

# Store og komplekse informasjonssystemer

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# Agenda

- Balancing the Local and the Global in Infrastructural Information Systems (Rolland og Monteiro)
- Who's in Control: Designers, Managers – or Technology? Infrastructures at Norsk Hydro (Hanseth og Braa)
- Ecologies of e-Infrastructures (Hepsø, Monteiro og Rolland)
- Control Devolution as Information Infrastructure Design Strategy: A case study of a content service platform for mobile phones in Norway (Nielsen og Aanestad)

# Balancing the Local and the Global in Infrastructural Information Systems

Rolland og Monteiro

# Balancing the Local and the Global in Infrastructural Information Systems

... information systems need to be situated to the local context of use. Yet for infrastructural information systems that span numerous contexts spread out globally, this is literally prohibitive. For these systems to work, it is necessary to strike a balance between sensitiveness to local contexts and a need to standardize across contexts.

We analyze a key element in this, namely, spelling out the (largely invisible) “costs” that the different actors pay to achieve working solutions.

# Balancing the Local and the Global in Infrastructural Information Systems

We aim at exploring one aspect of this problem complex, namely, the negotiations around striking a balance between the need for such information infrastructures to adapt to the various local contexts they are to operate across, while simultaneously coping with this complexity by leaning toward universal solutions.

Maritime classification company - MCC

Surveys

(Rolland & Monteiro, 2002)

# Balancing the Local and the Global in Infrastructural Information Systems

Traditionally, the surveys have been produced on paper. The surveyors had established a system of 74(!) different paper-based checklists for supporting different types of surveys. “It is a guideline consisting of different items that you should go through—but you will have to look at other things too (Surveyor 3, A).” The checklists were tailored according to the different contexts and environments. Thus, there was no standard representation or common use of terminology

... key motivation underpinning the design of the Survey Support System

# Balancing the Local and the Global in Infrastructural Information Systems

For sure, management were aware that the Survey Support System would challenge different communities' entrenched practices and interests (Braa & Rolland, 2000), and organizational politics was acknowledged and expected up-front

... Still, the extent and details of how the institutionalized practices, technologies, and terminology did differ were only gradually and painfully grasped.

# Balancing the Local and the Global in Infrastructural Information Systems

Global solutions in action: some illustrations:

- Irrelevant issues
- Additional work
- Adding new categories in situ
- Invisible work tasks
- Inscribed sequential logic



# Balancing the Local and the Global in Infrastructural Information Systems

three important implications for design can be drawn:

First, the Surveyor Support System tended to impose a too detailed way of entering data into the system. A higher level of accuracy seems to decrease flexibility in surveyor's work and increase complexity and uncontrollability on the managerial level. Henceforth, a lower degree of detail and accuracy required by the Surveyor Support System would make the system more flexible and probably enhance efficiency in use.

# Balancing the Local and the Global in Infrastructural Information Systems

three important implications for design can be drawn:

Second, which cases are considered “special cases” is important because they often require additional work to avoid misunderstandings, inform other surveyors, and to retrieve additional information.

A redesign of the system made the surveyors able to use the system more freely, and this solved some problems. For instance, when the restrictions on modifying generated reports were removed, this led to a significant reduction in average complete times for survey reports because this increased the opportunity for reporting “special cases.”

(Rolland & Monteiro, 2002)

# Balancing the Local and the Global in Infrastructural Information Systems

three important implications for design can be drawn:

Third, in designing systems like the Surveyor Support System it is impossible to cover all aspects. The Surveyor Support System fails to be an all-embracing perfect solution, but succeeds in being one element in a larger infrastructure when surveyors are allowed to improvise beyond the pre-given categories (Ellingsen & Monteiro, 2001).

Thus, in designing systems like the Surveyor Support System, not all information resources should be considered to become fully integrated in a common data model.

(Rolland & Monteiro, 2002)

Who's in Control: Designers,  
Managers - or Technology?  
Infrastructures at Norsk Hydro

Hanseth og Braa

# Who's in Control: Designers, Managers - or Technology? Infrastructures at Norsk Hydro

This chapter presents and discusses globalization and the definition and implementation of corporate information infrastructures within Norsk Hydro.

