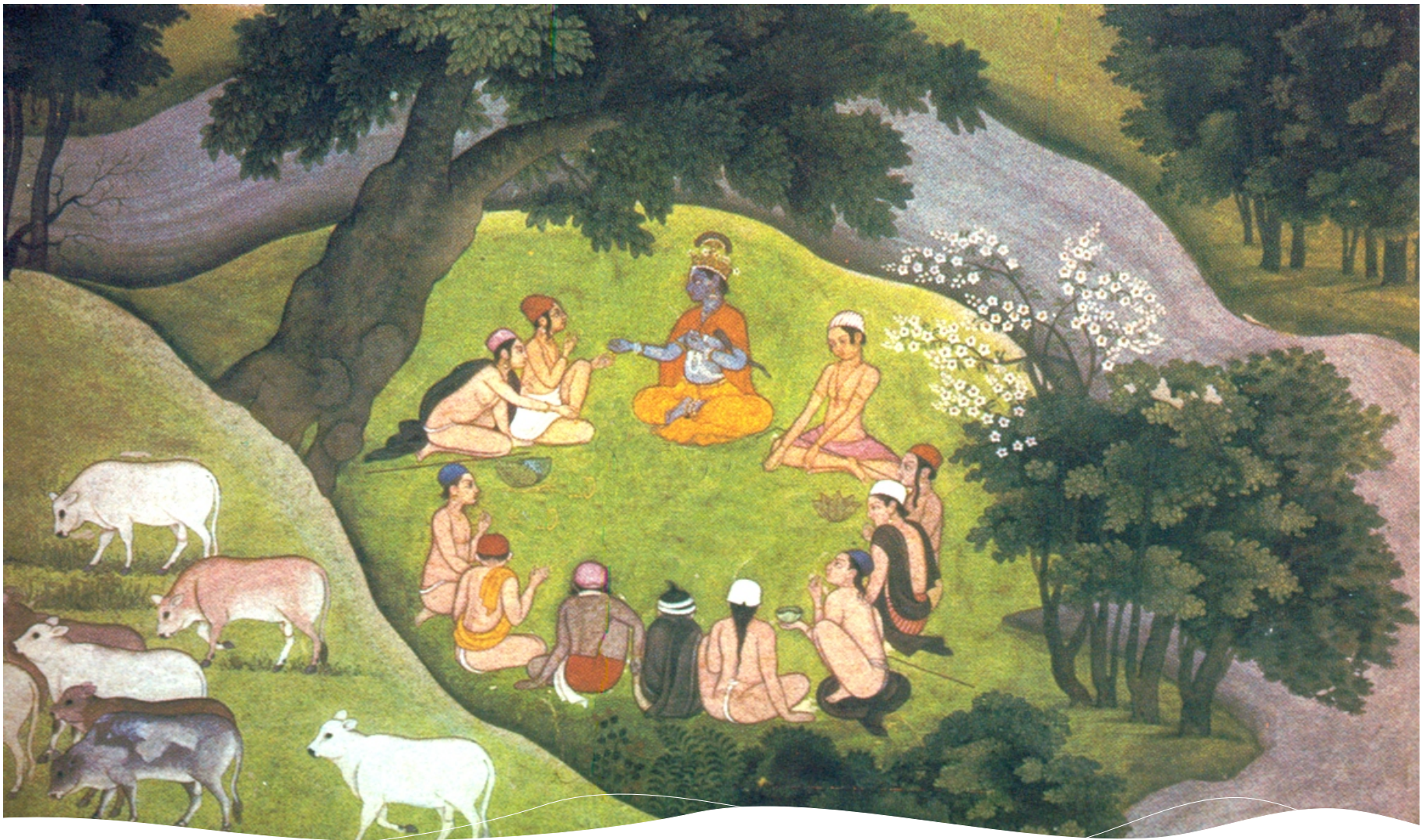




Interactive Storytelling

Theme: Water

Interactive storytelling

Visual Communication Project 3

Theme: **Water**

Submitted by Pudi Ravi Krishna MDes VC 02625006

Guide Prof. Ravi Poovaiah

Submitted in partial fulfilment of the requirements for the degree of
Master of Design in Visual Communication

Industrial Design Center
Indian Institute of Technology, Bombay
2004

Interactive Storytelling

Theme: Water

Approval Sheet

The visual communication project titled "**Interactive Storytelling** Theme: **Water**" by Pudi Ravi Krishna 02625006 is approved as partial fulfilment of the requirements for the Post Graduate Degree in Visual Communication.

Project Guide:

Chair Person:

Internal Examiner:

External examiner:

Date:

Acknowledgements

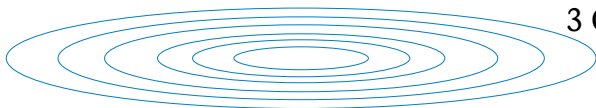
I would like to thank my guide Prof. Ravi Poovaiah for his encouragement and guidance throughout this project. I am grateful to him for giving me the necessary freedom and space to explore my interest in graphic design.

I would like to thank Prof. Shilpa Ranade for her suggestions and inputs regarding the animation.

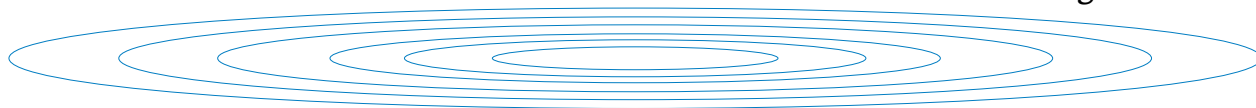
I would also like to thank Mr. Ram Mohan for his precious time and valuable comments.

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Introduction

Interactive storytelling, a story in which the audience has influence over the narrative, has existed in non-digital variations for thousands of years. In India respected storytellers in the 'Harikatha' styles have studied the scriptures, literature, languages, classical music and elements of drama. These storytellers adapt their stories according to the audience either by their response or by popping questions to keep the audience involved

Theatre, Film and TV can be viewed as steps in an evolution of dramatic language. Interactive drama should be seen as the next evolutionary step. Interactivity helps to create a sense of action and movement, but it should be fundamental to the story, not something trivial and unrelated, else the spell of immersion is broken.

The most innovative interactive stories don't try too hard to be innovative. There's simplicity in the presentation, a subtlety in the navigation; it flows smoothly from beginning to end, engaging the user occasionally, not constantly. That's good storytelling.

Whenever possible a story needs to be presented as a vital part of a cultural whole. Folk tales form the unwritten literature (stories and proverbs and riddles and songs) of a culture. This project was aimed at exploring the possibility of telling such stories in an interactively rich format.

