Multimedia Design

PANAGIOTIS KYRATSIS
University of Western Macedonia, Greece
ATHANASIOS MANAVIS
University of Western Macedonia, Greece
DHURATA SHEHU
POLIS University

Abstract
The use of multimedia in a variety of applications in our everyday life, offers additional advantages in designing the multimedia themselves, based on designing principles and appropriate tools. Those well implemented multimedia elements should be part of an integral design strategy to be followed, when professionals need to transfer their message to the users and their audience. The multimedia elements were described together with a series of applications to be used. Combining the multimedia technology together with the branding principles created an increased connection of the subject to the participants. Teams of participants developed their own brand and different multimedia elements for their own case. A number of tools for analysing and building modern multimedia applications were presented and used practically with the assistance of a number of class based exercises and presentations. An effort was made to balance the amount of knowledge offered to the participants, the practical exercise work performed and the creativity satisfaction developed, when presenting the requested outcomes from the teams in front of the audience.

Objectives
The aims of the Workshop in Multimedia Design were to combine the content of the multimedia with applications connected to product branding. The theoretical aspects were presented, while at the same time, a series of exercises were performed and presented within the class. The participants worked in teams and at the end of every exercise, they were all actively present the projects' outcomes. The rest of the participants and the curators asked questions in order to clarify issues that came up during the presentations. Additionally, a series of digital tools was presented based on real case scenarios and thus the participants were exposed to knowledges and experiences, when using a multimedia toolkit, with an increased number of tools, from different points of view i.e. text, audio, sketching, vector design, image processing, animation, video, artificial intelligence based media creations. The main objective of the course was to trigger the creativity of the participants and actively involve them via teamwork to create their own digital multimedia material and discover new computer based applications. When using these digital toolkit both creativity and creation satisfa ction were supported.

Theoretical content
The multimedia term incorporates a variety of ways to transfer information to the users, while they can interact with digital pieces of information that serve as set of active communication tools. They can be used in a variety of areas i.e. training, corporate presentations, marketing and communication, design industries. It uses text, audio, video, graphics, animation etc together with their combinations, having as an aim to transfer a dynamic message in an efficient manner. Text is used as the

Figure 1. Screenshot from the tools used during the workshop

basis of all multimedia productions. The text can be found with different fonts and sizes to better suit the application built. In addition, audio or sound elements are used for improving the quality and the quantity of the transferred message to the user. It can be of analog or digital type. The analog audio or sound refers to the original sound, which should be digitized for being able to be stored on computers. The digitizing process is based on a process named analogue-to-digital-conversion procedure and requires a set of computer based hardware and software to be used for this reason. Graphics improve drastically the quality of multimedia and make them more attractive and easy to convey messages that otherwise would need a great deal of text based content. They can explain a concept, transfer knowledge, present pieces of information etc. There are two basic categories of images and several case studies were presented for stressing the core ideas behind:

- bitmap images that are real images and can be captured via digital cameras or scanners. They are not editable and require a great deal of memory space. They can be stored in formats such as .bmp, .tiff, .jpeg, .png, .gif. When the same bitmap file is used for large sized applications its quality is drastically reduced.
- vector graphics are created based on computer aided design software, they are editable and require a small amount of memory for storage. They can be stored in formatted files such as .ai, .eps, .pdf, .svg, .cdr. A vector file can be used easily, when the size of the application varies because it is not losing the content quality.

The use of RGB and CMYK colour systems were presented. It was stressed that RGB is used for digital and web based media, while CMYK is used when the work completed will be used for printed physical media. With the assistance of the color wheel, the concepts of primary, secondary and tertiary colors were introduced and further explained the possibility of selecting from a variety of color pallets, when a digital project is developed. Case studies were presented in order to avoid using from a large number of colors instead of concentrating on specific color pallets that can be easily identified from the users' point of view.

With the term video, someone means a moving picture that comes with sound. Video as a main element of multimedia offers a great deal of information and messages in a limited amount if time. It can be used in order to depict real life objects within a multimedia application. It demands a considerable amount of computer memory resources and bandwidth if in use via the internet. The digital video clips can be easily edited, altered and be transferred within a computer network. As in all digital media a variety of formats are made available and the main of them where explained based on the standards used and developed over the years i.e. .avi, .mov, .mp4, .flv, .saf, .mkv .wmv, .mpg. Animation is the process of making a static image look like it is moving. It consists of a series of still images that are displayed one after the other and produce the sense of watching a motion. It is used for attracting the attention of the users and passing the messages and knowledge in a more effective way, thus giving the feeling of a light and attractive presentation. All the different kinds of animations are extremely populars to the users and it is one of the main ways to build multimedia applications. Stop motion, motion graphics, 2D/3D animations lead the users to recieve a greater satisfaction from the multimedia applications because they feel significant entertainment.

