For the purpose of introducing to our methodology, we would like first to define the meaning of the term “cultural representation”, particularly in the context of this paper. “Cultural representation” refers to every practice aiming at the presentation of cultural information to various target groups of recipients or “users”. Two fundamental theoretic issues prevail within the framework of this procedure of cultural content dissemination:

a) the interpretation of the presented information, by the point of view of producers on the one hand and by the point of view of recipients/users on the other,

b) the design of a “cultural presentation” performance in order to facilitate the access of the recipients/users to the corpus of the provided information.

These two issues are closely interconnected for the elaboration of any “cultural presentation” as an active and not passive procedure. “Cultural presentation” does not transmit a neutral message but promotes a specific interpretation of the presented information to the recipients/users. Under this scope, the design of the communicative tools becomes equally important and interconnected with the semantic content of the “presentation” itself. In fact, this conception it has already been expressed by classical theorists of communication, who recognised and underlined the significance of the medium for the transmission of any message. As McLuhan states “the medium is the message” [8, 9].

Within this framework, “cultural presentation” theorization may “borrow” methodological tools from the Performance Theory [4], since the structural features of “cultural presentations” can be analysed in correspondence to performances, according to the following:

a) leading actors (protagonists)/characters/selected data

b) specific “settings”/specific historical, social and economical presentation framework

c) communicative tools

d) scenario /story telling
If we apply the interpretation theory of P. Ricoeur [11] to the above-mentioned categories, we should consider the nexus of their relative autonomy with their interdependency facilitated by certain codes of representation, which correspond to vocabulary and syntax codes, which organize writing as “meaningful act”. In this theoretical framework, we can form the following Table 1:

The dynamic of the relations described in Table 1 are usually perceived and function within the constraints of the following logic: the design of the contemporary forms of cultural representation attributes major importance to the communicational techniques of “presentation” degrading the connection to the content as well as to specific “target groups”. This is due to the high level of abstraction characterizing the new “presentation tools”, including also multimedia applications. In particular, design techniques of User Interfaces (U.I.) and of Interactive Design Tools [10, 12], which intervene in the communication between people and informational systems, are focused mainly on Graphical User Interfaces (G.U.I.), as those we meet everyday in CD-ROMs, Web Sites, e.t.c.. However, these products still do not offer “easy” access to a respectable proportion of population who are not familiar with the use of the computer.

In an attempt to overcome this problem, some of the proposed solutions focus on the (relatively) recent development of special Cultural Information Systems (C.I.S.), for the presentation of cultural contents within the framework of exhibition design. C.I.S. go beyond the “typical” practices of user interface design by approaching alternative interaction scenarios usually based on information attributed to natural forms, like “graspable objects” and “augmented surfaces” [Tangible User Interfaces / T.U.I.] [6, 7].

The creation of T.U.I. applications propose alternatives to the problems posed by User Interfaces (U.I.) and Interactive Design Tools, that favour the development of Customizable User Interfaces (C.U.I.) related to specific design parameters. C.U.I. applications combine the easy-to-understand access to information, with content addressed to particular audiences and target groups, as well as with forms of interaction approaching as much as possible the everyday, experiential, “natural” or “social” practices [1, 2, 3, 5, 6]. In these environments, the use of specialised representation models allows (at least at a certain degree) the direct personal feedback of recipients/users with each other and with the information transmitted. This approach of representation goes beyond the “typical” Human - Computer Interaction (H.C.I.) process. The use of C.U.I. applications gradually evolves towards a direct (non-intervened) Human - Information Interaction (H.I.I.) and in particular of Human- Cultural Information Interaction (H.C.I.I.). Under this scope, the User Interfaces elaborated within the framework of C.U.I., can be correspondent to cultural representation processes focused on procedures of live inter-reaction of protagonists/audience, as it happens in performances.

Within this theoretic framework, we aim at presenting the multimedia exhibition under the title “Ermou street: symbolic, historical, economical and social centre of Mytilini”, as a case study of elaboration of interactive environments related to specific design parameters.

