Special Considerations in Using the Case-study Method in Teaching Information Security Education in IT Security - Trends and Questions

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寧為太平犬，不做亂世人 *

*May you live in interesting times
Data Protection and Financial Chaos

- Human factors
  - Malicious insiders
  - Fired employees
- Hardware loss
  - Laptop theft
  - Storage disposal
  - Device miniaturisation

CSO challenge: how to select an appropriate information security strategy within budget limitations and growing risks of unauthorized access to information assets?
How to make your seminars:

- interactive and entertaining
- facilitating development of analytical skills
- encouraging active use of theoretical knowledge
- close to real-world situation
- adaptive to students’ level and background
- admitting both teamwork and independent work
- with minimal requirements to laboratory equipment
Eierlegende Wollmilchsau
Case study method

- **Case studies** are stories with educational message (Source: Clyde Freeman Herreid, “Start with a story”)

- **Purpose:** teaching students work individually/as a team to
  - Analyse information,
  - Process it in a systematic way
  - Outline key problems
  - Generate and evaluate alternative solutions
  - Select optimal solution and prepare for actions

- **Application:**
  - Sociology
  - Economics
  - Law
  - Management
Problems with application of case study method in teaching information security

- Lack of educational materials
- Lack of ready-made case study available for free use
- Lack of guidelines for writing case-studies
- Inappropriateness of cases from consulting practice
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Public sources of ideas
- Real names replaced with imaginary
- Accumulating experience and writing guidelines
Where to get the idea for a story?

Key words:
- Personal data,
- Web 2.0,
- Globalization,
- Digitization,
- Mobile devices,
- Internet ethics,
- Control,
- Confidentiality,
- Pattern recognition
## Information sources

### News portals
- [http://www.itsec.ru/](http://www.itsec.ru/)
- [http://pd.rsoc.ru/](http://pd.rsoc.ru/)

### Company web sites
- [http://www.kaspersky.ru/](http://www.kaspersky.ru/)
- [http://www.infowatch.ru/](http://www.infowatch.ru/)

### Professional communities
- RISSPA | Лента инцидентов ИБ
  - [http://www.linkedin.com/groups?mostPopular=&gid=3796607](http://www.linkedin.com/groups?mostPopular=&gid=3796607)
- Информационная безопасность
  - [http://professionali.ru/GroupInfo/636](http://professionali.ru/GroupInfo/636)
### Structure of case study

- **Title**
- **Abstract**
- **Key words**
- **Body**
- **Questions and tasks**
- **Case analysis / solution**
- **Guidelines for teacher**
- **Bibliography**
Case study creation process

- **Data collection**
  - Main plot identification
  - Relevant information search

- **Concept definition**
  - Formulation of a catchy title
  - Problem statement

- **Main text writing**
  - Compilation of information from different sources
  - Removal of redundant information
  - Enrichment with imaginary details
  - Replacement of key actors names

- **Formatting**
  - List of key words population
  - Bibliography description
  - Hand-outs formatting and printing

- **Finalisation**
  - Approbation
  - Refinement of main text
  - Incorporation of guidelines
  - Teacher’s materials preparation
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Public sources of ideas
Real names replaced with imaginary
Accumulating experience and writing guidelines
Engaging students in contributing to the library of case studies
Evaluation criteria for student’s work

Writing a case study

• Relevancy of information
• Real-life story basis
• Structure of text
• Sufficiency of selected material
• No occurrences of real company/people names
• Freshness of ideas
• Accuracy of problem statement
• Author’s contribution and analytical pre-processing of information from public sources

Analysis of case study

• Demonstration of good command of theoretical knowledge
• Ability to identify both common and specific problems
• Exploring various solutions
• Openness to other people’s ideas
• Being persuasive in argumentation
• Application of risk management principles and decision making methods
Case studies by key words
Advantages of case study method application

- Focus on practical aspects of information security in the real world
- High level of students’ interest and involvement
- Understanding of organizational decisions and corporate culture impact on information security
- Demonstration of risk management principles application in the context of information protection
- Practical classes with minimum requirements to equipment
- Multifaceted approach to information security – from the perspective of user, technical specialist, CFO, architect, tom-manager
Software Engineering Department of National Research University “Higher School of Economics”

- “Information security management” (MSc programme, 2nd year)
- “Methods of information protection” (BSc programme, 4th year).

Training Labs’2010 conference

- Format: interactive case study training “Risk management in the world of digital dependencies”

Course “Microsoft technologies and products in information protection”, supported by a grant from Microsoft (students’ rating of the course – 4.83 out of 5 effective 19.12.2010)

Conclusion

Results of application

• Library of case studies (currently: 19 ready-to-use, 5 work-in-progress)
• Growth of course rating based on students’ assessment
• Plagiarism reduction in students’ course works
• Award from foundation for educational innovations in Higher School of Economics

Future work

• Identification of new sources for case study plots
• Refilling of the case study library
• Application of case studies for final assessment of students’ competencies acquired during information security courses
Demo

Video case: Switching to a Secure Frequency
Case study

► Title:
  • Switching to a secure frequency

► Actors:
  • Commander Tong
  • Admiral

► Key areas:
  • Human factors
  • Information risk management
  • Consequences of information system failure
  • Information availability
  • User Interface Design and Usability
  • Adequate level of information protection
  • Secure channels for data transmission
Thank You

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