Sundhedsstyrelsen

Health Informatics Strategy in Denmark

Arne Kverneland
National Board of Health
Denmark

Sundhedsstyrelsen

The Danish Health Care System

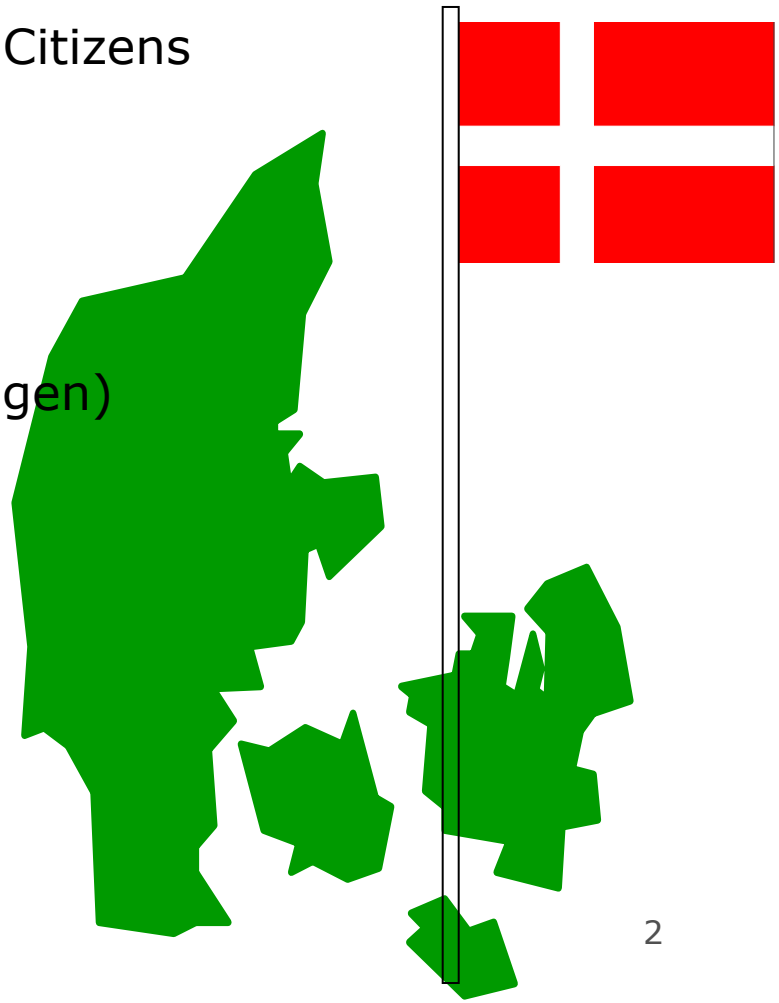
National Health Service serves all 5,3 mill. Citizens (tax financed)

3500 GPs *>90% of GPs use EHR*

65 public hospitals (14 Counties +Copenhagen)

25.000 hospital beds

1.3 mill. annual discharges



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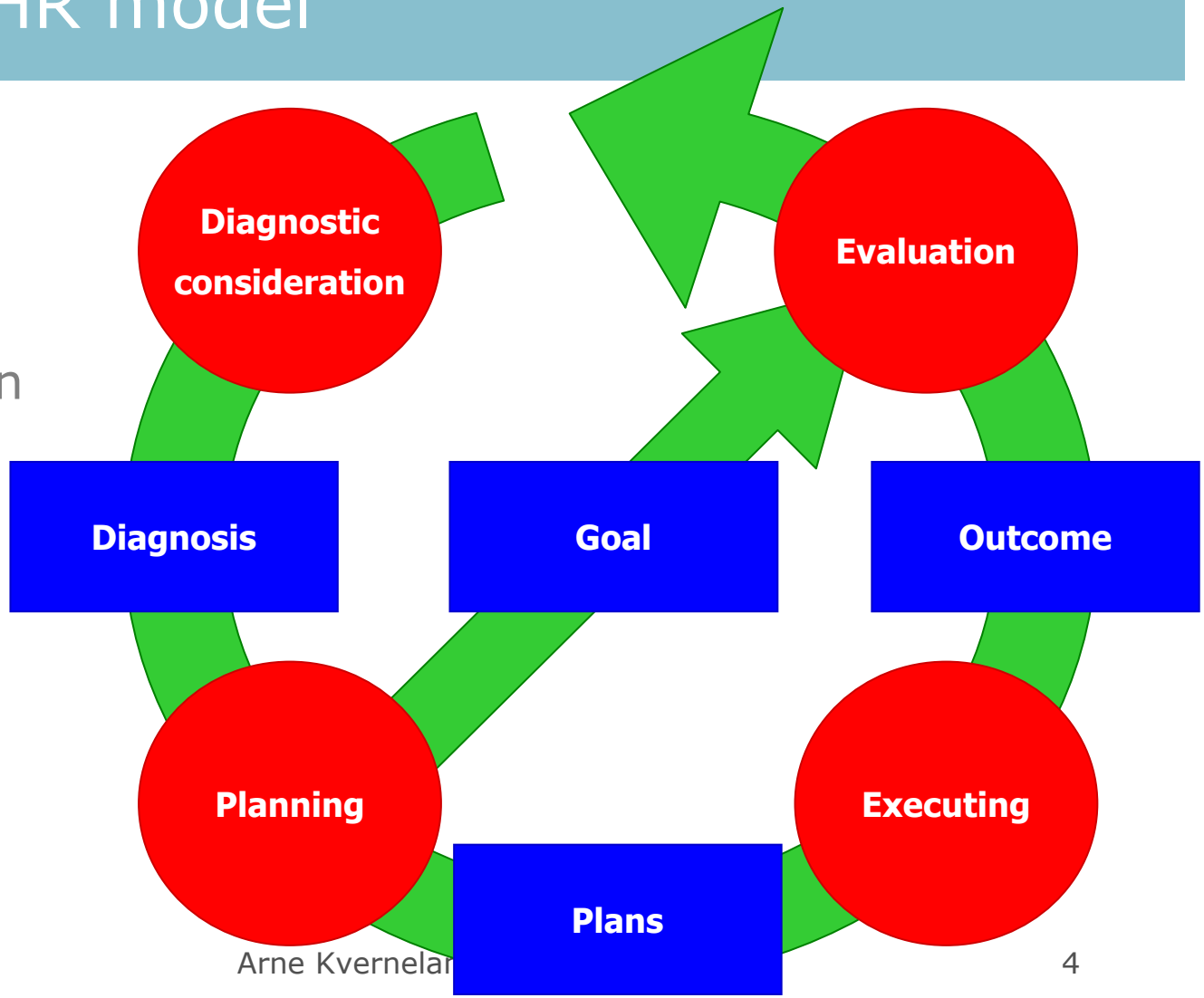
The Danish EHR model

