'Multimedia Rendering of Spiritual Texts'

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Abstract:

Multimedia rendering of *'Dnyaneshwari'* in the form of a CD ROM Title, is an effort which explores the possibility illustrating Indian spiritual texts using the digital media. This project involves diverse challenges such as- Interacting with the scholars and Understanding of spiritual concepts, Integration of thousands of pages of text, Audio recording of the recitation of entire

Dnyaneshwari, Commentary in *Marathi* (A local language used in the state of *Maharashtra*), Multimedia visualization and Rendering of metaphors, Dynamic navigation through the contents and Orchestration of presentation with Indian appearance and style. The *Dnyaneshwari* is presented entirely in *Marathi*. Hindi and English translations will also be included in the next phase of this project. With this, the National Multimedia Resource Centre of C-DAC has stepped forward in the direction of the Digital Library initiative for Indian Heritage Project.

A large collection of computer generated decorative designs has been created in order to enable the multimedia users in efficiently producing decorative backgrounds, screens and interfaces. The decorative designs are provided in vector form along with various popular application file formats. It is an initiative in the direction of a repository containing ready-to-use multimedia components. Such multimedia component libraries will be developed in the Indian context for presenting the multimedia applications and the heritage information with Indian style and impact. Ornamental designs from this collection are used for decorating the interface of *Dnyaneshwari*.

The paper discusses the challenges faced while illustrating the Spiritual Texts in multimedia, the reusable multimedia components designed for giving Indian identity and appearance to the multimedia applications and the approach for developing authoring templates for integrating similar topics.

1. Brief Introduction to *Dnyaneshwari*:

Dnyaneshwari is one of the most profound commentaries available on *Bhagvadgita* written in *Prakrit Marathi* (Old form of *Marathi*) by Saint *Dnyaneshwar*. Saint *Dnyaneshwar* wrote it when he was hardly 16 years old. Around 700 years ago, most of the Indian spiritual books were written in *Sanskrit* and therefore they were read and understood by a selected class of people only. The great Saint decided to write *Dnyaneshwari* in *Marathi* (Local language used in the state of *Maharashtra*) with the motivation of taking the divine knowledge to the most common people. The great Saint has described the spiritual concepts and the philosophy of life with the help of picturesque metaphors and examples. *Dnyaneshwari* has been composed in lyrical form and it is regarded as a master piece in *Marathi* literature.

2. Scope & Motivation:

The Philosophy of Saint *Dnyaneshwar* highlights on several observations of human mind and methods to control it. There are several similar writings available all over the world. It is necessary to make them available in the latest technological media so that people can see and get benefited. Following are the factors which motivated us

to take up this project.

Preservation of cultural heritage & ancient spiritual wisdom using the technological media:
2.1 Valuable information content
* Importance in today's context
* Uniqueness in the representation of spiritual concepts

2.2 Need for preservation
* Effect of the advancements in science, technology and the media of communication on cultural heritage and traditions
* Necessity of passing on the ancient treasure of knowledge to the generations to come and making an attempt to preserve it in it's original form

2.3 Examples from day to day life and nature
* Inherent quality of the content to address to masses (A topic with mass appeal)

2.4 Use of metaphors for multimedia visualization
* Metaphors can interestingly communicate the abstract concepts
The picturesque, poetic and witty writing of Saint *Dnyaneshwar* has tremendous potential for visualization and scope for using the capabilities of multimedia.

2.5 Structured writing
* Suitability of information for dynamic access and navigation
Dnyaneshwari has been written in a very structured way and it is as good as a script, tuned for a multimedia application.

2.6 Cross references to Indian mythalogical stories where hyper linking could be used effectively
* Further extentions of this project to the multimedia rendering of Indian mythalogical stories

2.7 Various levels of information
* Addressing to people of varied backgrounds and intelectual capacities

2.8 Availability of scholars and experts for guidance
* Authenticity and accuracy in the output

2.9 Availability of technical capabilities and infrastructre
* Effective implementation

Dnyaneshwari is read and studied in almost every part of *Maharashtra* state. The biography and writings of Saint *Dnyaneshwar* are known to almost every literate and illiterate person. People are used to quote the verses from *Dnyaneshwari* on various occasions. Therefore, it's very challenging to work on such a well known subject because any mistake or misinterpretation can easily be spotted by anyone in *Maharashtra*.

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3. Getting Ready:
Professional skills and technical expertise are not enough for working on spiritual topics. The multimedia team needs to develop following qualities:

3.1 Aligning oneself to the topic is very important, it helps the developer in understanding the concepts and communicating them to the audience without any distortion.

