GIGANT – an Interactive, Social, Physical and Mobile game

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ABSTRACT
The purpose of this project has been to design a mobile, interactive game where players physically move around in order to solve different assignments. Another essential goal was to create a game structure that didn't forced the player to act in pre-defined way; we wanted to draw a game that made it possible for free action choices and provide possibilities for the players to cooperate and develop strategies and interact face-to-face with each other.

Keywords
Ubiquitous gaming, play, computer-supported collaborative play, Interaction design, artwork.

INTRODUCTION
This project started when Electrohype, an organisation for artists working with digital art, asked us to develop a digital game to an art exhibition. The project was developed in cooperation with The Interactive Institute, Space and Virtuality Studio and The Interactive Institute, Game Studio.

OBJECTIVES
We wanted to develop a game with a game structure that made it possible for players to act freely and to cooperate, socially interact and develop strategies.

ARTISTIC WORKING METHOD
The design work in the Gigant project reminds of an artistic working method in many ways. We had a very small budget which resulted in extensive investigation for inexpensive materials – frequent visits to second hand markets for construction material, plastic and rubber fabrics (asking for leftovers) in search for material to test and work with. The collected material often gave us new ideas, changed the concept or directed us to what to search for next.

Especially in the beginning of the project the work was very similar to an artistic process – in that sense that is characterized as non-restricted and open, with an acceptance of any kind of ideas to be brought up.

We played forward scenarios and ideas, performance-like sessions, especially if we had an object, a material to reflect upon.

That in turn led to an expanded design space with many solutions and examples and it also resulted in a creative design environment.

COLLABORATIVE PROCESS
Our different backgrounds, as an artist and a social scientist, added different aspects in to the project and intensified our discussions. Our shared education in Interaction design and interest of games gave us a common ground to stand on.

Together we worked for a common understanding of how the game could be developed. This made it easier to work efficiently and unified in remaining periods of the project. This process started early in the process when we had a lot of brainstorming-sessions with discussions of our diverse opinion in different matters. During the project we evolved a mutual view of what were the right "Gigant qualities".

We didn't decide how the work should proceed or which methods we were going to use. The process evolved during the work. This didn't mean that we were without tools. We used our experience and knowledge from the disciplines of fine art, interaction design and social science. The character of the project invited us to be open towards different methods. The tools from these disciplines were used in a natural way. When a problem occurred or if we wanted to provoke a certain answer, we tried to use the method that was appropriate in the certain case.

THE SOCIAL LIFE OF ANTS
Quite early in the design process we decided to concentrate the game theme towards the ant life. We found the social life of ants very fascinating and started the game development by studying different ants species - how they interact with each other, what kind of functions different ants have and what behaviours they show. We discovered a lot of

In *PDC 02 Proceedings of the Participatory Design Conference,* T.Binder, J.Gregory, I.Wagner (Eds.) Malmö, Sweden, 23-25 June 2002. CPSR, P.O. Box 717, Palo Alto, CA 94302 cpsr@cpsr.org
ISBN 0-9667818-2-1.

interesting interaction patterns that could use and transform into game actions.

WORKING METHODS

We worked with this project during the summer of 2001 and the office was almost empty. We therefore took the opportunity to fully use the environment for our purposes. We changed the office to an atelier were and moved freely between different rooms and had our work material lying around almost everywhere.

One room had big white boards and we used the room as a brainstorming and investigation area. We listed everything that we learnt about ants on the white boards. Together we discussed what kind of ant behaviours and functions that could be transformed in to an overall game narrative and game actions.

In the lunchroom we worked in a more physical way with scenarios; made a few game boards illustrating game area with belonging game bricks (i.e. sugar cubes symbolise players), sketches and a mock-ups. With the intention of fully visualise and comprehend how different solution would affect the game story we physically moved around with mock-ups in our hands to really understand how the experience of interaction with objects or other players would be like. These methods also resulted new ideas and helped us to make cohesive decisions.

In the workshop we tested how to transform materials in to object that we wanted to create. We were melting, bending, sawing to see in what extend we could use the materials in creating prototypes.

We also worked in the sound studio were we tried to create organic sounds that we wanted to use in the game tools.

Appearance

Carbon mock-up couldn't tell us how the system would function and therefore we made a decision to have the digital prototypes ready rather early in the design process. In the prototype stage we put quite much effort in to construct objects that had a profile that was visually interesting. We made that decision for several reasons: We believed it would be easier to communicate about something that had an exiting form and could be touched and used. It could open up to discussion even thou the concept weren't in all details finished. Another reason was that we looked for sponsors to finance the last period of the project and it was therefore important to have something communicative to show. The third reason was that we wanted an opportunity to examine how it felt to use different digital game parts, for instant how to move around the playground with the ant attached and interact with other players ants, or how the ant ought to interact with the Aphid. I was essential to get a feeling of how the game play could be formed. So the objects, the digital prototypes were essential for us in order to get a feeling of the game experience. Fourthly, if we manage to create objects that could seduce and submerge the user into a play-atmosphere it could be a significant benefit.

