CREATIVE MULTI MEDIA: THE COMMODITY OF THE 21ST CENTURY

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Abstract

The Digital Revolution has turned individuals, institutions, and businesses into a new form of collective wealth and prosperity. This revolution has effected a creativity burst that goes far beyond an increase in the number of those involved in design tasks and challenges, in both professional and amateur settings. The Internet in particular are not only distributing media but most importantly it is a reference platform in which ideas, talents and capabilities emerge and are refined, enhanced and perfected through the inspiring interplay of collaboration and competition.

This paper briefly examines the relationship between art and science through the ages, discusses their recent re-convergence, and examines their current relationship via real world applications and productions. The study of such productions, their successes and the impact they have had in the marketplace based on designs and aesthetics instead of advanced technology appear to support the argument. It also highlights the need for accelerating this process and suggests that the re-convergence is a result of new technologies adopted by practitioners that include the effective visualisation and communication of ideas and concepts. These elements are widely found today in multimedia, which offers increased power and new abilities to both scientists and designers.

This paper also highlights the need for the employment of emerging computer-based interactive technologies which will enhance the design process, better decision-making, increase the quality of communication and collaboration, lessen the errors and reduce the design cycles. A Multimedia Palette is proposed as a design platform to expose one's imagination, creative and innovative ideas, and provide a richer and more creative multimedia content design and development. Following encouraging first round results, an expanded version of the suggested platform has been experimented in the Faculty of Creative Multimedia, Multimedia University for the last 5 years, in integrating design and computer skills in the teaching and learning projects.

Keywords: creativity, re-convergence, Multimedia Palette, Creative Multimedia

1.0 Introduction

According to Bronowski [1], science and art were originally two faces of the same human creativity. However, as civilisation advances and works became specialised, the dichotomy of science and art gradually became apparent. Hence scientists and artists were born, and began to develop works that were polar opposites. The sense of beauty itself became separated from science and was confined within the field of art. This dichotomy existed through mankind's efforts in advancing civilisation to its present state.

Mayall [2] has studied the reconciliation of art, science and technology in design. He draws distinctions between the mathematical engineer who creates new devices mainly through the alliance of specifications and working drawings, and designers interested in the form for whom it '... was a matter of observing what they regarded as proper combinations of forms and colours'. Stewart [3] highlights the contrasts that exist between what is inspired to what is formal and what is practical to what is academic and at the same time emphasising the need for a contingency approach to design.

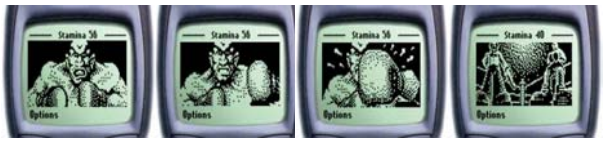
The challenge for us is to find appropriate means and effective ways to integrate the arts and the sciences and reduce the gap between the two domains. This paper will study briefly on design creativity and the media that have the potential to accelerate the process of re-convergence of arts and sciences, particularly in multimedia and virtual environments, as we try to make a bold leap into the future in the Multimedia Super Corridor (MSC). As our country's main goal is to move into a new 'knowledge-based' economy (k-economy), the ability to be creative in accelerating the re-convergence efficiently and innovatively will be the key to our success. A few case studies that have adopted multimedia technology successfully will be presented.

2.0 Creativity in Design

According to Lawson [4], while we have seen that both convergent and divergent thought are needed by both scientists and artists, it is probably the designer who needs the two skills in the most equal proportions. He further argues that designers must solve externally imposed problems, satisfy the needs of others and create beautiful objects. In this competitive world, one could argue should creativity in design need to be original? According to Robert Venturi, [5] for a designer**,** it is better to be good than to be original. Richard Seymour, one of the leading product designers**,** considers good design as a result of the unexpectedly relevant solution not wackiness parading as originality. Mr. Idei, the CEO of Sony Corporation, Japan points out that all designers should be motivated to function as an ace pitcher with every product [6]. What can be learned from these is that Venturi, Seymour and Idei are more critical and cautious on the function than totally on the originality of the design.

