Potential Rating Indicators for Cyberinsurance: An Exploratory Qualitative Study

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Outline

◆ Context and Background

◆ Research question

◆ Research approach

◆ Underlying models and constructs

◆ Results

◆ Discussion

Context and background

◆ Risk rating in the context of cyberinsurance premium-calculation

◆ Current state of practice
- Limited information available for risk assessment
- Time constraints
- Underwriters assess the exposure using standardised questionnaires
- Strong subjective component

◆ Goal
- Identification of indicators which could potentially be used in the premium rating process

Research question

What are potential rating indicators
for cyberinsurance?

Research approach

- Exploratory qualitative expert interviews
  - Interviewed Experts: 36
  - From 3 german speaking countries Germany, Austria, Switzerland (D.A.CH)
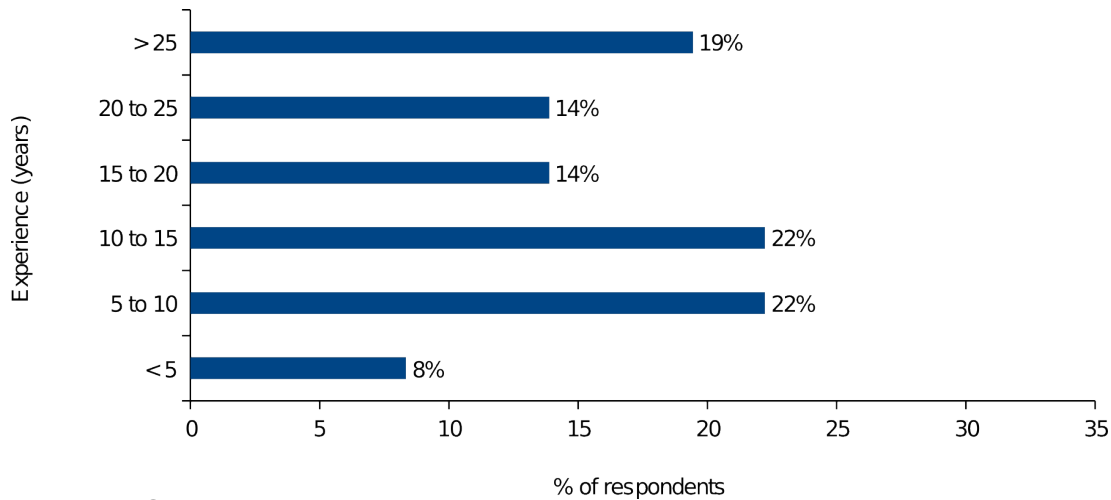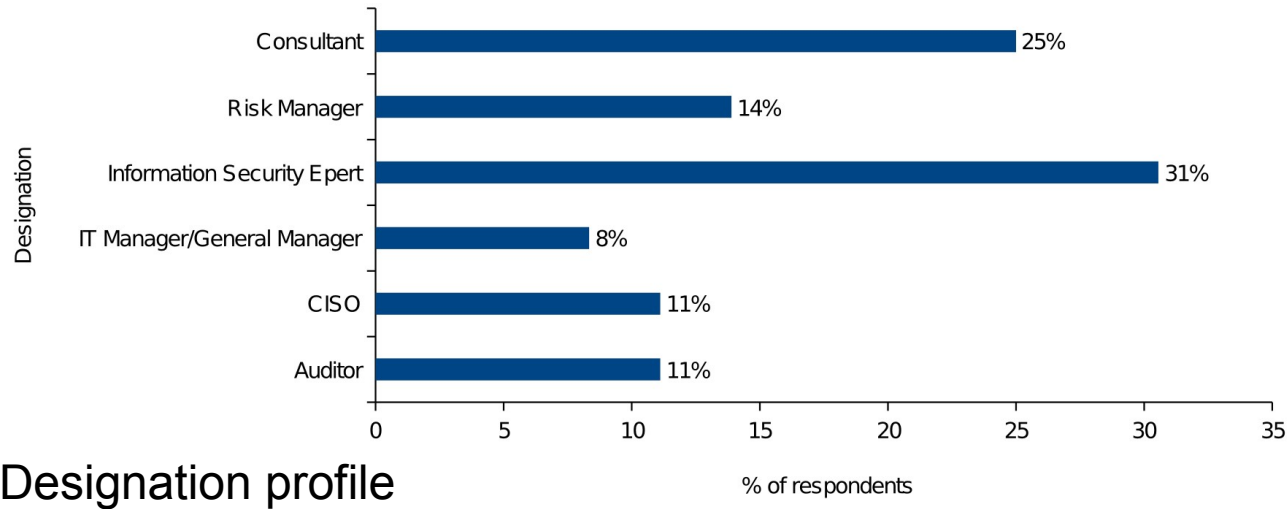 - Between April 2006 and October 2007

