On-Farm Technologies: Opportunities & Challenges for DHI and Genetic Improvement

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Context

- In Canada, the 2 DHI Partners…
  - Offer <u>On Farm Services</u>, and
  - Own & Operate <u>Laboratories</u>, and
  - Own & Operate <u>Data Processing</u> Centre

2. Genetic Evaluation is done independently (Canadian Dairy Network)

3. I'm a DHI Field & Marketing Guy!?!

Agenda

Review of On-Farm Technologies

Opportunities & Challenges

Strategies & Key Issues

Technology and the Dairy Herd of the Future...
    Things to Keep in Mind

Summary

On Farm Technologies

Why should we care?

- Increasing herd size
- More 'Commercial' in approach
- Trend to increase Automation and Technology at the farm

A Look Into the Past

"There is no reason anyone would want a computer in their home."

- Ken Olson, President, Chairman and Founder of Digital Equipment Corp., 1977

On Farm Technologies

Not so new...

- Herd Management Software

- Electronic ID

    Electronic Meters, Conductivity, Activity Monitor, Sort Gates, Scales...etc.

- Robotic Milking System

On Farm Technologies

Emerging…

- Udder Health/Somatic Cell Count

- Milk Components

- Ketosis Monitoring

- Locomotion & Lameness

- Repro Status

On Farm Technologies

Down the road...

- Disease Screening...?

- Pregnancy Diagnosis...?

- Other...?

On Farm Technologies

Future Trends...

Adoption of Automation and New Technologies will continue

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   Key Points

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Opportunities

For DHI & GI Industries...

- More Data!
    - From current farms
    - More farms will participate
- Improved quality/accuracy
- Reduced cost
- Data on new traits

DHI Just Needs to build an Electronic Pipeline — Don't even go to the farm, have herds 'upload data'

Pretty Simple!

Challenges

It's not that simple…

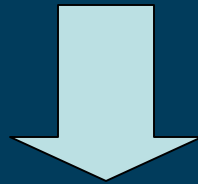Significant Data Quality Issues

– Animal ID

– Electronic read errors

– ID reuse, misuse

– Equipment failure

– Input errors, data completeness

– Data file transfer issues

Challenges

It's not that simple...

Data Quality Issues

⬇

Need for Editing or Discarding Significant Amount of Data
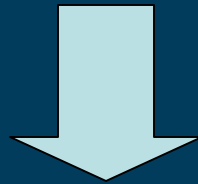
Challenges

It's not that simple...

- Practicality of keeping up with numerous manufacturers and DHI version updates
- Actual resources (costs) to program & manage these data interfaces/file transfers
- If customers' needs are being met, will they allow us to use/take the data... even at no charge?

Challenges

It's not that simple...

Issue of 'Perceived Value'

What value do I get from Central Processing?

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Strategy & Key Issues

For DHI...

1) Operate with 'for profit' culture and principles

Need to have a Business Plan and Business Strategy - We are running a Business!!!

Business Strategy

- Define the business
- Define the customer
- Identify, leverage core competencies
- Utilize economies of scale
- Adapt appropriate technology
- Invest in innovation and new products
- Identify key deliverables
- Etc…

Strategy & Key Issues

For DHI...

2) Be in the Herd Management Software business!

- Provide/Sell Software
- Be the Tech Support
- Assist with on farm Data Management

Strategy & Key Issues

At the end of the day…

Personal Computer

Handheld

Strategy & Key Issues

At end of the day...

The data/information from the on farm technologies resides in the Herd Management Software (Herd Database).

CanWest Experience

- **DairyCOMP 305 – 10 years**

- **>1,000 users**

- **>25% of all DHI cows (100,000)**

Customers willingly paid for the cost of the 'pipeline'…!!!

Strategy & Key Issues

DHI...

Herd Management Software can provide the 'Common Platform' that makes data exchange easy and cost effective

Advisors

On Farm

DHI

Strategy & Key Issues

DHI...

