Faculty of Mathematics and Natural Sciences

IN5210 – Information Systems

Introduction

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UNIVERSITY
OF OSLO

Agenda

Part I: About IN5210

- Motivation
- Objectives
- Expectations
- Structure
- A very brief introduction to Information Systems

Part II: About the seminars (groups)

- Maja & Vetle

Part I

Who am I?

- Faculty member in the Information Systems (IS) research group in the HISP Centre
  - https://www.mn.uio.no/ifi/english/research/groups/is/
  - https://www.mn.uio.no/ifi/english/people/aca/pnielsen/index.html
  - https://www.researchgate.net/profile/Petter_Nielsen

- Master and PhD in information systems from IFI (1999 and 2006)
- Worked with R&D and business development in the Telenor Group (2006 - 2013)

- Research Interests
  - Digital platforms, digital innovation and digital global public goods
  - Empirical research on information systems in (global) health

Who are you?

About IN5210

Motivation

We need to make Information Technology (IT) work in context to create 'value'

The information systems (IS) perspective includes:

- Information and how we 'deal' with information at work and for leisure
- Information technologies (IT)
- Users and their context - organisations, groups and individuals
- The broader implications of IT for different aspects of society
- Design, implementation and use of IT

Motivation cont.

The IS perspective differs from the ‘common understanding’ of IT – an illustration:

- Review of the most recent 342 papers published in the prominent interdisciplinary digital health journals (Frontiers in Digital Health, Digital Health and Lancet Digital Health) by Nielsen and Sahay (2022)
- Only 10 % of the papers took an «ensemble view». i.e. *“… recognises the features of digital technologies and the complex and dynamic context in which they inherently are enmeshed in their design and use.”*

Conceptualisation of IT	#	%
Nominal view IT is absent	63	18
Computational view IT can be described by computational capabilities and functionality	48	14
Proxy view Characteristics of IT can be captured through measures, e.g. user perceptions and diffusion rates	62	18
Ensemble view In complex and dynamic context	34	10
Tool view A tool to achieve something, and IT does what it is intended to do. A separate, static matter which humans’ control to improve things	135	40
Total	*342*	*100*

Motivation cont.

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Motivation cont.

A *socio-technical* perspective at the core of IS

- Users and their physical surroundings, norms, and practices
  and
- Features of Information Technology (IT)

Objectives

Offer a broad introduction to IS research

Prepare you for doing IS research (Master's)

- Introduced you to a selection of IS theories and concepts
  - Learn how to understand them
  - Learn how to use them in your research
  - Learn how they are made
- Practice reading academic papers (not one textbook)
- Practice academic writing (short assignments)

Objectives cont.

Present research from the Information Systems (IS) and the Digital Innovation (DIN) research groups

- Lectures are ‘independent’
  - Reflects our research groups and the focus of our researchers
  - Reflects the IS research field
- Groups/seminars are the ‘red thread’
- Certain theories/concepts may be relevant to your thesis!

A different approach: Management Information Systems: Managing the Digital Firm, Laudon & Laudon (http://dinus.ac.id/repository/docs/ajar/MIS_KC_Laudon.pdf)

Expectations

Learning outcomes

“Have insights in information systems practices in organizations, and can relate these to complexity and organizational change

Have an understanding of core concepts, models and approaches of information systems development

Have an understanding of the socio-technical and complex nature of information systems

Are knowledgeable of contemporary debates in information systems research

Can review academic literature to identify relevant theories and concepts and use them to analyze and discuss empirical data

Have an understanding of the role of theory in guiding research and as outcome of research”

What I expect from you

- Are here to learn
- Come to the lectures
- Engage with the literature – read
- Prepare for and engage actively in the seminar discussions
- Form reading groups on your own
- Identify exciting research areas, research topics, theories, and concepts – take the opportunity to engage with the lecturers

Structure: Lectures and Seminars

2+2 lectures per week

- Schedule is finalised (more or less, including the reading)
- No streaming and recording (two exceptions)

2 hours seminars per week

- Assignments to be approved
- **Mandatory** (80%) attendance
- More in part II

Structure: Stay informed

Use the IN5210 course website

- Lecture schedule
- Syllabus/reading list
- Introduction to Information systems compendium
- Messages

Read your UiO email!

Structure: Exam

- Essay (individual written home exam)
- The mandatory assignments must be approved before the exam
- Graded A-F
- 3 weeks duration, 3-4 full days of work expected
- November 4th to November 25th

Use of LLMs

https://gpt.uio.no

https://www.mn.uio.no/kurt/english/artificial-intelligence/templates-for-declaration-of-AI-in-assignments.html

A very brief introduction to Information Systems

What is and Information System?

“An **information system** (**IS**) is an organized system for the collection, organization, storage and communication of information. More specifically, it is the study of complementary networks that people and organizations use to collect, filter, process, create and distribute data.” (Wikipedia)

Phenomenon/subject matter

- Observable
- Designed, implemented and used

and

A research field

Another definition of Information Systems

«… a set of entities, shared patterns, and information processing capabilities that support goal attainment.» (Watson, 2014, p. 520)

- Entities: individuals, groups of people and organisations
- Common language and protocols for communication
- Capabilities like brains, but increasingly computers
- For a purpose (utilitarian or hedonic)

Better information systems, better

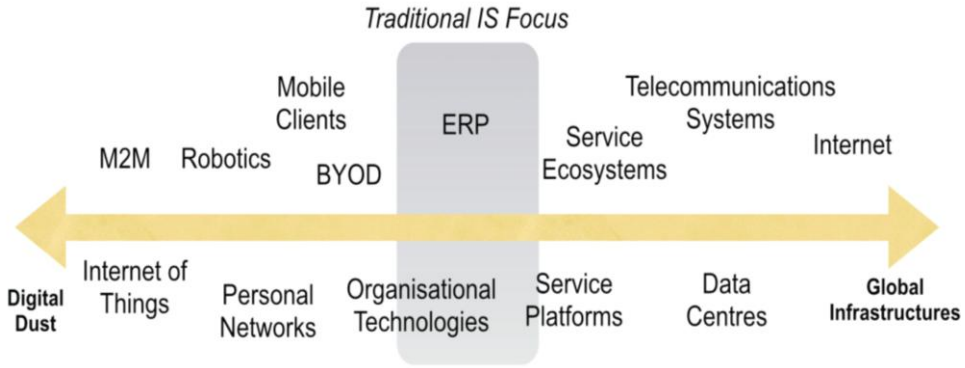
- prepared to attain goals,
- collaborate,
- and transformative capacity

Not only technology, not only organizations or people: Socio-technical

The Scope of IS research

- IT started within the organisation (accounting, enterprise resource planning, etc.)
- Today: Ubiquitous
- Driving forces behind this development:
  - Scale and capacity of computers
  - Distribution and interconnection
  - Digitalisation in all aspects of life





(Sørensen 2016)

References

- Nielsen, P., and Sahay, S. (2022). A critical review of the role of technology and context in digital health research. *DIGITAL HEALTH*.
- Sørensen, C. (2016). "The Curse of the Smart Machine? Digitalisation and the children of the mainframe," *Scandinavian Journal of Information Systems,* 28 (2), pp. 57-68.
- Watson, R. T. (2014). “A Personal Perspective on a Conceptual Foundation of Information Systems”, *Journal of the Association for Information Systems*, 15 (8), pp. 514-535.