3.2 It is essential to set proper ambience and mood even in the computer lab so that the scholars or experts feel

comfortable as they are not used to the computer environment.

3.3 Multimedia visualizers need to work hard to establish dialog with the scholars and avoid use of technical jargons.

3.4 It is very important to communicate the various possibilities and capabilities of the computer medium to the scholars. This enables them to visualize the concepts in tune with the computer medium.

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4. Vision for Multimedia Rendering of *Dnyaneshwari*:

The multimedia field is strongly dominated by the technologists and less by the communicators. As a result, people have constrained multimedia to audio, video, image, animation, text and interaction. It's necessary to extend the capabilities of multimedia in making people understand, experience and realize. Therefore, the following elements have been conceived to be woven in the multimedia rendering of *Dnyaneshwari*. (*Marathi/Sanskrit* titles have been chosen for describing these elements because they convey much deeper meanings than the English terms. For example:- *'Shravan'* means listening to the speaker with concentration and also trying to understand.)

4.1 The Prime Elements of Multimedia:
 * *Vaachan:* Easy and comfortable reading
 * *Gayan:* Musical recitation of the verses
 * *Shravan:* Listening with concentration and trying to understand
 * *Darshran:* Visualization and rendering of metaphors
 * *Nirupan:* Commentary on Dnyaneshwari by scholars
 * *Bhavartha:* Appropriate and simplified translation
 * *Rachana:* Integration and synchronized presentation of all the above elements
 * *Manthan:* Interaction with the information
 * *Vichar:* Thinking and meditation on various aspects
 * *Aakalan:* Realization
 * *Parivartan:* A positive change in the lives of people

4.2 If the interlacing of the above mentioned elements is done successfully, it will then result into the following:
 * The experience of multimedia rendering will inspire *Bhakti Rasa* (Celestial Feeling) and *Shanti Rasa* (Calm state of mind) among the viewers.
* The electronic form of *Dnyaneshwari* will become equally acceptable as the conventional book form.
* The multimedia computer with *Dnyaneshwari* installed on it, will become a place of worship and meditation for people.
 * People will maintain the same sanctity around the computer setup as in the temples and churches.

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5. Each of the elements are explained in detail below:

5.1 *Vaachan:* Easy and comfortable reading
Most of the fonts are not very legible if viewed on the computer monitor because they are designed for printing purpose. They appear good only in print. This project needed *Marathi* fonts for *Dnyaneshwari* and *Sanskrit* fonts for *Bhagvadgita*. Special fonts for *Marathi* and *Sanskrit* scripts have been designed for achieving greater clarity and legibility of text on the computer monitor. Each letter is given a slightly spread out form for enhancing the legibility.

In *Sanskrit* script when two alphabet are joined they are drawn one under the other. In the prevailing fonts, the alphabet are joined one after the other for saving the leading space. The shapes of certain characters are also changed and a bit distorted. Efforts have been taken for restoring the original form and style of each and every alphabet.