Process

Information



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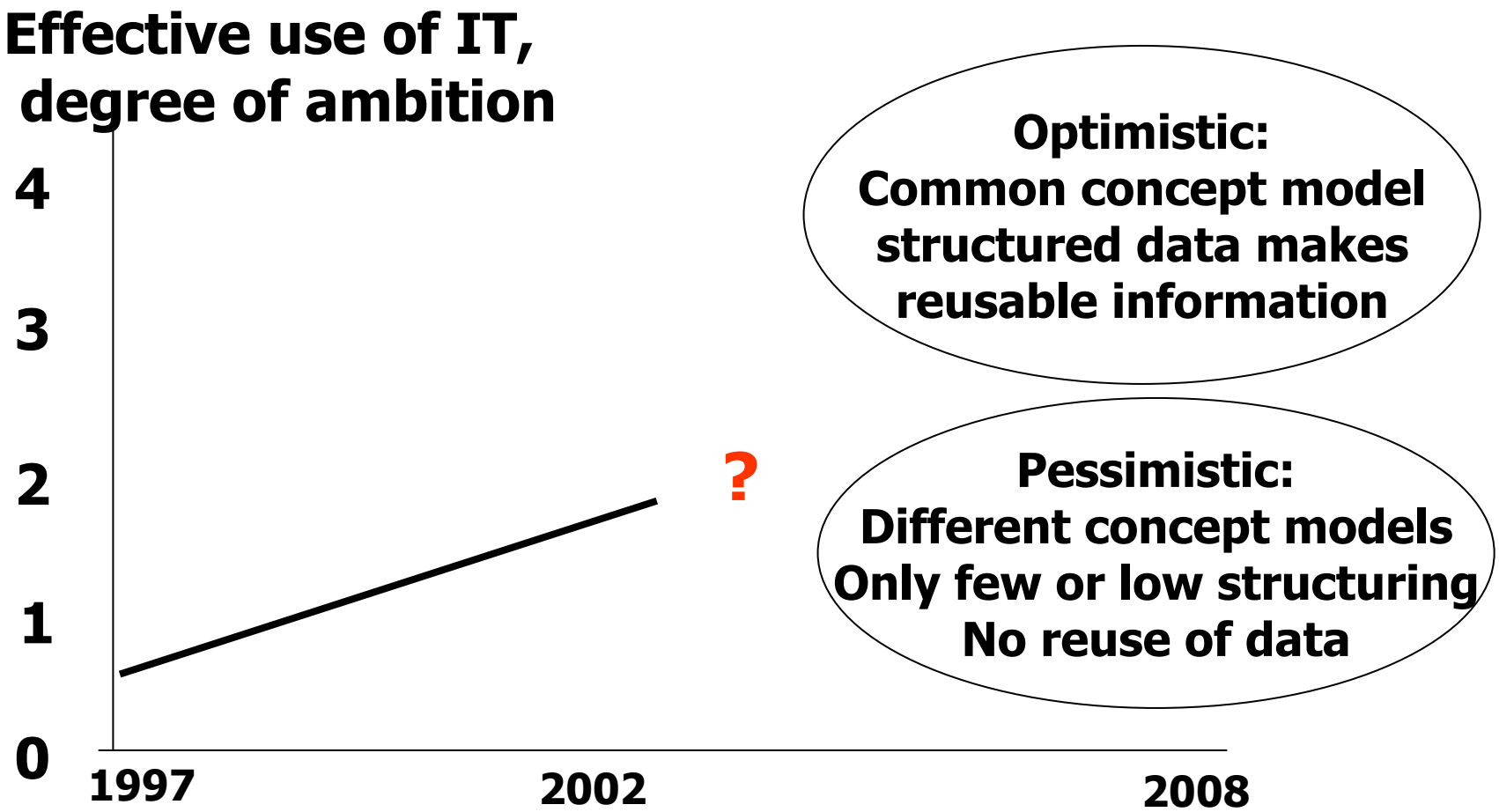
Different scenarios in IT in Denmark



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Background

1994: MEDCOM, EDIFACT-messages (25 mill messages per year)

1996-97: Action Plan for EHR – decentralized, pilots

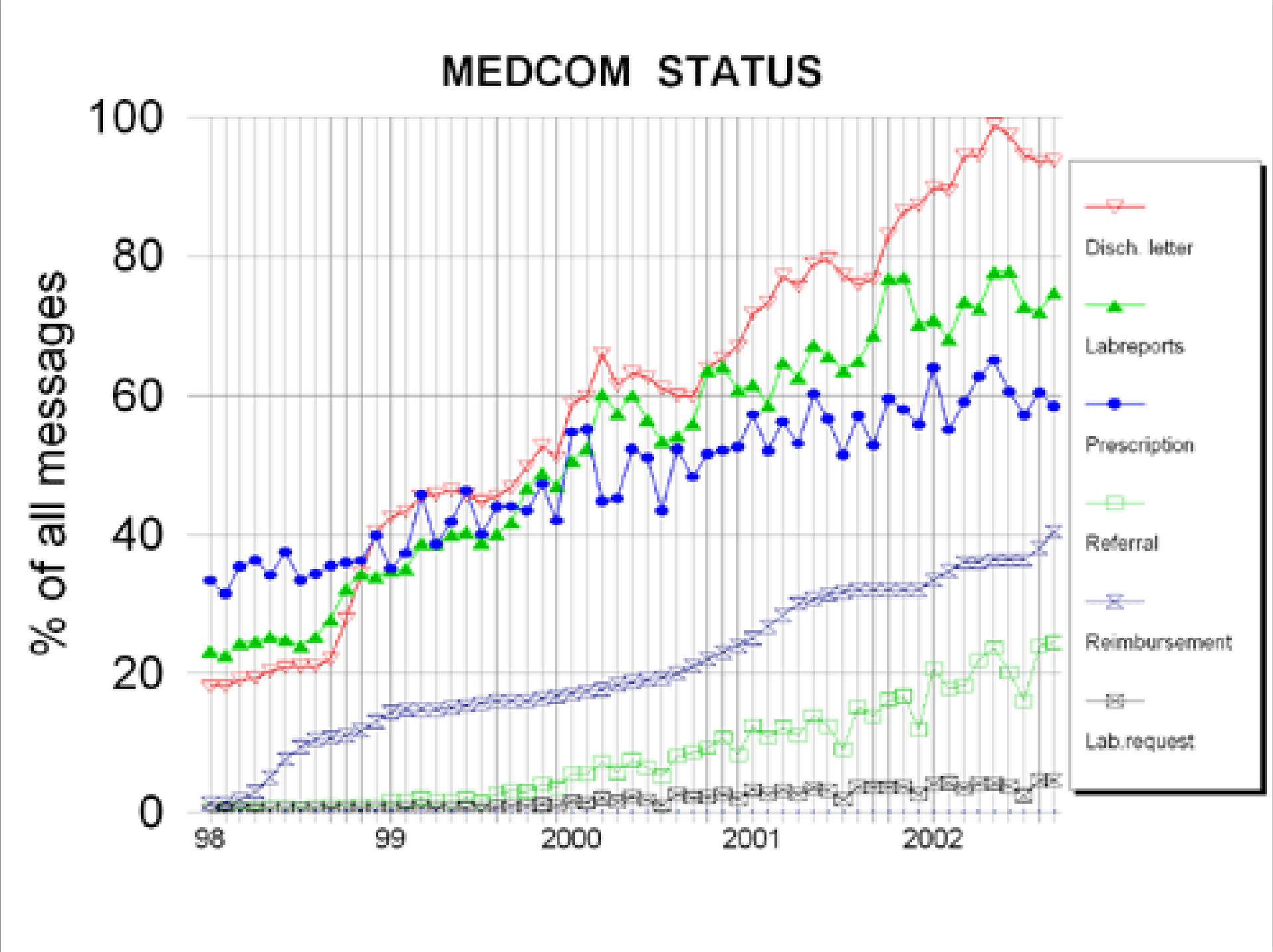
"There is need for standards and common terminology"

