

Organising Healthcare Innovations  
4th Annual Healthwise Conference, 4 November 2016

## ***Adoption and implementation of Electronic Health Record Systems.***

### ***An organization perspective***

*dr. Marc Seelen*, Chief Medical Information Officer and  
Nephrologist, UMCG

### ***A stakeholder perspective***

*prof. dr. Albert Boonstra* FEB - UG

*dr. Janita Vos* FEB - UG

# *Electronic Health Records*

## What?

Software platforms to create, store, and share medical information about patients.

From isolated databases managed by individual doctors to departmental, organizational, inter-organizational, or even nationwide interconnected systems.

## Why?

The main rationale is that their use improves patient service and the quality and safety of healthcare.

EHRs promise cost effectiveness by more efficient flows of patient data.

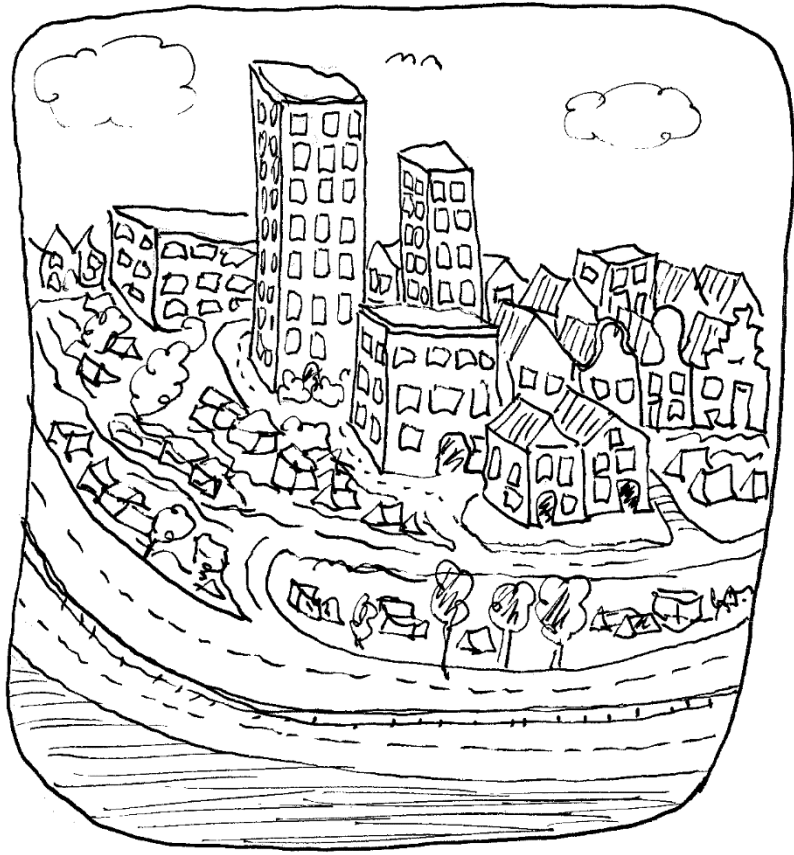
# EHR Implementation and adoption

Transition to EHR use is complex. Implementation problems include delays, high costs, and user resistance.

