# Information Systems Development: Professional and Ethical Challenges

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- **Examples of Information Systems Development (ISD):**
  - **CASE #1: DSS development in a Government Department (HRS)**
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  - **Case #3: ISD in a Retail Chain *Colruyt***
- **Exploring Differences among ISD Discourses**
- **A Discursive framework for investigating ISD**
- **Implications**

## Information Systems Development (ISD) and Organisations

- Information Systems (IS) developers
  - Analyse business processes
  - Analyse information needs and specify information requirements (requirements engineering)
  - Design an IS (IS architecture, DB, application programs, security and privacy procedures, etc.)
  - Test components and operation of the IS as a whole
  - Train users and implement the IS
  - Maintain and monitor IS operations
- IS can be implemented based on software packages in which case ISD includes:
  - Specification of requirements, selection and acquisition of a software package
  - Adaptation and implementation of the software package
  - User training, maintenance and monitoring of IS

## ISD and Organisations

- IS are typically implemented to achieve performance objectives:
  - Increase efficiency and effectiveness of business processes
  - Lower costs
  - Improve quality of services and products (better customer services, shorter product delivery, higher product quality, etc.)
  - Improve coordination between business processes
  - Increase and maintain organisations' competitiveness
- Research into IS organisational impacts shows:
  - High failure rate of ISD and IS in organisations
  - Performance objectives are at best partially achieved
  - Organisational, social and human implications are much greater and much more complex than anticipated
  - Unknown and unpredicted social and human consequences increase the risk of IS failure and limit potential benefits of IS

**What do IS developers actually do when they conduct business process analysis, investigate users' needs and specify information requirements?**

- **IS developers**
  - Identify and model the structure of business processes, sub-processes and flows (which may also include business process re-engineering)
  - Identify and model objects/entities and their attributes within business processes
  - Identify and model relationships between objects/entities
  - Describe/model events, procedures and algorithms
- **IS developers assume that these models represent reality and that their task is**

  ***correct representation of reality***
- **These models thus developed become defining structures and specifications for database design and application programs development**

# IS developers are typically not aware that :

- By naming some objects/entities and their attributes and relationships (believed to be 'found in reality')

  **IS developers participate in a more fundamental process of object (re)constitution through language**
- Definitions and distinctions IS developers make become inscribed in the application software and subsequently reinforced during the IS implementation and operation

  **'software as frozen discourse'**
- These fundamental changes in the social reality induced by IS are not well understood and remain unrecognised in ISD
- They are however responsible for major social implications of IS and thus essentially contribute to IS success or failure

# 3 cases of ISD

## CASE #1: *DSS development in a Government Department HRS*

Molineux, J. "The application of a Dynamic System Model to the Process of Contestability in the Human Resources Section of the ATO", in the Proceedings of the 4th Australia and New Zealand Systems Conference *Creative Systems Practice*, The University of Western Sydney Hawkesbury, NSW, Australia, 1998, pp. 234-247.

## CASE #2: *ISD in a Hospital – Acquisition of an Integrated IS*

**Waring, T.S., 1999, "The Challenge of Emancipation in Information Systems Implementation: A Case Study in an NHS Trust Hospital", *Critical Management Studies* Conference, Manchester.**

## Case #3: ISD in a Retail Chain *Colruyt*

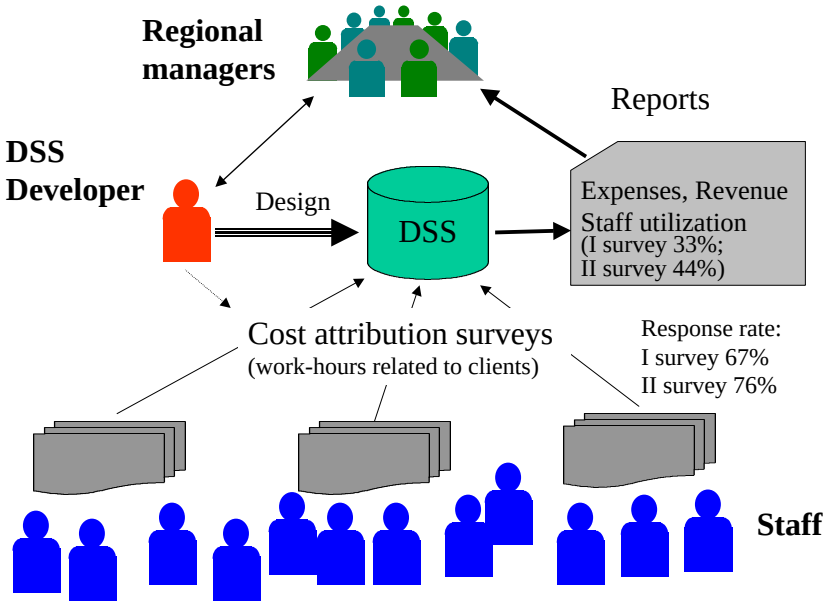
Janson, M. and Cecez-Kecmanovic, D., 2003, "Information Systems and the participatory ethos", in the Proceedings of the *European Conference on Information Systems ECIS*, Naples, Italy.

Cecez-Kecmanovic, D., Janson, M. and Brown, A., 2002, "The rationality framework for a critical study of Information Systems", the *Journal of Information Technology*, **17**, pp. 215-227.

## CASE #1:
## *DSS development in a Government Department HRS*

- **The development and implementation of a Decision Support System (DSS) based on Dynamic Systems Modelling in a Human Resource Services (HRS) section of a large Government Department**
- HRS provided non-payroll related human resource services to 'clients': all business units and corporate entity of the Government Department
- These services included performance management, occupational health and safety, employment equity and diversity, industrial relations, workforce planning, HR strategy and development
- The rationalization of the Government Department included transformation of HRS:
  - HRS would charge out services provided to other business units and
  - had to become "externally contestable" in two year period (as the business units would be able to choose other supplier of HR services (outside the Department)
- For HRS that meant a major change: moving from "a monopoly supplier in a fairly stable environment into a full competition in a quite dynamic environment" (p. 234).

