
The Risk Game
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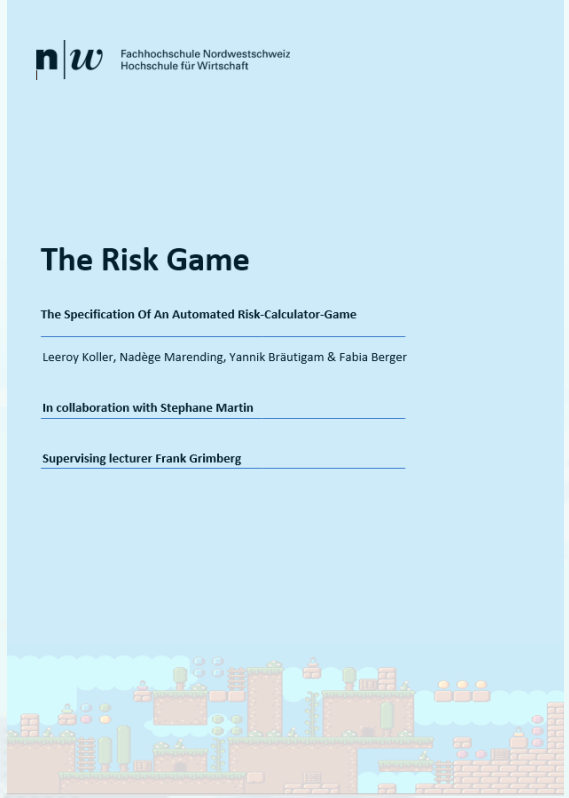
About our project

The problem

- Numerous risk management consultancies.
- Few can differentiate themselves
- The average SME is lacking in the aspects of risk management efforts.
- Current events, such as cyber security concerns and the pandemic, further emphasize the importance of the subject.
- None have devised a creative way to highlight and address the subject of risk



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About our project

The solution

- Creation of a risk game for business entrepreneurs
- Better engage them in identifying, assessing and managing risks
- Risk calculator
- Cybersecurity
- Real-life data

About our project

The objectives

- Specification of a fun but professional risk game
- Educate through gamification
- Enhancement of risk management culture and existing risk management tools
- Fully engaging for adopters
- 3 concepts → one final concept
- Scalable to every risk area
- Simulation of real world risks

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The Risk Game

Start User Journey

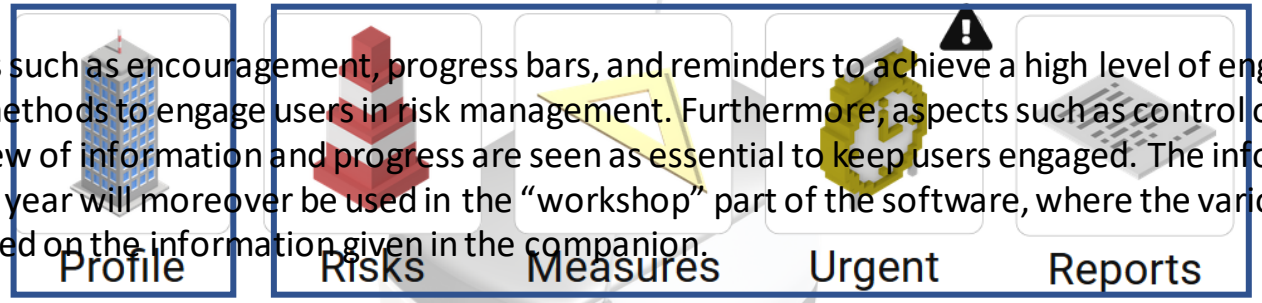
Mockup Main Menu

Companion–Overview

COMPANION OVERVIEW

The first component of our game is a “companion” which shall support and accompany key figures in risk management of businesses throughout the year. The companion allows entrepreneurs not only to keep track of risks that could possibly impact their businesses, but also informs them on the impact and possibility of these risks and advises the user on various measurements that can or should be taken to successfully manage risks. The risk companion has the additional benefit of keeping the user interested in the game throughout the year, thereby increasing the possibility of retaining a large user base. The goal is to gamify the processes of risk management in the real world.

Many games use incentives such as encouragement, progress bars, and reminders to achieve a high level of engagement for their players. This tool shall use similar methods to engage users in risk management. Furthermore, aspects such as control over the system, appealing aesthetics, a simple overview of information and progress are seen as essential to keep users engaged. The information added in the companion throughout the year will moreover be used in the “workshop” part of the software, where the various scenarios the players are confronted with will be based on the information given in the companion.