1999: National Strategy for Information Technology in *Hospitals*

"EHRs shall become the core of IT systems in hospitals"

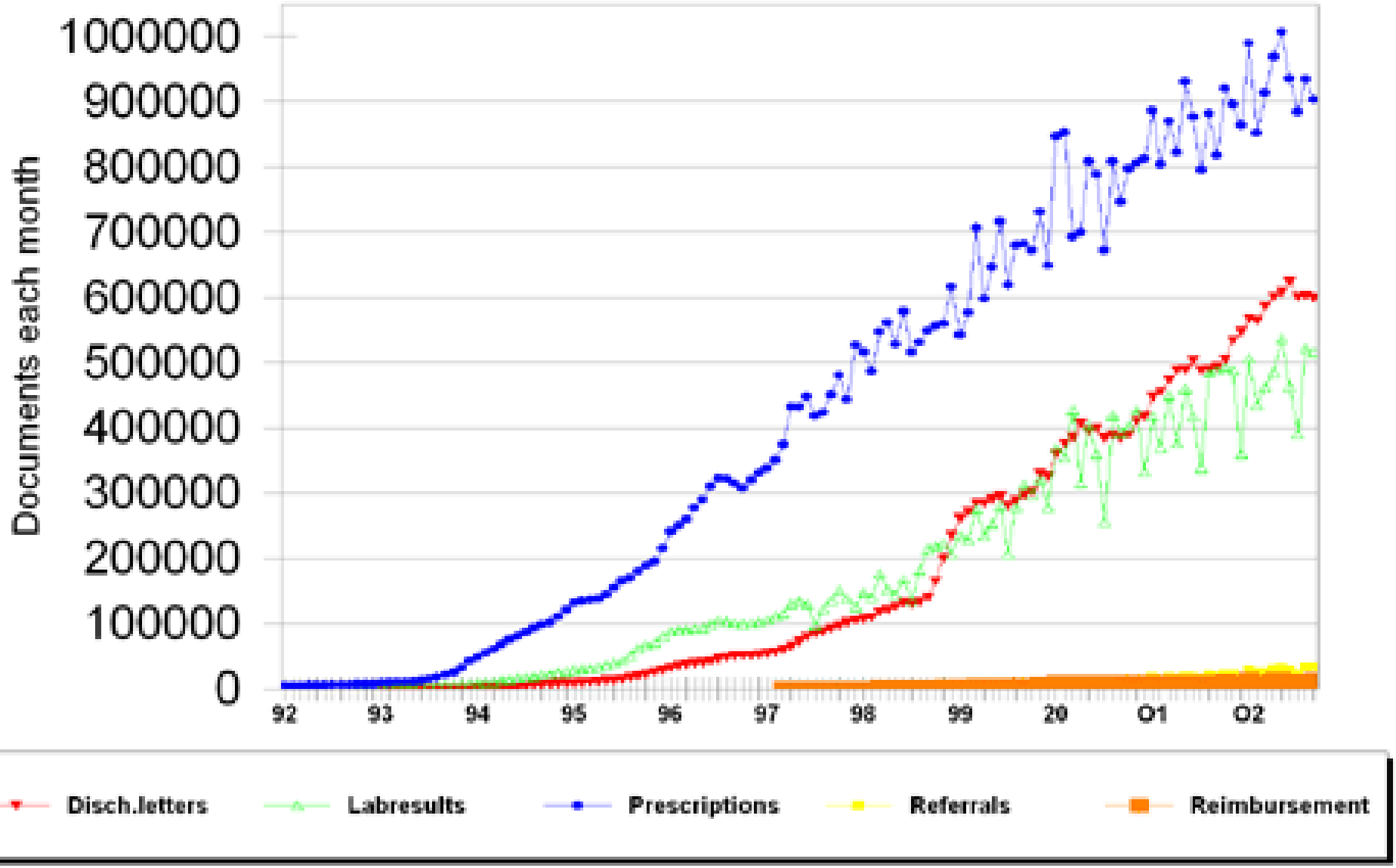
2003: National Strategy for Information Technology in the *Health Care System* (2003-2007)

"Shared information is the foundation for seamless care and patient involvement"


MEDCOM STATUS
% of all messages
100
80
60
40
20
0
98
99
2000
2001
2002
Disch. letter
Labreports
Prescription
Referral
Reimbursement
Lab.request