Story

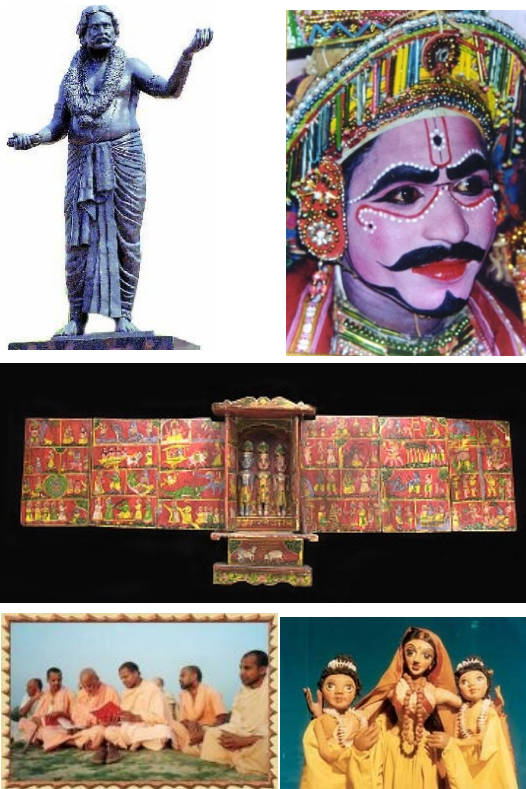
Story(n)- A piece of fiction that narrates a chain of related events.

A narrow definition of a story is a narrative with a beginning, a middle, and an ending. The narrative follows a main character through his or her struggle to achieve a certain goal.

But story is not quite the same thing as narrative. A narrative is a complex of connections made between events in order to bind them into an implicitly meaningful configuration. Peter Brooks, in "Reading for the Plot: design and intention in narrative", theorizes that narrative constitutes 'a form of thinking, a way of reasoning' about situations or problems in an abstract format. A narrative sets out a problem in the form of a scenario: then, by selecting and developing one or several of the potential sets of ramifications inherent in that scenario, it explores the issue and constructs an answer to the question or a response to the problem 'without explanation, through description of what needs to happen'.^[1a]

A story is a narrative and something more than a narrative. Clute defines story as narrative which is presented as such overtly and without irony, and which uses its construction of connections between events to not only imply meaning but speak it authoritatively. A story is a narrative which tells or implies a sequence of events, in any order which can be followed by hearers or readers, and which generates a sense that its meaning is conveyed through the actual telling ... a narrative discourse which is told'.^[1b]

Storytelling in the Indian context



The religious ideals of India have been passed on through village storytellers, family storytellers and professional storytellers of all types. Sophisticated, respected storytellers in the 'Harikatha' styles have studied the scriptures, literature, languages, classical music and elements of drama.

In other techniques the storyteller uses a scroll or a set of pictures(like the storytellers box of Rajasthan) to help in the telling. In some forms, he dresses in costumes or he dances(like the Yakshagana tradition of Karanataka). Sometimes the storyteller plays an instrument or appears with several musicians. At times the storyteller unfolds through questions and answer among members of the storytelling group.^[2]

Puppetry too is a popular medium of entertaining children and adults alike with stories.

Interactive storytelling

Interactive(adj): Capable of acting on or influencing each other.

Interactive storytelling, a story in which the audience has influence over the narrative, has existed in non-digital variations for thousands of years. According to Milman Parry and Alfred Lord who studied oral bards in Yugoslavia, oral storytelling relies on the patterning of language into units of content that can be assembled at each recitation into a new story. These stories vary at each performance based on the audience's input and the interpretation of that input by the bard. Due to its face-to-face nature, oral storytelling encourages this type of two-way interaction. Asking the storyteller a question or requesting that the protagonist take a particular action is simply a matter of yelling back at the storyteller. All that is required to facilitate an interactive oral story is a skilled storyteller who has the ability to adapt his material to the audiences' input.^[3a]

With interactive stories the end user is given **freedom to control** the character behavior and their actions. Giving too much freedom makes it difficult to tell a story in a coherent manner and ensure that the dramatic climax is reached. User may stray away from the plot.

Conflict arises between user's desire to do as he pleases and the story world creators desire to impose a plot and characterizations on the user. It has to be ensured that a high degree of user freedom is combined with the story in a coherent way at every instance of the virtual experience.

The aspects of an interactive story are:^[4]

1. Character knowledge of the virtual world
The user doesn't have prior knowledge of the virtual world and needs to explore the different objects as if he were a total stranger. It is therefore important to provide guidance and share character knowledge with the user.
2. Narrative flow
Ensuring that when the dramatic climax reaches in the story, the user is there and ready for it. The story unfolds as the user explores and interacts with the world.
3. Internal consistency of the story
At any point in the story the circumstances at that specific point must be consistent with everything that happened beforehand. Thus stories can be unpredictable but should make sense in a satisfying manner.
4. Handling of time
Time of the narrated, time of the narration and time of the reading do not necessarily coincide. One of the functions of narrative is to invent one time scheme in terms of another time scheme. For example, when the user interacts with an object in the virtual world that brings back

memories, then a temporary change in the age characteristic of the virtual identity will result a flashback on its childhood or the lowering of the height or point of view of the user.

5. Ease of creation

There is a need for authoring tools that allow writers to concentrate on creating interactive stories rather than deal with details of programming.

Why interactive?

"Interactivity helps to create a sense of action and movement, but it should be fundamental to the story, not something trivial and unrelated."

Interactive stories are broad and shallow, in contrast to traditional story formats, which are deep and narrowly focused on a predetermined plot line. However, perhaps this breadth can be used as a basis for creating a different kind of depth. The metaphor of a journey --- across the landscape of a 'Mysterious Island' or some other virtual world --- perhaps offers a way. The multimedia storyteller must be a world-builder, creating miniature universes that have their own internal states and mysteries to be discovered by peeling back layers of space and layers of meaning; realms for the audience to explore via the thread of the story.

Interactive stories present uncharted territory, but traditional storytelling can offer a compass for navigation. A critical element is pacing. Interactivity helps to create a sense of action and movement, but it should be fundamental to the story, not something trivial and unrelated, or the spell of immersion is broken. All elements can be used to support pacing, momentum.

Lessons from Other Media^[5]

Drama has been adapted and expanded to accommodate new forms of communication over the years. Theatre, Film and TV can be viewed as steps in an evolution of dramatic language. Interactive drama should be seen as the next evolutionary step. Let's look at how two forms of

dramatic presentation differ in how the principles of drama are applied.

Stage drama, being 'live', has the excitement of spontaneity, however well rehearsed it may be, and it has the feedback from the audience to the actors. The actors on the stage are trained to be hyper aware of audience reaction. From night to night the performers will intensify certain aspects of the presentation and minimize others depending upon what is working, for each audience is different.

Beginning during the Renaissance and lasting into the eighteenth century, traveling troupes performed the *commedia dell' arte*, the Italian comedy. The company's ten or more actors each developed a specific type of character, such as the Captain, two old men (Pantaloon and the Doctor), the Zanni (servant-buffoons). Along with these comic characters were the lovers. The comic characters were archetypes, well-known to an audience of commoners, and usually contrived at the expense of the aristocracy.

Before going on-stage, actors would agree on a basic plot and a general idea of how it should be performed. These plots were often well-known stories. But the actors had specific comic business (*lazzi*) that they developed (a bag of tricks). Though they knew the outline of the plot, no one, not even the actors, knew which comic bit would be pulled out. If the bit didn't work with the

audience, another actor would throw out another one. If this worked well with the audience, another actor would throw out one that would play nicely against the successful bit. In this way the audience was kept in suspense in terms of what would happen next, even though they knew what the eventual outcome would be. It's spontaneous creativity, but within a structure that everyone knows and accepts.

