Chair of Informatics
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IT Security & Project Risks

Threat tree and Approach of Applegate

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Group 56

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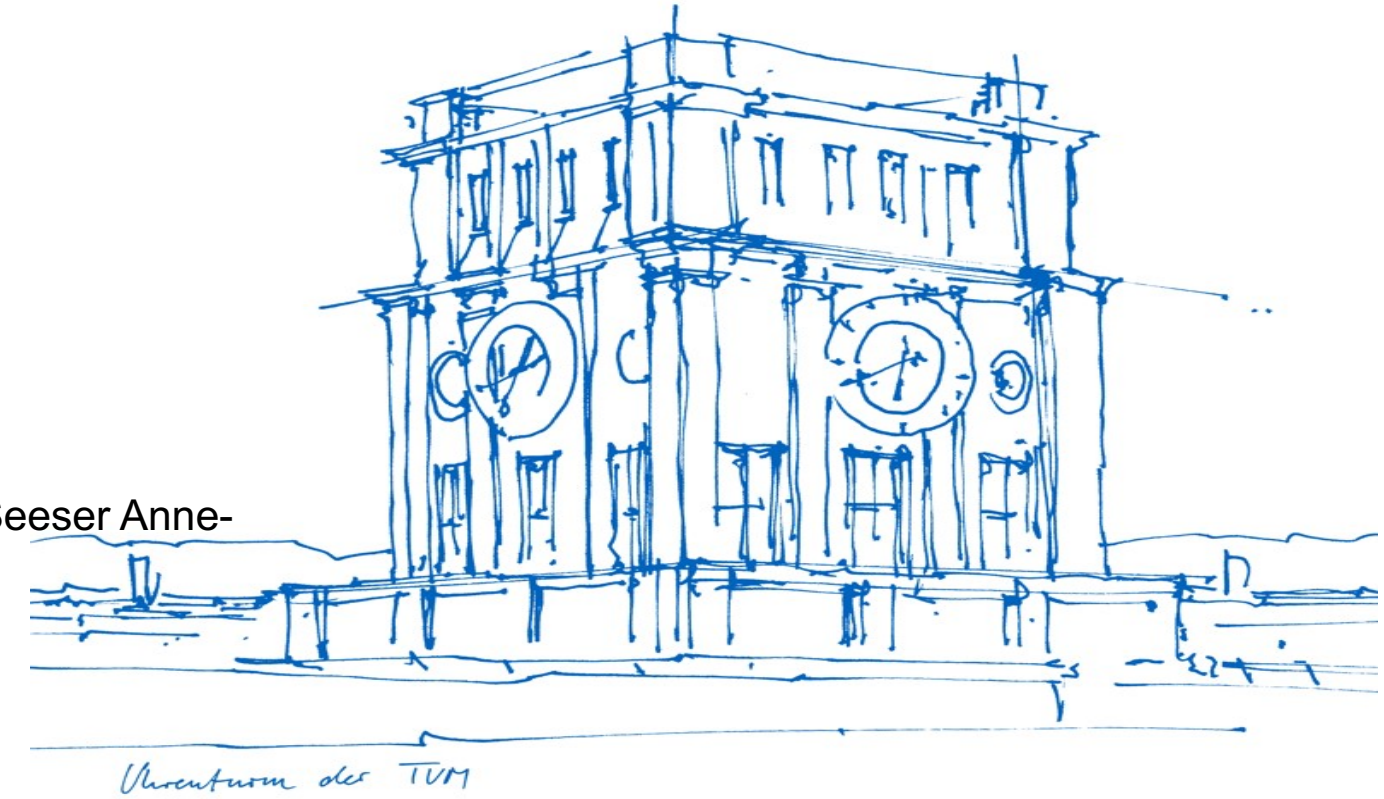
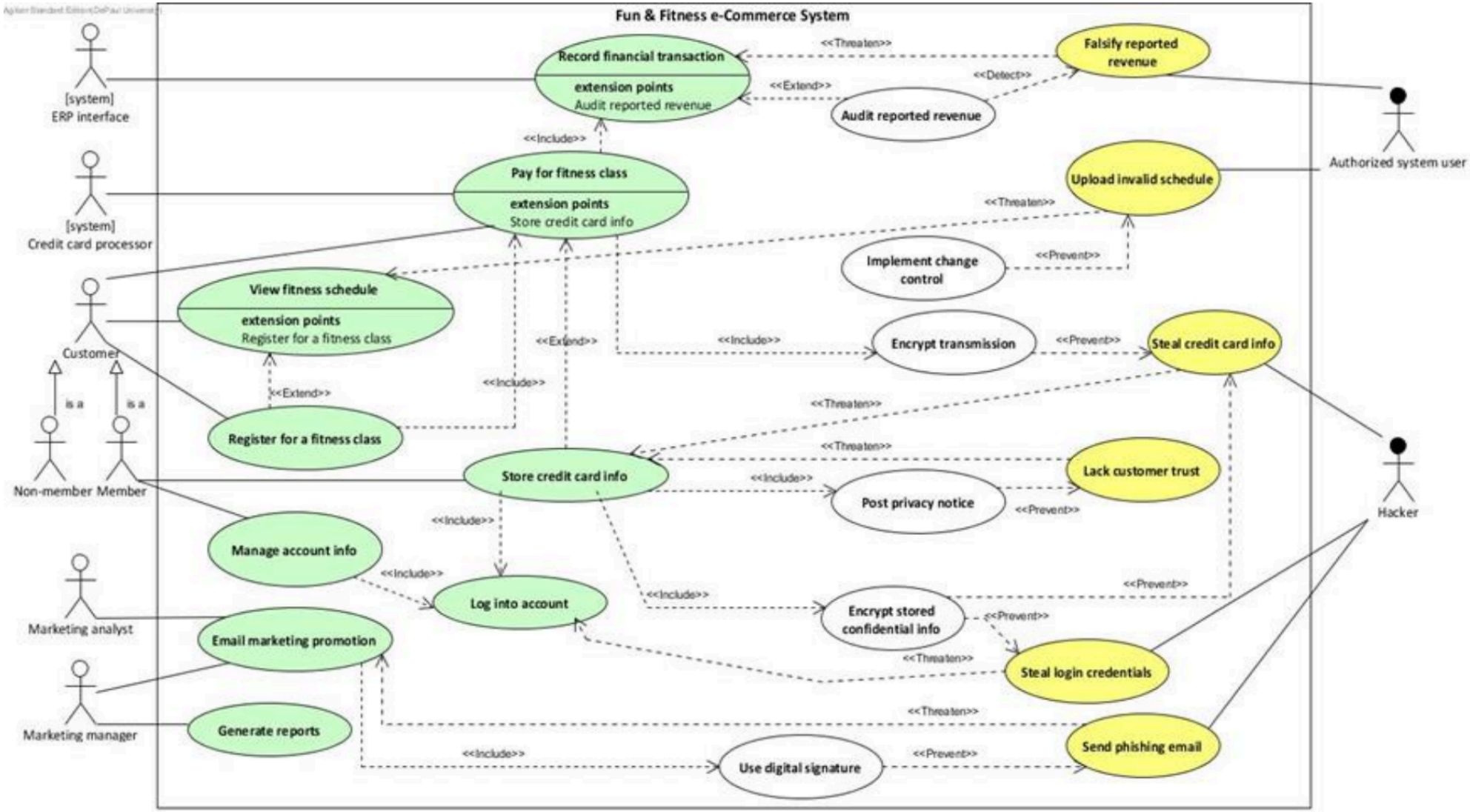