## DSS development in a region (Nov 1997 – April 1998)



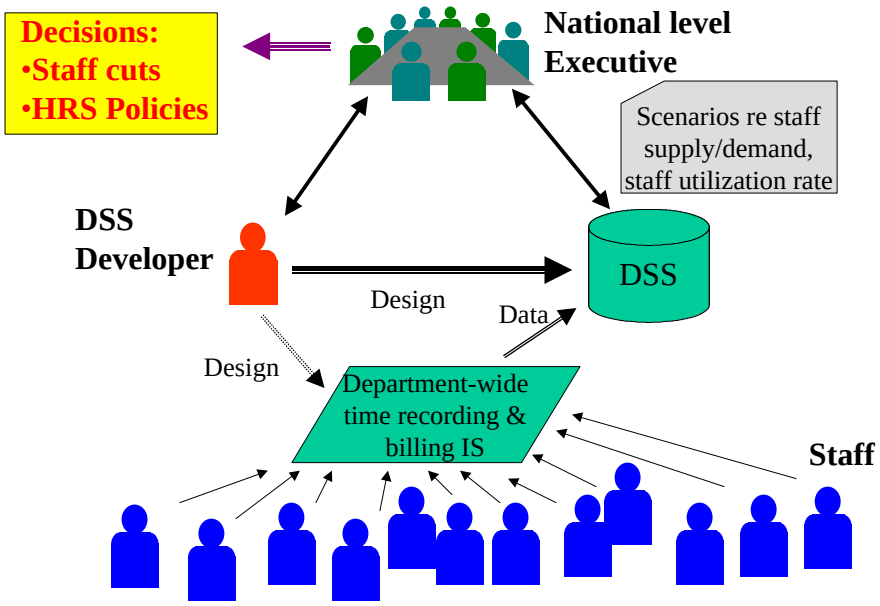

## DSS development and implementation

- ❑ **Nov 1996**
  - ➢ ***Cost attribution survey*** in a Region: staff volunteered to monitor and record times they spent engaged directly on *client-related* and *other* (non-client-related) work during a fortnight period
  - ➢ Staff **participation rate was 67%**; survey results showed staff 33% utilization rate
  - ➢ DSS (regional level) modelled the new business situation (demand and supply of services) and produced reports that predicted future services, business expenses, expected revenue for services and profit/loss calculations (based on survey and data provided by managers)
  - ➢ The objective of the DSS was to assist management teams
    - to understand the dynamic relationships between the demand and supply of services and
    - make policy and staffing decisions to transform HRS into leaner, and more efficient and effective service provider
- ❑ **Dec 1996**
  - ➢ Presentation of the DSS reports to Regional managers
- ❑ **Feb 1997**
  - ➢ DSS demonstration to National HR manager and executive which led to the decision to develop the National level DSS

## DSS development and implementation

- ❑ **Mar 1997**
  - ➢ The **National level DSS** (regional staff work related data generalized for the whole Department) justified staff reduction of approximately 1/3 (voluntary redundancies offered to staff)
  - ➢ To improve accuracy of the National DSS the developer conducted the ***second cost attribution survey*** with 76% participation rate (based on this survey DSS calculated staff utilization rate of 44%)
- ❑ **May-June 1997**
  - ➢ The new version of the National DSS included a new (National) time recording and billing IS to feed DSS
- ❑ **June 1997**
  - ➢ Workshops with staff to "explain the vision and direction of HRS and introduce the time and billing system and train staff to use it"
- ❑ **1 July 1997**
  - ➢ New National time recording IS alive
  - ➢ The developer offered a high level job in the Department (National level)

## DSS in the Government Department (May 1997 – April 1998)




## DSS development and implementation

- **July 1997** ➢ Staff reductions took place – **25% accepted voluntary redundancy packages**
- **Aug 1997** ➢ DSS provided to the National Manager 5 different scenarios and predictions based on varying expenses, revenue, demand and supply variables
- **Oct 1997** ➢ DSS provided to the Executive meeting further 7 scenarios which was followed by several more scenarios indicating a probable crises on the horizon due to higher then needed staff numbers (DSS showed that only 170 out of existing 240 were sustainable, assuming winning all the externally contestable contracts)
- **March 1998** ➢ The decision to reduce staff to 170 (further **reduction of 26%**) was made

## The DSS developer was genuinely concerned with *professional issues*

- **DSS development methodology**
  - DSS developed first as a prototype and gradually evolved through interaction between the developer, users (managers) and the DSS
  - Correct application of dynamic system modelling
  - Collection of accurate data for the DSS model
- **Staff involvement**
  - The developer believed that HRS staff had to be involved as they provided services to clients and their work was going to be dramatically changed
  - HRS staff needed to be involved in the DSS development project as only they could provide data about the ways services were provided and time allocated (collected by the two surveys)
  - The new approach to HRS service provision and transformation of business processes in the Department depended on staff acceptance of change

"Staff involvement was critical and the National Manager visited all staff several times in 1997 to ensure direct involvement of staff. New skills were developed and a customer focus established." (p. 244).

- **Staff training**

The developer considered training of staff "critical for to the modelling project [DSS] to get accurate data for use in projections of future scenarios." (p. 241).

The developer explained that DSS played a key role in implementing

"the economic rationalist model of contestability" in Human Resource Services (p. 238).

The developer also indicates that there were obstacles in achieving given objectives:

"A key obstacle was the fact that much of the change was being directed by events nationally…. Many staff did not work in the private sector and were unfamiliar with balance sheets and other financial documents…

Another obstacle was the disillusionment of many HRS staff members, which it was thought may influence early successes" (p. 239).

# Ethical issues – who are the users?

- The developer assumed that managers are the **users** of the DSS:
  - Managers contracted the developer to build the DSS to assist them in making restructure decisions
- Based on this assumption the developer correctly approached DSS development through the "developer-users-DSS" interaction

- Are managers the only users of the DSS?
- How did DSS developer define the users?
- Who else might (should) be considered users of the DSS?
- Could (Should) the developer include other users (staff) under the conditions present in the Department?

# Ethical issues – representing reality in DSS?

In modeling future business situations

- the developer assumed that he *represented reality*, that is "work performed by staff" in the DSS model as accurately as possible (based on 2 surveys completed by staff members)
- The work performed by staff was defined by managers as **"client job related" or "other"** and represented by
  Staff *attribute 'work'* with two values:
  - ***Client-job-related***
  - ***Other***
- This was a key element in modeling future HRS' business scenarios

- What did such *representation of reality* entail?
- Managers defined the type of work staff members (who provided HR services) do
- Why such distinction
  **"client job related" or "other" work ?**
  What did managers achieve by defining staff work in such a way?
- Was this the only way work performed by HR staff could be defined and modeled? What are other potential options? Would different representation of reality make any difference?
- Should the developer have consulted staff and asked them what they actually did? Should he be concerned with implications?