This can of course have an equivalent in interactive storytelling. If interactive stories have a provision for an interpretation of input actions, and if there is a "library" of possible actions that all serve the same dramatic and narrative intent of the moment, then these actions could also continuously add value to the story.

Another analogue is to be found in jazz. Often a combo will play from musical charts that note only the chord changes, number of beats for each chord, and key changes. Sometimes these charts will be based on a well-known song. Each musician improvises within this basic structure. The fun is the spontaneous emotional creation, the playing off one another, and the kind of mystical growth of theme. No two performances will ever be the same.

The photographic nature of the film and television mediums, on the other hand, allows a great degree of environmental realism, and gives the director an infinitely greater scope for varying the

venue of the action. There is much greater flexibility in structuring the action. The camera and the microphone are extensions of the director. They enable him to choose his point of view (or hearing) and to move the audience there by varying long shots and close-ups, by cutting from one face, one locale, to another at will. It is much easier to focus the audiences' attention on important details, however small or vast those details may be. Nevertheless, "film language" has much to offer towards the creation of compelling interactive drama.

Interactive entertainment can learn something important from Japanese anime. It's novel, flashy, and often startlingly beautiful, but it is also generally more philosophical and character-oriented. Even in humorous anime it is the hero's struggles and lessons learned that often form the core of the story. Japanese stories often stress things such as self-sacrifice, the search for meaning, the power of helping others, and the idea of redemption for the fallen -the stuff of drama.

Interactivity and the user

The most innovative interactive stories don't try too hard to be innovative. There's simplicity in the presentation, a subtlety in the navigation; it flows smoothly from beginning to end, engaging the user occasionally, not constantly. That's good storytelling, online or off.

Linear presentations, driven by audio and motion, tend to hold users' attention much longer than presentations that require a lot of navigation. Interactive stories that incessantly nag the user to 'click to continue' become cumbersome. That can disengage the audience.

Trends in interactive storytelling

Stories and narrative are being used in video games as an organizing technique, giving coherence and direction to the user's experience.

The recent developments in interactive storytelling have been in terms of enabling the user to control the flow of the narrative and influence the plot by different means.^[4]

1. Through virtual identities

The user can get a view of the virtual story worlds through the eyes of virtual characters. Each identity is empowered with knowledge about itself, its perception about the virtual environment and its embodiment in the virtual world. The user has to explore the different objects as if he/she were a total stranger to the world.

2. Use of natural language

Natural language is used as a paradigm for influencing the plans that are used to drive the behavior of characters in interactive storytelling. Utterances of the user are processed in real time and are then intended to influence the development of the story. User is considered an active spectator.

3. Use of story engines

Story engines are tools that tell interactive stories. Static narrative structures are in conflict

with interactivity while interactive storytelling is a live experience. A runtime engine takes care of the users experience as the story keeps unfolding.

4· Interactive story worlds

Story rooms have been developed where children can author physical storytelling experiences to share with other children. The room has objects and props , which serve as clues to create stories around a theme.

Live role-playing (LRP) is a dramatic and narrative game form in which players portray fictional characters that come to life in a web of stories. The narrative emerges in the interaction between characters, objects, and physical locations. By dramatic, it is implied that roles are assumed in person rather than through virtual or abstract means, and by narrative it is implied that a main product or goal of these games is of a story nature.

An important difference between online role-playing games (RPG) and live role-playing (LRP) is that LRP players interact directly with the narrative. LRP player is a person going through a transformation into a character and the experiences a character is subjected to also happen to its player.

5. Interactive story authoring tools

Authoring tools are generally defined as tools for creating computer based instructions without having to program. This is meant for writers and storytellers who have no knowledge of programming.

6. Automated narration using artificial intelligence(AI)

AI based storytelling is more concerned with the mechanisms for automatic story generation which can be based on autonomous behavior of artificial actors or on explicit plot representations. Dynamic interaction between characters generates the actual plot from a generic storyline. The overall story will emerge from relations that exist between actors' plans, these relations being determined from the story genre.

Study of books



The search for suitable stories involved reading through a large collections of folktales, fables, mythologies, short stories from different regions of India.

Myths : A traditional story accepted as history; serves to explain the world view of a people

Legends : A story about mythical or supernatural beings or events

Folktales : The unwritten literature (stories and proverbs and riddles and songs) of a culture. A tale circulated by word of mouth among the common folk

Fables : A short moral story (often with animal characters)

Folk tales

Narrator of folktales never writes.....memory is his only guide aided by his imagination. A mere incident in a long tale is often the theme of a shorter one with incidents of its own.^[7]

Study of folk arts



Folk art is inevitably linked with the forgotten art of story telling. **Paintings are used to tell visual counterpoint in narration in every region of India.**

Madhubani (Bihar)
Batik (Bengal)
Patua (Bengal/bihar)
Patachitra (Orissa)
Chittara (Karnataka)
Kavi (Karnataka)
Miniature
Kalamkari (AP)
Lepakshi (AP)
Leather puppet(AP)
Warli (MAH),
Gond (MP)
Kalighat(Bengal)
Pithoro(Gujarat)



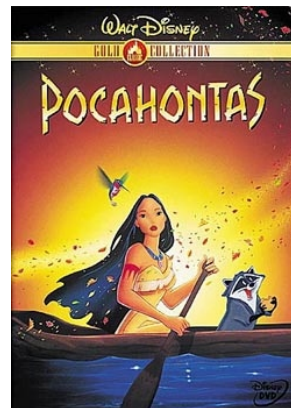
Study of interactive stories

The web has interesting examples of interactive storytelling. Listed below are a few examples of interactive storytelling.

Example1

<http://www.elasticspace.com/interaction/narrative/>

This lecture, given at Channel 4 in London, covers ideologies, examples, processes and practicalities in interactive narrative.

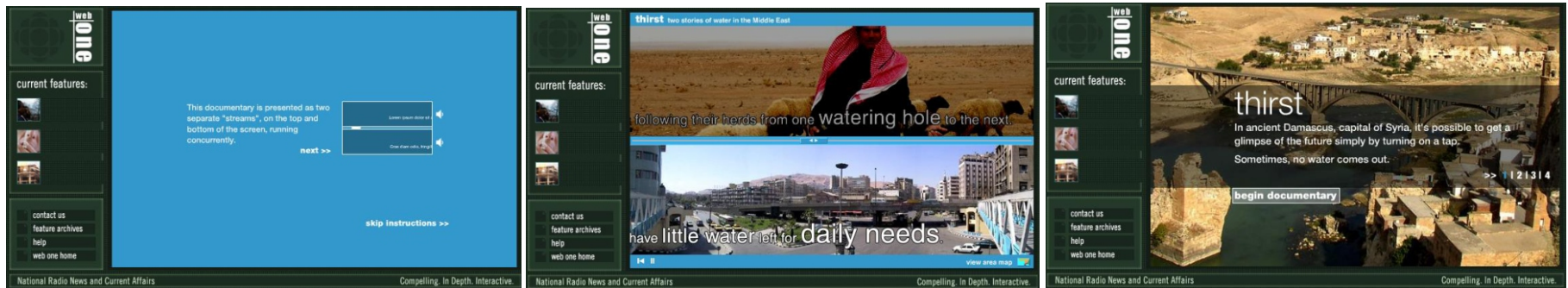


Example 2

CD-ROM

Pocahontas, Walt Disney

This is an animated storybook where the narrative moves in a scene based on what the user clicks. Subsequent scenes are browsed using the "next" arrow button. Each clickable object has two to three actions attributed to it which are played randomly. This brings about unpredictability in character behaviour but the plot remains the same.