Exercises and application

The first set of exercises given to the participants asked them to:

- find multimedia applications over the internet;
- describe them according to the multimedia categories presented earlier i.e. static elements (according to time), animated elements, artificial elements (made by computer), real elements;
- describe the multimedia applications based on the multimedia components used i.e. sound, image, video, animation, graphics. The effectiveness of the message transferred was of great importance;
- present the case studies in front of the class, ar-

Figure 2. Futuristic image produced from the class

gue about them and answer questions from the curators and especially from the rest of the teams.

A number of common areas fo building multimedia applications consists of:

- entertainment: designing flying banner presentations, video transitions, animations, audio effects can be utilized for creating a multimedia-based advertisement that is appealing to the users;
- education: assisting the children to learn via using a computer game with a number of difficulty levels introduced;
- business: a number of office needs, record management, employee training etc. use multimedia for introducing user friendly and effective work characteristics;
- marketing: promoting new product and brand identities can be very effective when a series of multimedia applications and design guidelines are used.

Based on the marketing principles, the company brand and its aims were explained. A brand is the identity and the story of a company, that makes it stand out from competitors, that sell similar products or services. The goal of branding is to earn space in the minds of the target audience and become their preferred option. It is the process of creating the brand identity of a company. This process also delivers materials that support the brand, like a logo, tagline, visual design, or tone of voice. It influences the users purchasing decisions, creates an identity for the business, helps users to remembering the company, boosts advertising & marketing and builds employee support. The identity can be supported from a variety of multimedia applications that use logo, business cards, posters, packaging, promo video, websites etc. A series of case studies were presented with an aim to introduce the key thoughts to be used, when designing those multimedia applications for branding purposes.

The second set of exercises aimed in creating a common umbrella or story for each team of participants. The teams were asked to:

- create their own logo, together with the development of a story telling for their businesses and the key products to be promoted;
- choose the categories of the designed logo and story telling;
- make use of inspiration from case studies that were available at the internet, expand and altered them;
- present the case studies in front of the class, argue about their output, answer questions from the curators and especially from the rest of the teams;
- the question “What is UX and UI?” raised in the class, led to a great deal of interest and discussions. Both meanings were explained and the design principles actually used were explained;
- user Interface (UI) Design focuses on anticipating what users might need to do and ensuring that the interface has elements that are easy to access, understand, and use to facilitate those actions. UI brings together concepts from interaction design, visual design, and information architecture;
- user experience (UX) design is the process design teams use to create products that provide meaningful and relevant experiences to users. UX design involves the design of the entire process of acquiring and integrating the product, including aspects of branding, design, usability and function;
- the wireframe as a tool to analyse and implement a website was introduced;

The result of the UX and UI content offered the opportunity to run two additional set of exercises in the class. The third set of exercises aimed in analysing a website based on the wireframe tool. The teams were asked to:

- choose a website;
- analyse the multimedia and the branding elements of the website under study;
- use the elements of the webside in order to present the wireframe tool output ;