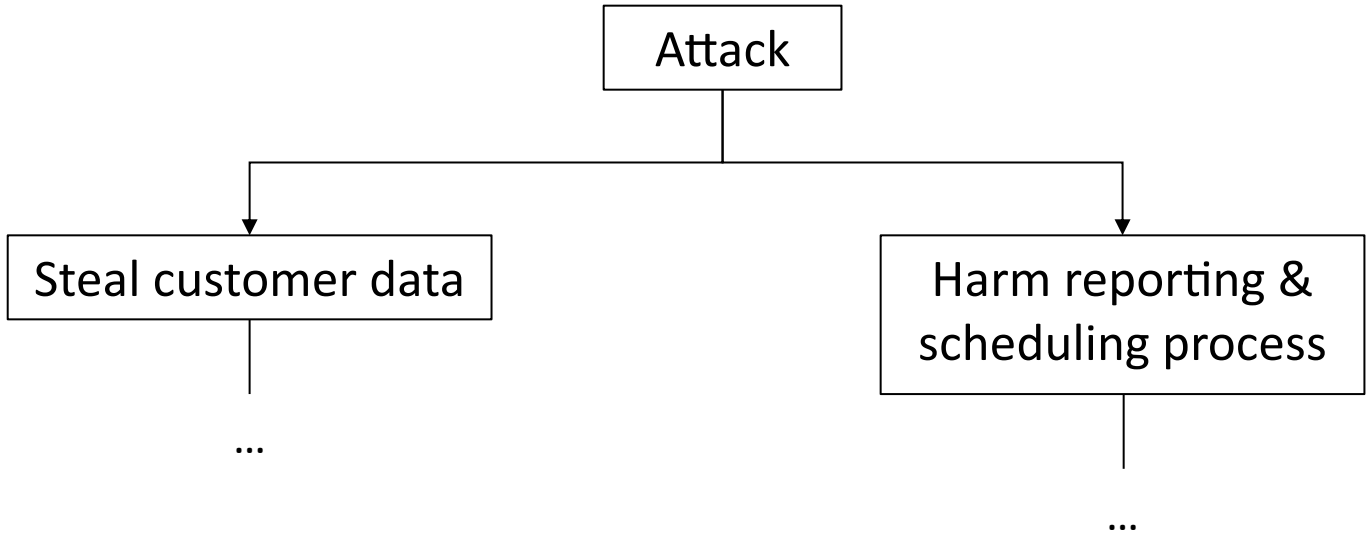
Company background and Misuse case diagram