Example 3

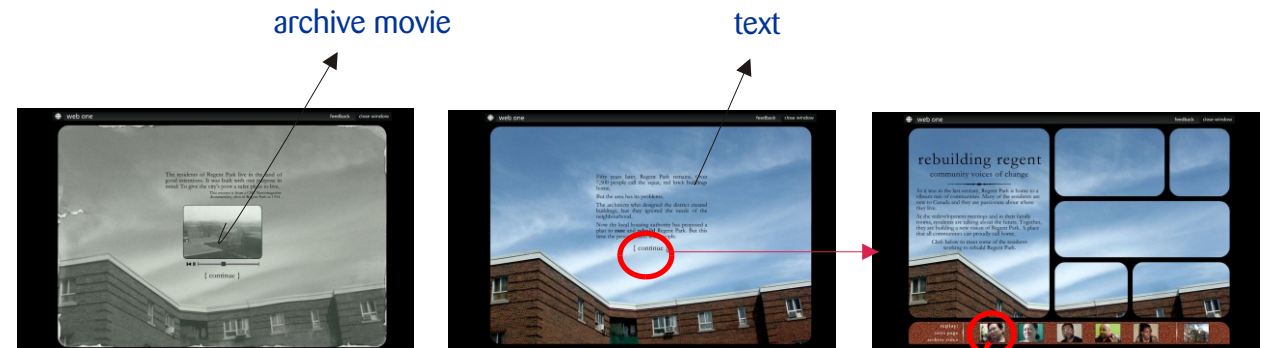
Webone, CBC News Network Canada (website)
<http://www.cbc.ca/webone/>

The two sides of a story about the water scarcity crisis in Syria is presented in an innovative way as a flowing stream. There is text, audio and images which enhance the narrative.

Example 4

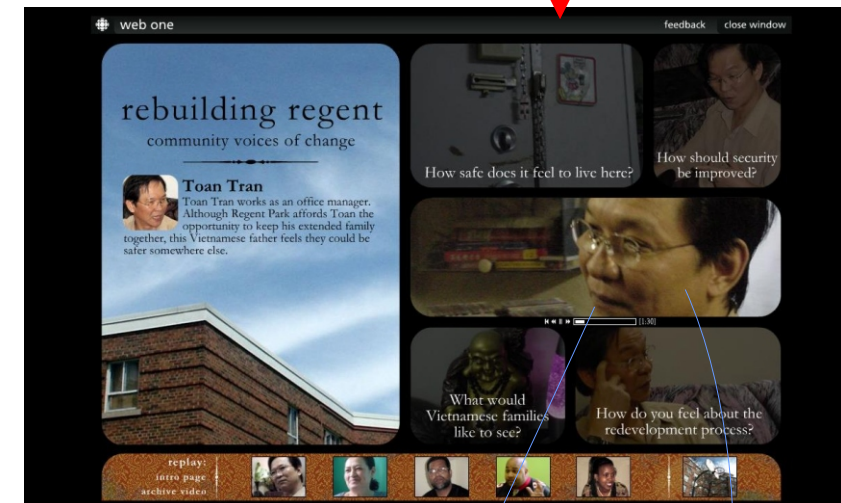
Webone, CBC News Network Canada (website)
<http://www.cbc.ca/webone/regentpark/index.html>

The example given on the next page is the story of Regent park which was a community housing project which went awry. The story has archive movie footage supplemented with text, audio and images. The user can skip any part or jump to specific part of a story.



The user can

- choose order and precedence of narrative.
- choose an actor
- choose an activity of the actor
- experience rich media interactively and control the flow.



User Study



The books, CD-ROMs and movie collection of a family were looked at closely to gain an understanding of existing likes and dislikes. There was a huge collection of books with varying topics from Panchatantra, Birbal, Tenali Raman, Jataka tales, fun learning books, mysteries of the universe. The books involved wit, mystery, fantasy and information.

All the books had colour illustrations. The children seemed to like more variety in terms of illustration styles. There was no one specific style that they particularly liked.



The study also involved analyzing the drawings of children in the age group of 9 to 12 years. There are very prominent similarities between children's drawings and different folk arts in India in terms of form and coloring, posture, abstraction in terms of representation of animals, birds, water etc.

Similarities between Childrens' illustrations and folk art

1. Representation of water



patachitra art (orissa)



2. animals



kondapalli toys (andhra pradesh)



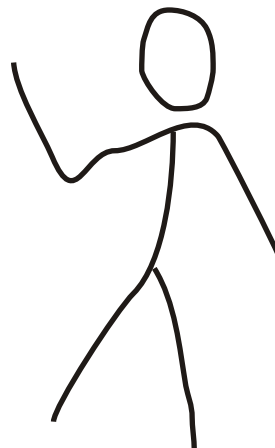
3. coloring and form



gond tribal art



4. Posture and decoration with patterns



bengali folk art (jamini roy)



Identification of stories

The following four stories involving the theme of water were selected.

Folktales

1. Goddess of river Mahi (Gujarat)
This is the story of river Mahi who falls in love with the Sea.
2. The descent of Ganges
This is the origin story of how the river Ganga came into existence.

Short story

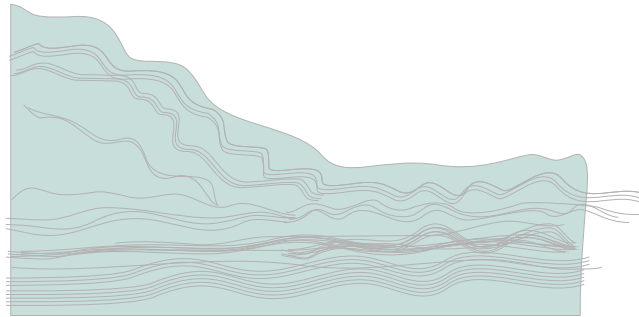
1. The Flood (Telugu)
This is a translation of a Telugu short story about the aftermath of a flood in a village.

Fable

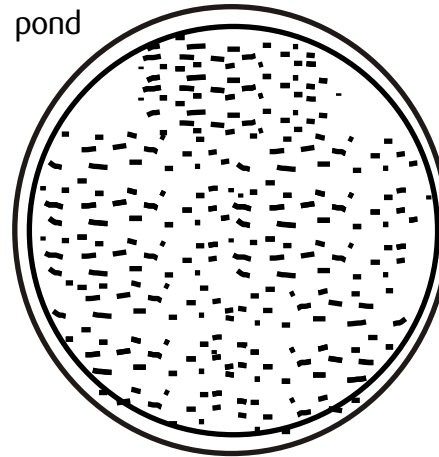
1. The three fish
This story carries the moral that lethargy can bring doom.

