

Research activities on Human-centered technology

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Current projects

- 1. DL: Implementing Web Based Teaching Methods and Practices for Distance Learning in Finnish – Russian Intercultural Master’s Programme. 2nd phase**
- 2. JIID: A Joint Study of International Infrastructure Development of Small and Medium-Sized ICT Enterprises in North West Russia. 2nd phase**
- 3. Oppijat: Privacy-based Information Security in Schools**
- 4. User Experience of Privacy in Networked e-Learning**



1. DL: Implementing Web Based Teaching Methods and Practices for Distance Learning in Finnish – Russian Intercultural Master’s Programme

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1. DL: Implementing Web Based Teaching Methods and Practices for Distance Learning in Finnish – Russian Intercultural Master's Programme

- Goal: to render MIT department's teaching into DL mode and study different aspects of information technology education utilising DL
- In collaboration with St.Petersburg University of Information Technologies, Mechanics and Optics since 2007
- Doctoral trainees: Johanna Silvennoinen, Kirsi Syynimaa
- Latest teaching experiment and data collection in Nov-Dec 2010: Meego-course (teacher: Dr. Matthew Weber)
- Main results so far: 1) social media application (www.ifmo.en.ru) for DL, 2) pedagogical models for Finnish-Russian DL on IT based on blended learning
- Research methods: design science and netnography



1. DL: Implementing Web Based Teaching Methods and Practices for Distance Learning in Finnish – Russian Intercultural Master’s Programme

Important in cross-cultural studies: ensuring validity.

Types of bias, prevention and detection (cf. Karahanna et al. 2004):

| Bias | Detection | Prevention |
|--|---|---|
| Construct bias (focus: constructs, concepts) | -informants describe construct and associated behaviors -double-checking | -informants describe construct and associated behaviors in each culture -theoretical sampling |
| Method bias (focus: administration procedures, analysis) | -method triangulation -repeated administration of instrument | -sampling -Identical physical conditions of administering instruments -unambiguous communication -ensure familiarity with the stimuli in the study |
| Item bias (focus: operationalisations) | -various stats tests (analysis of variance, LISREL) -method of constant comparison in analysis | -wording -translation -double-checking questionnaires, interview schemes etc. |

2. JIID: Information Security Culture in ICT Sector of the North-West Russia

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2. JIID: Information Security Culture in ICT Sector of the North-West Russia

- Goal: to carry out research that develops cross-border business opportunities for SMEs in the ICT sector. JY's theme: Information Security Culture (ISC)
- In collaboration with Lappeenranta University of Technology and European-Russian Innopartnership Network
- Doctoral trainee: Oleksandr Bilozarov; Post doc researcher: Dmytro Zhovtobruykh
- Theoretical background in information security studies
- Research methods: Grounded Theory, surveys, stats
- Data collection (1st data) in 2009: qualitative interviews in 19 ICT SMEs in St.Petersburg, systematic literature reviews; (2nd data) in August-September 2011
- Results: 2 journal articles, 2 conference papers, 2 in submission (following slides)



Three levels of ISC: socio-cultural & managerial measures that support technical security measures

External

- ethical culture,
- societal attitude towards security,
- IS-related governmental initiatives;
- legislation, standards, etc.;