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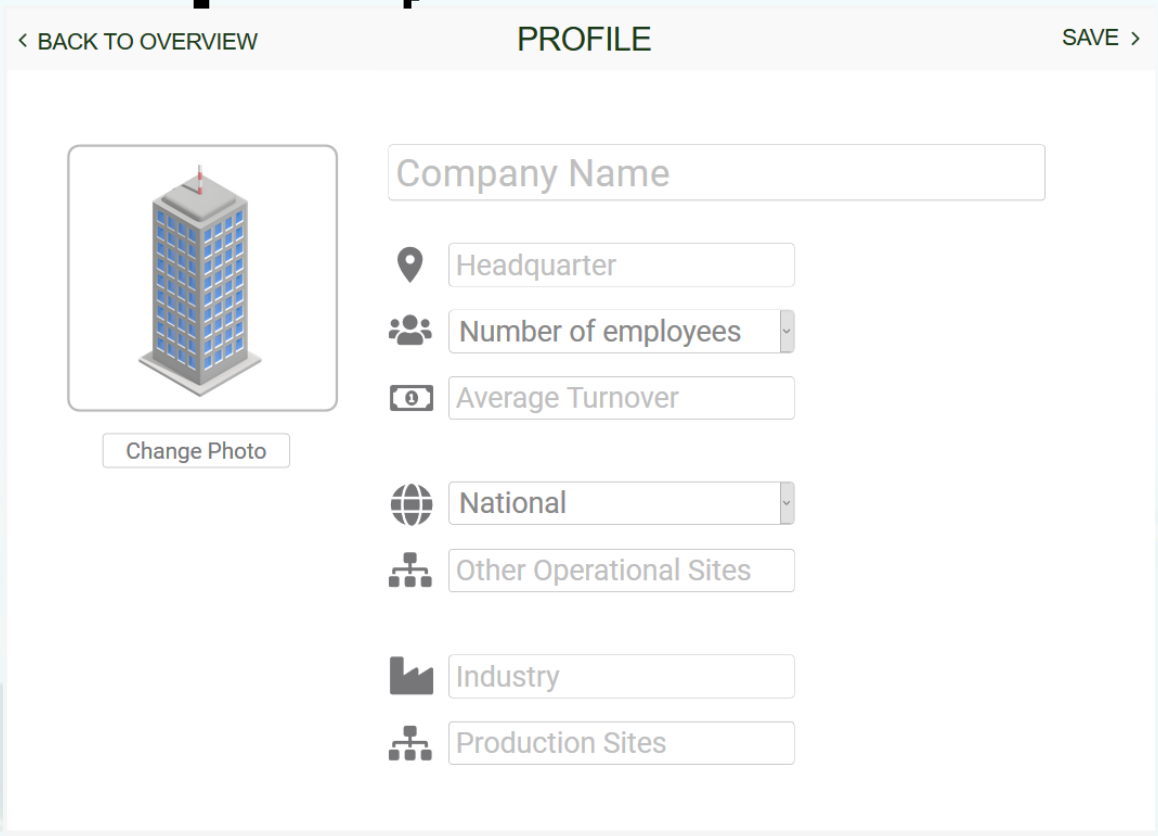
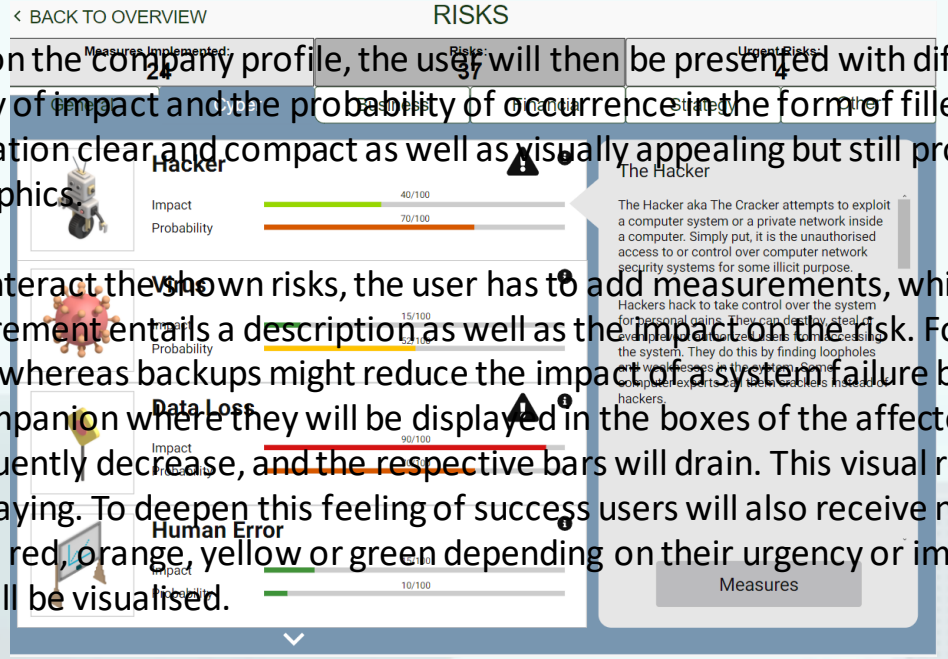
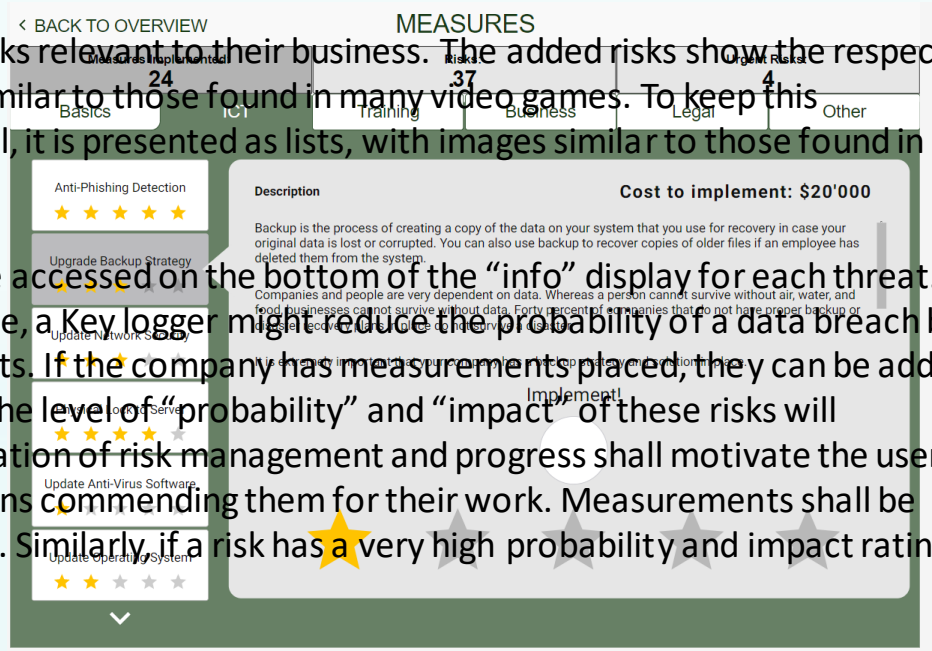
Create Company Profile



The first point of interaction with the system for the user will be the creation of a company profile. This entails basic information such as the name of the company, the number of employees and the average turnover. This data is crucial for our system as it is used to then create the companion as well as the scenarios for the workshop. For example, different Industries carry different risks, and operation locations have an influence on regulations and laws which have to be considered and followed.

Your Companion





Based on the company profile, the user will then be presented with different risks relevant to their business. The added risks show the respective severity of impact and the probability of occurrence in the form of filled bars similar to those found in many video games. To keep this information clear and compact as well as visually appealing but still professional, it is presented as lists, with images similar to those found in infographics.