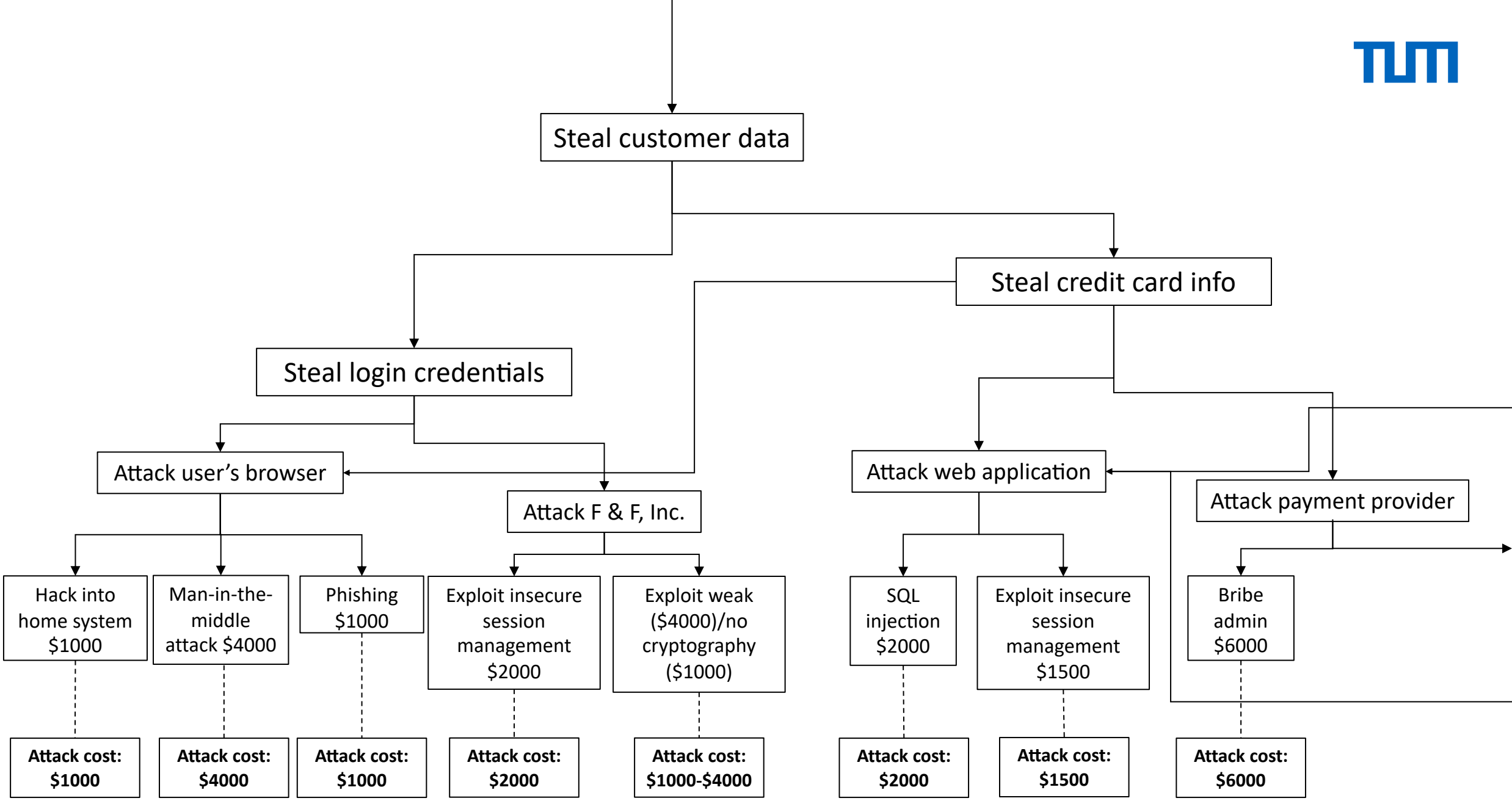
Analysis of IT security risks of Fun & Fitness using a threat tree