# Ethical issues – responsibility for the outcomes

- The objective to rationalize Government Department and create a leaner HRS which is "externally contestable" was eventually achieved by severe staff cuts (first 25% and later on further 26%):
  - These were the decisions by the Government Department and the developer did not feel in any way responsible for the staff cuts
  - The developer completed the job he was contracted for and could not be held morally responsible for decisions made by others

- The decisions to cut staff was enabled and supported by the DSS
- Given the evidence (scenarios) from DSS such **decisions seemed *inevitable and fully justified*** (failure to do it would have caused a major crisis – according to the DSS predictions)
- However, **different view of reality** (different definition of work performed by HR staff and different vision of HRS in the future) would have resulted in a completely different DSS model
- Decisions "inevitable and fully justified" by such DSS would be significantly different (eg. innovative transformation of HRS, staff retraining and reallocation) and the Department would still achieve its rationalization objective

# Ethical issues – DSS success?

- **Involvement of staff was critical**
  - to the National Manager to prevent potential staff unrest and to ensure active staff participation in the transformation of HRS (new ways of service provision requiring new skills and customer focus)
  - to the developer as he needed accurate data for use in projections of future scenarios in the DSS
- The developer was concerned with "**the disillusionment of many HRS staff members, as an obstacle to early successes"**
- The developer together with the National manager and other Executive considered the DSS a **great success**

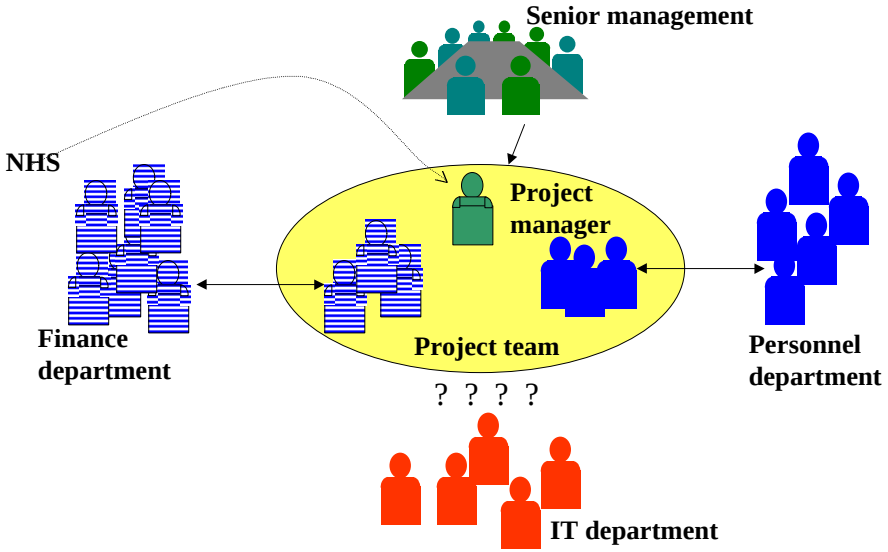
- **Staff was involved** in data acquisition to serve DSS modelling (staff voluntarily monitored and recoded their time in two surveys) without knowing the purpose of modelling nor potential consequences
- Remaining staff was involved in training to acquire new skills
- Involvement of staff had been for instrumental purposes only
- How did they define the DSS success? Achievement of objectives? Whose objectives?
- Was the DSS actually a success?
- Should staff disillusionment have been a legitimate concern for the developer?
- Should staff played a role in defining the DSS as well as determining its success?

# Case #2:
# *ISD in a Hospital – Acquisition of an Integrated IS*

- North Trust Hospital experienced increasing demands for information from NHS (National Health Services)
- Senior management was concerned with
  - low quality of data
  - inflexibility of existing IS and inability to provide required reports
  - management and control problems in the Hospital and the coming merger with another Hospital
- Senior management was under pressure to rationalize work force and cut costs
- Particularly critical were Finance and Personnel departments, both in need of an IS
- Senior management created a Project team to find solution for an Integrated Payroll and Personnel IS (IPPIS)
- Requested from Project team to come up with an effective outcome but did not dictate the solution

  *"IS belongs to the users so they should determine which was procured"*

# Case #2: *A Project Team was created to procure an IPPIS (early 1997)*




# Personnel department's concerns and attitudes

- **Responsible for producing a wide range of reports**
- **Dissatisfied with their old Personnel DB (not connected to Payroll DB)**
- **Focused on broader organisational issues**
- **Concerned primarily with Personnel IS but in favor of an Integrated Payroll/Personnel IS**
- **Oriented to team building and open for negotiation and compromise**
- **Concerned with data and reports quality, integrated and coordinated functioning of the Personnel and Finance departments and IPPIS to support them**

# Finance department's concerns and attitudes

- Dissatisfied with their old payroll DB (not connected to personnel DB)
- Concerned primarily with **Payroll IS** but recognize the need for an **Integrated Payroll/Personnel IS**
- Strictly focused on their internal business processes and procedures

  ***"They had pressing work to do"***
- Characterized by a closed local (departmental) culture
- Attempted to dominate discourse and take control of the whole project

  **"The payroll is vital and mistakes can cost the Hospital thousands of pounds"**

## IT department excluded from the Project team and the IS procurement process

- **IT department deliberately omitted from the Project team**
- **IT department in the past concerned with infrastructure and software side of packages**
- **IT department known as speaking "techno-babble"**
- **IT department seen as a barrier to successful procurement of IS**
- **IT department isolated from the rest in the IS procurement process**
- **(An interesting question: how did they eventually implement the IPPIS?)**

## IPPIS procurement

- **Companies were invited to give demonstrations of their packages (individual personnel and payroll IS and/or IPPIS)**
- **The Project team also visited other hospitals which implemented different packages; these visits and demonstrations gave them insight into some business and organisational problems that they had not considered before**
- **After a visit to a hospital that implemented an integrated IS they concluded that:**

  **"… the IPPIS [software package] was not the problem itself but the way it has been implemented" (p. 9)**

## IPPIS procurement was complicated by a merger with another Hospital

- **Departments involved had different interests, histories, cultures, information needs and IT experiences and expectations :**