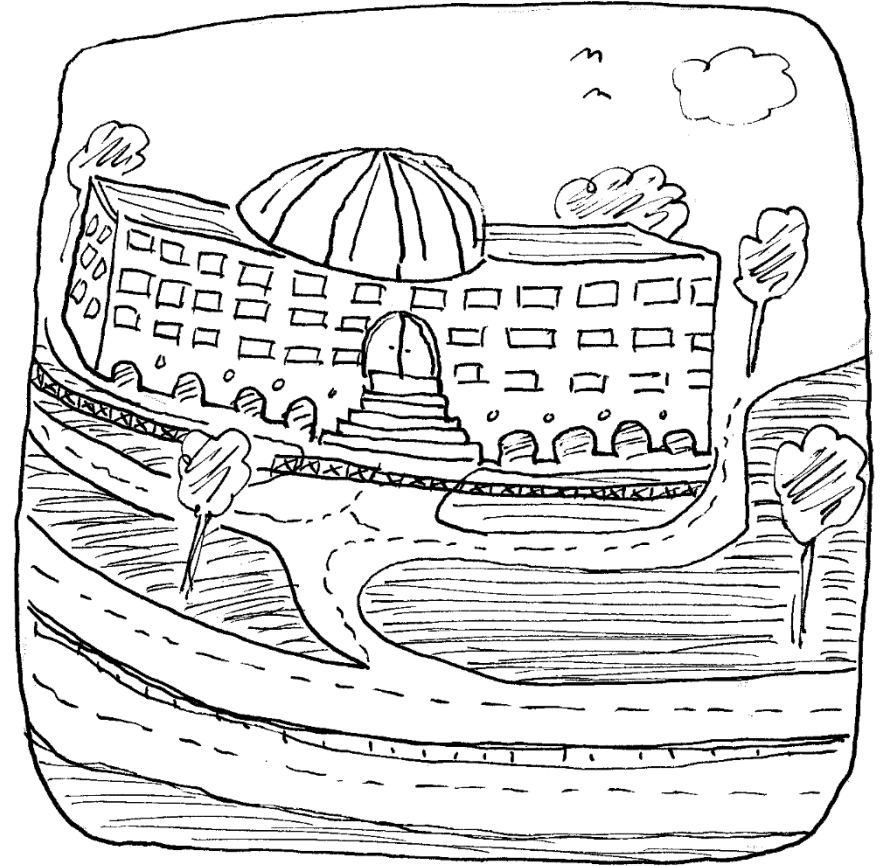
## Because

EHR implementation requires the involvement of multiple stakeholders with different expectations from the EHR.

When EHRs are implemented in healthcare organizations, the clinical, organizational and technical adjustments to the EHR are often complex, expensive and slow.

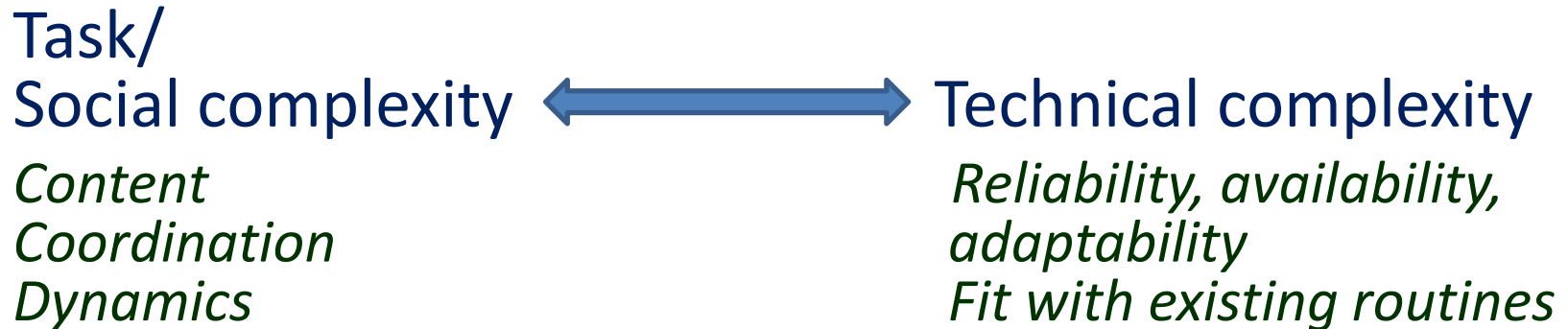


Pre – EHR City



EHR city

# EHR Implementation and adoption (c'tnd)



*Managerial / Clinical / Technical rationalities may conflict during EHR implementation and adoption*

*The goal of this workshop is to understand the complexity of EHR implementation from theoretical and practical viewpoints.*

## *An organization perspective*

*dr. Marc Seelen,*  
Chief Medical Information Officer and  
nephrologist, UMCG

# *Electronic Health Records*

UMCG:

2009: Elektronisch Patiëntendossier / Ziekenhuis Informatie Systeem (EPD/ZIS)

Waarom: - 'transmurale communicatie', 'efficiënte & patiëntgerichte zorgplanning',  
          'zorgpaden' en 'integratie van zorg en onderzoek' gaan inzetten;  
-Poliplus is ingehaald door de markt  
-Het huidige iSoft ZIS van het UMC Groningen kent een eindigheid van de periode van  
  gegarandeerd onderhoud door de leverancier.