Organizational

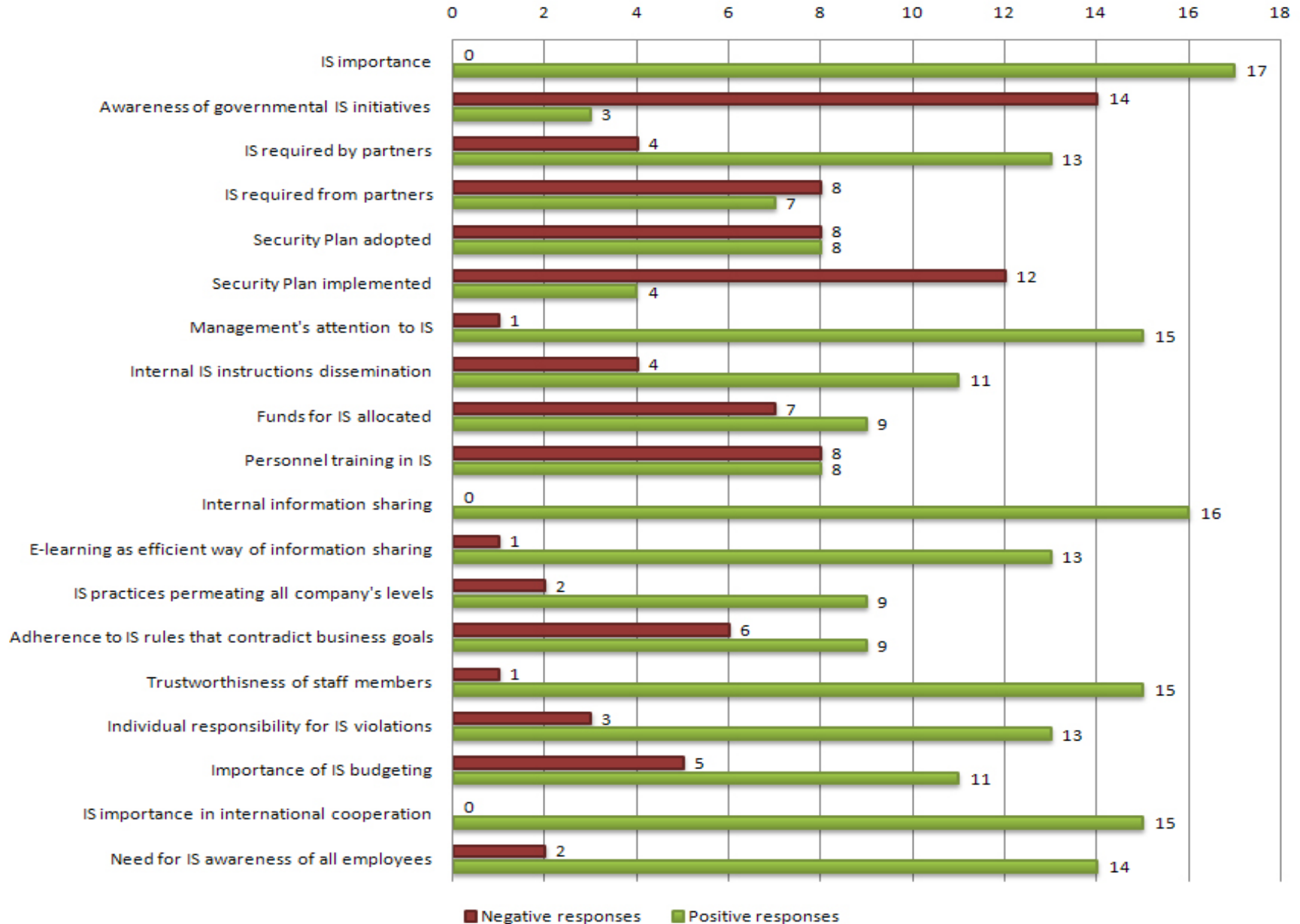
- organizational culture,
- top management's attitude towards security,
- managerial security measures (e.g., security policies, budgeting, risk analysis, etc.),
- learning, awareness measures, etc.;

Individual

- personal behavioral traits, e.g., trust, responsibility, ethical education, etc.