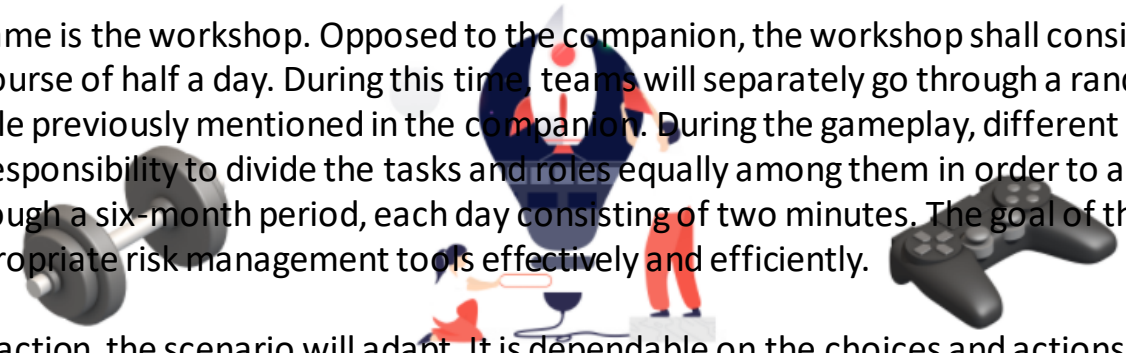
To counteract the shown risks, the user has to add measurements, which can be accessed on the bottom of the “info” display for each threat. Each Measurement entails a description as well as the impact on the risk. For example, a Key logger might reduce the probability of a data breach by 20 points, whereas backups might reduce the impact of a system failure by 15 points. If the company has measurements placed, they can be added to the companion where they will be displayed in the boxes of the affected risks. the level of “probability” and “impact” of these risks will subsequently decrease, and the respective bars will drain. This visual representation of risk management and progress shall motivate the user to keep playing. To deepen this feeling of success users will also receive notifications commending them for their work. Measurements shall be marked red, orange, yellow or green depending on their urgency or importance. Similarly, if a risk has a very high probability and impact rating, this shall be visualised.

If a risk is seen as very high impact and probability, or a measurement as urgent or important the user will receive warnings in the form of notifications. Similarly, if the player has not used the software for an extended period of time he will be reminded to keep the companion up to date. This shall aide in the user’s awareness of the game and shall serve as an incentive to keep the companion updated. The companion will additionally count the amount of measurements taken and update the company icon to a more appealing image if certain thresholds of measurements are met. This shall serve as progress to give the user a feeling accomplishment.

Workshop

Introduction Workshop

Start Workshop >



The second, equally big part of our game is the workshop. Opposed to the companion, the workshop shall consist of active gameplay and be playable over the course of half a day. During this time, teams will separately go through a randomly chosen scenario based on the company profile previously mentioned in the companion. During the gameplay, different roles will be made apparent, however, it is the players responsibility to divide the tasks and roles equally among them in order to achieve maximum efficiency. In game the user plays through a six-month period, each day consisting of two minutes. The goal of the game is to oversee risks and implement the appropriate risk management tools effectively and efficiently.

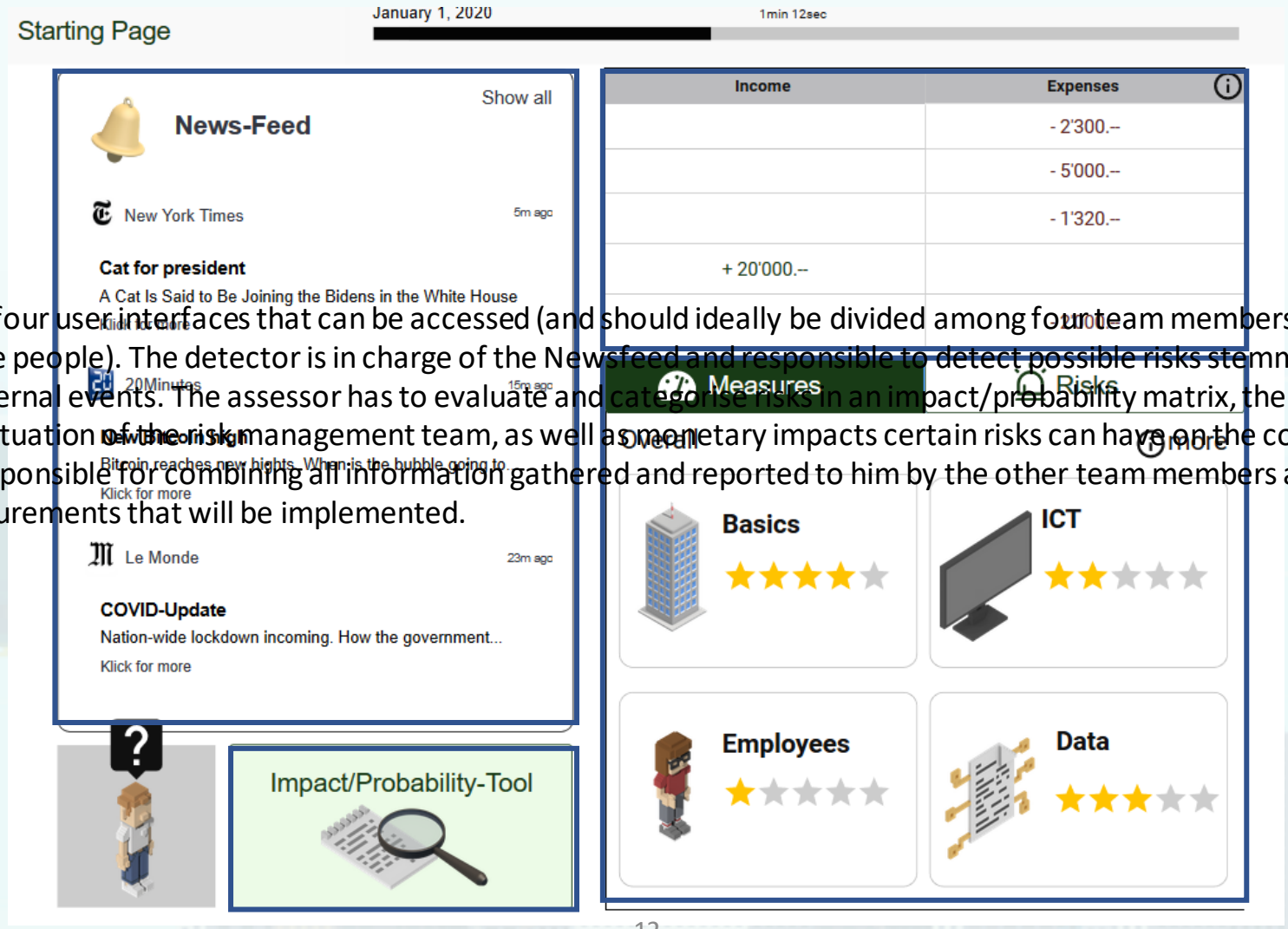
Depending on the chosen courses of action, the scenario will adapt. It is dependable on the choices and actions of the team. If the players make bad decisions, their company will suffer in the form simulated consequences stemming from inadequate risk management. After each passing week, (10 minutes) a weekend screen will be displayed, informing the teams of consequences such as “Oh no, you got hacked! You have not implemented a firewall. This has resulted in costs of CHF 200’000” Luckily, this was only a simulation!” consequences can include an impact on revenue, data loss etc. But also prevented risks such as “Someone tried to hack you! Thank god you installed a firewall!” At the end of the playing session (approximately four hours), The players can see their team ranking based on how well they performed throughout the game session and compare themselves with other teams in their enterprise. The point system is based on three factors considering monetary value. Money spent to manage risks (e.g., cost of implementing an ERP), money saved by successfully managing risks (e.g., being hacked would have cost the company CHF 20’000 but your efficient risk management avoided that) and money lost by not effectively managing risks (e.g., You didn’t have sufficient protections in place and got hacked. This cost the company CHF 20’000). The baseline for in system costs, saved money and spent money are dependent on the average turnover the user has added in their profile.