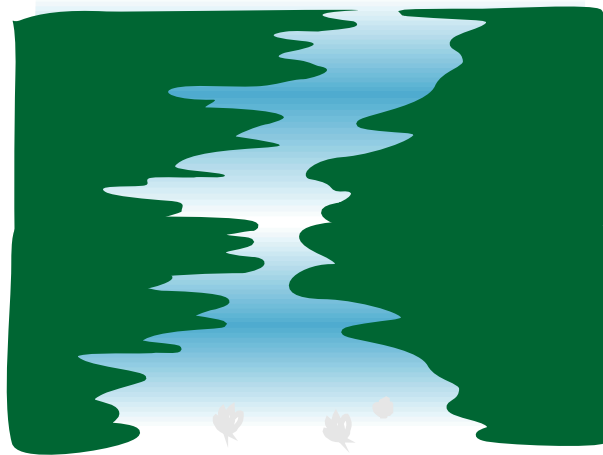
Identification of motifs on water

river



pond

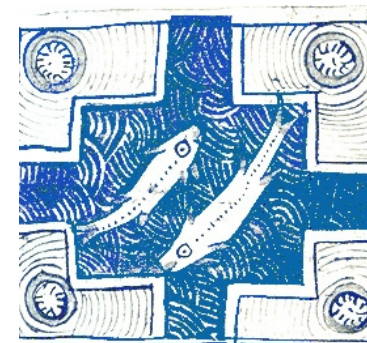




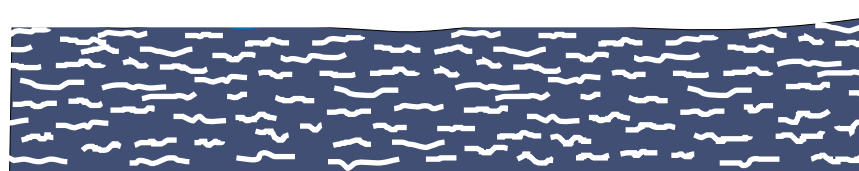
stream

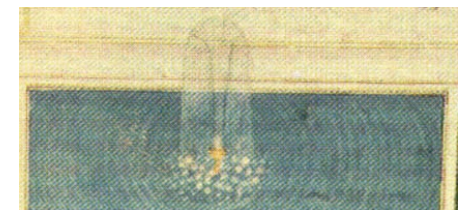
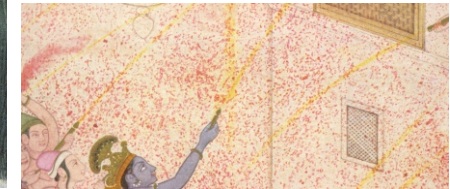
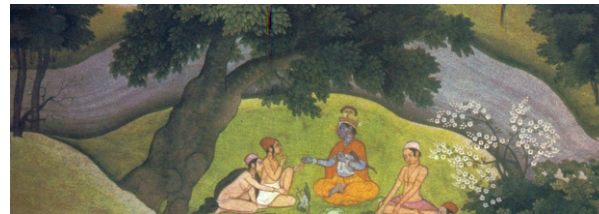


pond



lake







Goals

The intention was to attempt at telling a folktale in an interactively rich format.

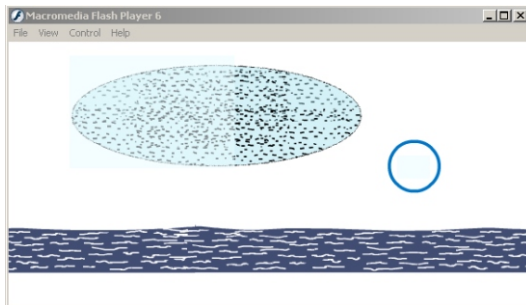
The initial goals were:

1. telling of **rich**, detailed stories around an interactive system.
2. something that will **delight** , provide value.
3. insuring overall user **experience** of the system.

The exploration was meant to find answers to questions like:

1. What makes a compelling story?
2. Is it by using a narrator/storyteller/adding fantasy/contemporary adaptation of old stories?
3. How to enrich a story?
4. Is it by adding audio, illustration, animation, games, puzzles, folk songs and rhymes?
5. What are the various ways to create a new experience?
6. Can there be innovative ways of presenting the story like horizontal, vertical, unfolding palm leaf or scroll?

Exploration/ Initial experimentation



The initial experimentations were in terms of exploring the different styles of representing water and trying to replicate some of these styles in Indian art and animating them. Also there was an attempt to associate appropriate music which gives a feel of water. The Santoor is one such instrument which closely matches the motion associated with running water.

Initial animation of a lake, river and pond were done using flash and tested along with music.

Also presentation of stories using scrolls and folding of paper was tried using paper.



Concepts

The concepts were generated taking different stories involving the theme of water and working out innovative ways and illustration styles to present the stories.

Concept 1
The Goddess of river Mahi

Concept 2
The Flood

Concept 3
The three Fish

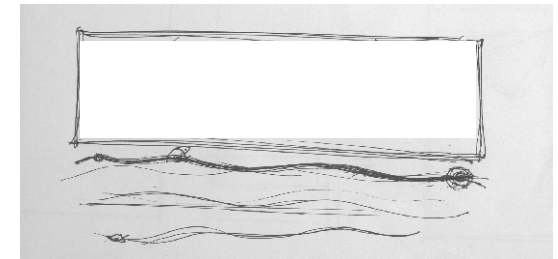
Concept 4
The decent of the Ganges

Concept 1

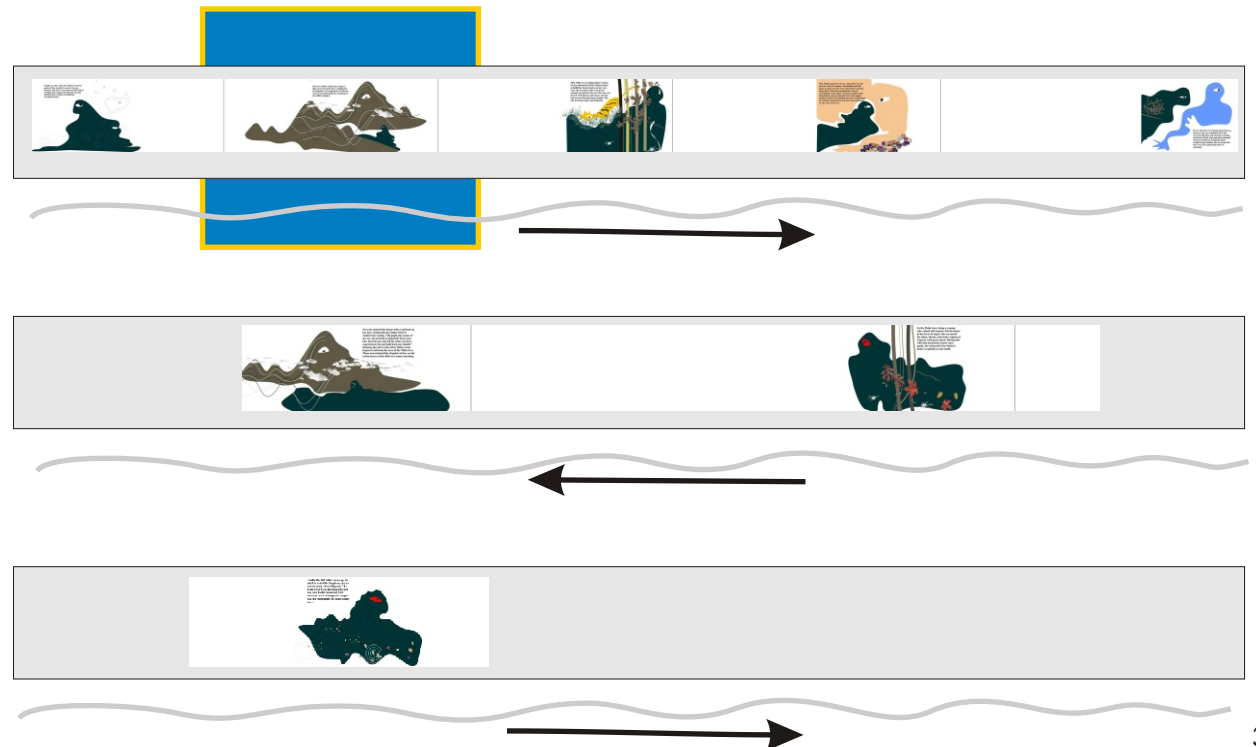
The story occurs as a river and the user can scroll/move horizontally to different scenes.

