Velkommen til Gruppetime 5

IN2150

Hovedtemaer for i dag

- Sentrale begreper for denne uken
- Reading guidelines for denne uken.
- Spørsmål til oblig frist fredag



Eksamensdato er satt 29.05 at 8:00 - 03.06 at 11:59

Recap fra forrige uke

- **ERP systemer**
- Utfordringer og fordeler med ERP systemer
- Hvor viktig det er å inkludere brukere i implementeringen av nye systemer.
- Selv med tidlige utfordringer kan gi stor nytte i fremtiden

- Davenport artikkelen hjelper med å forklare hva et erp system gjør og hvordan det fungerer





Problematikk relatert til lokal og global tension og standardisering vs. fleksibilitet

- Arbeid på lokalt nivå
  - Redistributing, primary work, work arounds.

- Global vs lokal
  - Tensions
  - Delt med flere ressurser
    - forskjellige type brukere
  - Standardisering og fleksibilitet



Eksempler på standarder

Kom med eksemper

ICD – international classifica







er ikke best
ene men vi
l det

Brukbart til oblig fra forelesning

Standards and infrastructures
(from Monteiro et al 2013) section 3.

Localist accounts vs infrastructural accounts

- Localist accounts and practice-based research on standardised work practices, by contrast, tend to document how users improvise around imposed constraints.
- Localist accounts emphasise how "technologies are 'imported' ('domesticated', 'appropriated' or 'worked-around') into user settings.
- In support of localist accounts we acknowledge the inherent and crucial abilities of users to tinker with technology, but, unlike these accounts, *we wish to supplement them with analysis of how (and to what extent) IIs mediate standardised work practices.*
- With an II perspective, collaborative technologies serving multiple, similar use communities will necessarily rely on forms of standardisation (standardisation is the only way these similarities in demand can be met). The question within II, then, becomes an empirical one of how standardisation plays out. In other words: *what exactly is standardised (and what is not); when in the biography of the technology does standardisation occur; and for whom does standardisation apply?*

Denne ukens artikler

Viktig: synliggjør utfordringer ved standardisering, IKKE dårlige systemer

- Et laboratorium system
- To forskjellige kontekster

Fokus: tensions mellom kontekster

- Et kartleggingssystem
- Flere forskjellige kontekster av bruk

Fokus: tensions mellom lokal og global



Seamless Integration: Standardisation across Multiple Local Settings

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Abstract. The pressure towards tighter or "seamless" integration of health information systems is a recurring issue with both practical and analytical relevance. It taps into a discourse in the IS literature in general and organisation and management science in particular. Unfortunately, the prevailing perception of integration in the IS literature is as a predominantly technical issue. The CSCW literature, however, is attentive to the socio-technical aspects of integration. Building on this – but supplemented with recent elaborations in science studies – we aim at exploring the unintended consequences of information systems integration. A user-led perspective implies emphasising the tailoring to local needs based on in-depth studies of the micro practices. We argue, however, that the condition for such an approach is radically undermined by politically motivated, regional changes towards integration with implicated standardisation. Enforcing order in the form of standards across multiple local settings, seemingly a prerequisite for tight integration, simultaneously produces disorder or additional work in other locations for other users. Empirically, our study is based on a large, ongoing integration effort at the University hospital of Northern Norway, specifically studying work practices and perceptions across multiple laboratories.

Key words: integration, standardisation, unintended consequences, work practices



Balancing the Local and the Global in Infrastructural Information Systems

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A considerable body of literature has demonstrated—empirically as well as analytically—that 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. Empirically, we draw from an ongoing case study. We analyze the attempts of a maritime classification company with 5500 employees located in 300 sites in 100 countries to develop an infrastructural information system to support the surveying of ships globally. We elaborate design implications and concepts relevant to developing information infrastructures that also apply to the context of developing countries.

nology. There is a broad consensus about this mutually reinforcing relationship, but there is hardly an agreement about how this process unfolds dynamically. Developing and using the information infrastructures these organizations require have traditionally been regarded as a predominantly technical endeavor (Gunton, 1989). This is no longer the case, as a rapidly expanding body of literature addressing an array of issues of social, economical, institutional, political, and strategic nature demonstrates (Kahin & Abbate, 1995). Most relevant to us is the subset of this literature focusing on how the development and use of information infrastructure is interwoven with social and strategic issues in business organizations and in developing countries. This body of work explores a number of issues including: the heterogeneity of information systems due to different local needs (Davenport, 1998), the in-

Ellingsen, G., & Monteiro, E. (2006). Seamless integration: standardisation across multiple local settings. Computer Supported Cooperative Work (CSCW), 15(5-6), 443-466.