Introduction

Opposed to the companion, the workshop shall consist of active gameplay and be playable over the course of half a day. During this time, teams will separately go through a randomly chosen scenario based on the company profile previously mentioned in the companion. During the gameplay, different roles will be made apparent, however, it is the players responsibility to divide the tasks and roles equally among them in order to achieve maximum efficiency. In game the user plays through a six-month period, each day consisting of two minutes. The goal of the game is to oversee risks and implement the appropriate risk management tools effectively and efficiently.

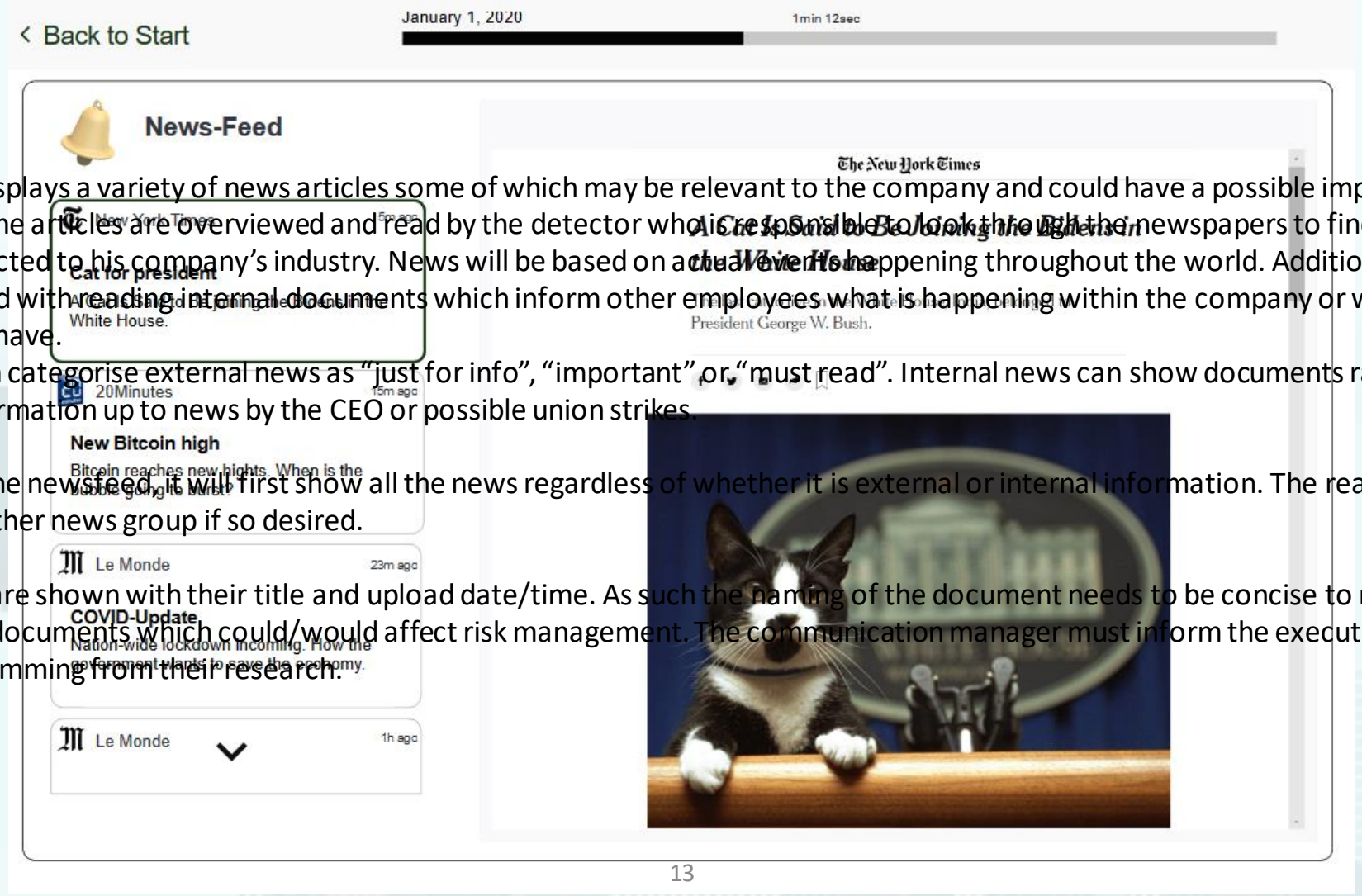
You are a hired to manage the disaster recovery plan of the company Pizza4everone - a regional Pizza chain with its headquarters in Basel. Their main business is to deliver pizza through their online reservation service.