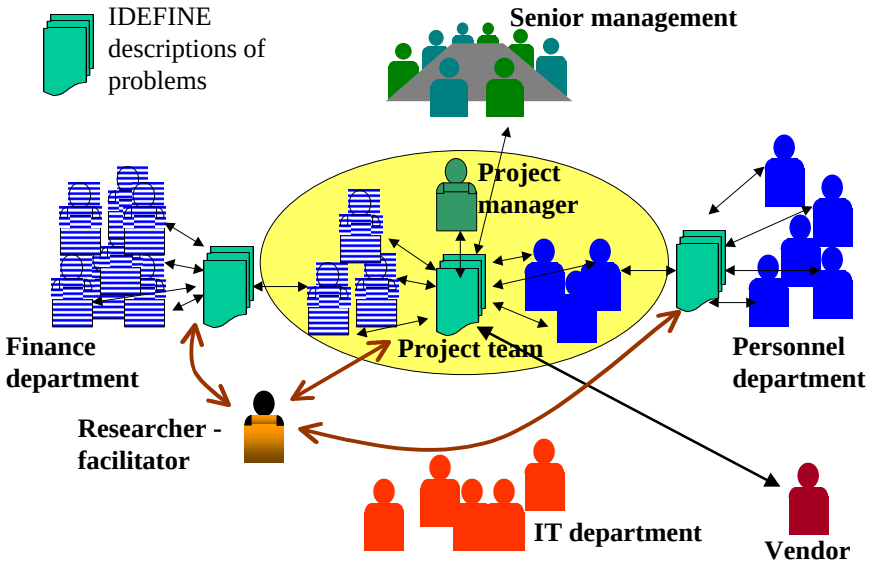
  ***"... nowhere was any guidance on how departments with different cultures might negotiate and consider their own particular concerns…articulating requirements was a problem from the beginning and anticipating future difficulties was almost impossible."***

## A Researcher was invited to join the Project team

- **The researcher (author) conducted an action research project with the aim of assisting the Hospital in specifying information requirements and procuring a package for the IPPIS**
- **The researchers introduced IDEFINE graphical language which enabled**
  - **Description of existing processes and future operations and systems**
  - **Identification and examination of essential organizational problems regarding integration of payroll and personnel services, new working practices etc. that existed irrespective of the future IS**
  - **Articulation of different views and interests; exposition of biases and illegitimate claims**
  - **Development of shared understanding of processes and work practices**
  - **Exploration of conflicting situations and negotiation of integrated solutions before the contract with the software vendor had been signed**
  - **Meaningful interaction with Vendors and clear specification of requirements and future IS implementation**
- **Researcher as facilitator trained staff and helped them apply IDEFINE**

  ***"Once trained everyone diagrammed their own system as it currently stood and discussed it with other staff in the Project team"***

## *Procurement of the IPPIS conducted as an action research project by the researcher-facilitator*




## A successful installation and implementation of IPPIS

- July 1997 a contract signed with software vendor to deliver a package for the IPPIS
- Sept 1997 installation and training of the software package commenced
- Personnel IS went live Jan1998
- Payroll IS went live April 1998
- Smaller software changes gradually made

## Ethical issues – stakeholders in ISD

- **Finance department had an arrogant attitude and tried to dominate organizational discourse regarding the IPPIS**
- **The Project Manager (had IT experience) excluded the IT department from the Project team arguing that he wanted to prevent the domination of technical issues**
- **Departments competed for the control over the process and the future IPPIS**
- **The software vendors were only interested in the technical side of the system "It's up to you how the system runs and who does what…that is internal operations"**

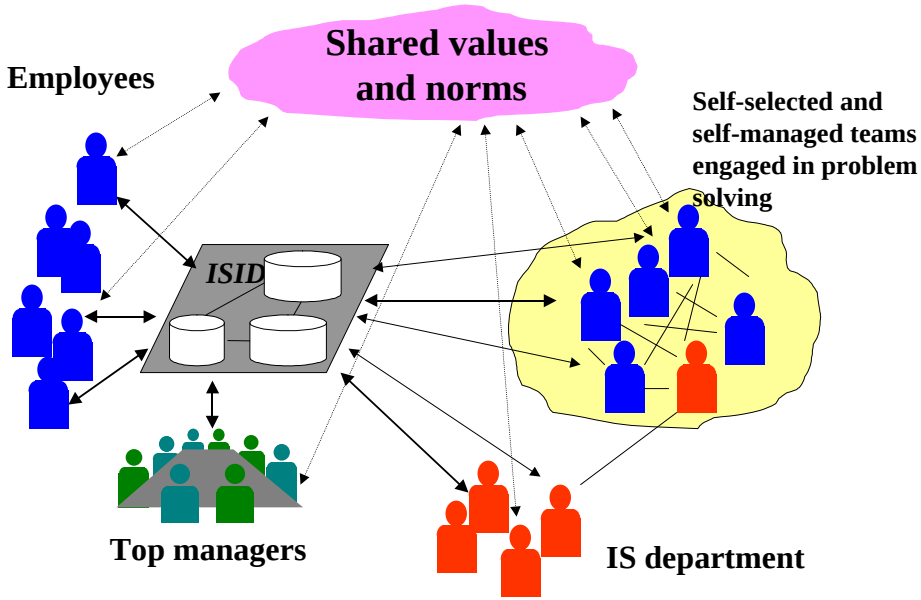
## Ethical issues – researcher's concerns

- **Challenging unwarranted power positions and tendency to dominate discourse** (the use of IDEFINE modelling tool enabled staff and department' representatives to check descriptions and question assumptions)
- **All stakeholders have an opportunity to present their views and their needs (multiple discourses) and engage in a rational debate**
- **No group of actors can dominate the discourse**
- **Values and norms guiding IPPIS selection and adaptation are widely negotiated and accepted**
- **The process of modelling and requirements specification** (including changing procedures) **is transparent**
- **Implications of the IPPIS on each stakeholder are clearly presented and discussed**

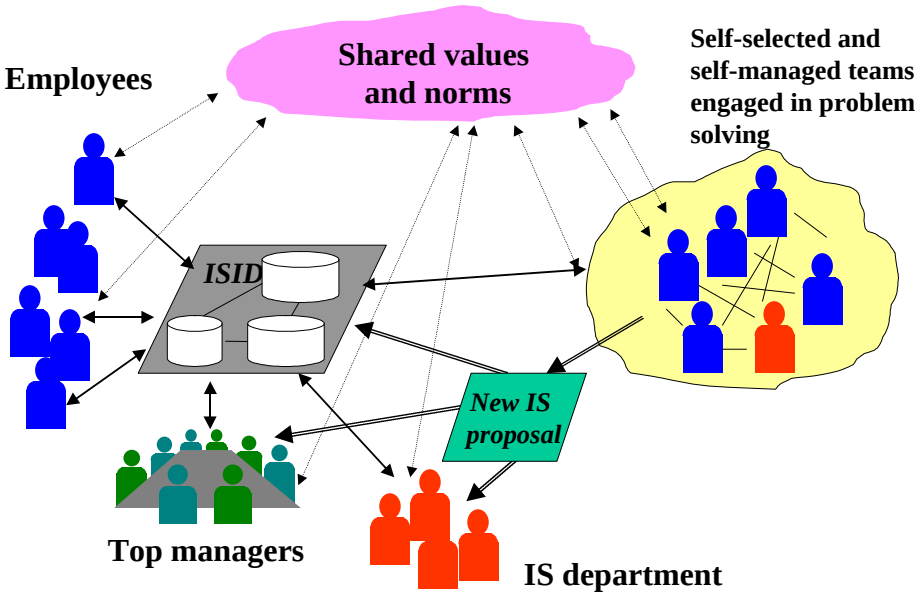
## Case #3: ISD in a Retail Chain *Colruyt*