3) Flexibility in Service

4) Value Added Services

- QC process for on farm technologies
- Benchmarking
- Records Mgmt for Regulatory
- Herd Book Registration assistance
- Forage, Soil analysis services
- Feed Mgmt Software
- Etc.

5) View Advisors as Customers

Pipeline of data to Advisors is as important if not more important then the pipeline to producers and industry...

- Increases the value of DHI back to the farm = more herds are likely to be on DHI

- Enhances the sustainability of the Dairy Industry

Strategy & Key Issues

DHI...

6) Value Added Lab Services

  – Disease Monitoring

  – Mastitis Management

  – Repro Mgmt

  – What else? – be proactive!

Strategy & Key Issues

DHI...

7) Be cautious about constant cost cutting and lowering the bar on service QUALITY

QUALITY and VALUE

Strategy & Key Issues

DHI...

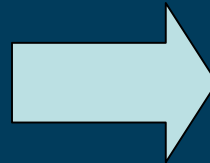8) Implement & Practice Sales & Marketing Principles

This is still a PEOPLE business and Sales & Service Matter

Strategy & Key Issues

DHI…

- Operate with 'for profit' culture and Principles
- Be in the HMS business – Common Platform
- Flexibility in Service
- Value added Services
- View Advisors as Customers
- Value added lab services
- Be Cautious about low cost & lowering service quality
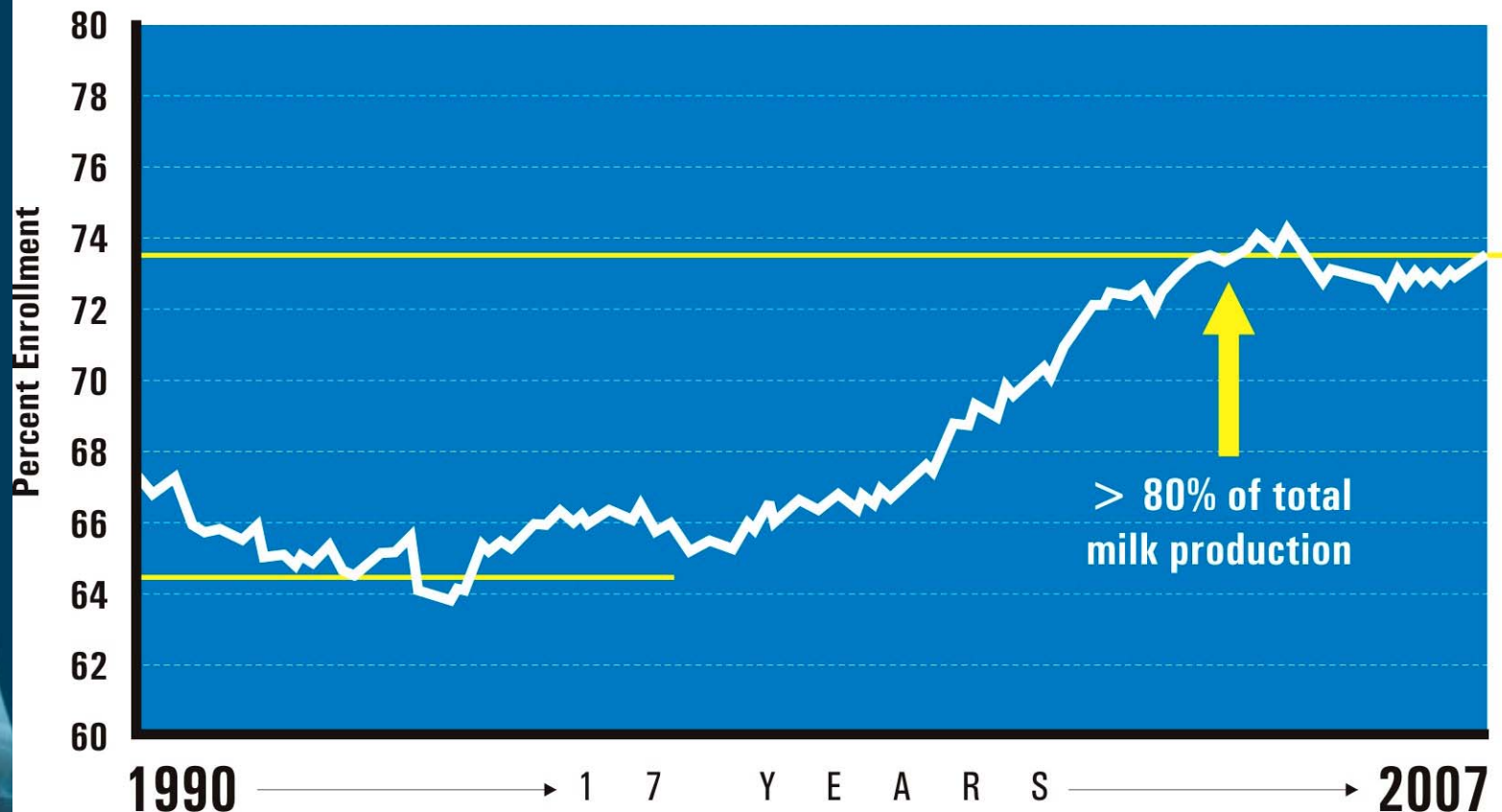- Implement & Practice Sales & Marketing principles