Workshop-Overview



The game consists of four user interfaces that can be accessed (and should ideally be divided among four team members but can also be played by less or more people). The detector is in charge of the Newsfeed and responsible to detect possible risks stemming from current internal as well as external events. The assessor has to evaluate and categorise risks in an impact/probability matrix, the budgeter supervises the overall financial situation of the risk management team, as well as monetary impacts certain risks can have on the company. The last role is the executer. He is responsible for combining all information gathered and reported to him by the other team members and based on that, deciding on risk measurements that will be implemented.

Newsfeed

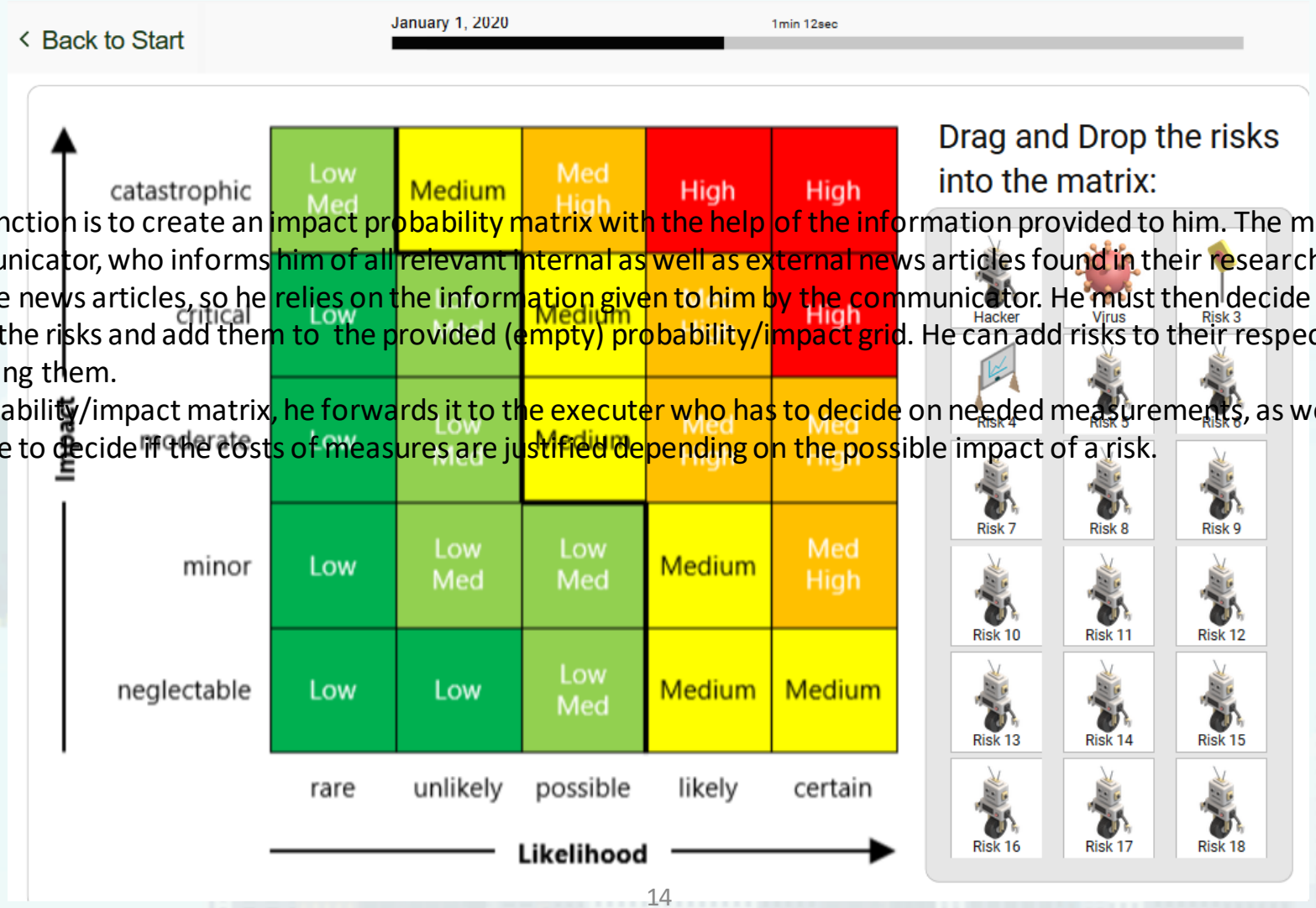


The newsfeed displays a variety of news articles some of which may be relevant to the company and could have a possible impact on the risk management. The articles are overviewed and read by the detector who is responsible to look through the newspapers to find articles which are connected to his company's industry. News will be based on actual events happening throughout the world. Additionally, the detector is tasked with reading internal documents which inform other employees what is happening within the company or which news other managers have.
The detector can categorise external news as "just for info", "important" or "must read". Internal news can show documents ranging from recruitment information up to news by the CEO or possible union strikes.

When opening the newsfeed, it will first show all the news regardless of whether it is external or internal information. The reader can then switch tabs to either news group if so desired.