- ***Colruyt*** – third largest retail chain in Belgium
- Empirical data from a longitudinal case study show:
  - Participative and distributed decision-making processes
  - Personal initiative and responsibility encouraged and expected
  - Individuals engaged in problem solving: an individual identifies a problem; self-nominated and self-managed teams formed for its resolution
  - Broad consultation with all members of the Company via ISID (IS for Information Distribution) a norm
  - Ultimately decision-making responsibility and decision implementation rests with the individual
  - Participatory culture nurtured through Company-sponsored seminars (during working hours) on any topic of interest to self-development, self-realization, communicative abilities, or collective well-being, cooperative work etc.

## Case #3: ISD in *Colruyt*




## Case #3: ISD in *Colruyt*




## Empirical evidence: ISD practices

- ISD follows a pattern similar to that of decision-making: individuals who recognize a problem whose solution requires an IS or a process change meet to discuss and describe potential solutions
- Typically an analyst located in a user department discusses problems with users which prompts search for either better use/change of existing IS or initiative to build a new system
- The problem description (including IS) is then available to all members (via ISID) and those interested/affected got involved in subsequent developments
- The IS solution is developed in close cooperation between users and IS analysts (from the IS Department)
- **ISD considered an integral aspect of organisational development, business improvement and community building**

## Empirical evidence: ISD practices

"[Company environment] can be equated with a sea populated by many fish including sharks. He who wants to swim has to learn to get along with both. [But], on second thought even sharks can be likable." (A. van Beethoven, 1985, p. 171)

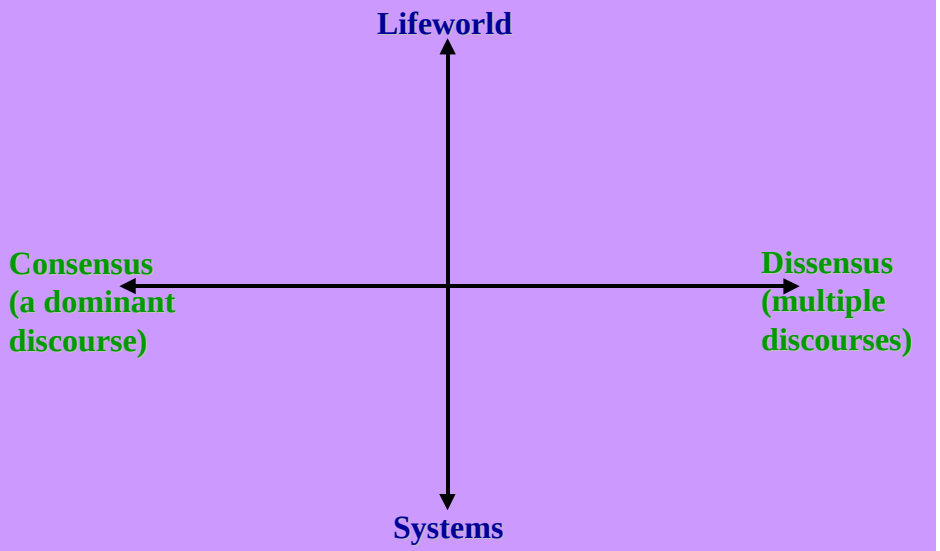
"I realized quickly that good relations [with colleagues] were necessary. I acquired self-confidence, I believed in myself, and that led to better and more relations with colleagues. The knowledge I acquired taught me not to stay quiet when something was amiss, but instead to discuss matters. It was and still creates a wonderful feeling." (A. van Beethoven, 1985, p.171)

## Empirical evidence: ISD practices

- The Union asserts that Company seminars indoctrinate and covertly manipulate employees:
  - "[they] cause [people] to think Colruyt, to live Colruyt, to sleep Colruyt. It is always the same [thing]. What I have heard is that employees who don't [attend] seminars are not liked very much." (Socialist Union, 2001)
- The Union also pointed to dehumanizing effects of technology and specifically ISs that have been developed, they claim, with full participation and support of those negatively affected.
- **In Colruyt we found :**
  - Well-informed, self-reflecting and empowered workers are not likely to be easily manipulated and indoctrinated
  - Being communicatively competent also guards against manipulation and indoctrination
  - Sensitivity to and public rational discourse about misuses of ISD that serves hidden agendas lead to its prevention

**How can we examine ISD practices from both professional and ethical perspectives?**

## A Discursive framework for investigating ISD?



# Exploring Differences among ISD Discourses

**Consensus-Dissensus dimension**

- emphasizes the social context of ISD and the position of IS developers in this context
- makes a distinction between
  - **ISD practices compliant with dominant organisational discourses, existing social orders and power structures, called here *consensus discourses* and**
  - **ISD practices that recognize multiple discourses, object the dominant discourses and disrupt existing social orders and power structures, called here *dissensus discourses*.**

**System-Lifeworld dimension**

- draws attention to the substantive aspects of IS and target domain of ISD:
  - **ISD *systems discourses* focus on functionality, efficiency and effectiveness (of both business processes and IS), that is, system integration aspects**

    **and**
  - **ISD *lifeworld discourses* are concerned with social and cultural aspects, individual and collective identities, different interests and values, social justice, freedom, self-realisation and emancipation**

## Consensus—Dissensus dimension

**The Dissensus discourse**

- **ISD processes assume and seek multiple and diverse interests, disorder and change**
- **ISD assumes conflicts, struggle and tension as a natural state and a source of change**
- **Power as productive; Potentially liberating social relations**
- **Language as a medium for argumentation and struggle for meanings; information requirements resulting form meaning co-creation and negotiation**
- **IS reflects the struggle among different discourses and is inscribed by certain values and interests**
- **ISD are sites of resistance and opposition to existing orders aiming to disrupt dominant discourses**
- **IS developers as historically and socially situated actors, positioned and active facilitators of change**