- Semi-structured interviews
  - Duration ~ 60 Minutes

- Selection of interviewees
  - Attendants of an expert forum on IT- and Internet Risks
  - existing contacts with practitioners
  - Snowball methodology to identify further candidates

Profile of the interviewees

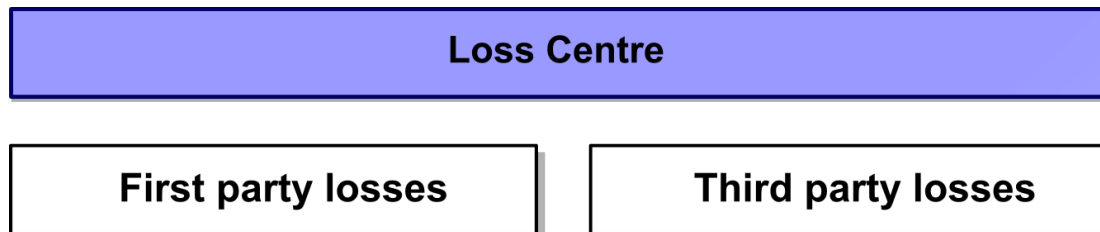Designation profile

Experience profile

Exposure and quality

◈ Exposure is the insured's possibility of loss

◈ Quality is used as a proxy for the risk reduction capabilities of an organisation

Inherent Risk	reduced by →	Risk Reduction	results in →	Residual Risk
Exposure		Quality		