RvB besloten om de implementatie van de Siemens Suite te beëindigen. Vanaf medio maart tot  
eind mei 2015 is de Programmaorganisatie afgebouwd

# *Electronic Health Records*

## **Why?**

The main rationale is that their use improves patient service and the quality and safety of healthcare.

EHRs promise cost effectiveness by more efficient flows of patient data.

-Stakeholder perspectief

RvB, Stafconvent, Users (Med, verpleegkundig etc), ICT



# *Electronic Health Records*

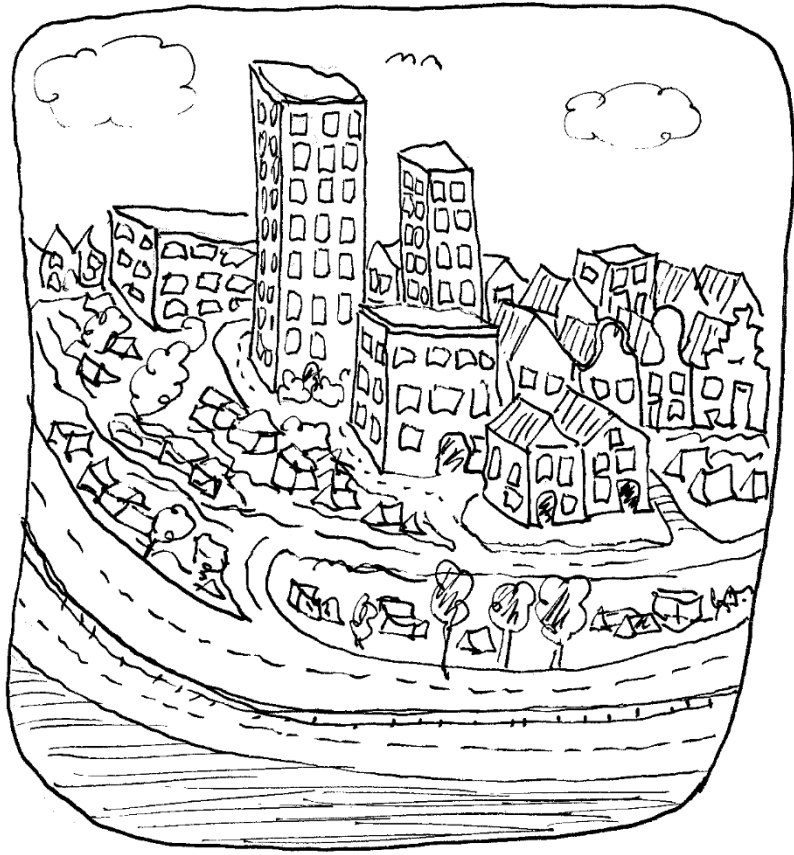
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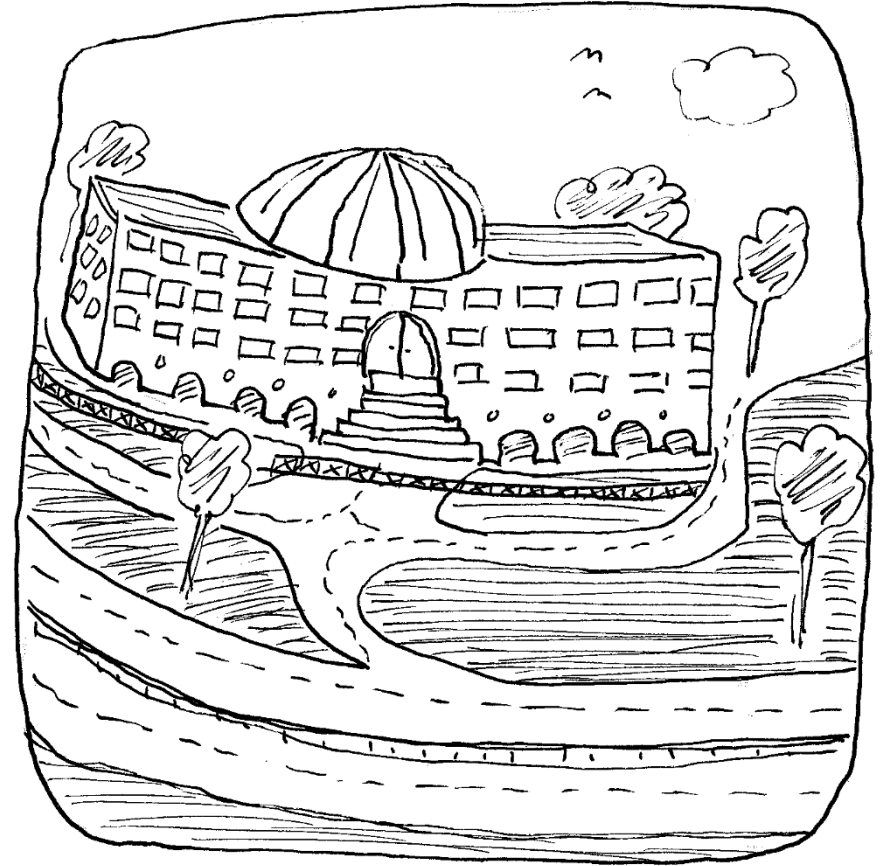
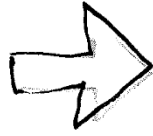
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-Stakeholder perspectief