By following this approach, DHI can be successful in working with new technology and as a <u>secondary</u> benefit… the pipeline of data for GI industry will be full!

CanWest DHI Success

Ontario DHI Market Share

> 80% of total milk production

1990 → 1 7 Y E A R S → 2007

Strategy & Key Issues

GI…

- Differentiate/understand data source & quality…

   Careful evaluation of quantity and quality

- Look at Progeny Testing program as 'R&D Division' of Business… Business Principles

- Consider 'high tech' farms as concentrated/specialized data source and approach as business transaction

   ie) We buy Data - You sell?

Strategy & Key Issues

GI...

4. Be cautious of adding too many traits

- Low economic impact
- Low heritability, therefore...
- Need large amount of data...
- Data Collection 'fatigue'

5. Use Technology to advantage – Sexed Semen & Genomics

GI Future Data Source 'Stool'

Traditional
DHI Data
(more traits?)

DHI Central
Processing

Genomics

Contract
Data Farms

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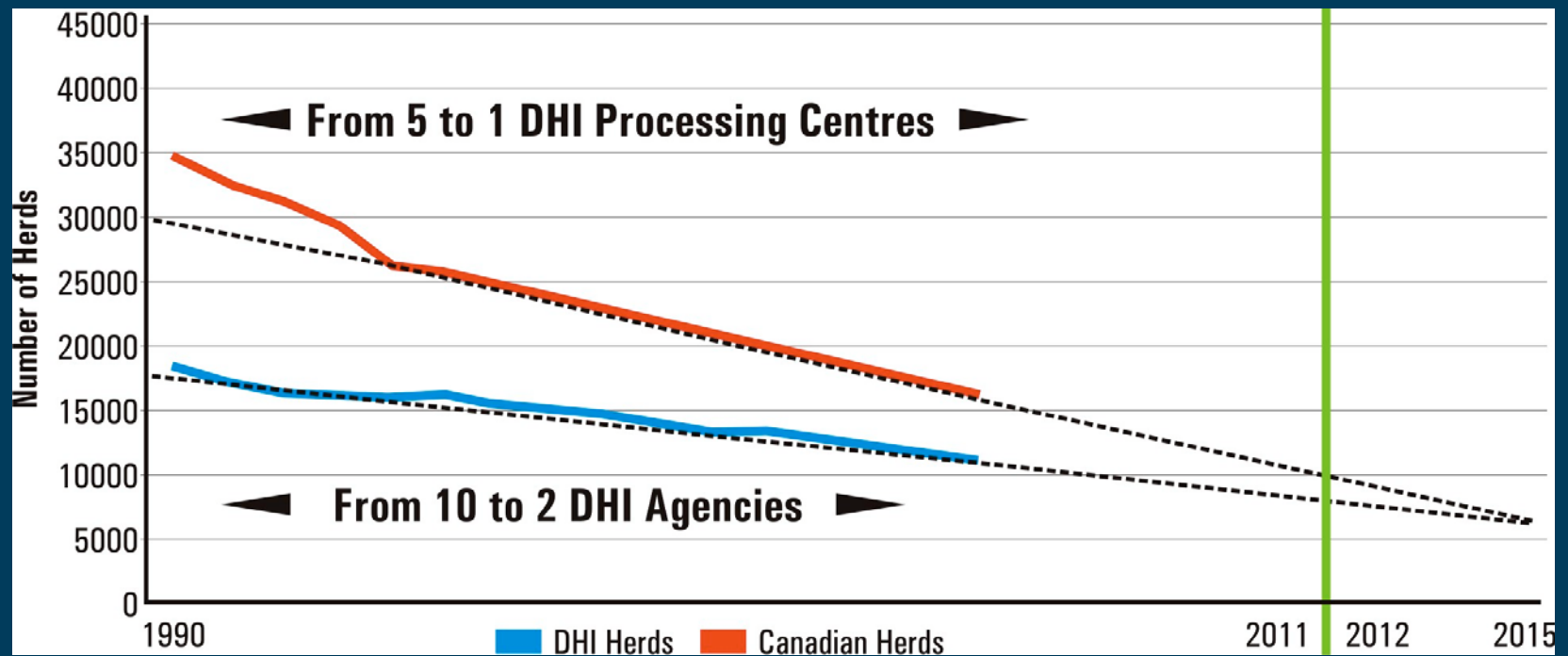
The Herd of the Future