Loss centre

◈ Distinction between
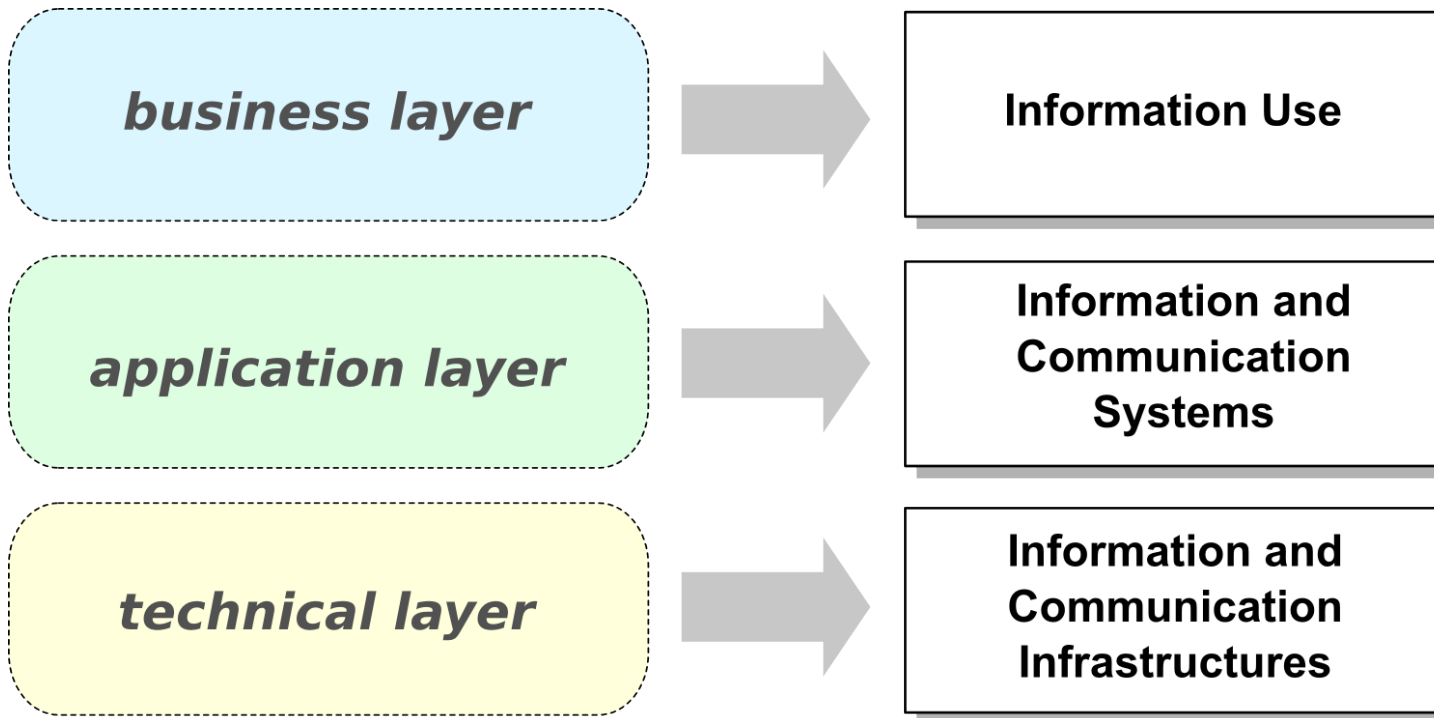
◇ the loss exposure of the insured and

◇ the loss exposure of third parties which are affected by the insured

Loss Centre

First party losses	Third party losses

Layer model

◈ Focus on IT service providers with respect to third party loss exposure indicators

business layer	→	**Information Use**
application layer	→	**Information and Communication Systems**
technical layer	→	**Information and Communication Infrastructures**

The resulting questionnaire

◈ First party loss exposure

◇ 1. What are in your opinion relevant drivers and indicators for the IT Business Risk Exposure of an organisation?

◈ Quality of IT Risk Management

◇ 2. What are in your opinion indicators for the quality of the IT Risk Management efforts in an organisation?

◈ Third party loss exposure

◇ 3. Which indicators reflect the potential of IT-Providers in general to cause third party losses due to IT Business Risks?

◇ 4. Which indicators reflect the potential of IT-Infrastructure Providers to cause third party losses due to IT Business Risks?

◇ 5. Which indicators reflect the potential of Information Systems and Application Providers to cause third party losses due to IT Business Risks?

◇ 6. Which indicators reflect the potential of Information Providers and Processors to cause third party losses due to IT Business Risks?