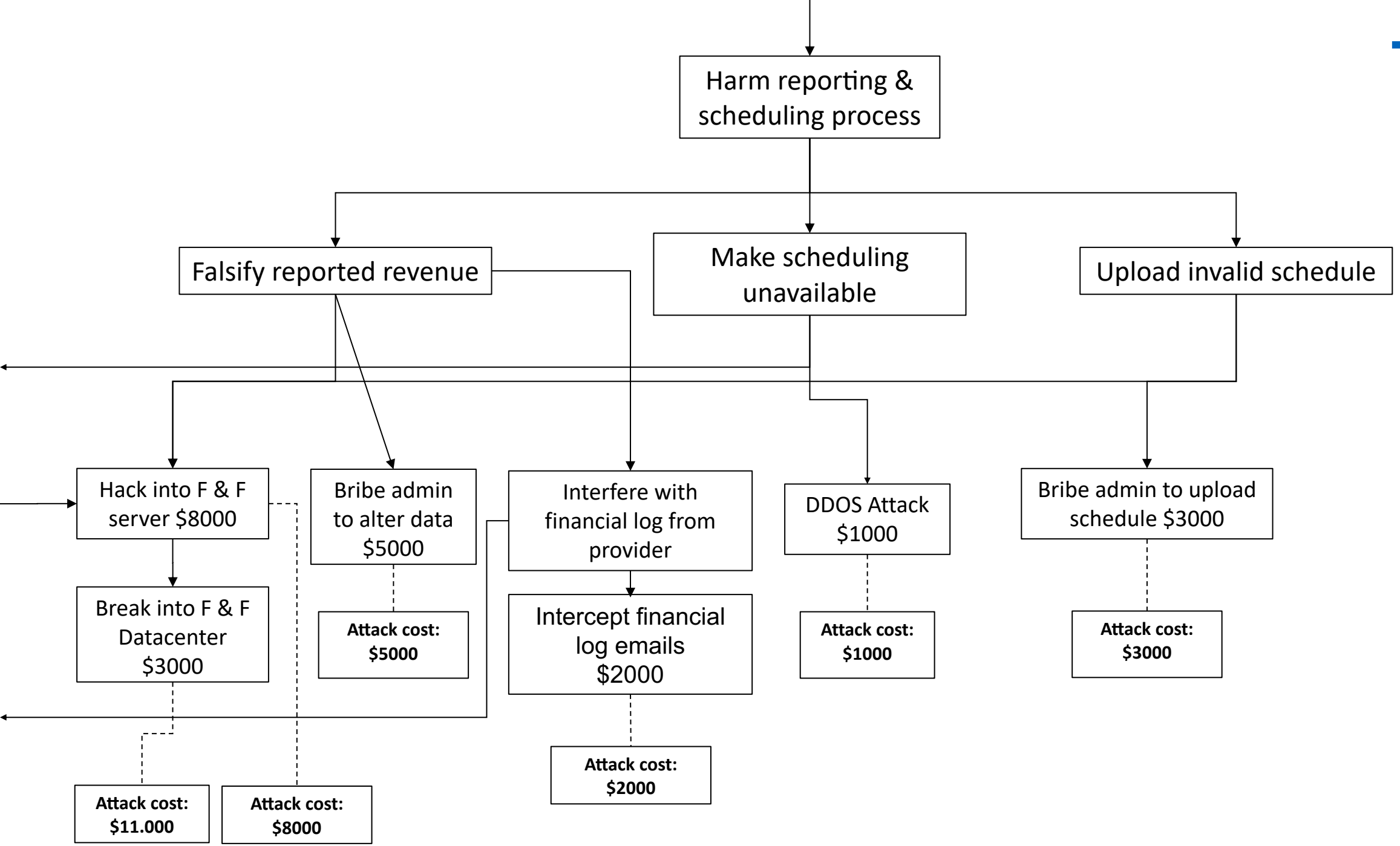


IT security risks of Fun & Fitness

Analysis of IT security risks of Fun & Fitness using a threat tree




Steal customer data
Steal login credentials
Steal credit card info
Attack user's browser
Attack F & F, Inc.
Attack web application
Attack payment provider
Hack into home system $1000
Man-in-the-middle attack $4000
Phishing $1000
Exploit insecure session management $2000
Exploit weak ($4000)/no cryptography ($1000)
SQL injection $2000
Exploit insecure session management $1500
Bribe admin $6000
Attack cost: $1000
Attack cost: $4000
Attack cost: $1000
Attack cost: $2000
Attack cost: $1000-$4000
Attack cost: $2000
Attack cost: $1500
Attack cost: $6000


Harm reporting & scheduling process
Falsify reported revenue
Make scheduling unavailable
Upload invalid schedule
Hack into F & F server $8000
Bribe admin to alter data $5000
Interfere with financial log from provider
DDOS Attack $1000
Bribe admin to upload schedule $3000
Break into F & F Datacenter $3000
Attack cost: $5000
Intercept financial log emails $2000
Attack cost: $1000
Attack cost: $3000
Attack cost: $11.000
Attack cost: $8000
Attack cost: $2000