As the computer screen is a luminous/glowing medium, it is difficult to read the text for long time. In order to reduce the strain on eyes of the readers, explorations were made for evolving an ergonomically pleasant color scheme. *Dnyaneshwari* text is displayed in bright colors with black background and the translation text is kept in black color with bright background. Now, hundreds of people are able to comfortably read *Dnyaneshwari* after projecting it on large screen.
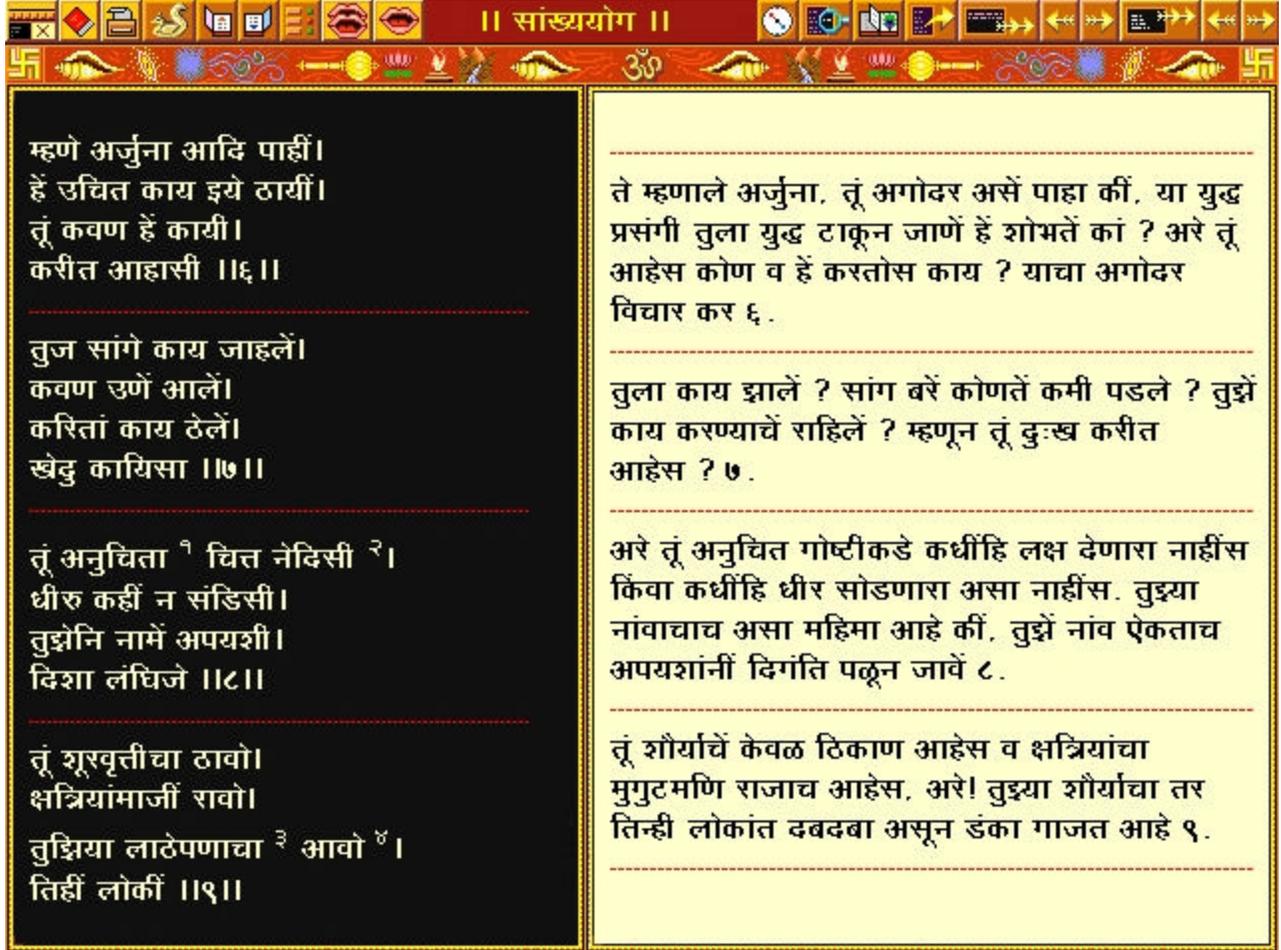

Fig. 1 Screen Layout for the Display of *Dnyaneshwari* Text

5.2 *Gayan:* Musical recitation of verses
Singing of *Dnyaneshwari* and *Bhagavadgita* has been recorded on digital media. The recording went on for almost five months. Maximum care has been taken for avoiding mistakes in pronunciation. Even for minor mistakes the recording was redone. Musical instruments like *Tanpura*, Violin and *Swaramandal* are used in the background for setting the ambience for singing.

The digital audio is edited and integrated along with *Dnyaneshwari* text. As one turns the page the singing begins from that point onward. One can jump to any verse and get the correct pronunciation of it. One is able to listen to the audio, page by page in manual mode or continuous audio in automatic mode. In the automatic mode the software turns the pages as the audio proceeds.

5.3 *Shravan:*Listening with concentration
 It is very pleasing to listen to the signing of *Dnyaneshwari*. Maximum care has been taken for avoiding mispronunciation of verses. People can use it for learning the recitation. As *Dnyaneshwari* is written in *Prakrit Marathi* and *Bhagavadgita* in *Sanskrit*, most common people have difficulty in reading
and pronunciation. If one reads while listening to the musical recitation, reading becomes much easier.

5.4 *Darshan:* Visualization and rendering of metaphors

The metaphors used by *Dnyaneshwar* have remained understandable to most common people. Some people decipher the metaphor but do not get the exact interpretation. Very sincere efforts have been taken for visualization and rendering of metaphors with appropriate interpretation.