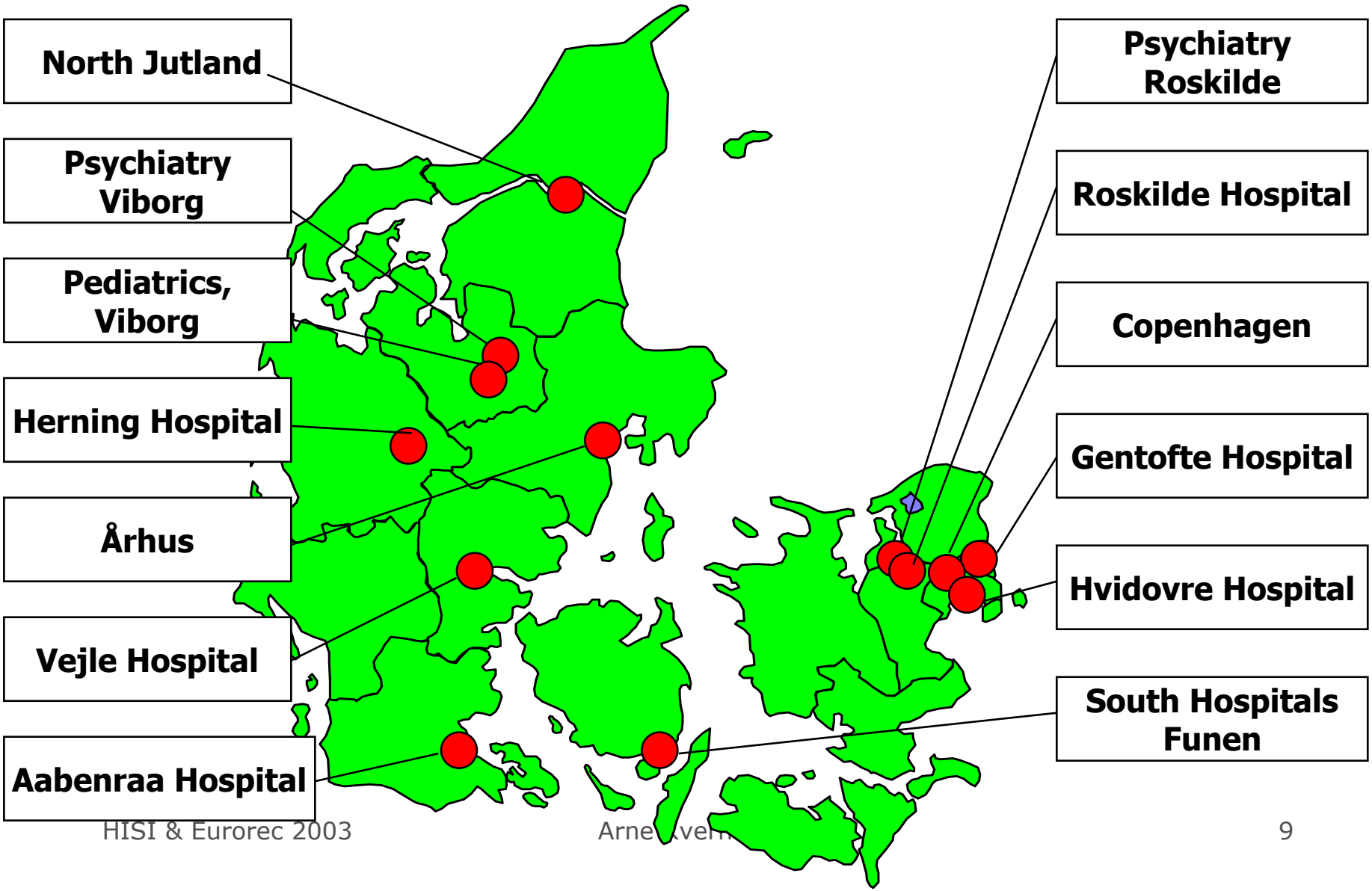
MedCom -The Danish Health Data Network

Messages/Month



Observed HEP EHR sites

(EPR-observatory,1999)



Copenhagen 20. februar 2001

SUNDHEDS MINISTERIET

Amtsråds-foreningen

Sundhedsstyrelsen

H:S Hovedstadens Sygehusfællesskab

Parterne er på den baggrund enige om de overordnede principper for standardisering og udbredelse af EPJ, der er beskrevet i vedlagte notat. Principperne vedrører fælles ansvar for udviklingen, fælles mål for funktionaliteten og fælles standardspecifikation for EPJ, som udvikles af Sundhedsstyrelsen i samarbejde med sygehusejerne. Parterne opfordrer til, at de beskrevne principper lægges til grund for det videre arbejde med EPJ i Danmark.

Arne Rolighed
Sundhedsminister

Kresten Philipsen
Formand for Amtsrådsforeningen

Jens Kristian Gøtrik
Medicinaldirektør

Peter Martinussen
Bestyrelsesformand for H:S

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What did they sign in 2001?

- Episode of care based
- Structured information
- Report to clinical databases for quality
- Standardized terminology & classifications
- Shared responsibility for testing & pilots

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Why make a National IT-Strategy

- Try to achieve agreement about the vision
- Try to keep shortsighted goals in focus together with the future needs
- Point out the needed initiatives and who is responsible