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Pre EHR city



EHR city

# *Electronic Health Records*

Start EPIC implementation 2016

Why?

-Stakeholder perspectief

RvB, Stafconvent, Users (Med, verpleegkundig etc), ICT

# *Electronic Health Records*

Start EPIC implementation 2016

What?

-Stakeholder perspectief

RvB, Stafconvent, Users (Med, verpleegkundig etc), ICT

## ***A stakeholder perspective***

*prof. dr. Albert Boonstra FEB - UG*

*dr. Janita Vos FEB - UG*

# Understanding EHR implementation from a stakeholder perspective

Academic hospital, replacement of multitude of local systems by one hospital wide EHR.

Multiple objectives and requirements, a number of which were contradictory, or incompatible with the available capabilities and resources, leading to tensions.

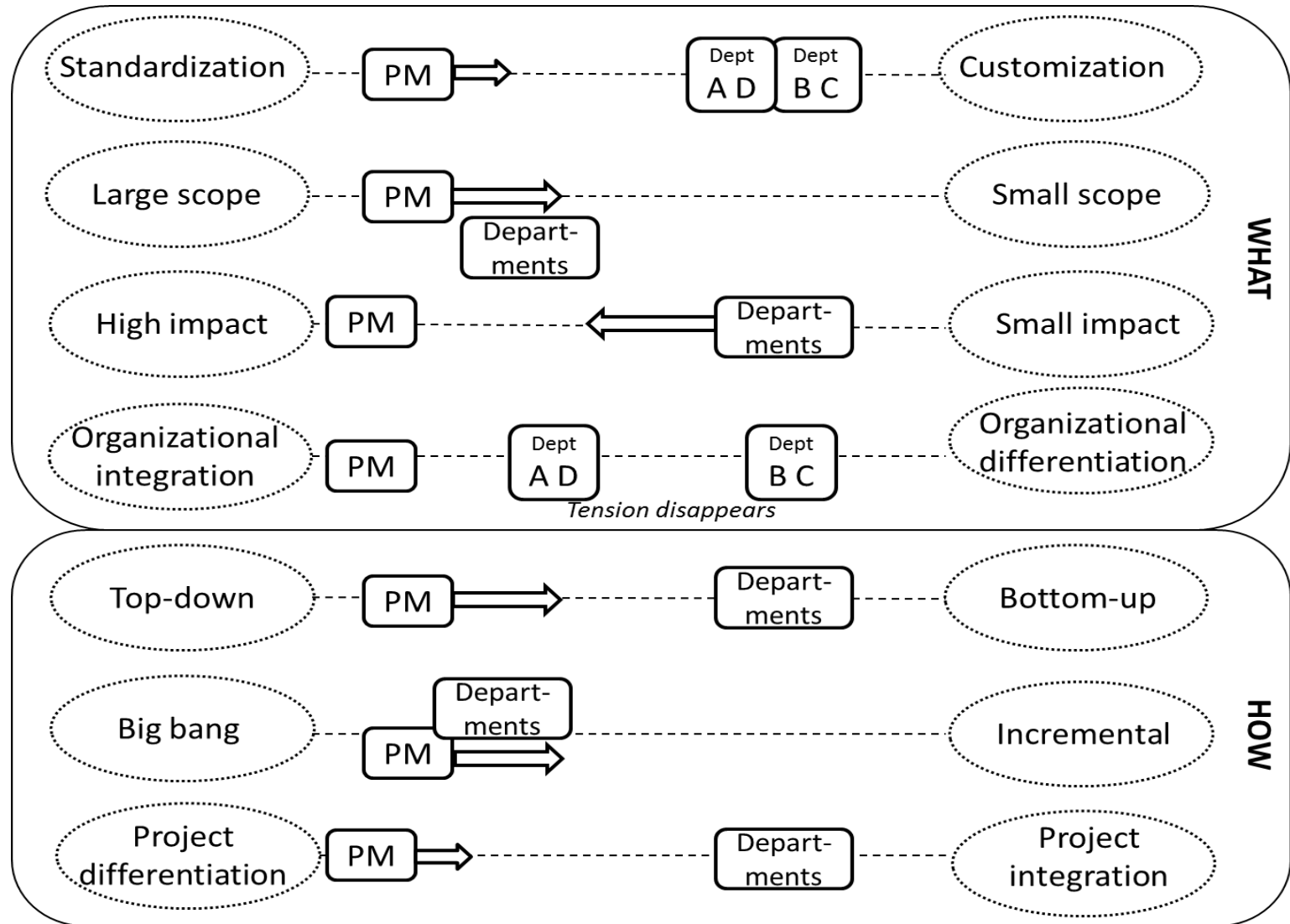
This EHR implementation involved dilemmas regarding the WHAT, and HOW of the project (stakeholder-dependent).

Our research team examined how tensions – evolving from such dilemmas – materialized and how they were related to stakeholder views (four departments and Project Management).

# Emerging tensions during this EHR implementation

	<b>WHAT tensions: related to project content dilemmas</b>	
<b>Technological system</b>	Standardized	Customized
	Large scope	Small scope
<b>Work organization</b>	High impact	Low impact
	Integration	Differentiation
	<b>HOW tensions: related to project process dilemmas</b>	
<b>Project organizing</b>	Top-down	Bottom-up
	Big bang	Incremental
	Differentiated	Integrated

# Stakeholders' positioning on the project management dilemmas



The length of arrow represents big (long arrow) or small (short arrow) move toward other side of the dilemma.



