European Collaborative Innovation Centres for Broadband Media Service

Hanze University Groningen
University of Applied Sciences

Dangers of modern traffic

Prototype

EUROPEAN UNION
European Regional Development Fund

Investing in the future by working together for a sustainable and competitive region

The Interreg IVB North Sea Region Programme

1 Executive summary

The Dutch organisation for traffic safety wished to target the specific age-group of children between seven and twelve years of age, to increase their knowledge and awareness of the dangers they face when navigating (on bicycle) though the traffic of a small city such as Groningen. As the form of this message they decided to use a serious game, as this is the medium most often used by children of this age.
Two such games were eventually created by the Hanze University of Applied Sciences Groningen.

2 Problem statement

Veilig Verkeer Nederland (VVN: Safe Traffic Netherlands) is a NGO that tries to increase the safety of the traffic participants. In order to do so, they employ a diversity of media, such as TV commercials, posters and free cards to create awareness of the difficulties and dangers of navigating thought today's complex and dangerous road network, and to stimulate people to behave in a less aggressive way.
One of the less well known target groups of this NGO is the children of the age between seven and twelve years. Both the younger and the older people are already being targeted by specific media activities, but this specific group remains relatively difficult to approach. To account for this problem VVN wanted to create a serious game to be used at school. While playing this game, these children would acquire knowledge and insight into their responsibility that comes with navigating through a small town such as Groningen.

3 Alternatives

It was up to the students Game Design and Development to create the games mentioned under the previous heading. One issue that needed to be resolved upon was the number and size of the project groups. The number of participants was such that several options could be considered, each of which with their own pros and cons. To have one group create both games was not really an option, since such a project group would consist of too much persons to be manageable. Given the fact that students from different kinds of education participated in the project, interdisciplinary project groups were considered an obvious choice.
Once the groups were formed, they had to decide on the form of the eventual game. Since both games were to be created from scratch, all possible game-forms (e.g. 3D, first person, side scrolling, puzzle, platform) were considered. To facilitate in this decision, the project groups had several discussions with their target audience about their expectations and knowledge of games. Another important factor in this decision was the preference of the game-artist in the project group.
The eventual form chosen did limit the number of available techniques to actually create the game: web-based games demand a different technique than MMO's, which in turn differ in their implementation from desktop games. Persistence also needed to be taken into consideration at this point. In choosing between the different alternatives, the knowledge and

preference of the game-programmer is decisive, as well as the availability of tools, platforms and documentation.

4 Conclusion

Eventually, two different project-groups were created, both consisting of four students: three communication students and one computer science student. Both groups created a satisfactory game which VVN is still using at elementary schools.
The first group decided to use an isometric perspective as the form of their game; the other group used a first person perspective. This difference resonates in the graphical design of both games: the first is modern and sterile, the second is more realistic, a bit monkey-island meets Roy Lichtenstein-like.
It was decided that both games should be stand-alone games, as this was the most obvious form for the domain in which the games were to be used (elementary schools). However, both incorporate the possibility to have some data-persistence in the cloud, to be used in future releases to create some kind of competition.

5 Implementation

The first group created a flash-application, called Trafficity, delivering a tiled three-dimensional world in which a child has to cycle from one point in the world to another, obeying the traffic-laws and preferably not get run over in the process. (figure 1)

Figure 1: the tiled isometric perspective of Trafficity

By way of ‘comic relief’ the project group created a traffic variant of the well-known memory-game. In this version, the challenge was not to find matching pictures, but to find the textual description that matched the traffic sign (or vice versa). (figure 2)

Figure 2: Traffic Memory

The second group working on this project, Urban Chaos, used a special web-browser plug-in, called Unity3D, to create a real virtual 3D world. The player can experience busy traffic roads, the buildings surrounding these, and the other traffic participants that perhaps are not obeying the laws as strict as one might wish. (figure 3)


Figure 3: Riding around in the game

One of the goals of the contractor was to have the player experience the consequences of disobeying the traffic laws in a direct way, but without showing bloody corpses. The project group achieved this result by using familiar cartoony dialogues to convey pain or strong emotions.

One of the issues that needs to be mentioned is the consequence of using Unity3D. This is a browser plug-in that needs to be downloaded before the game can be played. Since a lot of users are using their parent's computer, it is highly questionable whether they have enough rights to install this plug-in.
Both games were extensively tested during the development at several elementary schools, which resulted in specific wishes and expectations that eventually made is to the definitive version.

6 Participants

This project was done by students of the Institute of Communication and Information Technology and the Institute of Communication and Media. The contractor was Veilig Verkeer Nederland.