“The case study of multimedia exhibition”

The representation of Ermou Street, aimed at a systematic approach of economical, social and symbolic centre of diachronic public life at the city of Mytilini, as a case study of promotion of the broader cultural assets of the island of Lesvos, with the use of new technologies and C.U.I. Within this framework, the whole presentation model encompassed interactive exhibits, photographic material, lectures, video projections and documental presentations in the form of slideshow, combined with a structured “narrative” scenario.
Potential Forms of Cultural Representation

Performances
1) Actors/leading actors: members of a social group, race or community (such as the head of a tribe, the priest, the father) as well as trained or informal professional specialists (actors, athletes, directors, etc.) performing discrete identifiable roles. Actors could be identified with their role (e.g., a priest with his religion) or could be distanced from them (e.g., a company representative's personality from his/her professional profile).

2) Settings: mostly settled in areas of high symbolic social value (e.g., churches, schools, concert halls) but could be adapted in various places (e.g., open air concert stages).

3) Communicative tools: symbolic objects, artifacts, gestures, bodies, speech and other human expressions which are nowadays enhanced by technological means, such as lighting, sound amplification, etc..

4) Scenario/storytelling: mostly predetermined and standardized with limited improvisation. Cases of structural improvisation should also be considered (e.g., everyday performances in public spaces).

Target-groups: mass spectatorship, specific social, cultural and taste groups, imagined communities. Although spectators are distanced from the performers and the performance itself, the success of the latter is depended, to a certain extent, on the direct or indirect response of the spectators/participants.

Written Text
1) Characters and data (instead of human actors): characters and data are abstractions of human behavior, which serve the interpretive perspective of the author. As abstractions, characters and data are platforms for multiple interpretations by the readers.

2) Settings: although written text's content is static, it is framed in an apparent mobile object whose routes are mapped within a certain historical, social, economical and cultural environment, influencing both production and use.

3) Communicative tools: words, punctuation, syntax, stylistics, expressions presented in handwritten, printed or electronic form.

4) Scenario/storytelling: plot is articulated in linear mode despite flashbacks or flash forwards.

Target-groups: usually specific due to different national languages, varying educational backgrounds and cultural interests. Alternation of roles between writer and reader is impossible in pragmatic terms and, likewise, feedback is always indirect and delayed (e.g., review).

Audiovisual Arts
1) Characters and data (instead of human actors): the construction and analysis of characters and data could be parallel, in semiotic terms, with "texts" although the "languages" of audio-visual modes of representation could be better considered as "meta-languages".

2) Settings: although technologies of recording, editing and projecting visual image and sound are rapidly evolving, the basic expressive techniques remain standardized (e.g., long-shots, close-ups, non-diegetic sound, etc.).

3) Communicative tools: although technologies of recording, editing and projecting visual image and sound are rapidly evolving, the basic expressive techniques remain standardized (e.g., long-shots, close-ups, non-diegetic sound, etc.).

4) Scenario/storytelling: predominantly linear paired to writing texts.

Target-groups: usually as broad as possible but sometimes specific. Alternation of roles between writer and reader is impossible in pragmatic terms and feedback is always indirect and delayed (e.g., review).

Multimedia Applications
1) Selected data (instead of human actors): characters and data are strongly selective due to their highly abstracted cognitive elements, which form a specific "meta-language".

2) Settings: graphical design interface, digital images, fluid environments.

3) Communicative tools: graphics, texts, photographs, various forms of visual and sonic images (e.g., video, animation, music, speech).

4) Scenario/storytelling: proposed modes of navigation facilitating various alternative choices to the users.

Target-groups: varying from the global to an individual scale. Highly interactive, user becomes a re-writer.

### Table (1). An Analytical Approach of Cultural Representations Processes

<table>
<thead>
<tr>
<th>Structural Elements of Cultural Representations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dramatic realization of data</td>
</tr>
<tr>
<td>Idealization / Idolization, symbolic abstraction of data or leading actors/protagonists</td>
</tr>
<tr>
<td>Maintenance of expressive control</td>
</tr>
<tr>
<td>Misrepresentation / Distanciation of the performers, and/or selected data, and/or communicative tools from the target group, due to different cognitive patterns</td>
</tr>
<tr>
<td>Emotional discomfort or mystification of the target group when the representational models are revealed, analyzed or over dramatized</td>
</tr>
<tr>
<td>Reality and Contrivance in relation to suitable, beautified and well-articulated narrative models</td>
</tr>
</tbody>
</table>

### Dynamic Process of Cultural Representation

Creator / Author / Designer / Producer

Creator's / Author's / Designer's / Producer's avatar in the mediated form

Platform of interactivity

Reader's / Consumer's / Respondent's avatar in the mediated form

Reader / Consumer / Respondent
The content of the presented interactive exhibits was selected and organized with qualitative research methods following a two year research project on the social history and the material culture of Lesvos and Mytilini. Selected research data centre upon the following thematic fields:

1. the architectural identity of Ermou str. and the pertinent social web, from the 19th to the 20th century,
2. the experience of the inhabitants regarding the economical and social life in the past, as well as the contemporary life,
3. biographical approaches of local shopkeepers representing key points in the historical development of the local market,
4. the contemporary sound environment (soundscape) formed by everyday activities,
5. a twenty-four hour visual representation of the urban setting.