Initial drawings of characters were designed and the motion of water explored in flash to demonstrate the effectiveness.

The emphasis was on how the whole story would feel, look and sound like.



horizontally flowing, long stretch





People say that when the Mado river first
crossed the water to reach the sea.
Because the river is a water of knowledge
strong and strong only, the left on path
passed in a few minutes to reach the
distant lands.

Playfull

adventurous, brisk



198. Mado was an independent woman
in the wilderness, but her father's house
in 1988 he had to leave and he was
Papa she traveled to the west to her
adventure to understand the sea. The sea was
strong with strong and strong, and she
had to pass through many people. The
sea was strong and strong.

disappointed,



In the Mado river, being a woman
who could not escape, with the hope
of her love to reach. She traveled
the sea, strong and strong, and strong
of the sea with great speed. During this
time, she traveled to her father's
house, she traveled to her father's
house in quickly in the world.

persuasive



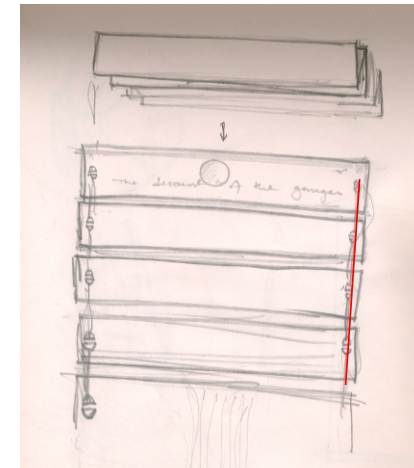
furious



Concept 2 The descent of the Ganges

The story unfolds as the user explores the vertical space. Each scene unfolds like the pages of a palm leaf book.

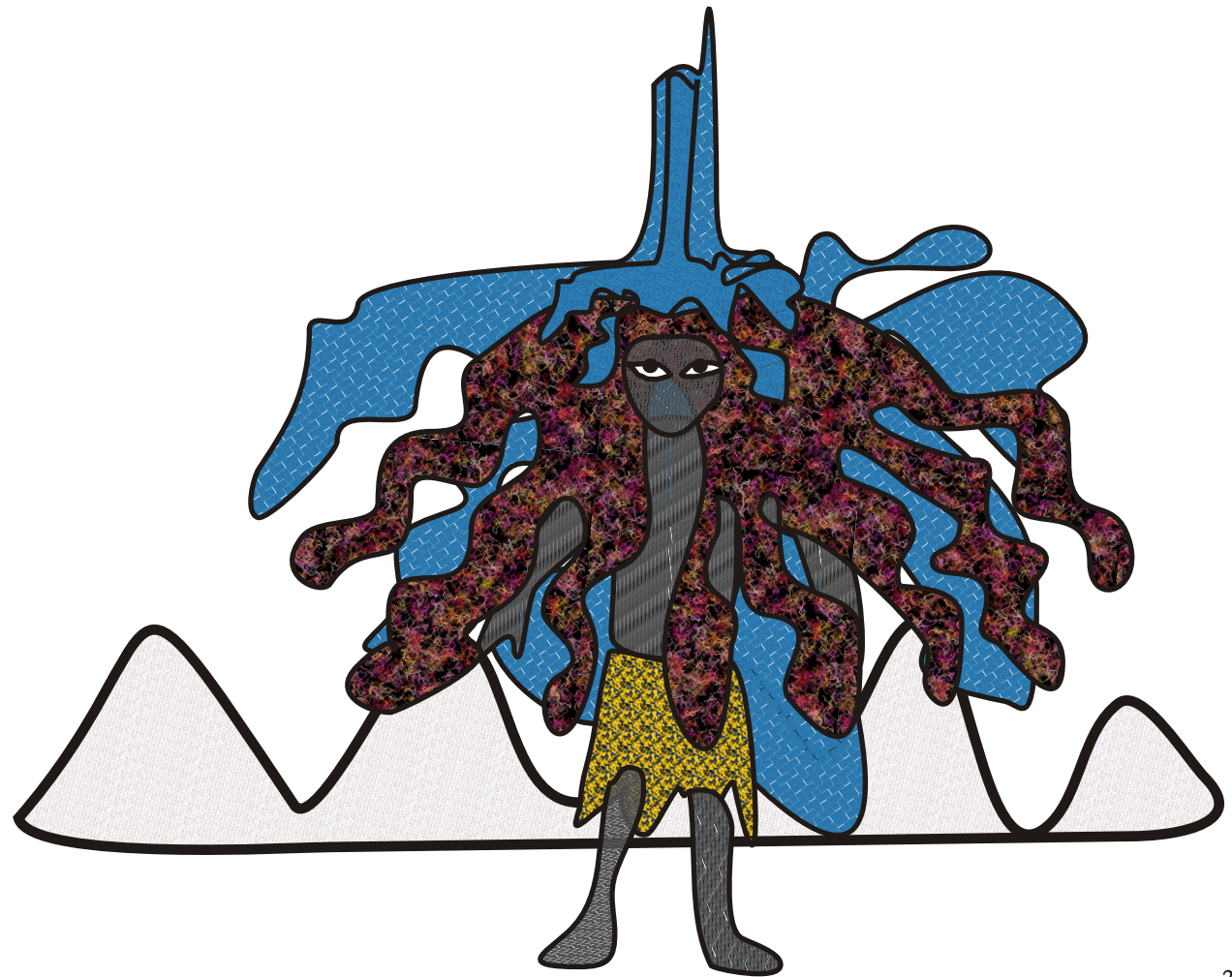
The drawing style was based on using the textural patterns as in Gond tribal art of Madhya Pradesh.