## Consensus —Dissensus dimension

**The Consensus discourse**

- **ISD processes assume and seek unity of interests, order, and regulation**
- **Oppressive social relations and hegemonic order perceived as natural and unproblematic**
- **Power as oppressive**
- **Language system as representations, neutral and unambiguous**
- **IS mirrors reality and is value neutral**
- **ISD embedded in dominant discourses (managerialist, technocratic)**
- **IS developers - objective observers and neutral facilitators of reality mapping into IS**

## Systems—lifeworld dimension

**Systems discourse**

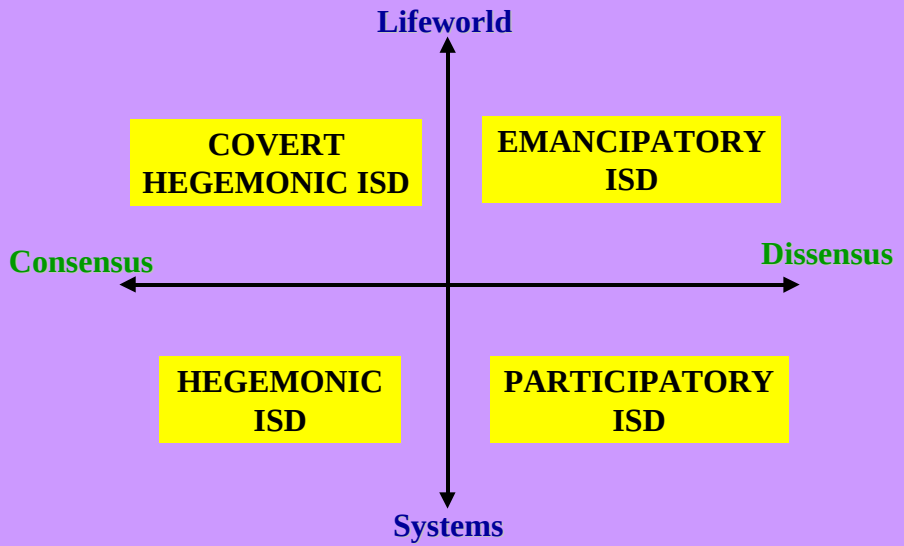
- **The view of IS as instruments for improving functionality of the production, administrative, financial, management, and other systems**
- **The role of IS: serving management goals such as increasing productivity, efficiency, effectiveness, competitiveness, etc.**
- **ISD is an arena of purposeful action, self-interested calculus and instrumental rationality as a central concern**
- **ISD use a privileged language of systems (a fixed language game):**
  - **Language of functionality, efficiency and effectiveness of processes establishing a monopoly of facts**
  - **Technical language of IT and ISD methodologies of key importance**
- **ISD models involving truth statements**
- **IS ideal: an instrument of scientific-rational control**

## Systems—lifeworld dimension

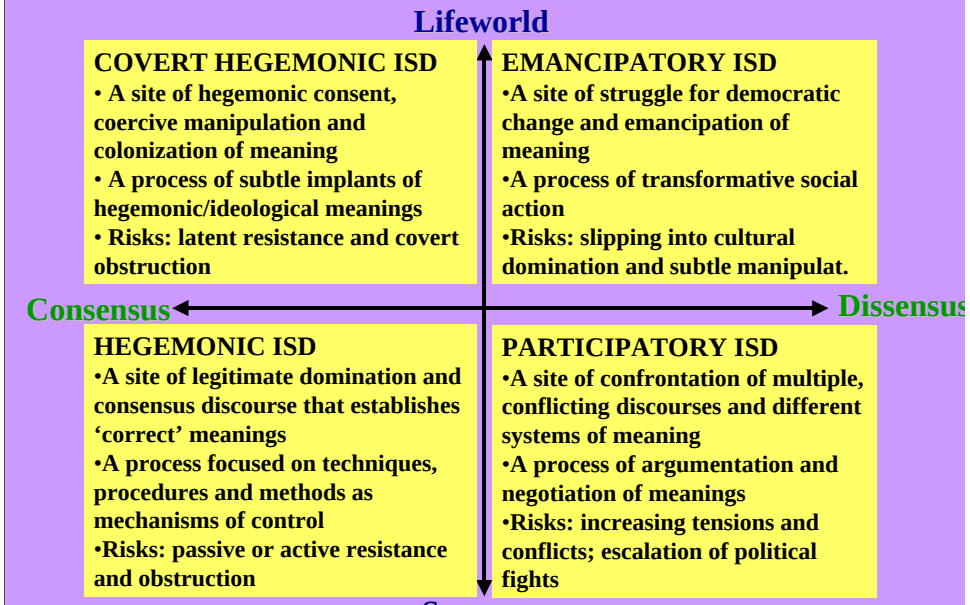
*Lifeworld discourses*

- The view of IS as social infrastructure of an organisation as community; IS as a medium for social interaction
- The role of IS: contributing to social goals, social integration and socialization of individuals
- ISD is an arena of communicative action, cooperation and communicative rationality as a central concern
- ISD as argumentation processes and communicative practices involving 'multiple language games' and emergent meanings
- Communicative competence of actors of key importance
- ISD models involving claims to truth, rightness/legitimacy and truthfulness
- IS ideal: enabler of social change with emancipatory potential

## Discursive framework for investigating ISD



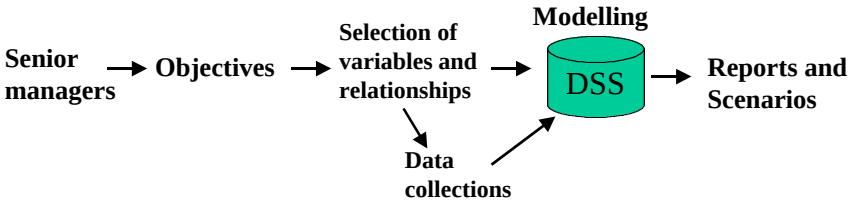

## Discursive types of ISD




## Case #1 DSS development in a Government Department

ISD was explicitly conceived as an instrument to support the dominant discourse imposed by the ideology of economic rationalism in the Department
  - Such ideology was never questioned, nor has the approach to transform service provision by the HRS
- The proposed staff cuts were presented as the direct and inevitable implication of the necessary transition to external contestability
  - No other options were ever discussed
  - Staff was never involved in any such discussion
- The DSS designer worked hard to understand the planned changes and what the top executive wanted
- He then stimulated staff to participate in surveys (without them fully understanding the purpose) to collect data for DSS, which was subsequently used to justify staff cuts