Pros and cons of a threat tree

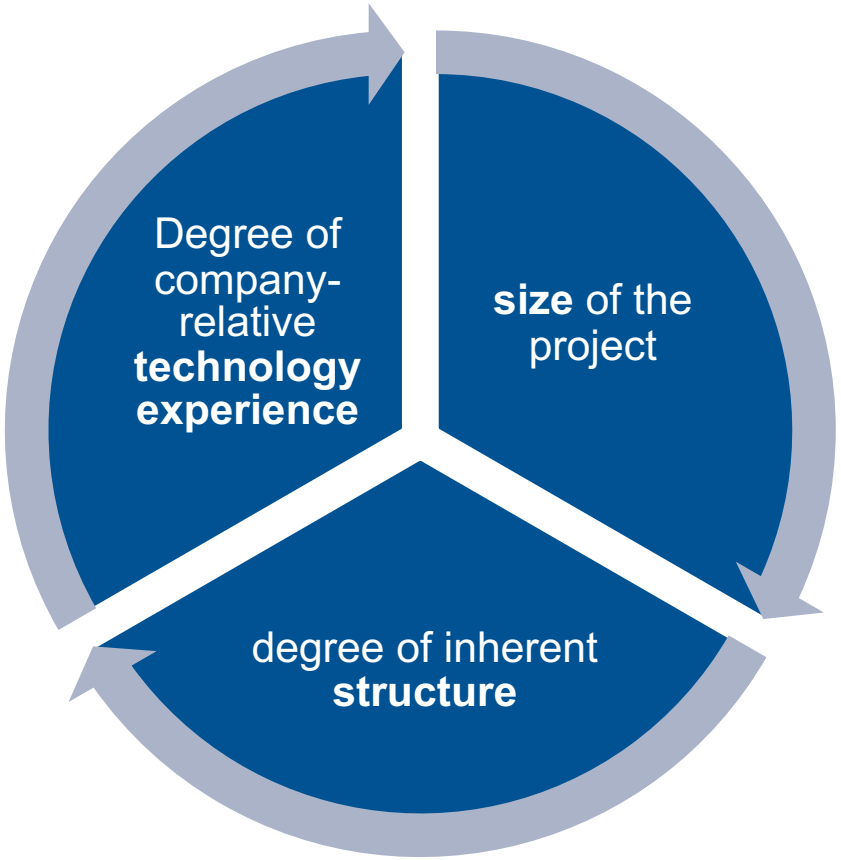
Advantages and disadvantages of a threat tree as a method to assess IT security risks

- Can be easily reused, extended and updated
- Can be combined with other diagrams
- Promotes holistic thinking
- Good overview of which threats exist and how to deal with them
- Better understanding of security requirements and the different behaviors of a cyber criminal

- Can become very large and complex
- Can give a false sense of security since it is easy to overlook an avenue of attack
- Attack tree results are very dependent on the original cost estimates, which are hard to make accurately