THE GAME STORY

The game tools consist of five types of objects the anthill, ants, Aphides, pine needles and leaves. The main goal in the Gigant is to take care of the anthill by finding as much energy and construction materials as possible but also to protect the anthill from enemies. Two or more opposite teams are competing for the same resources and there is not enough material for two ant colonies to exist. The players have consequently to work hard to survive. They have to investigate a big area to search for materials and Aphides. The players have to find Aphides to collect energy and constructions material such as pine needles and leaves.

THE FREE-PLAY PAPER VERSION OF GIGANT

First we wanted to investigate if the game structure that we had sketched out perceived as to complex or to simple, fun or boring. In order to do so we arranged several game tests. In the game we used paper mock-ups mad of for instant boxes, carbon paper, that illustrated construction material – pine needles and leaves, drawings of Aphides and arranged several free play sessions. After every test session we discussed with the players how they had experienced the game play and asked for their advice and suggestion for changes.

When we had found a game structure that seemed to be engaging and fun we developed the digital version of Gigant. In discussion with Nabil Benhadj, the engineer working at Interactive Institute, we came to the solution of using infrared technology and microprocessors. Different game parts could then communicate with each other. The use of microprocessors in the game tools made it possible to chance their behaviour by reprogramming them. The game structure therefore became flexible and open for alterations. This meant that we could transform the game story, the rules and as well investigate which interaction patterns that perceived reasonable and understandable by the user.

THE DIGITAL VERSION OF GIGANT

Interaction patterns

One of our intensions was to make players interact with each other as well as with the game objects. We designed cooperative actions for instant helping a team member (i.e. share energy) as well as aggressive actions like spitting on enemy ants.

Aspects of interaction

We wanted to carefully examine and readjust the system feedback to make sure that the interaction patterns were easy to understand by the user.

The interface of the artefacts is very basic illustrated with sound, small lights, vibration. As a result of how the game parts are designed the focus is primarily in what happens between the players, like in ordinary free play. The Players experience and reaction of the game is a combination of the experience of the system feedback, the rules, and the organic like objects.

Electronic ant

With the ant attached on the forearm the player is able to examine different objects. The player will find out by pushing down the examine-button (placed on the ant's back) if the object is of good or bad quality, it responds by lighting a green (good) or a red (bad) lamp.

The player could choose to spit on another player if she wants to protect the anthill from an attack or herself from being spitted on.
If the player chooses to attack another ant, she loses energy and the energy is needed in the anthill. Consequently she has to consider if an aggressive behaviour is to the benefit of the whole ant colony or not.

Symbiotic relation with Aphides

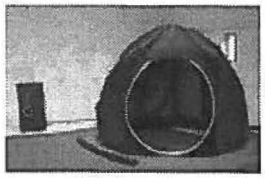
On the playground there are Aphides located on different places. When a player finds an Aphid she uses his electronic ant to make the Aphid start the energy producing process. The player places his ant under the Aphid tail and after a few second the electronic ant has gained full energy level.

Shared stomach

In some situations the players needs to collaborate. If someone has used all of his ants' energy, he has to find a team member and ask for help. Without energy the players' ant will be unusable. When the players share energy they put their ants' head in front of each other and the sender push the feed button down.

Pine needles and leaves

Big pine needles and leaves are to be found on different places on the playground. The player has to seek in a rather big area to find these objects. When he discovers one, he has to examine whether the object is infected or healthy. If the object is of good quality he carries it to his own anthill to gain points and if it is of a bad quality he should try to sneak it in to the opponents anthill and cause damage. The size of the objects makes it difficult to hide from the enemies, transporting an object means therefore a great risk being dis covered.



The Anthill

The anthill is a three-meter high and wide construction. Entering the dark anthill the player hears a sound that a change according to the anthills well being. Inside the anthill is an electronic ant mother. When a player delivers energy to the anthill he directs his ant, pine needle or leave towards the ant mothers mouth and the anthill will respond by a happy or a sad sound and a light respond.

OUTCOME – RESULTS

A reflection from demonstrations that we have conducted is that some people become extrovert, wild and playful when they attach the ant on the forearm. Could it be, that when attaching something on your own body it becomes personal and subsequently good or bad things that happen to your electronic ant affect the players' personal, emotional behaviour and experience?

The process

Based on the experience not only from the Gigant project we believe that the cooperation between art and science will probably be more rewarding if one would regard these two fields as being very fragmented and not attempt to force them into a preconceived form. We believe in that in the beginning of a cooperative project that includes representatives from both art and science one should try to avoid deciding which methods are the more useful ones. It has to be related individually to the circumstances of each situation. One could allow every situation or investigation to develop it's own mix of methods in relation to the work one is carrying out.

There is probably a lot to gain when one regard the cooperation between these fields as a learning process. Then one would focus on what is more interesting; the fact that you during a work in progress create something new; a new platform, a language and also create a space where artists and scientist can meet on equal terms and where new exiting events can occur. We could focus on creating this third space: that is not art nor is it science it is something else.

ACKNOWLEDGEMENTS

A huge thanks to Nabil Benhadj, Ivar Hamrin, Lenny Carlsson and Michael Johansson how have participate and contribute a lot of expertise and energy in to the project work.