## In Case #1, what is the type of ISD discourse?




- Having clear objectives, a particular selection of variables and their relationships using Systems Dynamics modelling resulted in a particular DSS, which was taken as "true presentation of the situation"
- Consequently decisions about staff cuts based on the DSS-produced scenarios were considered objectively justifiable and necessary for the survival
- Staff was disillusioned but 'voluntarily' participated in this process, subjected themselves to manipulation and consented to participate in processes against their interests

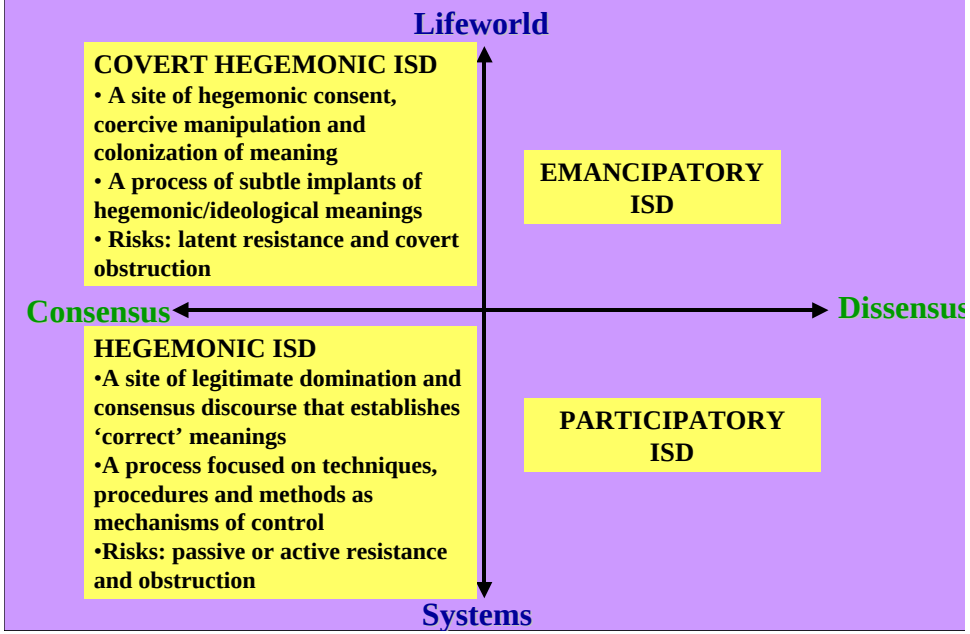
## Case #1: What type of ISD discourse?

**HEGEMONIC or COVERT HEGEMONIC ISD?**

**"Staff involvement was critical and the National manager visited all staff several times in 1997 to ensure direct involvement of staff. New skills were developed and a customer focus established." (p. 244)**

**The author emphasized that the training of staff was "critical for to the modelling project [DSS] to get accurate data for use in projections of future scenarios." (p. 241)**

## Discursive Framework for Investigating ISD




## In Case #2 *ISD in Hospital – Acquisition of an Integrated IS*

***WHAT IS THE TYPE OF ISD DISCOURCE?***

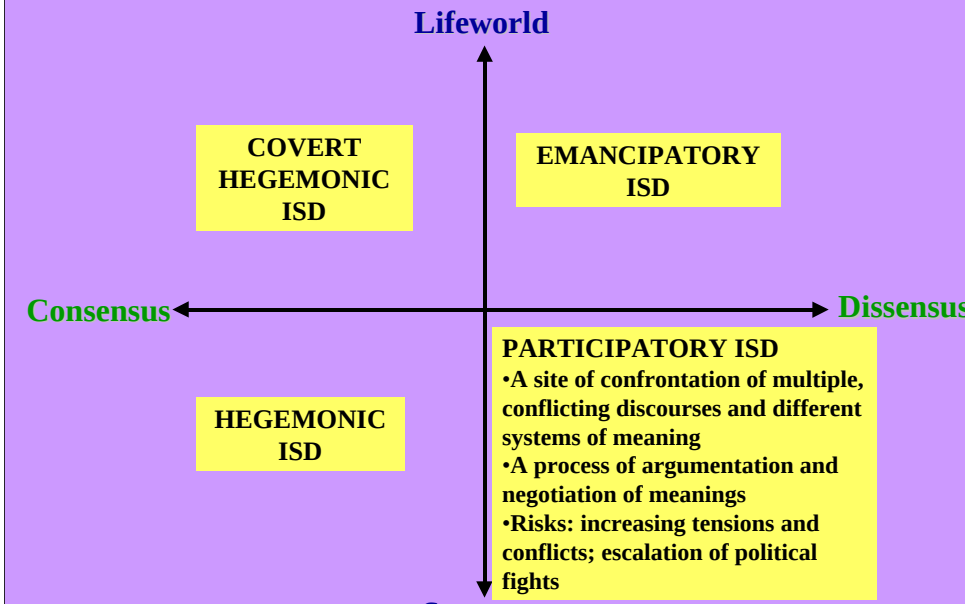
- Multiple, conflicting discourses surfaced and confronted
- The use of common language (IDEFINE) enabled
  - articulation of different views and needs
  - comparison of different practices and negotiation of meanings
  - open dialogue that challenged various authorities and power structures
  - collective and individual critical self-reflection
  - seeking mutual understanding and agreement regarding the future IS internally and with the Vendor
- … but also contributed to
  - revelation of entrenched operational difficulties and conflicts
  - increase in tensions and *"a great deal of upset for those participating in the debates"*