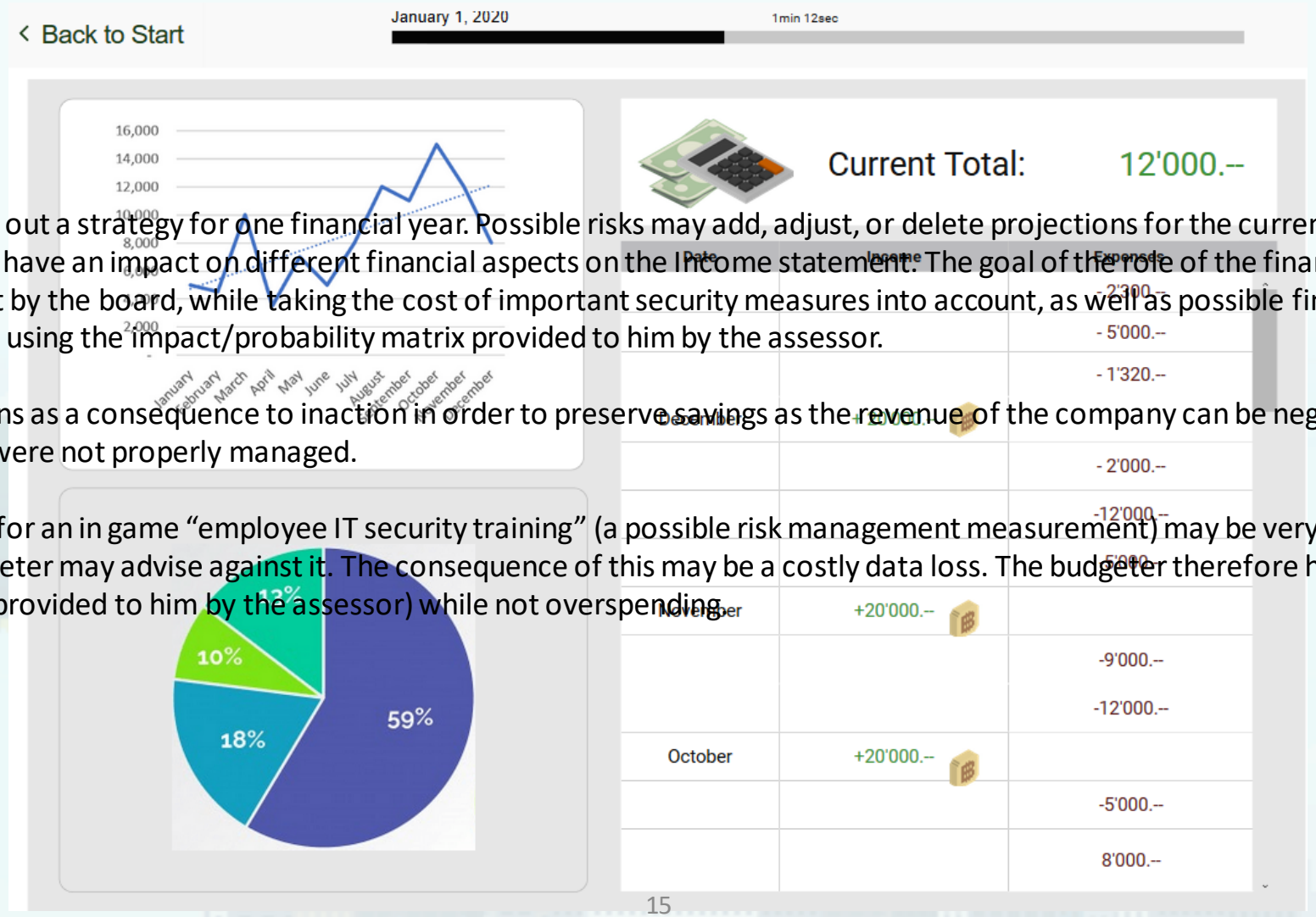
The documents are shown with their title and upload date/time. As such the naming of the document needs to be concise to make it easier to find relevant documents which could/would affect risk management. The communication manager must inform the executer of all possible risks stemming from their research.

Measurement categorizing



The assessor's main function is to create an impact probability matrix with the help of the information provided to him. The main input stems from the communicator, who informs him of all relevant internal as well as external news articles found in their research. The assessor does not possess all the news articles, so he relies on the information given to him by the communicator. He must then decide on the correct assessment of the risks and add them to the provided (empty) probability/impact grid. He can add risks to their respective category by dragging and dropping them.
After creating the probability/impact matrix, he forwards it to the executer who has to decide on needed measurements, as well as the budgeter, who will have to decide if the costs of measures are justified depending on the possible impact of a risk.

Financial Report

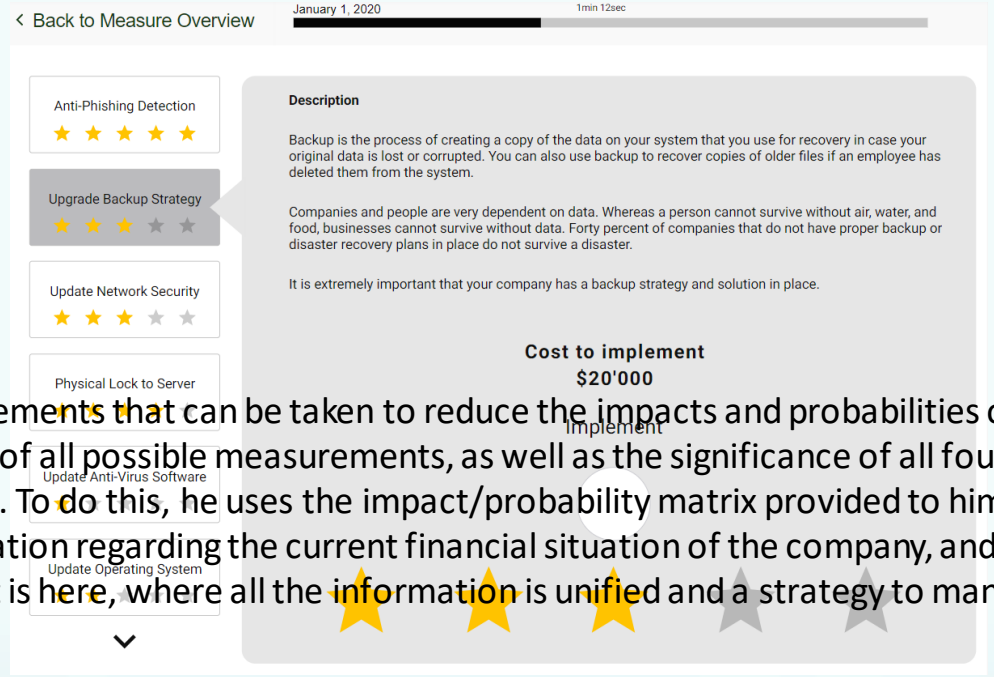


Board decisions will lay out a strategy for one financial year. Possible risks may add, adjust, or delete projections for the current year/month. Risks may have an impact on different financial aspects on the Income statement. The goal of the role of the financial expert is to balance the goals set by the board, while taking the cost of important security measures into account, as well as possible financial impacts of various risks using the impact/probability matrix provided to him by the assessor.