vertical unfolding of story



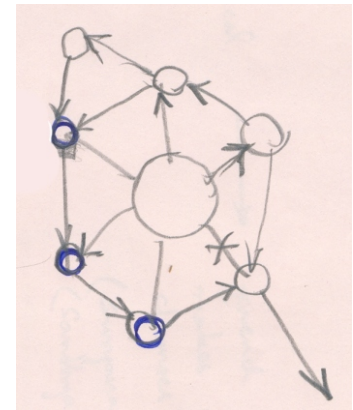
Illustration of Lord Shiva receiving the
Ganges on his forehead(right)based on
the Gond tribal art(below)



Concept 3 The flood

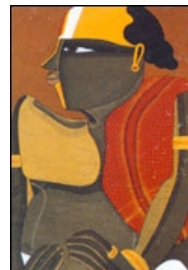
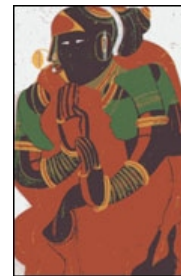
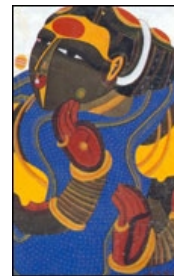
The story is a collection of scenes whose order and precedence doesn't affect the story. So depending on what the user clicks, the movement occurs between interlinked scenes.

The style of representation was meant to be based on the paintings of T. Vaikuntam who is inspired by the people of Telangana district of Andhra Pradesh.



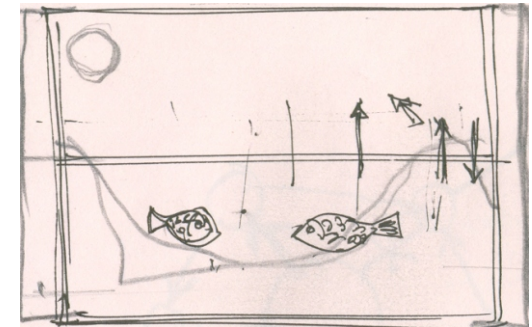
interconnected scenes to end

The Krishna river in flood(extreme right).Illustration style based on the paintings of Telangana women by T. Vaikuntam



Concept 4 The fish

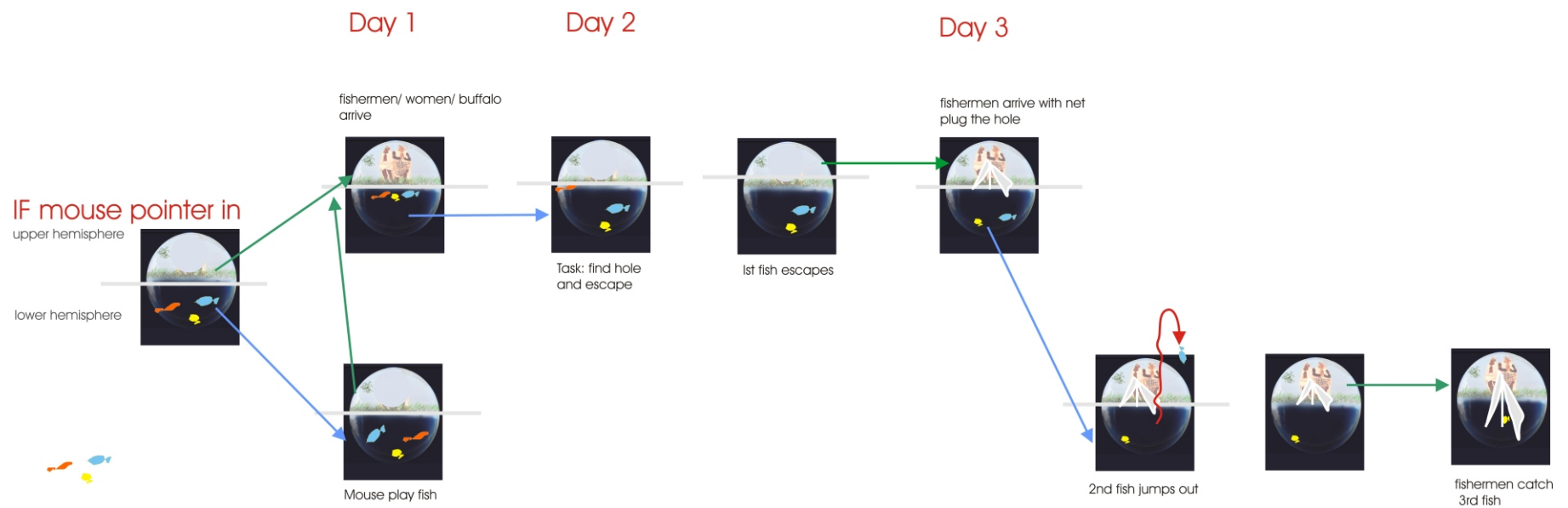
The story occurs from the point of view of the fish. The story progresses depending on where the mouse is placed i.e. the upper/lower part of the sphere.



