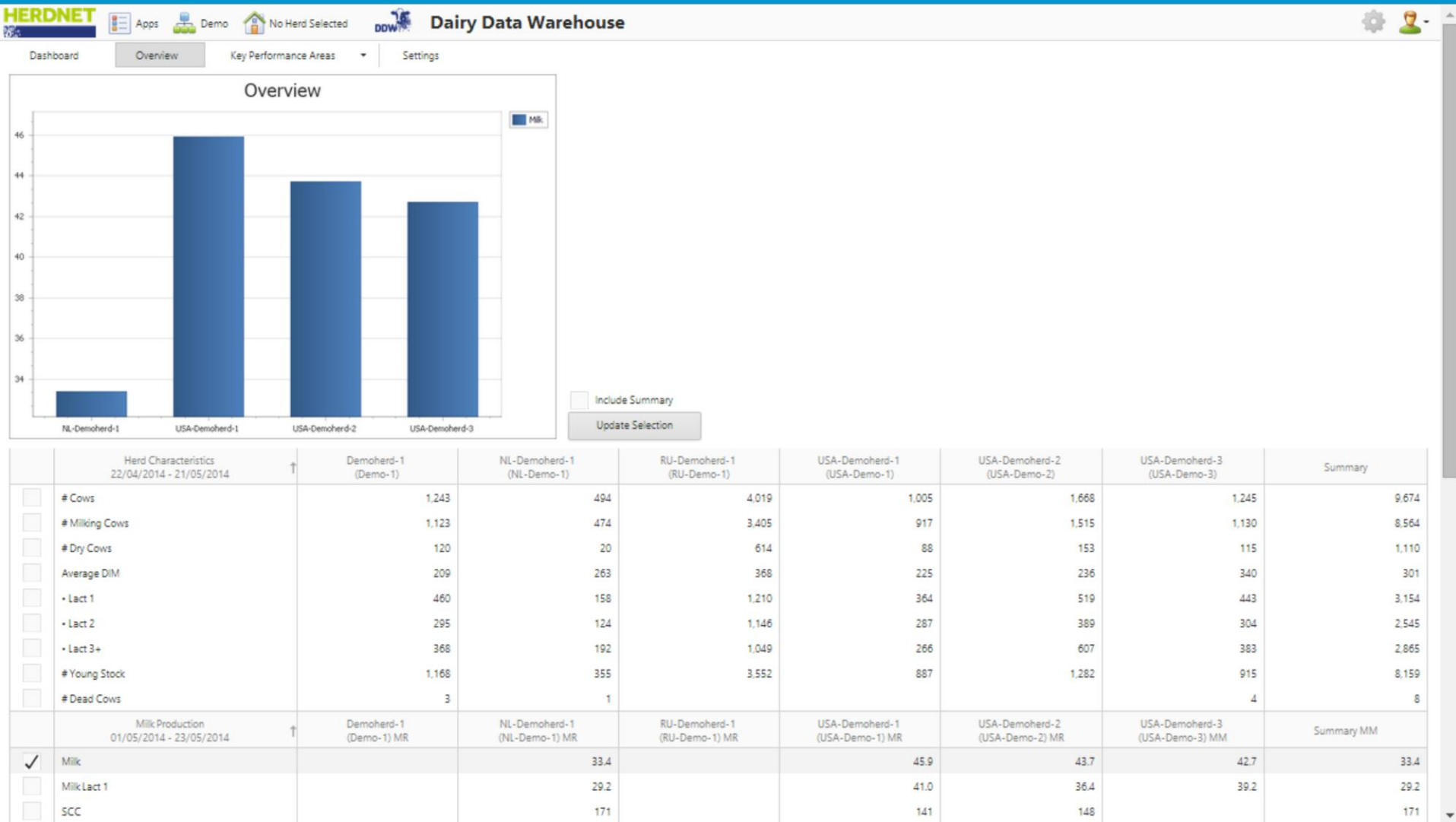
## Dashboard





# DDW Functionality Module Farmcomparison (II)

## Overview



# DDW– Product Overview



## Consultant Products:

Targeted at veterinarians, genetic consultants, feed consultants ....



## Dairy Industry Partner / Research organizations

Targeted at organizations selling to or managing a network of consultants such as pharma, milk processors, feed companies, etc  
Research institutions

Datamart: Data Enrichment and Customization

ETL + Data Warehouse

# DDW as a platform for research



GLOWORM



**Innovative and sustainable strategies to mitigate the impact of global change on helminth infections in ruminants**

- EU funded project
- Consortium of 14 partners / Universities / Research Institutes and SMEs across Europe

*GLOWORM will contribute to the continued productivity and profitability of European livestock farming by delivering new tools, strategies and recommendations for the monitoring, surveillance, and sustainable control of helminth infections in grazing livestock.*

# DDW as a platform for research

- GplusE
- EU funded project
- Around 14 partners / Universities and research institutes not only European (US + China)



Genotype and Environment contributing to the sustainability of dairy cow production systems through the optimal integration of genomic selection and novel management protocols based on the development and exploitation of genomic data and supporting novel phenotyping approaches

# Data Quality for Dairy Advisors - Summary

## 1. Dairy Data Quality



## 2. Dairy Data Access



## 3. Dairy Data Comparability



# Thank You