Scholars have guided the visualization team in understanding the metaphors described in *Dnyaneshwari*. The team first tried to understand the meanings of every metaphor and then visualized it. The correctness of visual representation has to be ensured at every step.

Each metaphor has pointers to diverse information and references. The information is categorized into various levels for visualization. It is also linked with visuals and audio clips. This helps the viewers in understanding the metaphor as well as experiencing it. The visuals help them in remembering the metaphors as our visual memory is more effective.

5.5 *Bhavartha:* Appropriate and simplified translation

Translation in *Marathi* is also included along with the verses. The meanings of difficult words/terms are available on demand.

5.6 *Nirupan:* Commentary

Marathi Commentary in audio form has been included along with the metaphors. Commentary helps you in understanding certain details which are not depictive visually.

5.7 *Rachana:* Integration, structuring and synchronized presentation

The *Dnyaneshwari* has 18 chapters and over 1000 pages of text. It is a massive task to integrate and organize text in multimedia. For the first volume of *Dnyaneshwari* which has only 5 chapters and 175 pages, around 600 audio files are edited. It was decided to evolve a framework which will give the flexibility of changing the contents and to include translation in other languages such as Hindi and English. Therefore, following disciplines are evolved for the integration of components.

* Each page has only four verses and the corresponding translation.
* In order to achieve greater visibility a larger font size is chosen.
* Standard naming conventions are used for the text pages, audio files, images etc.
* Audio is edited and dynamically linked to the respective pages.
* Text and audio is simultaneous.
* Meanings of difficult words appear only on demand.
* *Bhagavadgita* pages have a different layout and they are not mixed with *Dnyaneshwari* text.
* Each page is having only one *Shloka* and audio is linked to it.
* *Bhagavadgita* is a spiritual conversation between *Bhagavan Gopal Krishna, Arjun, Sanjaya, Dhritarashtra* and *Duryodhana*. Pictures of these characters are placed on the pages.
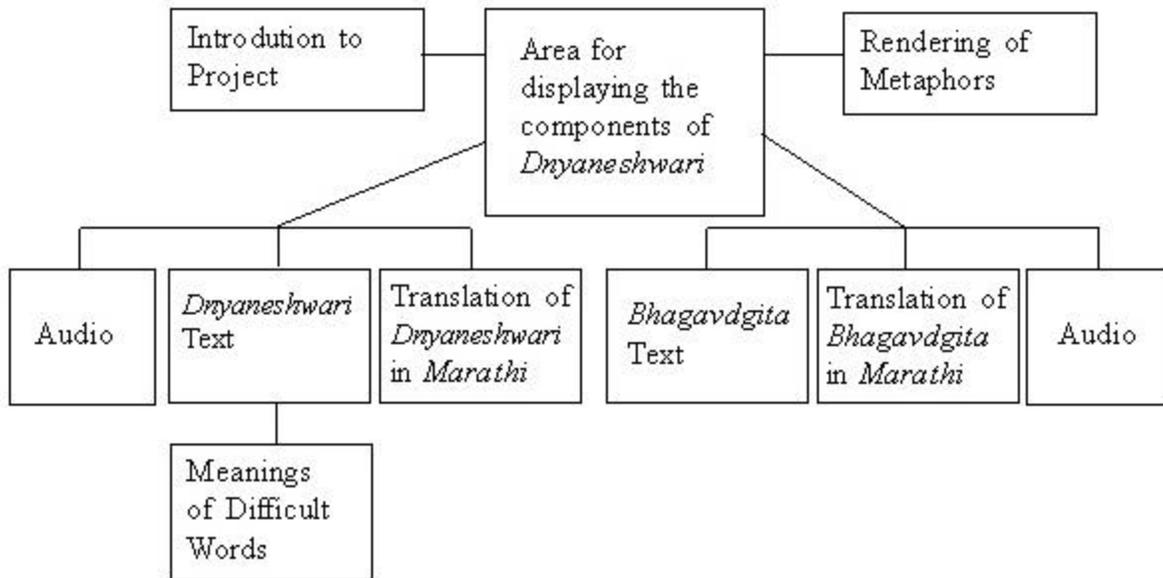
Fig. 2 Categorized Arrangement of Contents