point of view belonging to fish



fishermen

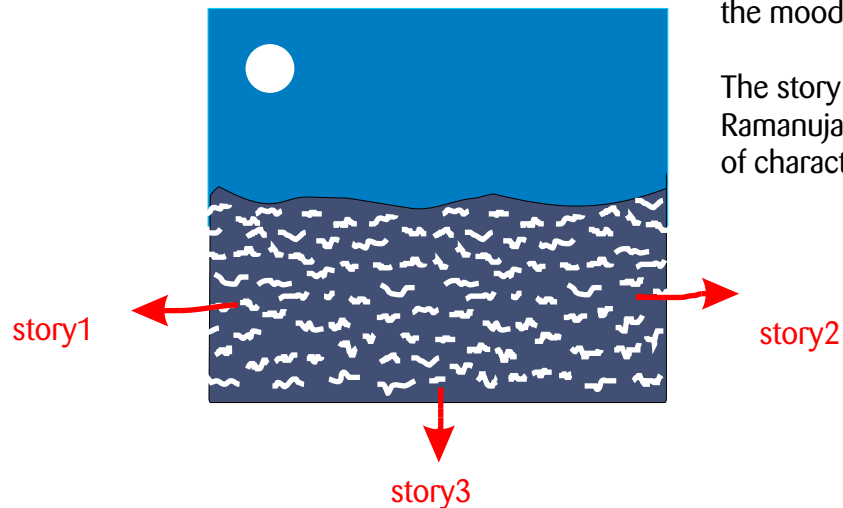


Final Concept

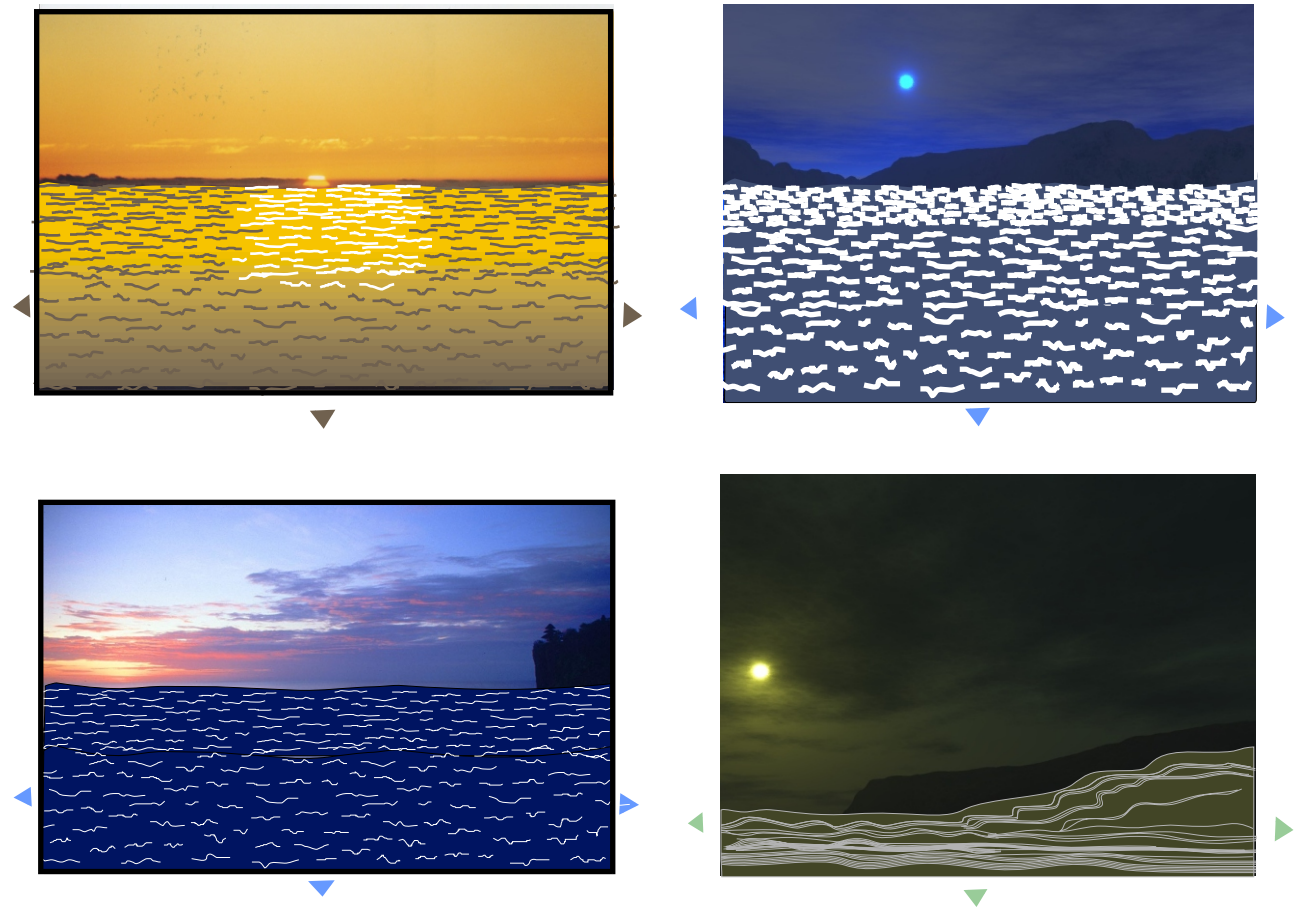
The final concept was to present a collection of rich stories in the form of an interactive CD-ROM. The stories will reside in an interactive space and the user can explore this space and search for the stories by moving about.

This story environment keeps changing depending on the time of the day or night thus enhancing the mood.

The story of the goddess of river Mahi picked from the collection of 'Folktales of India' by A. K. Ramanujan was chosen for further development since it had the simplicity of narrative & richness of characters.



Story environment varies with time of day/night



The Goddess of river Mahi

This tale is a kind of origin story. It portrays the great Mahi river of Gujarat as a goddess who boldly sets off from her father, the Satpura Hills, to find a lover in the sea. Like many Indian goddesses, Mahi is a lovely but fierce young girl. She has a warrior personality and an independent temperament. This associates her with the women of the forest or tribal areas.....

The Mahi is wide and strong. It is also somewhat blackish in colour. The hills too are dark coloured and they serve as the home for the Dharala, Bhil, Baraiya and Patanwadi tribes. These people are known for their dark complexion. So too, the Mahi river is seen to be a dark-skinned girl.

Mahi Research

River Mahi originates in the northern slope of the Vindhya ranges in MP at an elevation of +500 m. It flows southwards for about 120 km in MP before entering Banswara District of Rajasthan. The river makes a 'U' shaped loop in Rajasthan before entering Gujarat and finally discharges into the Gulf of Cambay. The principal tributaries of the river are the Som, the Anas and the Panam.

Development of Initial Drawings

Mahi

Color:

bright green for young Mahi, dark green for a mature Mahi

Characteristics:

shy, lovely but fierce young girl, has a warrior personality, independent temperament, associated with the women of the forest or tribal areas

Satpura hills

Color:

Dark brown

Characteristics:

Calm and aloof, old with greying features

Sea

Color:

Bright blue

Characteristics:
Handsome, Confident

Gulf of Cambay

Color:
Dark blue

Characteristics:
Romantic, Sympathetic

Background music

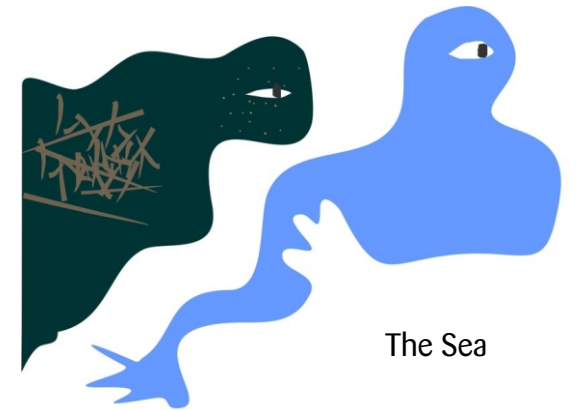
The music had to be Indian and be sensitive to the story environment. The music was picked from an array of instrumental renderings of Hindustani classical music. No vocals were used to remove the use of a specific language.



River Mahi



Satpura hills



The Sea



Angry Mahi



Interactivity

The idea was to make the user forget the mouse at first. When the narrative stops, the user can be prompted to explore the space by characters and objects that invite attention by their movement. The focus is on the content. The effort is towards engaging users in ways that will help them relate to the story--making the presentation more active, and ultimately more memorable. The key is not to overdo it.

There would be a lot of choice in terms of variations in story, time & styles.
The story would have long pauses when children can explore the space, dwell there and prod things.

Navigation Scheme

The basic navigation is subtle and happens by clicking a fish which swims to the next scene. The user can jump to any part of the story by clicking on a bubble which represents that scene.



Usability Test

User testing is an important part of the design process in any interactive media. The initial product was tested with individuals without prompting them to see if they can figure out the navigation scheme and discover their usage patterns.

Initial observations

1. The user expects a lot of click able objects in each successive screens.
2. The element of surprise adds value to the experience.
3. The safe navigation scheme prompts user to use it more often than explore the screen for clickable objects.
4. Moving objects attract attention and hence diverts attention from narrative.
5. Actions attributed to buttons events like “roll over” , “on release” are easier to spot than actions made using “on press”, “on drag over”

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