SESAM seminar

"Industri 4.0 BIG DATA i produktionen"

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KMD'S FOUNDATION

One of Denmark's largest IT companies

The KMD group employs more than 3400 people. More than 1000 IT-professionals work every day with the development of IT-solutions critical for Danish society

Nordic Presence

The KMD Group has offices all over Scandinavia, including a larger development base in Poland. KMD's top management is Danish and based in Ballerup, Denmark.

Over 1500 Danish and international customers

KMD delivers IT to the Danish local authorities, regions and the government, as well as to more than 800 foreign and domestic private companies.

More than 400 IT solutions

KMD primarily develops administrative and enterprise management systems, and also develops solutions in citizen services, IT outsourcing, application management, BPO and a number of other areas.

KMD has built and developed Danish IT infrastructure for over 40 years.

More than 400 billion DKK are processed by KMD's systems on an annual basis. This amounts to roughly 20% of the Danish GDP.

Ownership

KMD is owned by Advent International and Sampension.

PUBLIC AND PRIVATE CUSTOMERS

DKK 400 billion

goes through KMD's systems every year, equivalent to more than 20% of Denmark's GDP

500,000

public-sector employees receive their salary or pension via KMD

100,000 pupils and parents

use the KMD Educa platform on a daily basis

4000 Lotto outlets

are linked up via KMD's network, enabling Danes to play Lotto every week

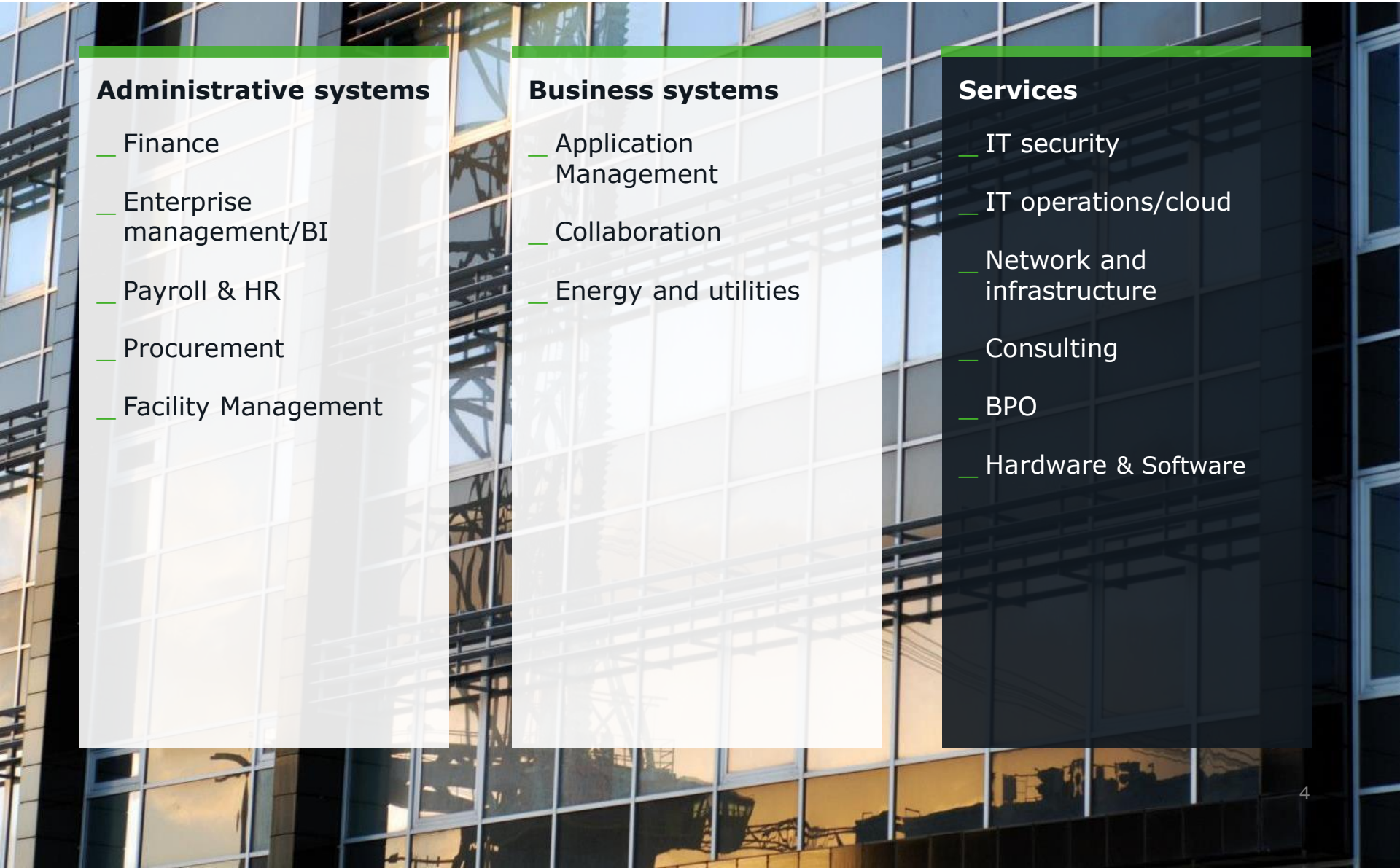
4,000,000 Danes

receive digital post in e-Boks, run from KMD's operations center

260,000 private-sector employees

are paid via KMD's payroll systems, including companies such as Coop and Carlsberg