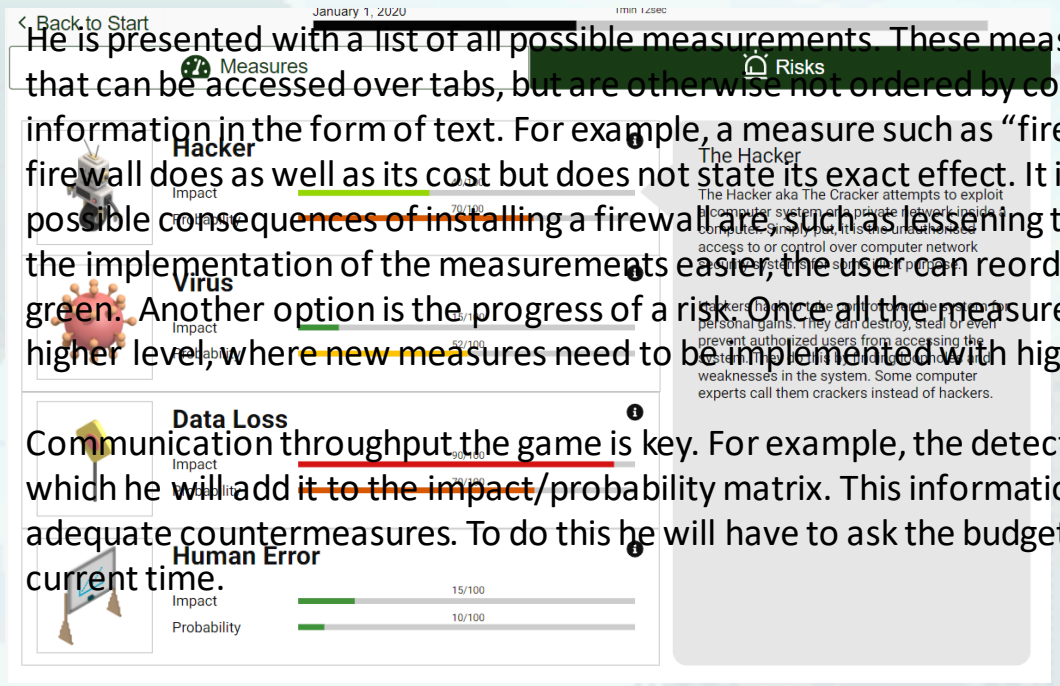
The report also functions as a consequence to inaction in order to preserve savings as the revenue of the company can be negatively impacted by risks that were not properly managed.

For example, the costs for an in game “employee IT security training” (a possible risk management measurement) may be very expensive, and therefore the budgeter may advise against it. The consequence of this may be a costly data loss. The budgeter therefore has to balance estimated risk impact (provided to him by the assessor) while not overspending.

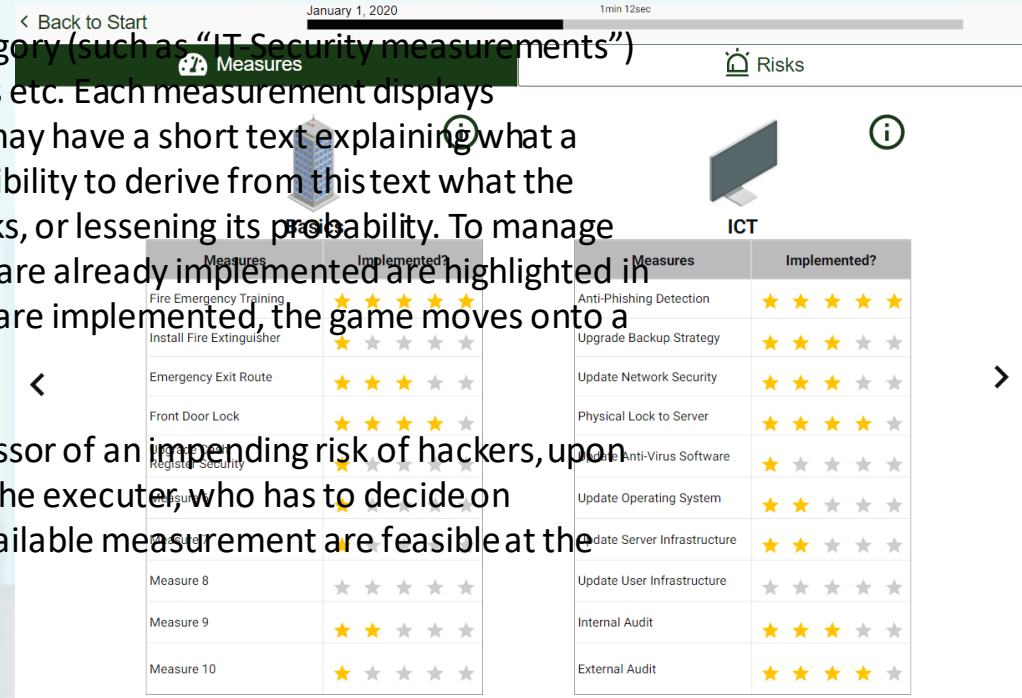
Execution



The main task of this role is to decide on the measurements that can be taken to reduce the impacts and probabilities of the risks. Therefore, this person needs to acquire an overview of all possible measurements, as well as the significance of all found risks and decide which measures should be implemented next. To do this, he uses the impact/probability matrix provided to him by the assessor. Additionally, the budgeter provides him with information regarding the current financial situation of the company, and therefore the significance of measurement costs. In other words, it is here, where all the information is unified and a strategy to manage the risks is developed.



He is presented with a list of all possible measurements. These measures are sorted by category (such as “IT-Security measurements”) that can be accessed over tabs, but are otherwise not ordered by cost, impact, effectiveness etc. Each measurement displays information in the form of text. For example, a measure such as “firewall implementation” may have a short text explaining what a firewall does as well as its cost but does not state its exact effect. It is the executers responsibility to derive from this text what the possible consequences of installing a firewall are, such as lessening the impact of certain risks, or lessening its probability. To manage the implementation of the measurements easier, the user can reorder them. Measures that are already implemented are highlighted in green. Another option is the progress of a risk. Once all the measures under a risk category are implemented, the game moves onto a higher level, where new measures need to be implemented with higher costs.