These thematic fields are presented respectively through five interactive exhibits whose common axis is the cartographic representation of Ermou Street. The interaction of users/visitors with the exhibits is based on the combination of cutting edge technologies with everyday life objects. The form and means of interaction within each thematic field and its corresponding exhibit/installation turns the visitor into a user, who can:

1. place a compass on specific spots of a table map in order to activate the projection of visual information (i.e. image and text) which correspond to relevant sites of the street,
2. move a wooden selector on an interactive map to spots activating inhabitants and merchants’ narration about the past as well the present economical and social life. Information is transmitted as oral speech and written text,
3. activate a movable cursor, in order to navigate in key moments of historical evolution of Ermou str., presented in a symbolic way through biographical narrative speech concerning professions that are obsolete (blacksmiths), sparse (tailors) or common in contemporary times (bookseller). Information is transmitted in audio (oral narration) and visual format (portrait of each professional in his/her working place and photographs of the working tools),
4. tune the receiver of an antique radio to «virtual» radio stations that reproduce selected soundmarks of the modern social life of Ermou str. The movement of the radio pointer is simulated by video accompanied with related photographs,
5. observe two video screens projecting daytimes and nighttimes activities in Ermou str.

The spatial arrangement of the presented activities is outlined by the drawing below. The numeration of the exhibits indicates the suggested route of the visitors, formed in relation to the presentational form of the exhibition.

In this way, the organisation of the multimedia exhibition under the title «Ermou street: symbolic, historical, economical and social centre of Mytilini», combines the selection of specific thematic fields concerning cultural heritage and contemporary cultural landscape with the use of new technologies within the framework of a C.U.I. model, providing users with alternative prospects of Human - Cultural Information Interaction (H.C.I.I.). The use of the particular representational model promotes the development of new technologies as expressive tools that respond to social needs and expectations rather than as objects of technophobia or technophilia. Furthermore, the combination of analogue and digital technologies contributes to the creation of a friendly and attractive environment to any user, regardless of his/her knowledge and level of familiarity with the information technologies. Therefore, the simulation of everyday objects and activities with the use of new technologies, promotes the creative contact of a great number of people with the potentials of contemporary information and communication systems. In this context, the promotion of cultural heritage as well as of the wider issues of contemporary culture can perfectly meet interactive design in the new forms of «techno-cultural presentation».
Diagram [1] Ermou // Exhibition’s Topography

Initial Interaction // Introduction
Communicative Tools: Speech, Documentation (Slide show)
Sensorial Design: Sound, Visual, Audience

First Interaction Area // Exhibit [1]
Communicative Tools: Linear Visual Presentations in the Form of Posters
Sensorial Design: Images, Texts, Patterns of Navigation in Real Space

Second Interaction Area // Exhibit [2]
Communicative Tools: Dynamic Representation System (Images, Texts, Maps, Diagrams)
Sensorial Design: Tangibility, Compass as Symbolic Form of Navigation

Third Interaction Area // Exhibit [3]
Communicative Tools: Dynamic Representation System (Cartography of Interviews)
Sensorial Design: Tangibility, Symbolic Artifact as Form of Navigation, Binaural Wall of Sound

Fourth Interaction Area // Exhibit [4]
Communicative Tools: Biographical Presentations
Sensorial Design: Tangibility, Selector as Form of Navigation, Images, Texts, Binaural Wall of Sound

Fifth Interaction Area // Exhibit [5]
Communicative Tools: Linear Video Presentation
Sensorial Design: Sequential Information

Sixth Interaction Area // Exhibit [6]
Communicative Tools: Soundscape
Sensorial Design: Tangibility, Radio Tuner as Form of Navigation, Images, Binaural Wall of Sound

Diagram [1] Ermou // Exhibition’s Topography
References:

Keywords: User Interfaces, Interactive Design Tools, Interactive Storytelling, Cultural Representation.