Machine vision in Denmark

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Presentation Topics

- Denmark (DK) – background + random facts
- Key Industries
- Machine vision sectors in Denmark
- Machine Vision key players + other imaging DK
- New markets
The oldest, continuously used national flag in the world is Denmark, dates back to year 1307. The flag of Scotland is older – however not used continuously.

According to legend/history, the flag came into Danish possession during a Battle in Estonia in 1219. The Danes were on a failing crusade in Estonia, but after praying to God, a flag fell from the sky. After this event, Danish King Valdemar II went on to defeat the Estonians. The official recorded use of the flag appeared about 100 years later in 1307. The cross design was later adopted by other Nordic countries such as Sweden, Norway, Finland, and Iceland.
Kingdom of Denmark

- Danish **monarchy** is amongst the 3 **oldest** and *the oldest continuous Monarchy in the world*. Queen Margrethe II's heritage trace back more than 1000 years to a king born in year 958 **Harald Bluetooth**. Queen Margrethe II is Denmark's **monarch** since 1972.
Oaktrees planted around Y 970 in France
The "tiny" Kingdom of Denmark — the little piece on top of Germany — includes Greenland and is the 12th largest in the world.

- Geographic size bigger than Germany, Turkey, France combined.
- 5.8 Mio people + 28 Mio Pigs
- 443 named Islands
- Logistics capital of Scandinavia
4 Famous Danes …

Hans Christian Andersen, fairy tales author

Niels Bohr, Nobelpriest winner 1922 “Defining the Atom structure”

Mads Mikkelsen, actor

Caroline Wozniacki, tennis-player
There are more bicycles in Copenhagen, Denmark, than people.
Key Industries in Denmark

Cleantech

Denmark holds exceptional business opportunities for the fast-growing cleantech sector. Our national goal is to be powered entirely by renewable sources by 2050.

Tech

Denmark is one of the world’s top locations for tech activities, featuring an excellent test market with access to world-class software development talent pools.

Life Science

Join our life sciences cluster and turn clinical research into business.

Food

Denmark’s food cluster is known around the globe for quality, safety, sustainability, organic production, gastronomy...the list goes on.

Maritime

Join the maritime industry in Denmark, and enter a dynamic ecosystem within shipping, offshore and technology development. Together we’ll set new standards for the global maritime industry.

Design and Innovation

Danish design is known all over the world. When companies incorporate good design into their innovations, their earnings, exports and competitive ability are bound to grow.
5 x more Pigs in Denmark than people

- ~ 28 Mio Pigs / year
- 5000 farms
- > 5% of total export
- 70% of meat is exported
- All pigs slaughtered ...
Machine Vision Sectors in DK

Production  Cleantech  Food  Life Sciences
Design & Innovation  Tech  Food Ingredients
Food Technology
Machine Vision Key Players in DK
- Founded 2000 > 1500 employees – present in > 100 countries.

- Intra-oral scanners
- 3D Dental scanners
- CAD/CAM software
- Based in Copenhagen
FOSS

- Founded 1956 >300M€, 1400 empl. 98% export
- Analytic solutions and instruments to secure and improve food quality
- Grading Grain, Feed, Dairy, Milk, Meat ...
- NIR infrared technology
- Based in Hillerød 40 km north of Copenhagen
▪ Originates in Iceland 1.2 Billion €. Large subsidiary in Denmark

▪ Advanced processing systems for Poultry, Meat and Fish industries

▪ Implements Machine Vision to growing extent.

▪ Based in Aarhus - Jutland
Founded 1997
~ 22 Mio € Nasdaq OMX
Analytical instruments, **Cytometers** counting and analyzing cells in many areas
Cancer and stem cells research, drug dev. and for food production
Using Fluorescent imaging
Founded 1985 – an **incubator**
for a number of successful
machine vision companies

- **Food** industry automation
  using machine vision MV

- **Railway** condition monitoring
  using MV

- Vision solutions for **Postal** and
  **logistics**

- Based central Copenhagen

- ~ 40 employees
Vision Automation

- Founded 1988 ~ 8 Mio €
- Packaging (logistics), Pharma Pack
- Experts in MV based serialization/traceability
- Substantial export (90%)
- North of Copenhagen
- 12 employees
JLI VISION

- Founded 1985 ~ 15 employees
- Initial MV application inspection of steel nails
- Now expert in glass inspection and other complex MV tasks
- 15 km west of Copenhagen
Videometer

- Founded mid 1990’s
- ~ 11 employees
- Spectral Imaging – VideometerLab
- Vision Systems – VideometerLine

Scale your vision.
ProInvent – TRIVISION

- **ProInvent** Founded ~ 1994 ~ 6 M€
- Robotics and automation
- Vision controlled robotics
- North of Copenhagen

- **TRIVISION** ~ 1999
- Quality control systems based on Machine Vision
- Seals, Labels, Cans etc.
- West of Copenhagen
CIM

- Founded 1998 – Industrial Systems
- Based in Jutland
- Machine vision and automation
- Big Data specialist
- National Instruments Partner
Other Imaging related companies in DK

- Founded 1964 – privately held
- ~ 45-50M €
- Present in DK (HQ), Japan and USA
- Significant Camera player
- Machine Vision cameras
- Specialized in Multi-spectral imaging.
  - Food
  - Print
  - Medical
  - Traffic
Other Imaging related companies in DK

- Founded 1993 – 60 Mio €  350 empl
  - Silverfleet Capital
- Headquarter in DK, offices in USA, Japan, China and Israel
- Medium Format Digital Cameras – professional photography
- Software RAW
- Entering *industrial imaging*.
  - Arial surveillance
  - FPD/FPI
New / growth Markets in DK

Flagship industries:
- Wind power
- Health products (Life Science)
- Agriculture / Food
- Green Tech Sector
www.svs-vistek.com

thank you for your attention