Communication throughput the game is key. For example, the detector may inform the assessor of an impending risk of hackers, upon which he will add it to the impact/probability matrix. This information will be forwarded to the executer, who has to decide on adequate countermeasures. To do this he will have to ask the budgeter if the costs of the available measurement are feasible at the current time.

Our journey

- The Initialization
  - Meetup with the client
  - Objectives
- Our Tasks
  - Initial Challenges
  - Overcoming and changing scope
  - Reiterative design
- Coming to a close

Read more

Our journey

The Initialization

Meetup with the client

Our project supervisor initially contacted us regarding a potential topic for our practical project and put us in touch with Stephane Martin, the founder of the company Smart Risk Consulting and our client.

Objectives

In our meetup with our client, we discussed the broad scope and defined objectives that were to be fulfilled. The objective of this project was to create a concept for a fun but professional risk-game simulation, that educated participants in the risk identification, assessment and evaluation processes. The theme of this concept revolves around the topic of cybersecurity, while allowing the concept to be scalable to any theme desired.

Our journey

Our Tasks

Initial challenges

Our freedom of possibilities and design choices was rather large in the initial phase of the project. That's why we made it atop priority to create multiple versions of a tool that may fulfill the set requirements of the client. We split up into our own little workgroups to brainstorm 3 different versions of a tool that all essentially serve the same purpose but achieve their objective via different methods. In this phase we conducted individual research into gamification and methods of risk-management and how to combine them. We presented those versions to each other and gave feedback and additional ideas. The first concept we came up with serves as a companion to companies and keeps track of their progress in implementing measures to secure the companies IT systems. The second concept was a short-term simulation of a company, which could serve multiple teams as a training exercise in which they compete against each other to achieve the highest scorein a hypothetical scenario facing risks. The last concept was a more long-term simulation very similar to the first one but by handling a fictional company through a never-ending simulation with incoming cyber-attacks and incremental challenges, would be more engaging.

After feeling confident enough in these concepts, we decided to present our client with each one of the concepts.

To facilitate each of the tasks, responsibilities and scheduling into a coherent project plan, we began working on each of the ten knowledge areas and created a structure to our project to help us with administrative project work. These knowledge area definitions helped us in asking questions, we might not have thought of before and contributed to a unified project visions between the project team members.

Our journey

Overcoming scope

In our meeting with the client, we were able to find aspects which seemed more relevant than others and could isolate wanted features. Additionally, we concluded that the initial scope as described in the project charter would have to be adapted. Our client emphasized the importance of the concept and instructed us to focus on the more abstract and creative aspects such as gameplay, and usage in enterprises while putting the actual implementation of real-life data, risk calculation and technological aspects aside. In the end we came to the conclusion that a fusion of all three concepts was in order to fully encompass every area of relevance. Important there was to discard features that were not necessary to preserve simplicity in use and to keep the scope realistic if the project was to continue after the accomplishment of our objective.

We kept in touch with our client on a weekly basis, reporting our progress and asking questions on uncertainties to unify each of the concepts.

However, the fusion of these concept into one coherent one was more challenging than we thought. We decided to contact sims4training, which our client has recommended us to check out, to find some references we might be able to draw on. We scheduled a meeting, were able to take a look, and even play the simulation. This was an important step for us, as we were able to gauge what might work in our tool and what might not. We came to multiple conclusion regarding our own project like the discarding of set roles of the team-members for the simulation and using a fluid role system instead, where each member can pick out their roles instead of assigning them to the players. We also got a lot of inspiration the UI-design of the software and inter-functionalities like how occurring situations would impact the simulation.

Reiterative design

We sat together again and fleshed out our concept with the insights we acquired. The goal now as to create a first mock-up of the system and an abstract user journey, which we could present our client for the mid-term presentation. Each of us created different modules of the tool an explained them and their purpose to the client. The client had only small adjustments to our concept, which meant for us that we finally had a strong base, we could build upon.

We further delved into each module and functionality of the tool and discussed a detailed user journey and each interaction between the different modules. In this process, we were able to make small adjustments. We iteratively went through each of the functionalities and re-evaluated their function and usefulness, discussed them together and decided on what to change and how it would impact the tool. After feeling confident enough with our definitions, we further refined the mock-ups to create a uniform presentation of the tool with each button, slider, text field and picture. The next step was to present those little adjustment to our client bevor the final presentation.

The Future

Critiques and Future

- We are no experts in gamification and risk management
- Useful information from Sims4Training
- Our work only serves as a foundation
- Deeper research
- Technical feasibility study
- Basis for software development team
- Key role: graphical aspects and user experience, therefore focus on aesthetics
- Balance between fun and professionalism

Read more

The Future

Critiques and Future

Even though we think we managed to use our resources fully under the guidelines of the practical project, there a couple of remarks we would like to mention content wise.

While we did some literature research regarding gamification and game theory, we are clearly no experts. The ideas of the concept are our own and despite of collecting information from Sims4Training, the project encompasses only an analysis of a single established simulation developer. The result of this project builds a foundation for the work and development of the game that follows. Next steps could be the improvement and strengthening of the applied theories and ideas that might benefit the game as well as additional research into existing risk management tools. A technological feasibility study might greatly benefit the project before further developing the concepts.

The described concepts and mock-ups of the game shall act as a base for the development team. We want to emphasize again the importance of the graphical and user experience aspects of the game, which are going to play a key role in the success and acceptance of the simulation by its users. Therefore, a high focus on the graphics used in the final product as well as designing aesthetically pleasing user interfaces are crucial next steps. We would like to again highlight the importance of keeping the game professional, yet fun and exciting for the users.

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Our project organisation

Our project plan tool in clickup

Our prototypes in mockit

Our project documentation

See our prototype

See our project plan

Download our Documentation

Thank you!

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Credits

This project was created in scope of the practical project 2020

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Special Thanks To Frank Grimberg, Stéphane Martin & Trish Thurley for their support!