Project risks of Fun & Fitness

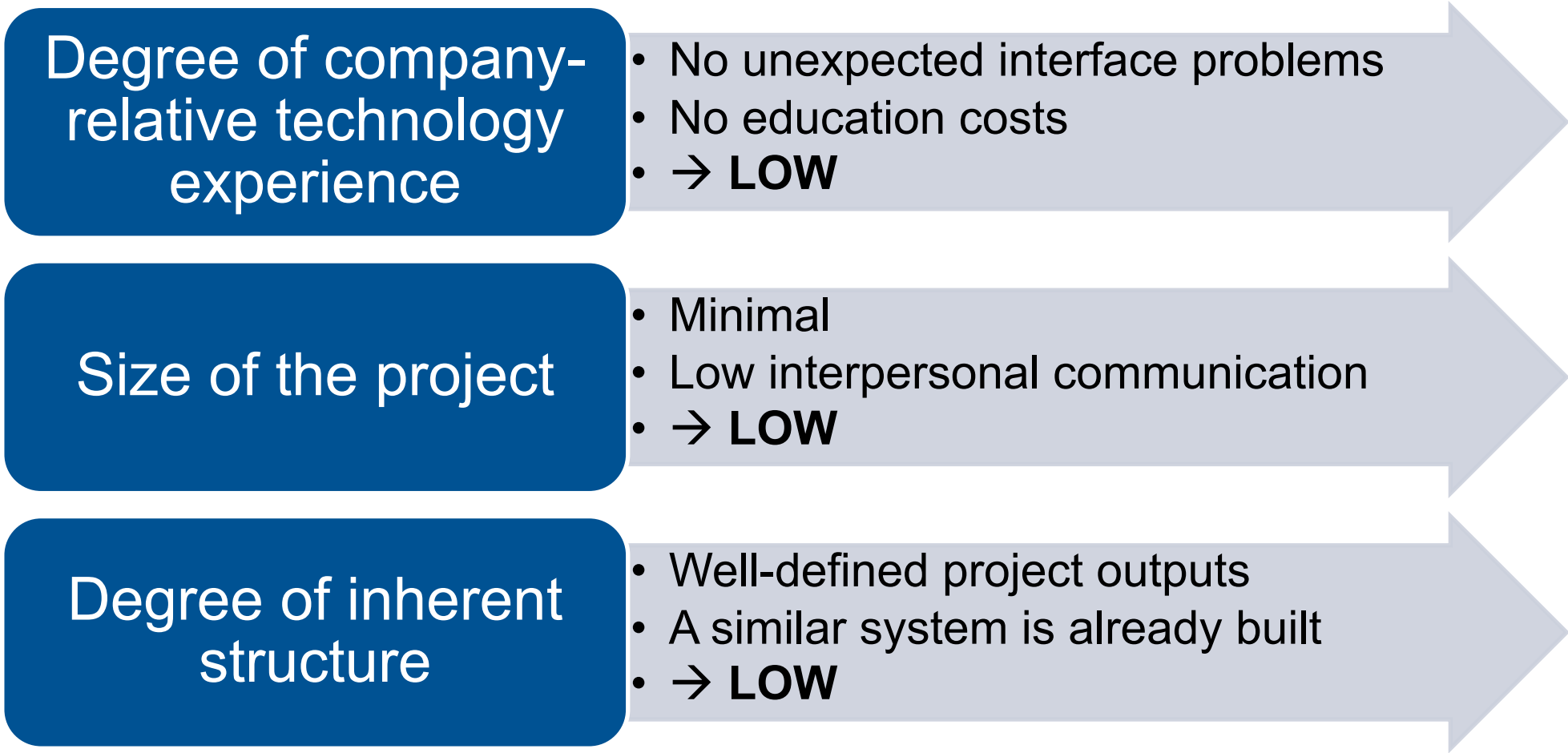
Analysis of project risks – Introducing the payment feature by using the approach of Applegate