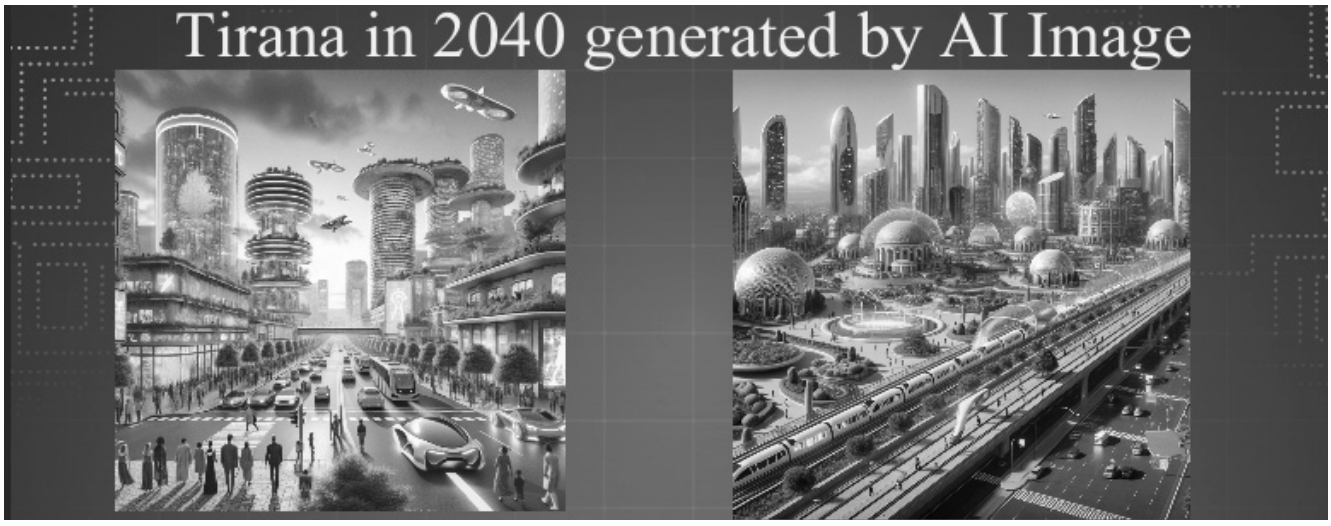

Figure 3. Vision of Tirana 2040

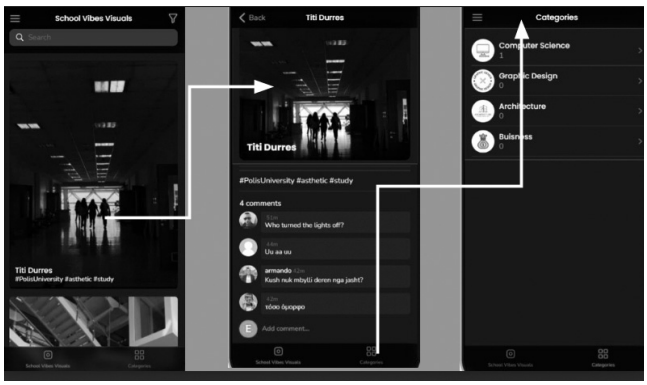

Figure 4. One of the mobile app prototypes

Figure 5. Mock-up from the apps

- present the work done including the website analysis and the website wireframe tool;

The fourt set of exercises aimed in building an application for smartphones, analyse and present it:

- based on the team brand identity built earlier, create an appropriate application for a smartphone;
- analyze the multimedia and the branding elements of the application built;
- design the wireframe of the application built;
- present the work completed including both the application analysis and the application wireframe;
- the final part of the workshop was used for including the Artificial Intelligence (AI) tools for developing a series of multimedia elements in a more effective and automatic way. Using text or images and other descriptions within a number of AI applications, the participants were able to automatically produce multimedia elements, targeted to the specific needs of their own brand identity introduced at the beginning of this workshop. At the end, each team presented the:
- AI tool used for creating their multimedia element;
- produced multimedia element;
- advantages and disandvantages of using AI for this purpose.

Conclusions

After a successful workshop full of knowledge, skills and experience transfer, a number of summarized outcomes would include the following:

- the theory was combined with case studies and appropriately designed class exercises;
- a series of methodological tools were used together with technological tools with an aim to integrate the whole process;
- vthe participants used both physical and digital tools for their work in the class;
- the teamwork used increased significantly the capacity of each team to run the project works requested in a limited time table;
- the project based work completed over the worskshop offered increased knowledge and skills transfer to the participants. At the same time, the teams received increased satisfaction when completing and presenting their work. Defending their work in front of large audience was a significant experience;
- although some digital tools and pieces of software were presented to them, the teams used their own tools and felt more comfortable when producing high quality output. In a number of cases, the teams used digital tools for the first time, thus increasing their exposure to learning digital tools, discovered over the internet in such a short time period;,
- the use of I technological tools made the participants realizing that there are not only advantages but disadvantages as well in their use when developing multimedia elements. Not being able to control with accuracy the output received from the AI tools was the main surprise offered to the audience at the end of the workshop.

Panagiotis Kyratsis is a Professor in the Department of Product and Systems Design Engineering, University of Western Macedonia, Greece. He is Director of the Research Institute of Traditional Architecture and Cultural Heritage (University Research Center of Western Macedonia) and the Director of the Computational Design and Digital Fabrication Research Laboratory (CODE+). Panagiotis Kyratsis received his PhD in the area of CAD-based manufacturing process simulations from the Department of Production Engineering and Management, Technical University of Crete.