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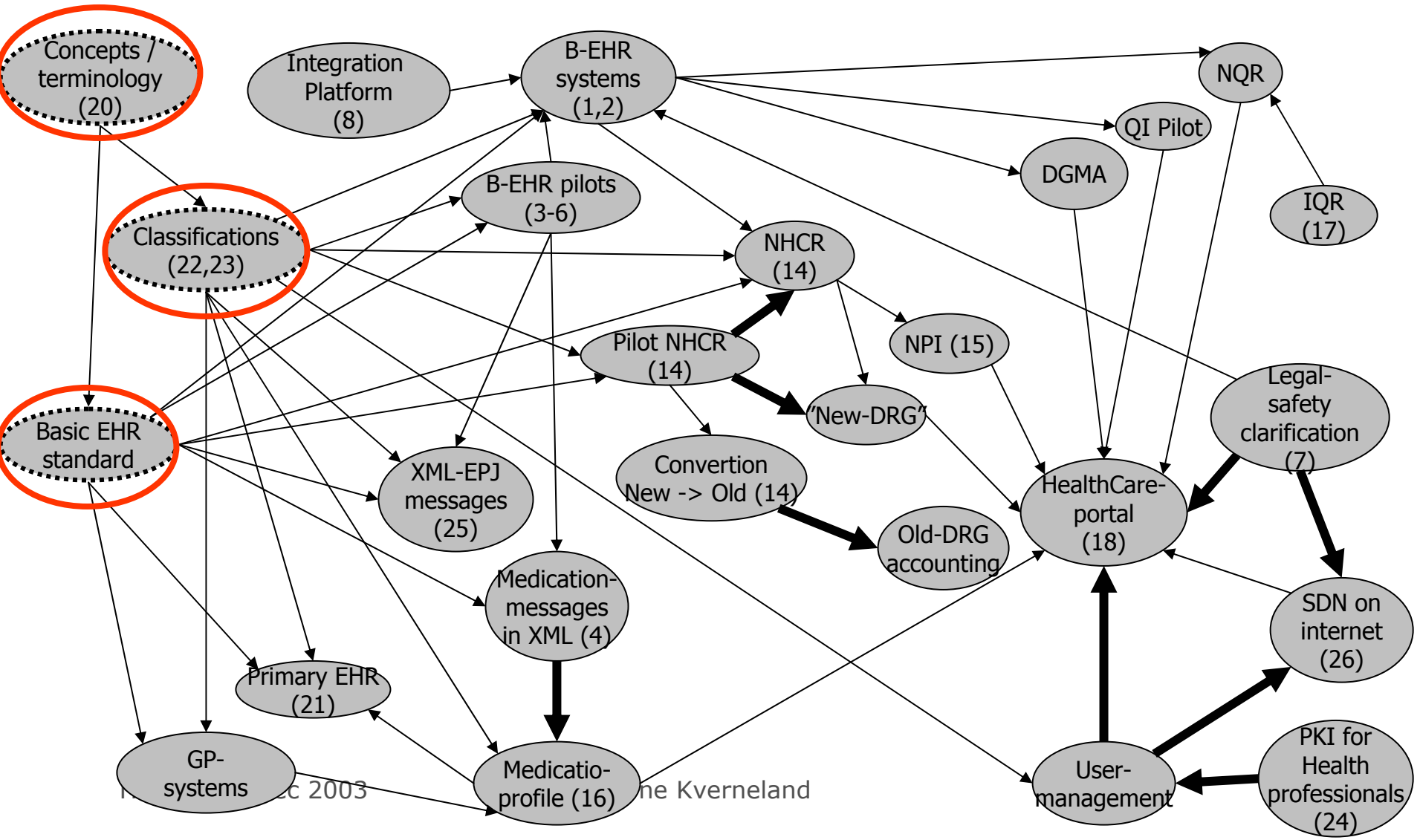
Initiatives of the strategy



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3 Major initiatives of the 2003-2007 strategy

- Coordinated development, test & implementation of EHRs
  - based on The National Basic Conceptual Model for EHR ”The Clinical Processes and its elements”
- A national terminology server and organization (NBH)
  - Web-access to web-application
  - National Concept Council & working groups
- Common classifications
  - International & national classification
  - SNOMED CT?

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Many stakeholders

- Ministry of Health and Interior
- National Board of Health

- 14 Counties and County Concil
- Copenhagen Hospital corp.

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Many Operators

- The National Health Portal
- Center for Health Telematics
- Vendors
- Hospitals
- Professional societies
- Labour organisations
- Ministry of Science
- Medicin Agency

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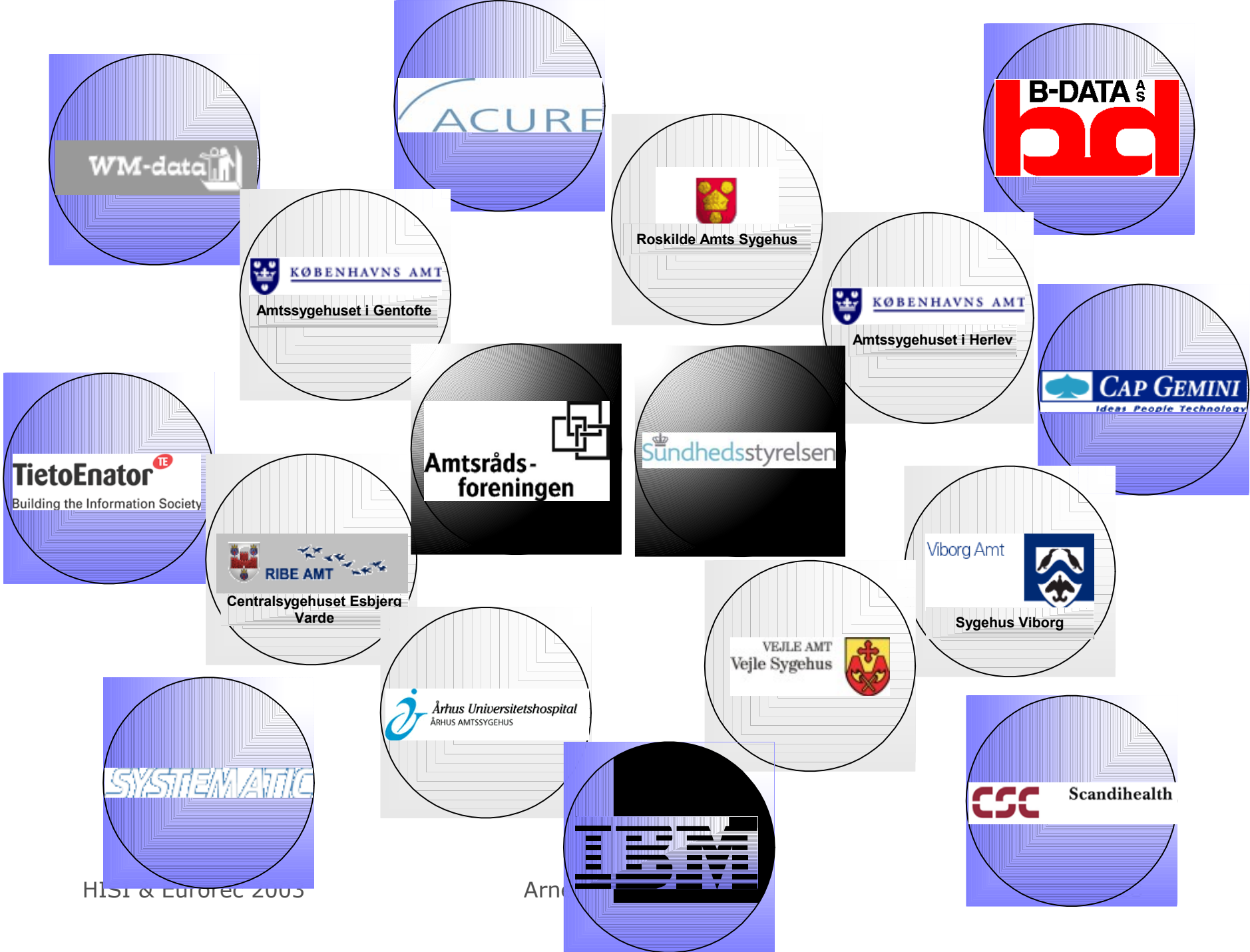
Can the strategy be carried through?