Seamless integration main points

- De ønsker å lage et felles system for laboratorier på alle sykehus for å øke effektiviteten, bytte ut forskjellige systemer
- **Problemet:** De forskjellige laboratorier jobber veldig forskjellig og de er ikke enige i endringer i systemet

Mikrobiologi labben og Clinical chemistry labben har veldig forskjellige løsninger

Tatt fra forelesningen

Klinisk kjemi labben

- 'simple' analysis
- High number of analysis
- Physician able to request specific analysis
- Results: pos/neg or numbers
- High level of automation by machines in performing tests
- Requires few hours
- Bioengineers, rarely physicians

Mikrobiologi labben

- Need of more information from physicians
- Not set beforhand which analysis to perform
- «the clinician presents a problem»
- More explorative
- Results: long explanations
- «interpretation and guidance to how information should be understood»

Standardiseringer lager tensions over konteksten

- Order and disorder:
  - Standardization process: imposing the order of uniformity
  - Across settings: produce ‘disorder’
  - Unintended consequences
  - E.g. access to results; available options for physician when ordering tests; “hidden” results.
- Granularity of standardization
  - What to standardize?
  - The vendor based the design of system on most productive laboratories.
  - Makes Microbiology invisible/problematic

Reading guidelines til artikkelen

PDF: https://link-springer-com.ezproxy.uio.no/content/pdf/10.1007/s10606-006-9033-0.pdf

- What do [the authors] mean by ‘seamless integration’?
- Why do you think [the authors] use the concept of order/disorder when talking about standardization across contexts?
- Why do you think [the authors] explain that IT implementation is a process of standardization? What is that ‘get standardized’? and why is standardization needed?
- Why do you think [the authors] argue that integration means accepting a degree of non integration?

What do [the authors] mean by ‘seamless integration’?

An integrated solution is supposed to give the physicians easy access to data from multiple information sources (Friedman, 2001; Tsiknakis et al., 2002; Winsten and McMahan, 2000), thus providing a complete picture of the patientÕs/clientÕs medical history. The multiple information sources are accessed seamlessly from a single point of end-user interaction (Boochever, 2004). This avoids that the physician must perform redundant activities (corresponding to what Cabitza et al., 2005 denote redundancy of effort), such as specifying the patient identifying information over and over again (Ginneken, 2002).

S. 446 (abstract svarer også)

Why do you think [the authors] use the concept of order/disorder when talking about standardization across contexts?

scale integration projects. Furthermore, this increases the possibilities for unintended consequences and disorders of which we have emphasised in our analysis. Given the fact that many integration efforts generally imply standardisation to practices and systems, we suggest that the disorder generated by integration efforts is *immanent*. When specific instances of this disorder are eliminated, new ones are simultaneously produced, possibly relocated.

Side: 464

Står mer om det på side 447

Why do you think [the authors] explain that IT implementation is a process of standardization? What is that 'get standardized'? and why is standardization needed?

Moreover, the laboratory module in HealthSys is one module, meaning that all of the laboratories using HealthSys system reside in the same database with no borders between them. Implementing common HealthSys laboratory systems would also come close to the visions of Health Region North of reorganising the laboratory services in the northern region where tighter coordination and collaboration between the laboratories were an explicit goal.

Health Region North supported the project of replacing GlobSys' RecSys EPR with HealthSys with 10 MNOK (about 1.2 MEUR). By June 2004, the PAS and the EPR module were implemented. By the end of 2004, the laboratory module was implemented. Before introducing the HealthSys's laboratory module , the laboratories at UNN had numerous laboratory systems. The Clinical Chemistry, Immunology and Clinical Pharmacology were running the same system (although different instances) systems on a Tandem platform from a Scandianvian based vendor. In contrast, the Microbiology laboratory was running a completely different system. Implementing and using the HealthSys laboratory module was considered crucial for a common and completely integrated solution.