Standards are widely considered as the most basic features of information infrastructures

Our study illustrates that the reality is different. The idea of the universal standard is an illusion, just like the treasure at the end of the rainbow.

# Who's in Control: Designers, Managers - or Technology? Infrastructures at Norsk Hydro

Hydro Bridge standard

Lotus

Måtte gi opp å standardisere alt

Hydro Brigde skulle erstatte en den eksisterende infrastrukturen - det er vanskelig!

# Ecologies of e-Infrastructures

Hepsø, Monteiro og Rolland

# Ecologies of e-Infrastructures

We present and discuss a historical reconstruction of the development of a Microsoft SharePoint eInfrastructure in NorthOil (2003 – 2008). The eInfrastructure was to support strategically emphasized work processes and open up a richer context of decision making around production optimization

... the Microsoft-based SharePoint eInfrastructure was intended to “seamlessly” integrate the many different and distinct information systems holding relevant information on production optimization. A principal aim of our study is to analyze how, why, and who resisted this largely top-down eInfrastructure initiative.



# Ecologies of e-Infrastructures

NorthOil is an oil and gas company with large amounts of digitally stored data, models, maps, and visual and numerical analyses of sub-surface resources covering the 34 countries in which it operates.

Recently, eInfrastructure initiatives have been instrumental in addressing post-Enron regulations and practices for increased traceability, accountability, and transparency to government agencies, the public, the owners, and the stock market. To meet these standards for increased levels of documentation, it is vital to trace and document company decision processes over time.

# Ecologies of e-Infrastructures

In this paper we explore how the trajectory of oil and gas well development is maintained and constructed historically across technological platforms and disciplinary and geographically boundaries. Key to this, we argue, is the “patching together” of specialised, niche-oriented, partly competing and partly overlapping sources of information.

... Central to our story is the tension between implicit and explicit top-down demands for tighter integration embedded in the SharePoint eInfrastructure and how these unfold dynamically against the persistent, bottom-up reliance on niche systems and micro-practices of commensurability.

(Hepsø et al., 2009)

# Ecologies of e-Infrastructures

- Ulike måter å se informasjon på
- Gamle systemer brukes fortsatt
- Fragmentering av informasjon

Control Devolution as Information  
Infrastructure Design Strategy: A case  
study of a content service platform  
for mobile phones in Norway

Nielsen og Aanestad

# Control Devolution as Information Infrastructure Design Strategy: A case study of a content service platform for mobile phones in Norway

Omhandler hvordan to telenetttilbydere har endret informasjonsinfrastrukturen sin fra å ha sterk kontroll over hvordan innholdsleverandører kan prise og bruke infrastrukturen, til å la dem bestemme dette i større grad.

Balanse mellom kontroll og autonomi

# Control Devolution as Information Infrastructure Design Strategy: A case study of a content service platform for mobile phones in Norway

Within this study, this control/autonomy balance was observed in two levels:

The first involved employees engaged in the development of the CPA platform within both network operators, who were granted the autonomy to pursue their personal initiatives in an entrepreneurial milieu. This autonomy emerged in part as a response to a lack of managerial interest in services which were defined as economically marginal and appeared to be 'odd practices' and serendipitous applications of systems (Ciborra, 1994).

# Control Devolution as Information Infrastructure Design Strategy: A case study of a content service platform for mobile phones in Norway

A second level in which this balance was observed was in the development of the platform by the network operators. Recognition occurred by a number of individuals that they were not equipped with the resources, risk aversion, or the ability to innovate and create the range of services which the market required. Through the design of the CPA platform, the network operators transferred these elements to the content providers. These companies could now exercise the flexibility they had been seeking earlier. By relinquishing control, the network operators transferred responsibility for these types of services to external participants, including services that were not congruent with their cultivated 'public image'.

(Nielsen & Aanestad, 2006)

Felles tema for dagens artikler:

**Kontroll**



# Artikkel med gode definisjoner

På slutten av gruppetimen (onsdag) så vi på noen definisjoner på bottom-up og top-down + hva installert base er for noe. Jeg leter etter en versjon av artikkelen som dere har tilgang til, oppdaterer presentasjonen når jeg finner det

# Plan for neste uke

Uke 40: HØSTFERIE

Uke 41: Fremføringer