- Compiled in a close cooperation (10 months)
- Many initiatives

- Follow-up group
- Revision of the work plan after 2½ year

- Strategic pilot-project


WM-data
ACURE
B-DATA AS
Roskilde Amts Sygehus
KØBENHAVNS AMT
Amtssygehuset i Gentofte
KØBENHAVNS AMT
Amtssygehuset i Herlev
CAP GEMINI
Ideas People Technology
TietoEnator
Building the Information Society
Amtsråds-
foreningen
Sundhedsstyrelsen
RIBE AMT
Centralsygehuset Esbjerg
Varde
Viborg Amt
Sygehus Viborg
VEJLE AMT
Vejle Sygehus
Århus Universitetshospital
ÅRHUS AMTSSYGEHUS
SYSTEMATIC
IBM
CSC
Scandihealth

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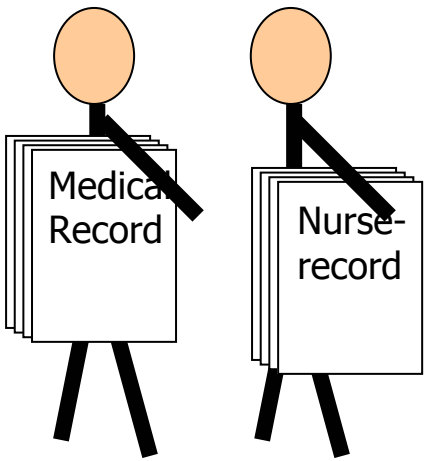
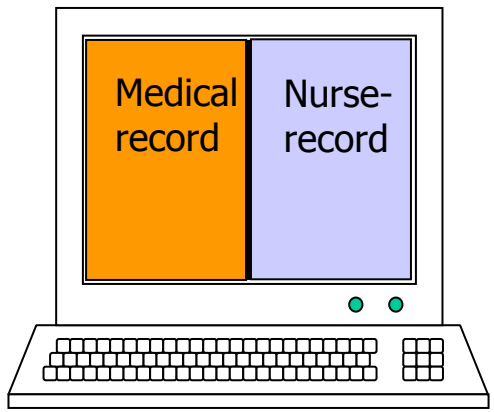
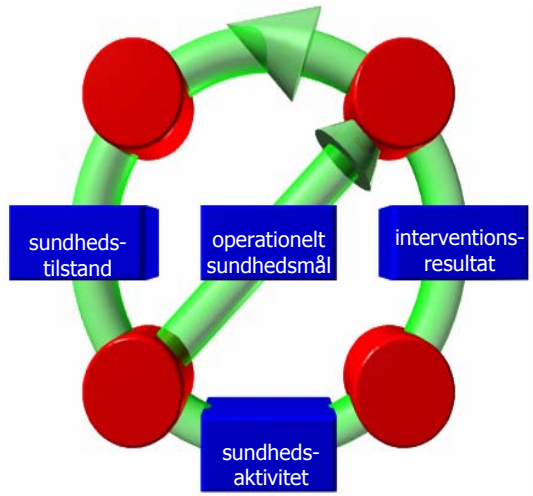
The proces of real common information….



Each profession
has their own record



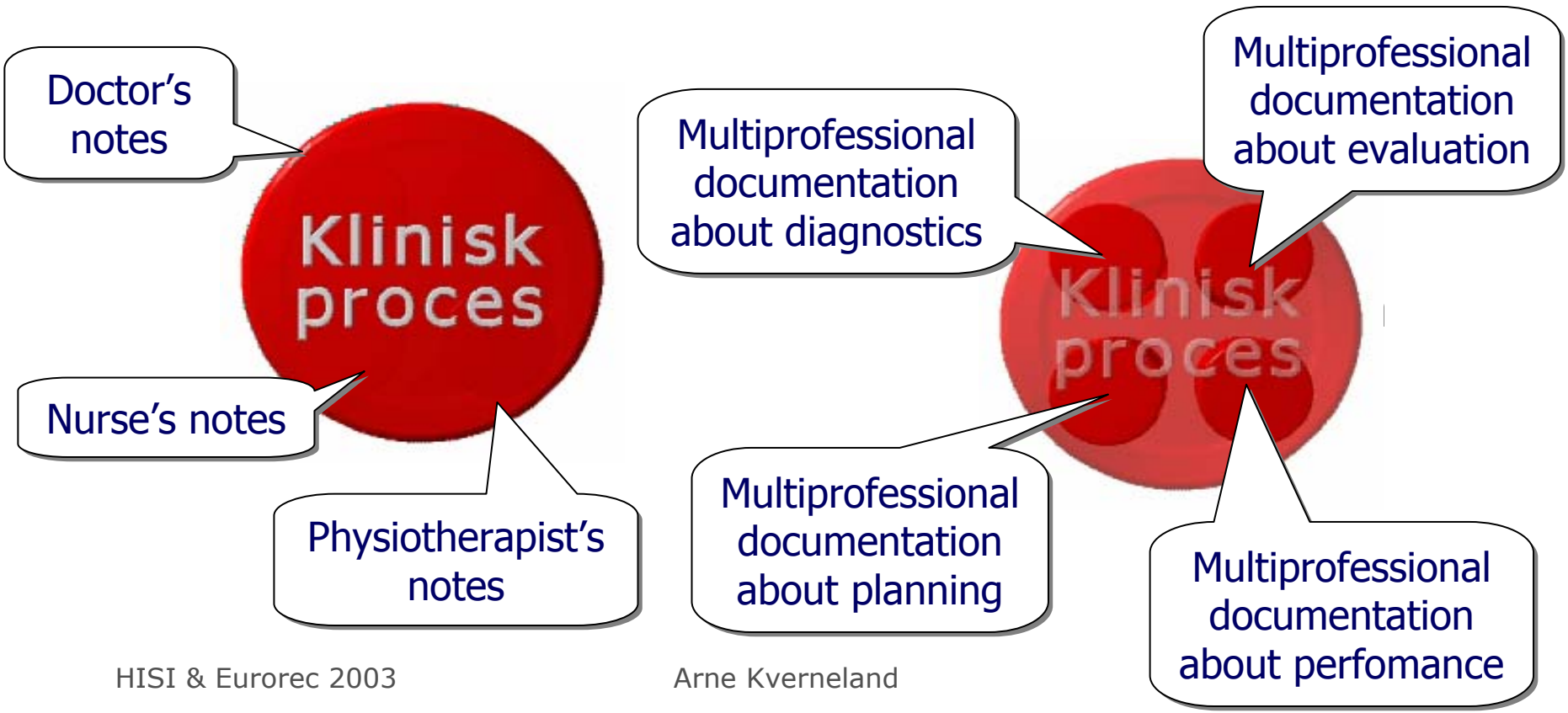
”if I can see yours,
you can see mine!”