Analysis
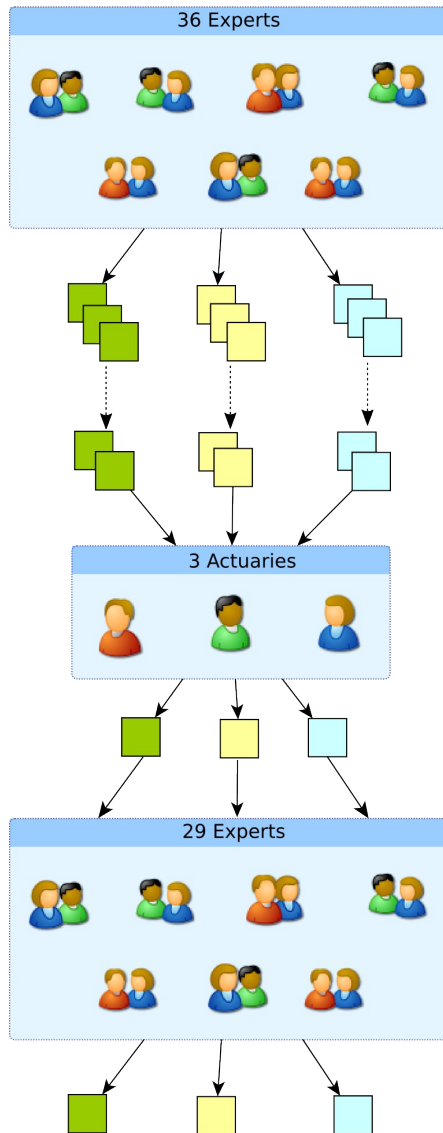
Generation of Statements

976 Statements

Consolidation

198 Indicators

Reduction

94 Selected Indicators

Ranking

94 Ranked Indicators

- ◇ Transcription and qualitative content analysis to extract statements (976 statements)

- ◇ Concepts maps of the stated indicators and explanations were created

- ◇ Consolidation of statements (198 indicators)

- ◇ Reduction of the list of indicators with 3 actuaries (94 indicators)