6. Following interaction models are used for integrating the metaphors:

Model I:- Page by page browsing

One can go to each page, read the translation and then view the visualization of metaphor.
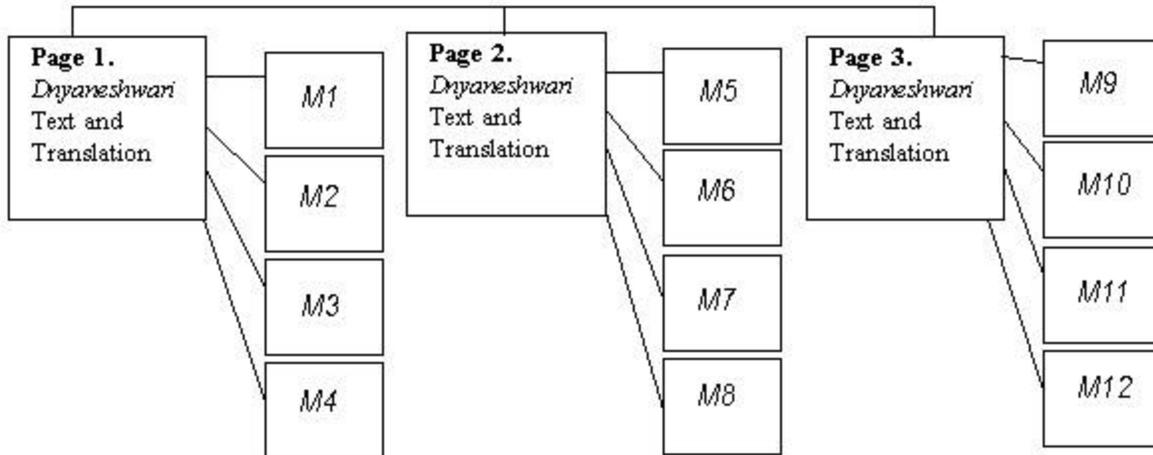
(M- Metaphor)

Fig. 3 Linking of Metaphors from each page

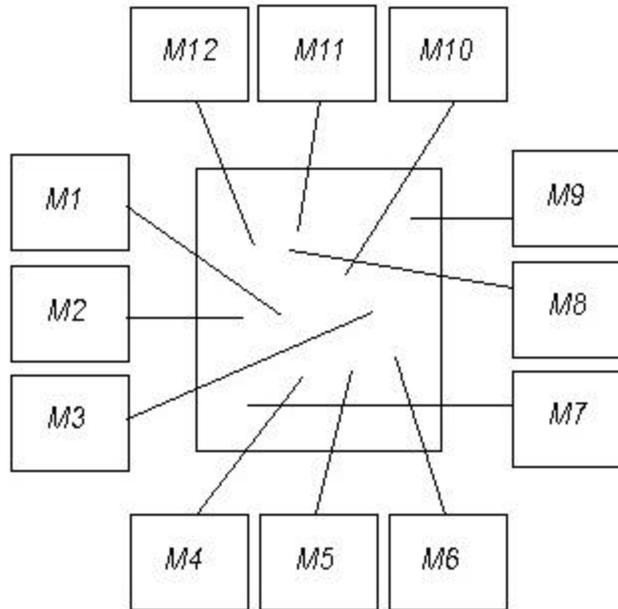**Model II: Linear Browsing**

This interaction model allows you to skip the translation pages and view the visualization of metaphors one after the other.

Fig. 4 Linear Links to Metaphors

Model III: Dynamic Navigation

Links to all the metaphors are given from the map of central theme. The links allow you to jump to any metaphor.

Fig. 5 Multiple Links from the Central Image Map

All three navigation methods are made available simultaneously by unifying them together.

Fig. 6 Multimedia Rendering of Metaphor

As indicated in the 'Interaction Model III- Dynamic Navigation', one is able to click on any part of the image of Lord *Ganesha* and get a magnified view with more details, animated effects, recitation and commentary.

Sentences and words from the verse are highlighted as the metaphor unfolds. This helps viewers in relating the visual interpretation with the verses.

7. Interface Designing:
Most of the applications on computer have interfaces with a lot of grey shades, white and monochromatic color schemes. They look very artificial and synthetic.
Interface for *Dnyaneshwari* is designed with following qualities:
 * Indian color schemes
 * Meaningful use of colors
 * Maximum use of Indian religious icons, symbols etc.
 * Use of Indian motifs, patterns and borders
 * Decorative buttons and frames
 * Iconic representation of various functions
 * Intuitive interface
 * Instructions in *Marathi*
The buttons and controls are positioned based on the frequency of use and the flow of operation.

Fig. 7 Iconic Representation of Navigation Controls

8. Installation Program:

A very innovative installation program has been designed for *Dnyaneshwari*. Auspicious *Shlokas* are recited while the installation continues. It sets a very religious and pleasant ambience for viewing the *Dnyaneshwari*.