Real common information

Structured clinical documentation with a multiprofessional procesmodel

- A general process
  - Meaningful for clinicians
  - Multi-professional understood



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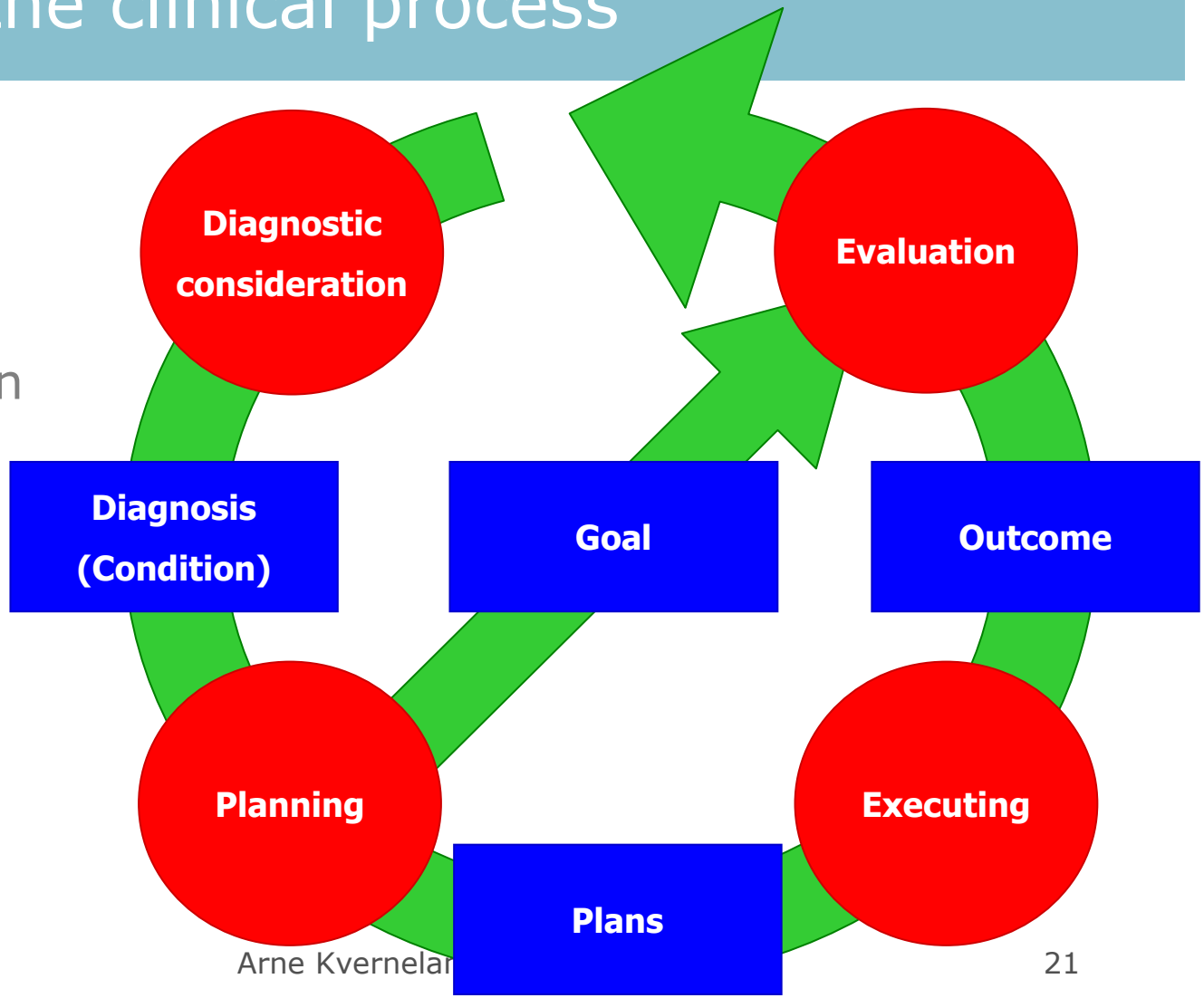
The steps of the clinical process

Process

Information



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How much can a strategy include?

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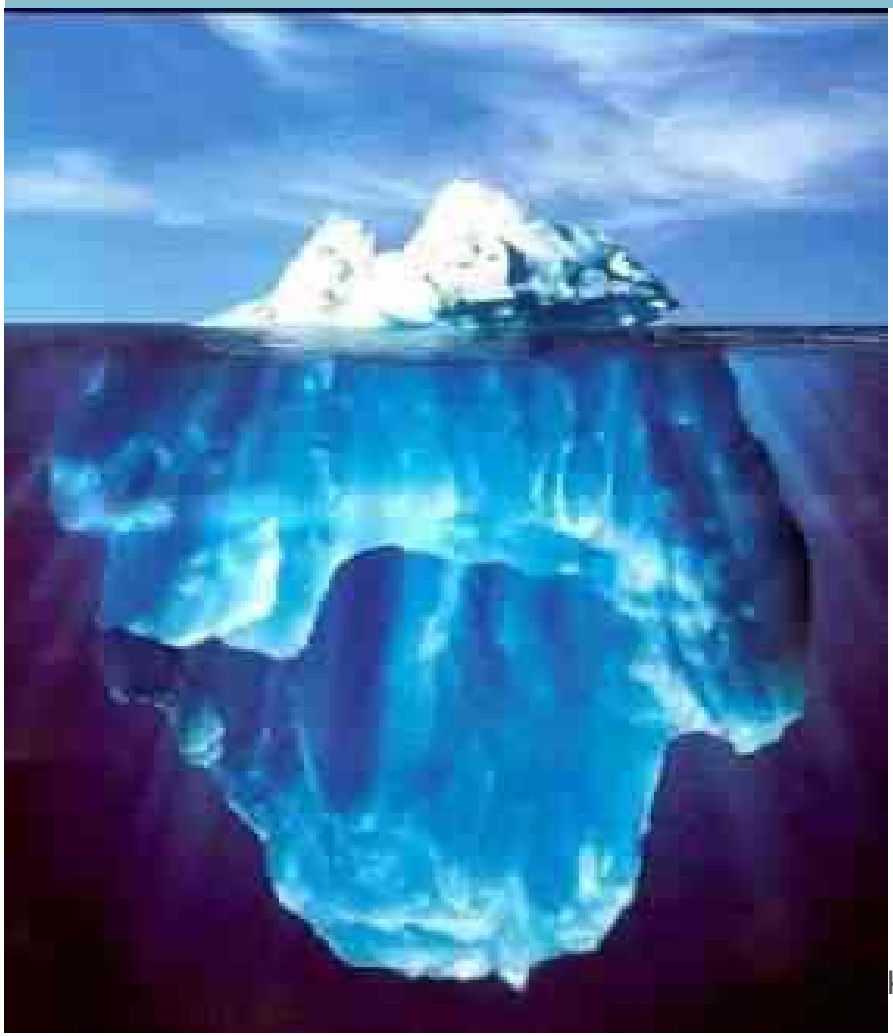
AN ICEBERG - A METAPHOR FOR A STRATEGY



- The visible part over water
- The supporting part invisible, under water
- How much of an IT-strategy is under water ?
- 60 % ?
- 80 % ?
- Is it only 20-40 the strategy can describe ?