Side: 452

Why do you think [the authors] argue that integration means accepting a degree of non integration?

Rolland, K. H., & Monteiro, E. (2002). Balancing the local and the global in infrastructural information systems. The information society, 18(2), 87-100.

Balancing the local and the global in infrastructural information systems

Handler om hvordan man kan finne balansen mellom lokale og globale behov og generalisering vs. spesialisering i informasjonsinfrastruktur.

Spesifikt om en case studie om et maritimt båtselskap som “sjekker” standarden og vedlikeholdet på skip ved hver havn i mange ulike land, hvor sjekken ofte må fortsettes på og fullføres av andre personer i andre havner og andre land pga. Lovverk som hindrer skip i å bli i én havn for lenge om gangen.



Reading guidelines til artikkelen

PDF: https://www-tandfonline-com.ezproxy.uio.no/doi/pdf/10.1080/01972240290075020?needAccess=true

- What do [the authors] mean by local and global?
- What is global and local in the case of the Maritime Classification Company?
- Why the Surveyor Support System did not adapt well to the local needs of the workers?
- What does ‘mutual shaping process’ mean?
- Why do [the authors] argue that local and global should be balanced?
- What is a ‘reflexive design process’ and why is it needed?

What do [the authors] mean by local and global?

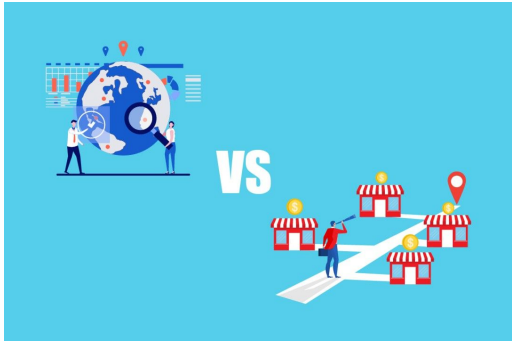
Eric Monteiro

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A considerable body of literature has demonstrated—empirically as well as analytically—that 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. Empirically, we draw from an ongoing case study. We analyze the attempts of a maritime classification company with 5500 employees located in 300 sites in 100 countries to develop an infrastructural information system to support the surveying of ships globally. We elaborate design implications and concepts relevant to developing information infrastructures that also apply to the context of developing countries.

Keywords information infrastructure, standardization of global work practices, improvisation, globalization

nology. There is a broad consensus about this mutually reinforcing relationship, but there is hardly an agreement about how this process unfolds dynamically. Developing and using the information infrastructures these organizations require have traditionally been regarded as a predominantly technical endeavor (Gunton, 1989). This is no longer the case, as a rapidly expanding body of literature addressing an array of issues of social, economical, institutional, political, and strategic nature demonstrates (Kahin & Abbate, 1995). Most relevant to us is the subset of this literature focusing on how the development and use of information infrastructure is interwoven with social and strategic issues in business organizations and in developing countries. This body of work explores a number of issues including: the heterogeneity of information systems due to different local needs (Davenport, 1998), the inscription of interests into artifacts (Bloomfield et al., 1997; Sahay, 1998), managerial approaches (Weill & Broadbent, 1998), local resistance to top-down initiatives (Ciborra, 1994), how basic design assumptions get taken for granted



What is global and local in the case of the Maritime Classification Company?