- ◇ Ranking indicators according to their relative importance with 29 of the initially participating 36 experts
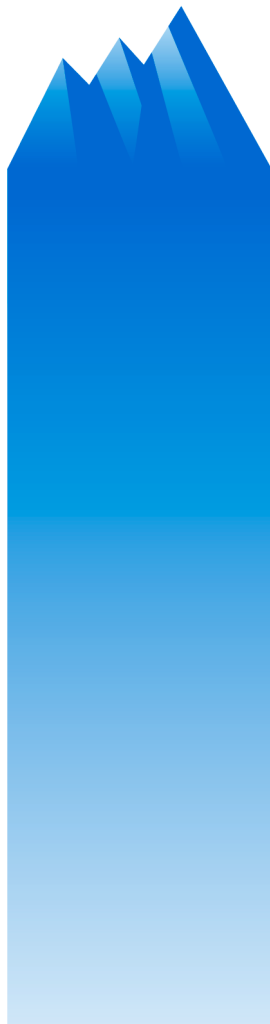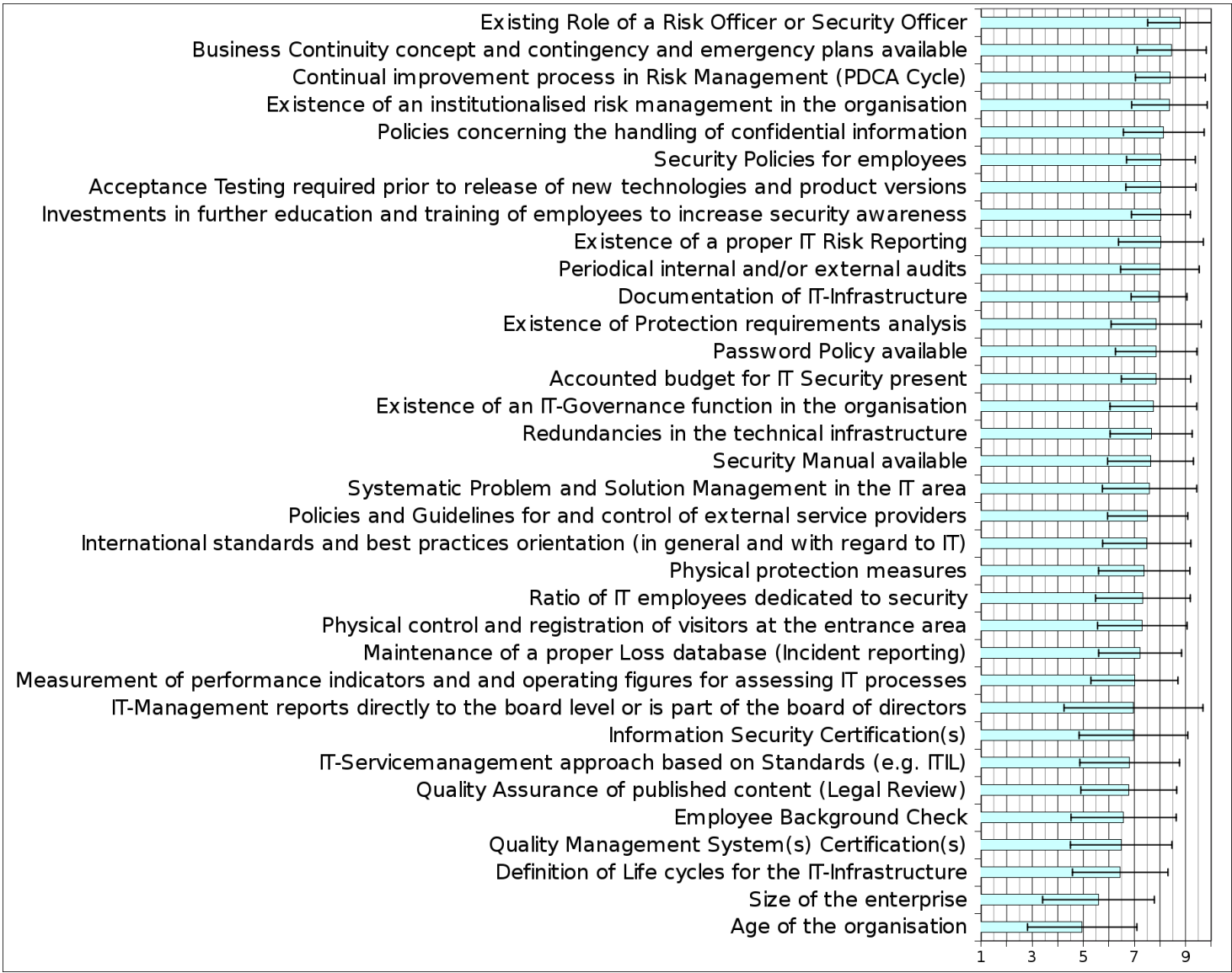
First party loss exposure indicators
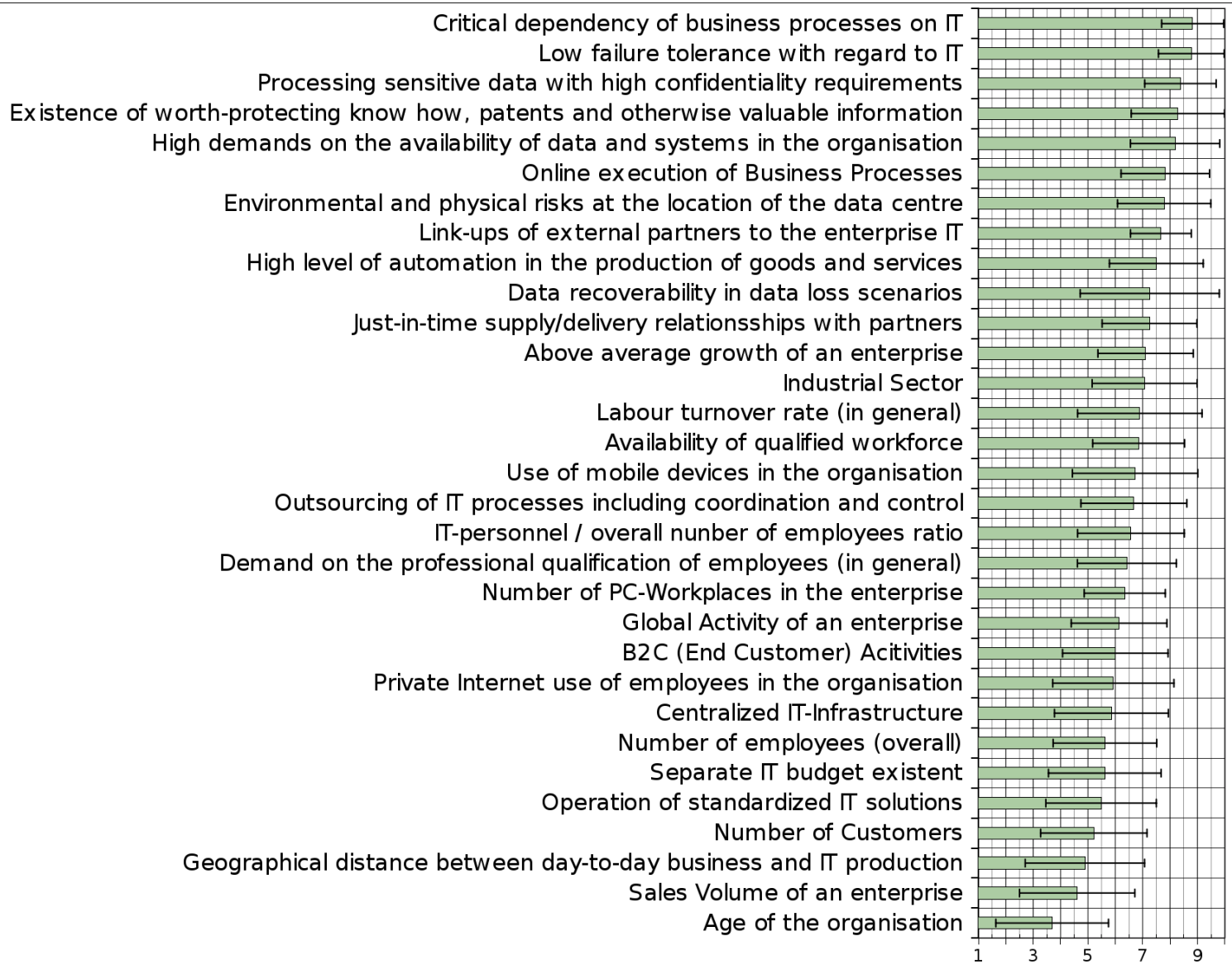
Third party loss exposure indicators
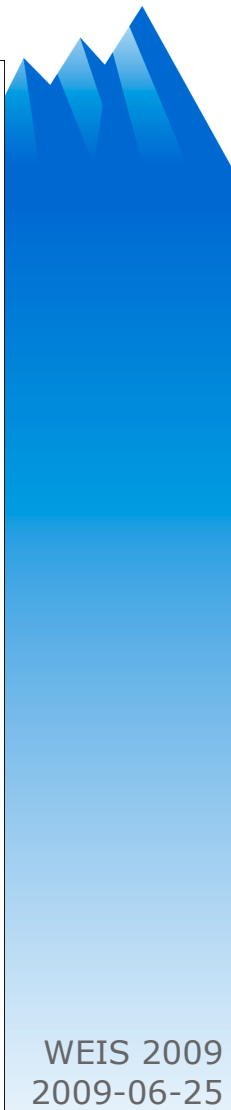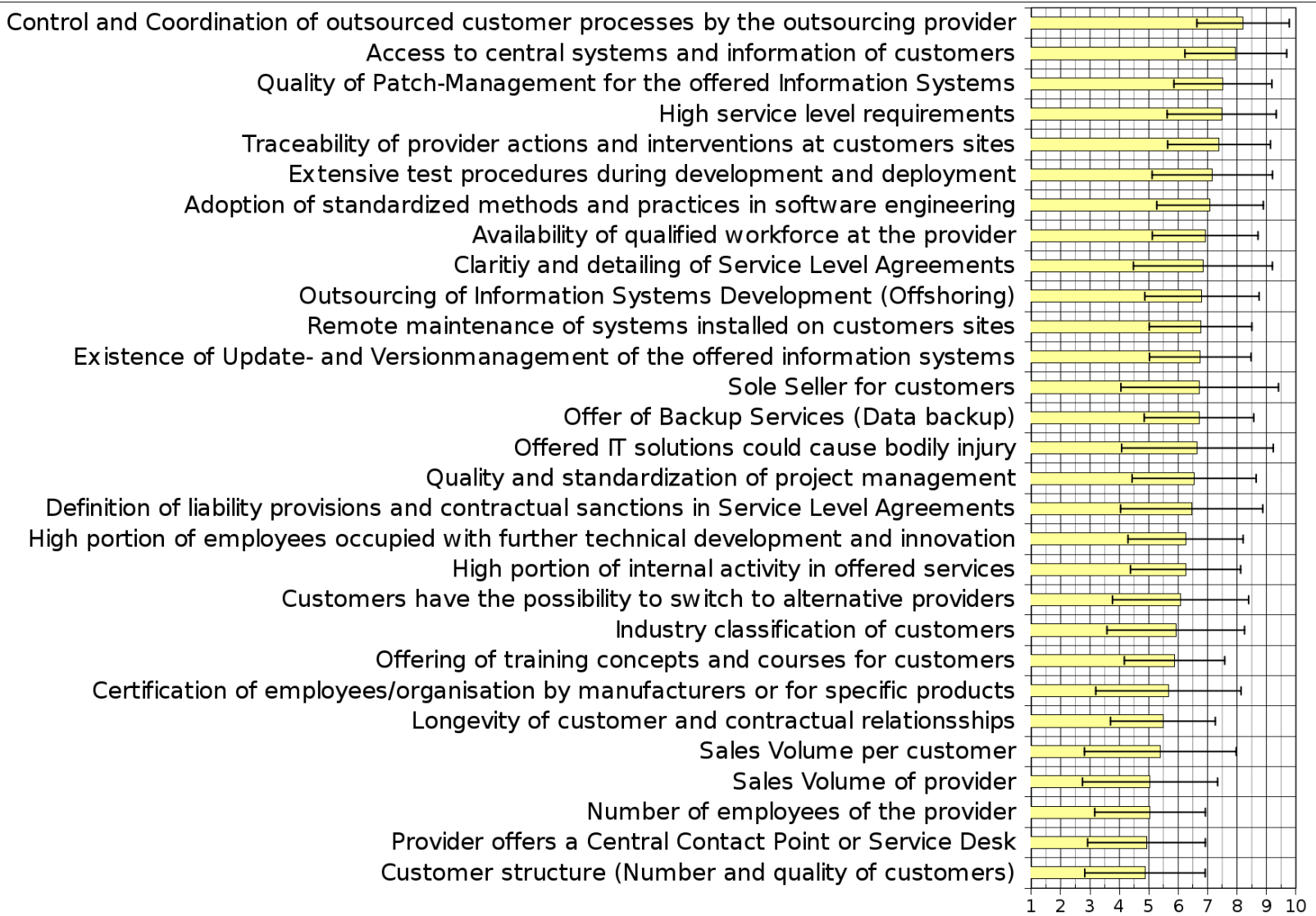
IT Risk Management quality indic.

Summary

- Conducted an exploratory qualitative expert study in ordert to identify potential rating indicators for cyberinsurance
- Results: A list of 94 indicators ranked according to their relative importance
  - 31 first party loss exposure indicators
  - 29 third party loss exposure indicators
  - 34 indicators for the quality of the IT Risk Management
- Limitations
  - Potential cultural bias of the interviewees
  - Did the interviewees actually report influential indicators or did they answer as potential buyers of cyberinsurance
  - Interdependence among risks and risk correlation has not been adressed in this study

Open questions and future work

◆ Indicators are being currently evaluated by actuaries besides the traditional questionnaires and models

◆ Operationalisation of the identified indicators

◆ Validation and relevancy of the indicators

◆ Analysis of relations between the indicators

◆ Development of an explanatory model

Questions?

Thank you for your attention.

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