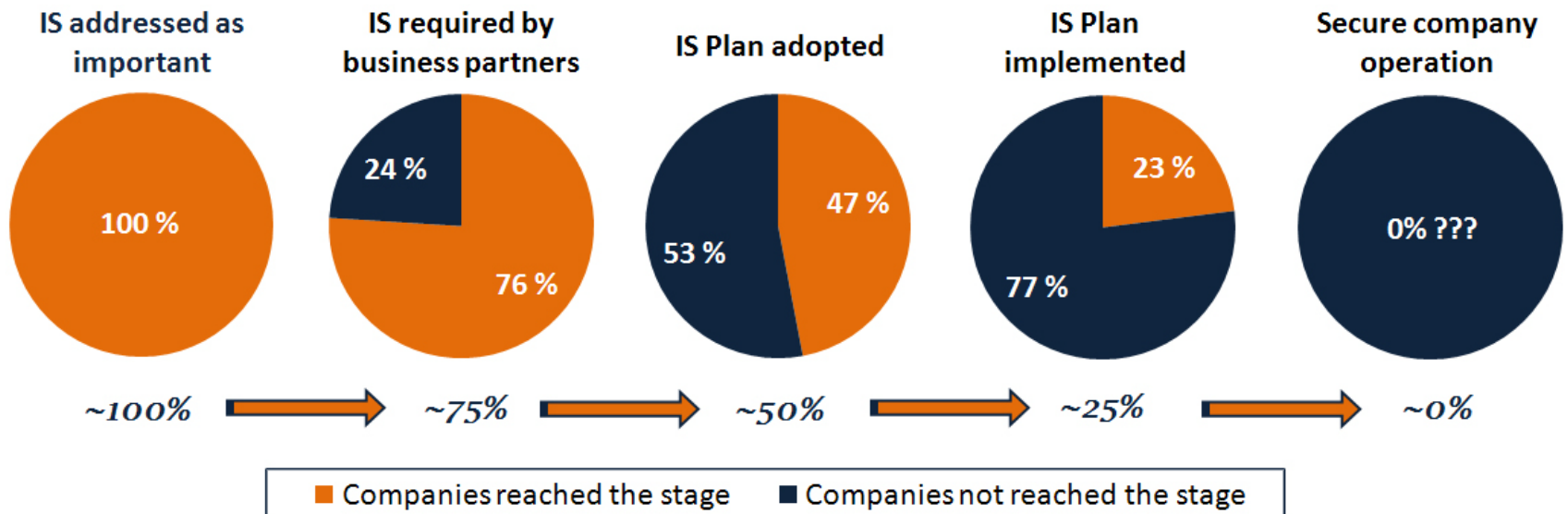


Distribution of positive and negative responses



Five stages of IS deployment in a company

- General IS provisioning process typically includes the following steps:
 - realization of IS measures' necessity;
 - formulation of IS requirements to oneself/business partners;
 - adoption of IS plan/policy;
 - implementation of IS measures specified on the IS plan;
 - safe company operation with largely secured sharing of sensitive information.



Typical North-West Russian ICT SME (1)

- ❏ addresses information security as important business asset in both local and international cooperation context;
- ❏ expects partners to have a reasonably high level of IS, and is required to have a similar IS level by partners;
- ❏ realizes the risks of unsecured information sharing;
- ❏ realizes the need for IS awareness measures performed at all company's levels;
- ❏ realizes the need for employee's individual responsibility for security violations;
- ❏ realizes the need for IS budgeting;



Typical North-West Russian ICT SME (2)

but:

- is not aware of existing governmental initiatives funding IS development in Russia;
- has IS policies and measures poorly (or not at all) planned and documented;
- has no systematic IS assessment and planning framework implemented;
- does not allocate sufficient budgets for IS development and deployment;
- rarely adopts a comprehensive personnel training programs in IS;
- is not ready to adhere to IS rules in defiance of losing short-term economical benefits;
- relies on trust to own employees rather than on accurate IS monitoring, measurement and control.



3. Oppijat: Privacy-based Information Security in Schools

- Part of HI's IT and security in schools – research agenda
- Goals: 1) to study primary, secondary and high schools' students and teachers views on privacy and security in their e-learning environments, and 2) to develop privacy-based information security of Peda.net –school network's user interfaces, and 3) to provide children and teachers with privacy management mechanisms in e-learning environments & increase awareness
- In collaboration with Peda.net and Finnish Institute of Educational Research
- Doctoral trainee: Johanna Silvennoinen
- Theoretical background in HCI, privacy studies
- Research methods: design science, netnography
- Data collection at hand (qualitative interviews, user studies) in seven schools in the Jyväskylä region
- Reporting starts in June-July 2011



4. User Experience of Privacy in Networked e-Learning

- Goal: to create theory of Privacy UX
- In collaboration with HIIT (Helsinki Institute of Information Technology)
- Theoretical background in privacy and user experience studies; constructionist stance
- Research methods: conceptual-theoretical analysis, on empirical level: exploratory research design using data triangulation on multiple levels (incl. elements of design science method, such as focus groups and design workshops)
- Benefits other IT and security in schools -studies



Thank you for your attention!

Questions?