Things will continue to change…

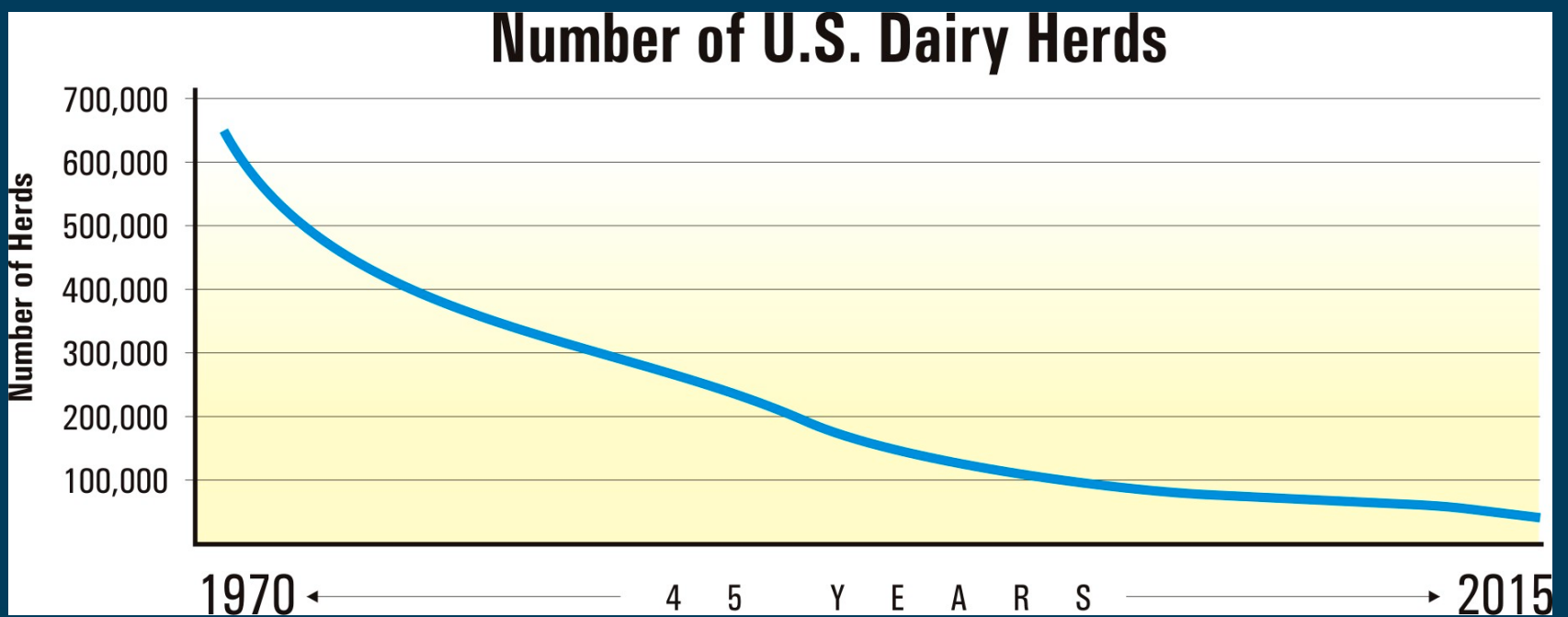Continue decline in herd #s…

Continue increase in herd size…

This is a fact of the dairy industry!

Canadian Dairy Herds

US Dairy Herds

Number of U.S. Dairy Herds

The Herd of the Future

Adoption of Automation and Technology will continue

The Herd of the Future

Key Issues we MUST keep in mind...

Dairy Farms are independent businesses...

Making <u>MONEY</u> is the priority

and

<u>TIME/CONVENIENCE</u> is money

(R. Thomson, ADSA – 2007)

The Herd of the Future

Key Issues...

What is the one thing our customers wish they had more of...

NOT DATA!!!

$$, Time, Quality Labour, Quality of Life, Convenience... etc.

The Herd of the Future

Key Issues...

Technology DOES NOT ALWAYS =
Profits or Convenience/Time Savings

(R. Thomson, ADSA – 2007)

Some cases... the opposite

- Not good Cost:Benefit

- Not practical

The Herd of the Future

Key Issues...

Labour consideration and Quality of Life will be key factors in the adoption of Technology and Automation

3 6 2007

The Herd of the Future

Key Issues...

Management approach to GROUPS vs individuals

Need for data to identify the individuals needing 'attention' - NOT the high/well performing animals

The Herd of the Future

Key Issues...

The Data Needs of GI Industry may
be quite different then the Needs
for Herd Management of the Farm

Data on... groups of cows in certain
stages of lactation, problem cows,
equipment, employees

The Herd of the Future

Key Issues...

Question the Value of having data sent for...

- Central DHI processing

- Genetic Evaluation

The Herd of the Future

Because of these Key Issues...