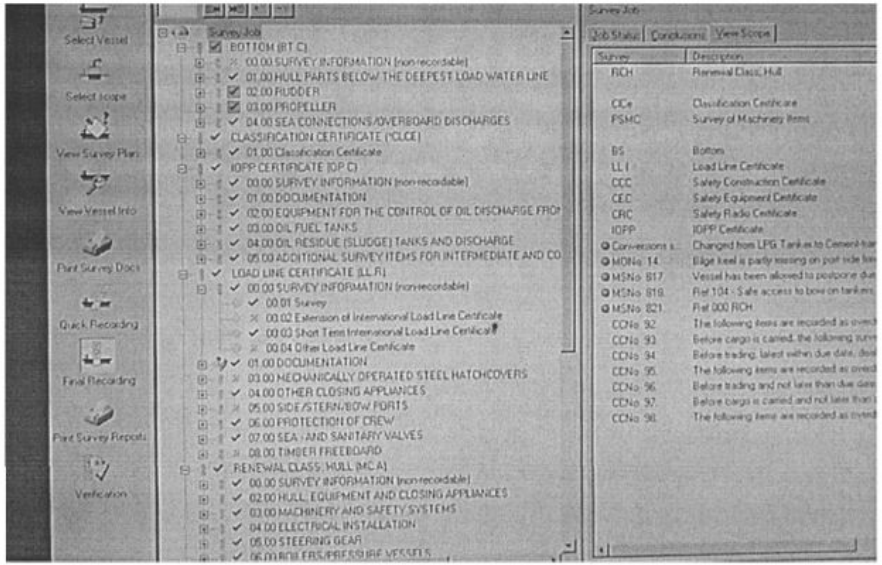
Side 93-96.

- Distribuert arbeid over flere forskjellige skips havner over hele verden, derfor bruker de papir og derfor er det veldig standardisert globalt sammen med arbeidet som må gjøres lokalt i den havnen.

Why the Surveyor Support System did not adapt well to the local needs of the workers?

- Mange forskjellige grunner som nevnes i forelesningen

Irrelevant categories



In this system, it's quite hard because you cannot just say "No." Consider this one [pointing at the screen] called "Propeller nozzles and/or tunnels." This vessel does not have one so I've selected "Not Applicable." But it could just as well been "Not inspected." [. . .] This can be very tricky. Our procedures do not specify that we have to take the rudder down, which means that this "02.09 Dismantling of Rudder" is not a requirement. This is only supposed to be done if I find something that indicates that I need to. There [pointing to the middle of picture 1] you can write "Not applicable," but then the following items become irrelevant as you simply can't see the rudder stocks when the rudder is not dismantled. Here [pointing] it makes sense to say "Not inspected." This is also true for "02.11 Rudder shaft or pintles and bearings" and "02.12 Max. bearing clearances after repair." Since the rudder is not down, it is impossible to inspect these things. And "Max. bearing clearances" gives absolutely no meaning here—these measures are only relevant when the vessel has been repaired. And if so, of course I would have categorized it as "Repaired/Rectified." (Surveyor 3, B)

Invisible work tasks

- Need for additional sources of information
- Need for additional people willing to find the needed information
- Digging into paper-based archives



What does ‘mutual shaping process’ mean?

Like most IT systems and infrastructures, the Surveyor Support System was designed in the Western part of the world and transferred to more than 130 offices all around the world. Offices visited during our study differed culturally from other offices in, for instance, Singapore and Dubai. However, whether it is Singapore or Scandinavia, standardized technologies like the Surveyor Support System become transformed in a mutual shaping process with the local context. These dynamic processes may locally develop along different trajectories, but due to the distributed nature of survey work and the shared infrastructure, the different local shaping processes do not happen in isolation from each other. Thus, in designing and implementing a shared infrastructure like the Surveyor Support System, local needs must always be weighted in relation to a well-functioning infrastructure that encompass different communities of practice, technologies, and diverging interests and needs.

Side: 98

Why do [the authors] argue that local and global should be balanced?

In other words, it is not, as one might easily be led to believe through the situated design argument, a particularly fruitful position to be hostile to universal standards. It is rather the case that the real issues circle around questions like: How do standards come about; how do the negotiations unfold; who has to fill in the glitches to make standards work; and where should the balance between the global and the local be drawn? Our pragmatic balance, then, amounts to making explicit the work or "costs" associated with establishing working infrastructures, a task that is notoriously difficult to identify as it tends to become invisible (Bowker & Star, 1999; Monteiro, 1998; O'Connell, 1993; Timmermans & Berg, 1997).