Strategic planning….50 years of experience

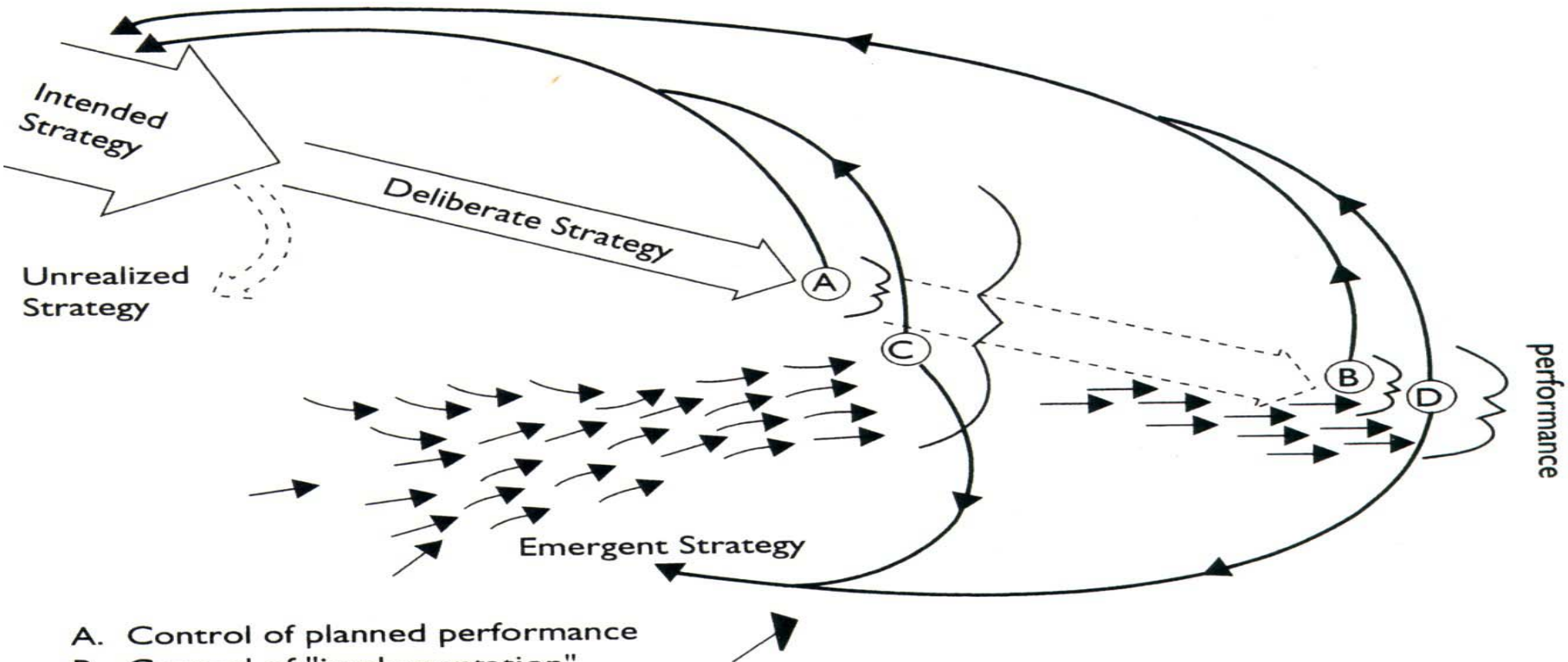


Figure 6–5
Strategic Control: Traditional (A and B); Enlarged (C and D)

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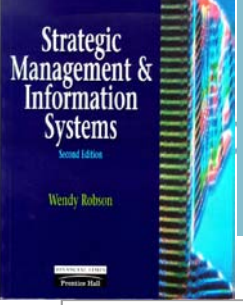
When does a strategy have effect ?



It takes 5 years before the benefit begins to materialise...

	PLANNING	METHODOLOGY	OBJECTIVE
Stage 1	**Inexperience**	**"Bottom-up", experts**	**Management understanding**
Stage 2	**Inadequate business plan**	**"Top-down", Management run**	**Agreeing priorities**
Stage 3	**Complexity apparent**	**"Bottom-up" "Top-down", prototyping**	**Strategy plan shaping up**
Stage 3 is in general a chaotic period. Selection of structured methodology to lead into stage 4.			
Stage 4	**Impatience for benefits**	**"Indside-out" management and users in control**	**Finding opportunities**
Stage 5	**Maturity**	**Multiple methods accepted. Partnerskip**	**Integrated IT and business strategy**

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Challenges

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Part of the strategy: The Danish EMR-project

- Modelling and documenting at 3 levels
  1. Conceptual level
     modelling real world concepts using UML notation
  2. Logical level
     modelling class diagrams and use cases using UML notation applying datalogical restrictions
  3. Physical level
     modelling implementation models – XML schemes
- Testing the model in major pilot project throughout 2003-2004

Link: www.medinfo.dk/epj (Danish only)

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Danish Conceptual Model vs. CEN/ENV 13606

- CEN/ENV 13606, Part 1 contains the extended reference architecture for communicating health related information partly or solely by EHR
- Both models use object oriented analysis documented in UML notation
- 13606 focuses on the composition of the EHR as a documentation system inspired by traditional paper files
- The Danish model addresses the information processing in clinical situations, including relations and structure of the information components

Sundhedsstyrelsen

Further development

- Modelling and documenting at 3 levels
  1. Conceptual level
     modelling real world concepts using UML notation
  2. Logical level
     modelling class diagrams and use cases using UML notation applying datalogical restrictions
  3. Physical level
     modelling implementation models – XML schemas
- Major pilots are testing the model in clinical settings throughout 2003-2004

Link: www.medinfo.dk/epj (Danish only)

the ULTIMATE SOLUTION