PRIVATE SECTOR



Administrative systems

- Finance
- Enterprise management/BI
- Payroll & HR
- Procurement
- Facility Management

Business systems

- Application Management
- Collaboration
- Energy and utilities

Services

- IT security
- IT operations/cloud
- Network and infrastructure
- Consulting
- BPO
- Hardware & Software

SNAP SHOT OF PRIVATE CLIENTS IN 2015

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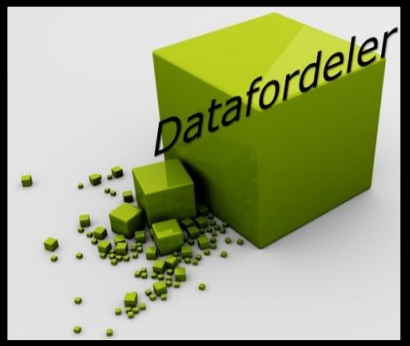
Data value chain

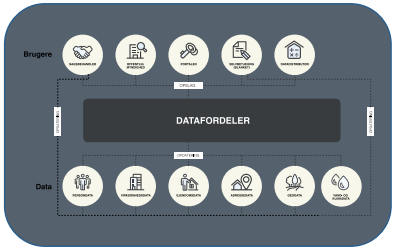


Operational use

Information creation	Apply	Gather and share	Exploit
Catch • Manuel • Automatic	**Use** • Specialist systems • Operational systems • Stora4ge • Internal distribution	**Data warehouse** • Secured data sharing • Distribution • Search • Processing • Storage	**Analyses** • Compile • Forecast • Evaluation • Benchmarking • Pattern • Prediction

KMD has a broad range of Big Data competences
- from source data to Deep Analytics

Public data distribution



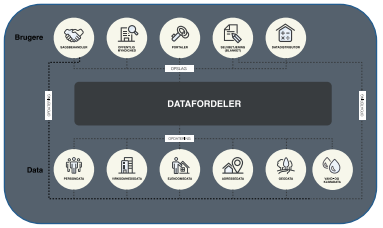
Private data distribution

Predictive model for Manufacturing Company- IoT

Optimizing purchase processes – unstructured data

Public data distribution

- ”Den fællesoffentlige Datafordeler”



Possibilities for authorities

The basic data program expects efficiency gains amounting to DKK 250 million annually in municipalities, regions and central government

- ✓ Optimized and improved case processing
- ✓ Fewer manual work processes and registration tasks
- ✓ Fewer errors and time saved on restoring errors
- ✓ Time and money saved on procuring, uploading and maintaining data
- ✓ Cheaper development of new IT systems
- ✓ Operational savings in connection with data management in existing IT systems
- ✓ Fewer shadow registers

Possibilities for companies

The basic data program expects savings and new opportunities for growth and innovation amounting to DKK 500 million annually in the private sector.

- ✓ New data-based business opportunities
- ✓ Fewer expenses for procurement of data
- ✓ Release of resources when data is retrieved in one place only and does not need to be maintained
- ✓ Cheaper development of new IT systems when data is stored externally
- ✓ Operational savings in connection with data management in existing IT systems
- ✓ Fewer registrations

Data limitations:

- Technically, it is possible for the Data Distributor to distribute more data than those comprised by the basic data program. However, initially, data will not be enriched further.

Distribution and enrichment of data

- KOMBIT, the Danish Health Data Authority and a number of private data providers are expected to distribute basic data to different users and can, if they want, enrich basic data according to their users' needs.

New possibilities with data
- KMD Cognito Cloud

New possibilities

Distribution & Merged data

Master data management

New KMD solutions | New third party solutions

New services – merged and refined data

Common Data Distributor

KMD Cognito

Public Basic Data

Domain data

Persons

Companies

Real Property

Adresses

Geodata

Utility

Finance

Agriculture

Commerce

Statistics

Redundant registers

Predictive model for a Manufacturing Company
- Internet of Things (IoT)

Vision: Analyze sensor data from 50.000 production lines around the world (IoT generated)

- Business goals:
  - "Can current data explain which production bath are optimal, and which parameters are most significant?"
  - "Build a predictive model based on current data"
  - => New Business model: The project will deliver a Management Recommendation for establishing a new business line: Customer consulting service based on Industry bench marks
- Project phases:
  - Data gathering and cleansing
  - Data transformation (into hourly based observations etc.)
  - Data analysis (regression analysis)
- Technical test data information:
  - Approximately 2 years of data, 200 production lines, each calculation has between 240.000 to 1,03 mill. key values
  - Open Source R for data handling and analysis during PoC

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Optimizing purchase processes

- Structures and unstructured data

- KMD and SAS Institute has established a partnership for it solutions on Procurement
  - KMD is responsible for future development, hosting, sale and Marketing
- Functional facts:
  - Leading Nordic provider of it solutions dedicated public institutions, education sector, utility sector and similar complex procurement organizations
  - Analyze and categorization of unstructured ”product units” information
  - Estimated savings using an analytical approach to procurement is minimum 10% - more precise prediction of demand
- Technical facts:
  - SAS visual analytics (in memory analyze)
  - Apache Hadoop (Open source, distributed data and workload)

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