DHI and GI programs will have to continue to adapt and CHANGE the 'way of doing things'

Change can be good

Summary

- As the industry continue to change, the use of On Farm Automation & Technology will continue to grow

- This will bring Opportunities & Challenges for both DHI & GI

- Proactive plans and strategies are NEEDED to deal with the Challenges and take advantage of the Opportunities

Summary

Strategies for DHI

- Operate with 'for profit' Culture and Principles
- **Be in the HMS business – Common Platform**
- Flexibility in Service
- Value Added Services
- View Advisors as Customers
- Value Added Lab Services
- Be Cautious about low cost approach & lowering service Quality
- Implement & Practice Sales & Marketing principles

Summary

Strategies for GI

- Differentiate data sources
  - Careful evaluation of quantity and quality
- Look at Progeny Testing program as 'R&D Division' of Business... Business Principles
- Consider 'high tech' farms as concentrated/specialized data source and approach as business transaction

  ie) We buy Data - You sell?
- Be cautious about adding too many traits
- Use Tech to advantage – Sexed Semen & Genomics

Summary

Keep in mind the Herd of the Future

- Making Money will be the Priority and Time is Money

- Challenges will be related to Profitability, Time, Labour, Quality of Life... Not a lack of 'production efficiency' data

Summary

Keep in mind the Herd of the Future

- Technology adoption and data needs:
    - Will be different by herd size segment
    - Will be driven by Herd Management & Farm Profitability Needs
    - May NOT be the same data needs required for GI

- DHI and GI will be required to continue to proactively adapt and change