3 dimensions that influence implementation risk

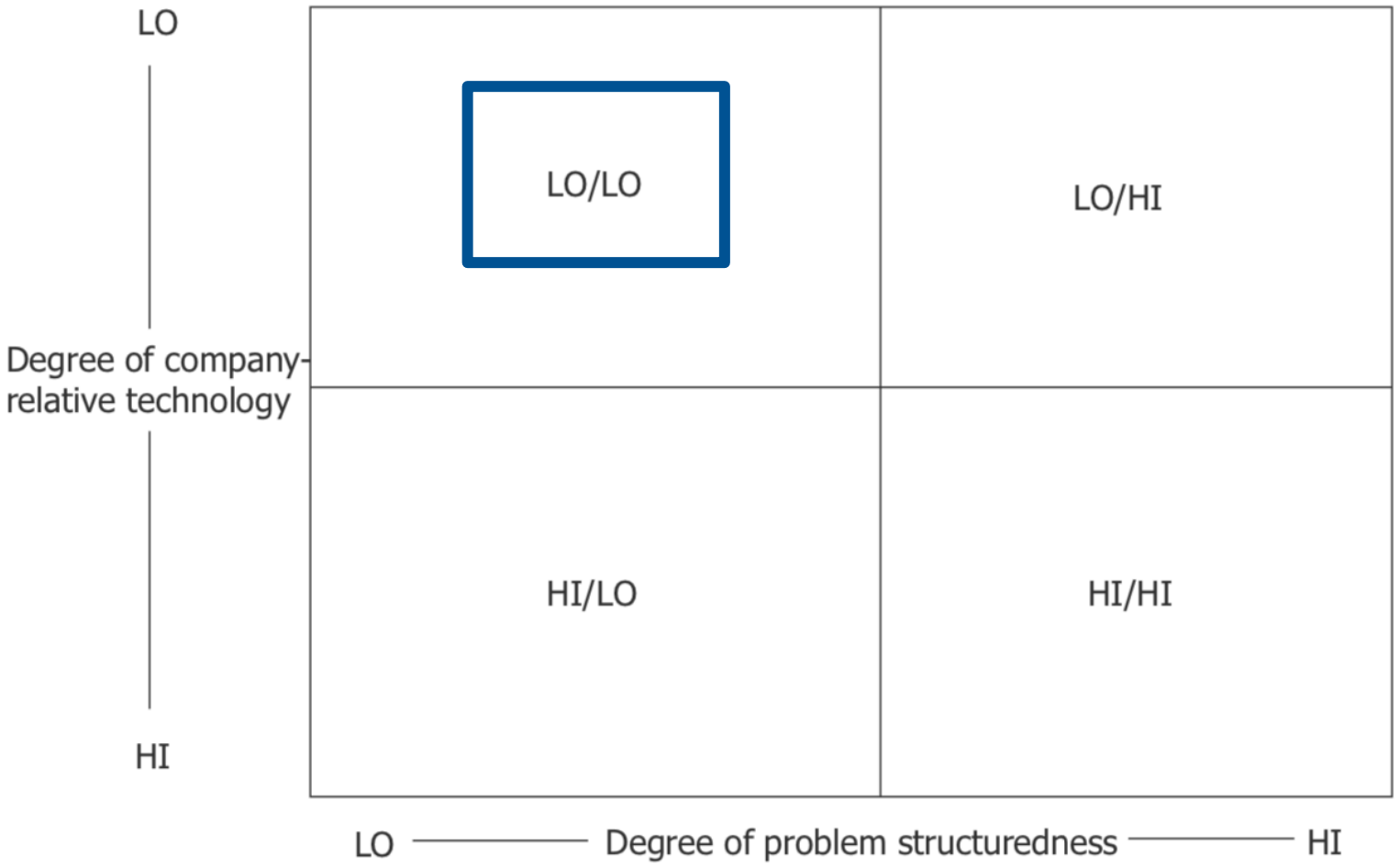
Project risks of Fun & Fitness - Explanation

Analysis of project risks – Introducing the payment feature by using the approach of Applegate



Project risks of Fun & Fitness- Evaluation

Analysis of project risks – Introducing the payment feature by using the approach of Applegate



Project risks of Fun & Fitness

Analysis of project risks – Introducing the payment feature by using the approach of Applegate

Overall project risk:

- **Compliance** with PCI DSS (Payment Card Industry‘s Data Security Standard)

→**Card holder protection**

Encryption of stored card holder data

Encryption of card holder data during transmission

Pros and cons of the approach of Applegate

Advantages and disadvantages of the approach of Applegate as a method to assess IT project risks

- Helps to set contingency levels
- Easy way to get overview and insights into how to manage the project
- Logically consistent with other operational risk approaches as to risk drivers and their impact
- First step to further explore the risk sources and define a managerial approach to manage the risks

- Doesn‘t explain the calibration of input uncertainties and output risk levels
- Missing dimensions, e.g. time flexibility, interdependence, culture
- Difficult to assess the risk of requirements volatility in advance
- High abstraction level

Questions?