This is inspired by Bowker and Star (1999, p. 108), who noted that "true universality is necessarily always out of reach." Still, like all navigating devices, the ongoing strive for completion is productive. A splendid example is the prolonged study of classification that has been conducted by Bowker and Star (1999). The International Classification of Diseases (ICD) is an arch-typical illustration of how to balance between local and global needs. The ICD is a 100-years old list centrally administered list by the World Health Organization (WHO), aimed at mapping diseases that threaten public health. It is used by general practitioners, hospitals, insurance companies, statisticians, governments, and others worldwide. It implements WHO's

Side: 90

What is a ‘reflexive design process’ and why is it needed?

“The precondition for being able to balancing the costs in infrastructural information systems in the design process is to follow a “reflexive design process.” This involves designing the system gradually through iterative processes, where the current design is continuously negotiated and costs on different organizational levels are weighed. This implies ensuring flexibility through always—both technically and politically—keeping the possibilities open for redesigning the system. Spelling out the various types of “costs,” that is, additional work, is exactly what the improvisations are that are involved in technology transfer from developed to developing countries.”” (side 99)

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Oblig

Noen generelle krav til oppgaven og innleveringene (gjelder alle del-innleveringene):

1. Prosjektene skal gjennomføres i grupper på 3-4 studenter.

2. Minst to intervjuer skal gjennomføres. Intervjuene skal gjennomføres og dokumenteres på en vitenskapelig måte, noe som innebærer: a) at de baseres på en intervjuguide, b) at dere skriver notater under intervjuene, og c) at dere oppsummerer intervjuene skriftlig i etterkant. Intervjuguider skal vedlegges i første og andre innlevering.

3. Skriftlige innleveringer og presentasjoner skal fremstå som godt forberedte, ryddige og profesjonelle. Dette gjelder for eksempel god organisering, overskrifter, innholdsfortegnelse, sidenummerering, referanser og språk. Dere kan skrive på norsk eller engelsk.

4. Alle leveransene skal ha en forside som tydelig beskriver hvilken innlevering dette er (1-4), valgt organisasjon, gruppe# og navn og brukernavn på alle gruppedeltakerne.

5. **Alle innleveringer leveres i Devilry** senest klokken 23:59 på innleveringsdagen.

6. Alle innleveringer skal være på pdf-format.

7. Filnavnet skal følge denne malen: gruppe[gruppe#]innlevering[innlevering#].pdf (eksempel: gruppe4innlevering3.pdf).

Første innlevering: Bruk av Informasjonssystemer

Rapporten skal gir et brukerperspektiv på ett eller flere informasjonssystemer (det dere definerer som informasjonsinfrastruktur). Den skal være basert på faktaopplysninger (websider, dokumenter etc.) samt informasjon fra intervjuobjekt(er). Dere skal intervjue (minst) en bruker (30-45 minutter).

Krav til leveransen:

a) En skriftlig rapport, som inneholder:

- Innledning (½ side): Hvilken organisasjon (case) er valgt. Motivasjon - hva ser dere som interessant med nettopp denne?
- Informasjon om organisasjon (½ side): bransje, formål/sentrale forretningsområder, størrelse, struktur m.m.
- Et brukerperspektiv (3-4 sider): Beskriv hvordan en bestemt bruker forholder seg til IT-systemer for å løse sine arbeidsoppgaver. Dette kan omfatte:
    - Hvilke verktøy brukes (IT, men også papir, telefon m.m.) for å løse hvilke oppgaver?
    - Hvordan brukes verktøyene? Samles det først og fremst informasjon for *primær* bruk (knyttet til å løse arbeidsoppgavene) eller også for *sekundær* bruk av informasjonen (for eksempel for å administrere arbeidet, eller samle data for forskning/analyse)?
    - I hvilken grad utføres arbeidet sammen med andre (kollektivt)?
    - Hvordan er denne brukerens arbeid koordinert med andres arbeid? Hvilken rolle spiller IT for denne koordineringen?
- Bruk konsepter fra forelesninger og pensum fra del I.
- Rapportens skal være på max 5 A4-sider.
- Intervjuguide og prosjektlogg skal vedlegges.

Vurdering og tilbakemelding: Kursledelsen vil gi tilbakemelding på innleveringen.

Spørsmål?

Lykke til med obligen på fredag!

Takk for i dag!

Send evt andre spørsmål på mail:

Pederfs@uio.no