## In Case #2 *ISD in Hospital – Acquisition of an Integrated IS*

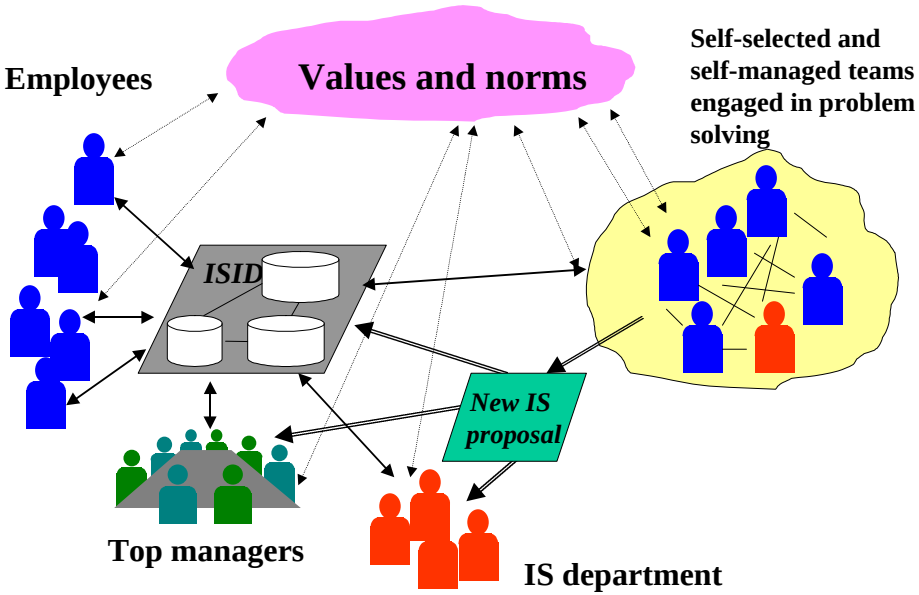
## *A PARTICIPATORY ISD DISCOURCE?*

- Multiple, conflicting discourses surfaced and confronted
- The use of common language (IDEFINE) enabled
  - articulation of different views and needs
  - comparison of different practices and negotiation of meanings
  - open dialogue that challenged various authorities and power structures
  - collective and individual critical self-reflection
  - seeking mutual understanding and agreement regarding the future IS internally and with the Vendor
- … but also contributed to
  - revelation of entrenched operational difficulties and conflicts
  - increase in tensions and *"a great deal of upset for those participating in the debates"*

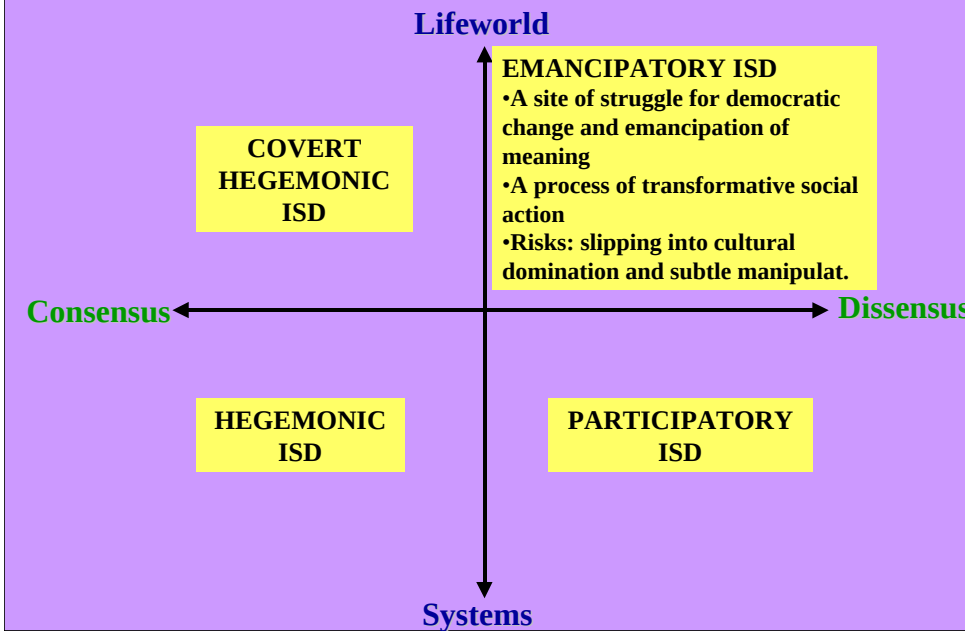
## Discursive Framework for Investigating ISD



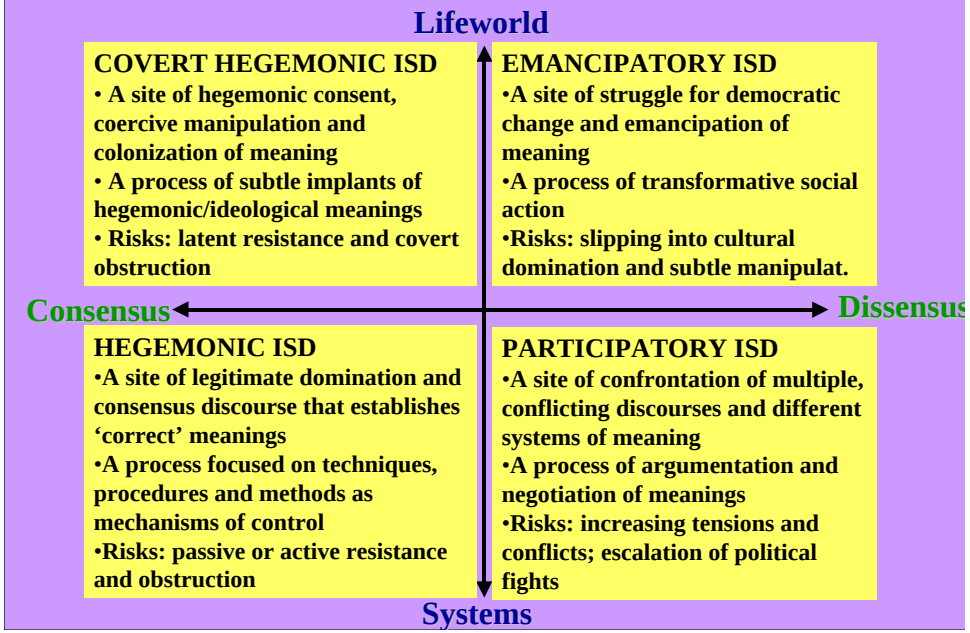

## Colruyt: *WHAT TYPE OF ISD DISCOURCE?*




## Discursive Framework for Investigating ISD



## Characteristics of four types of ISD discourses




## Implications …

**The purpose of the proposed discursive framework is to draw your attention to both professional and ethical implications of ISD practices:**

- by defining objects/entities, attributes, and relationships IS developers represent **a particular view of reality, resulting from certain values and interests**
- ISD processes as discursive practices reveal how different groups of actors struggle to shape 'presentation' of reality and the ways future IS would recreate this reality, according to their views, interests and values, and

  … thereby achieve certain political effects
- through ISD processes developers (re)construct and (re)produce reality, social order and power structures
- different types of ISD discursive practices pose significantly different professional and ethical problems for IS developers

  ***understanding them may help IS developers in their search for a thoughtful and conscientious response***