Following are the features of the first volume of this CD Title:

* 5 Chapters of *Dnyaneshwari* and *Bhagavadgita* are integrated along with Translation in *Marathi*
* Meanings of Difficult Words which apear on demand
* Multimedia Rendering of 20 Metaphors from the First Chapter
* Introduction to *Dnyaneshwari* Project
* Dynamic Controls for Browsing

9. Collection of decorative designs for the rendering of spiritual and traditional subjects in Multimedia:

A large collection of decorative designs has been created. It contains various categories of designs such as Motifs, Tiles, Borders, Corners, Arches and Decorative Components using which new kaleidoscopic variations can be evolved. This huge collection of decorative designs is created with the inspiration from ancient Indian temples, architectures and embroideries.

Fig. 8 Example of a Traditional Decorative Border
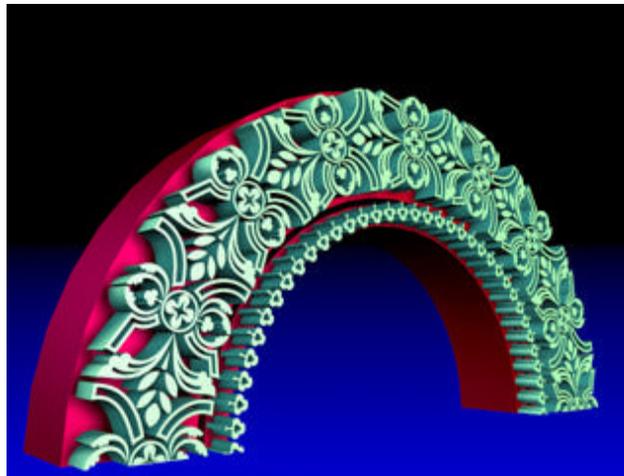
Fig. 9 Example of a Decorative 3D Model

These readymade designs will help the multimedia users in giving traditional identity and appearance to their applications. The designs are made available in several application file formats such as *.cdr, *.ai, *.wmf, *.shp, *.3ds, *.jpg, *.bmp, *.gif along with varied resolutions. Three dimesional decorative models have also been provided. Selected designs from this collection are used for decorating the backgrounds and interfaces in

10. Reusable Multimedia Authoring Template:

Multimedia authoring model of *Dnyaneshwari* will serve as a template for the integration and presentation of similar Spiritual Texts due to the following qualities:

* Background templates for displaying multimedia contents
* Use of standard naming conventions
* Categorised organization of content
* Scalable structure
* Time saving
* Cost effectiveness

One may require to make a few changes and tune the authoring template while integrating a similar spiritual book like *Dnyaneshwari.*

11. Software Tools Used:

* Macromedia Authorware 4.0
* Autodesk Animator Pro.
* Adobe Photoshop 5.0
* Corel Draw
* LEAP for Text in Indian Languages

12. Reactions of People and Scholars:

The Dnyaneshwari CD ROM was demonstrated on various occasions before varied audiences and also to the scholars. The summary of feedback received so far is given below.

* The multimedia rendering of metaphors has attracted the attention of people from various countries and as result they are curious to have translation and commentary in english. The current version supports only *Marathi* translation.

* Hundreds of people were able to read *Dnyaneshwari* without any problem after projecting it on a large screen.

* Villagers from rural area who have the opportunity to see the Rendering became aware of computer technology and it's capabilities. They can relate themselves with computer technology, due to their familarity and attachment with *Dnyaneshwari*.

* Modern generation is not much interested in the traditional and spiritual books. However, packaging and presentation is so done using latest technology that it has attracted the attention of all.

* Scholars working on similar topics got excited after seeing the result and felt that even other books could be illustrated using multimedia.

* Scholars and domain experts have realized that they should learn and use computers in their own fields.

Conclusions:

* **Multimedia rendering with intuitive interface design for interaction can give pleasure to the readers of spiritual litrature, without making them feel any kind of inconvenience due to change in medium.**

* It is possible to communicate abstract spiritual concepts with better accuracy and in an experiencial way using multimedia technology.

* Multimedia authoring templates can help in cost effective and efficient production of heritage content.

* Libraries of traditional designs can set a suitable mood and ambience for the multimedia application.

* It is possible to preserve the cultural heritage by using the prevailing technological media. It helps in increasing the viewership for such creations.

* Topics with mass appeal can effectively create awareness of multimedia technology.