## Three mechanisms that give rise to tensions

- *Stakeholders* advocate opposing views on a dilemma (e.g. **on what**: customization-standardization).
- *Project management* and *other stakeholders* have different views (e.g. **on how**: top-down vs bottom-up).
- *Indirectly related to stakeholders*: different dilemma's interact (e.g. **both what & how**: scope hinders big-bang implementation)

## Stakeholder roles in EHR implementations

Stakeholders are a crucial resource for receiving feedback regarding dilemmas

They also highlight conflicting choices regarding dilemmas.

Early tension awareness through stakeholder dialogue is crucial for effective EHR implementation.

EHR implementers need to acknowledge, appreciate, and accommodate the tensions originating from dilemmas inherent to these complex projects.

Questions?

## Our research focus on EHR implementation

Tension awareness of stakeholders in large technology projects: a duality perspective, *Project Management Journal*, 2016

An integrative framework for managing project issues across stakeholder groups, *International Journal of Project Management*, 2016

Implementing electronic health records in hospitals, a systematic literature review, *BMC Health Services Research*, 2014

The dynamic interplay among institutional logics in hospitals, submitted

Barriers to the acceptance of electronic medical records by physicians, *BMC Health Services Research*, 2010

Analyzing an ERP system implementation by analyzing stakeholders. *New Technology and Employment*, 2009

Stakeholder management in IOS projects: analysis of an attempt to implement an electronic patient file, *European Journal of Information Systems*, 2008