Creativity is concerned with the design of products that in some ways offer added value and functionality when compared to products or ways that have preceded them [7]. Even applying the convergence of technology, new innovation often failed due mainly to minimal awareness of the context. For example, when WAP (Wireless Application Protocol) technology was introduced, almost every single games company expressed an interest to further develop in existing cellular products or devices but then dismissed the idea [8]. There was no serious effort to search for design within the WAP constraints and wireless communication capabilities. In contrast with Firesoft's approach, they first searched on the WAP standard and

relevant cellular technology to better understand the medium. Their design was based on these constraints to deliver original product and interface design (i.e. via Burgundy WAP server environment) for effective and richer content development. The recent revolution in business nowadays refers to the change through creativity which includes ISO 9000, total quality management, re-design and re-engineering, as usual responses of Western companies waking up to the competition from Japan (figure 1).



W@P Boxing

W@P Derby Day

W@P Dungeon 3D

W@P Kingdom of the Nile

Figure 1: WAP game samples

Design, in nature is an interdisciplinary activity that requires a collective input from different skill sets of professional, layman (clients) and specialist. Lawson [9] believes that good design is often a matter of integration. It is a powerful tool and allows designers to shape their products and environments in a way that may affect the well being of people in general, especially in the global networked economies. Papanek [10] defines design as a function complex where Method, Use, Need, Telesis, Association and Aesthetics all are strongly related to Functionality. Pugh [11] rightly argues that design is central to business success and, for that to happen, it has to successfully interact with the various business facets.

For example, the release of *Computer Space* into amusement arcades in 1971 marked a beginning in the commercial electronic games market and accelerated the overall growth in the late 1990s that surpassed the film industry in revenues. According to the USA-based Interactive Digital Software Association (IDSA, 1998) the games industry reached "…$16 billion in economic activity in 1997, not including computer and video game hardware sales" [12]. Rollings and Morris [13] have studied 'the best practices for game design and programming' and have concluded that most of the works behind development lies in design. Game [14] and game development [15] now encompasses the fields of real-time computer graphics, prototyping, visualisation, art, animation, and content creation. It has entered new fields such as immersion, applied artificial intelligence, physical-based modelling and real-time communications using the Internet as a method for delivering content.

3.0 Creativity in Design Communication

As the world becomes border-less or hyper-competitive [16] in nature, the need to communicate becomes paramount. New tools provide us with a totally new way of communicating. New multimedia tools can be defined as an integrative medium, which appeals to all five human senses. However the abuse of tools for communication is already happening. How many times have we seen or heard an interesting introduction or presentation only to be left asking, yes, but what does it mean? What is it exactly? In looking for tools, the solution lies partly in finding the tools to help you define the problem. But the bottom line is what are you trying to communicate? Multimedia, like any other communication tools, must be seen as a mean rather than an end.

One of the most powerful vehicles to competent design is the efficient communication of concepts and values between individuals involved in the design, marketing, manufacturing and use of a product from concept to delivery [17]. Communicating these concepts to individuals in the design teams and user groups is a challenge. Team synthesis and synergies are needed to broaden communication, control the design process and aid decision making. Such synergies also work against certain creativity or other individuals that in some cases choose to express themselves egocentrically at the expense of other team members and ultimately the customer. Pugh [18] has shown that linking mechanisms work better when different units are arranged organically rather than mechanistically and stated a number of requirements to enhance communication within the design environment. These include a relaxed working atmosphere, open communication, interpersonal trust, the autonomy of the individual, participation and the provision of opportunities for individuals to exercise their expertise [19].

4.0 Creativity in Design Computing

The designing of computer tools that will benefit design per say are tools that the complexity of their domain does not interfere with the design process [20]. Poor tool design forces designers to deal with complexities that exist in the wrong domain that subsequently lead to compromise or poor designs and products. A good example of this is the success that Apple Macintosh enjoyed during the middle and late 80s by offering an intuitive way in which text and graphics were manipulated and viewed on the screen. This was in contrast with the text-based interfaces (offered by competing products on the IBM PC and other desktop machines during that period). Graphical browsers and front-end interfaces will increasingly act as access points to information and its visualisation [21], educational material, software applications and on-line collaboration. Current and emerging Virtual Environment (VE) and Multimedia technologies link the two areas of information and visualisation together making an otherwise complex content accessible to wider audiences.

One of the creative achievements in design computing is the Internet. Some have defined the Internet as an ‘electronic courier’ service and its integration with multimedia is already happening. We can all agree that the advantage of the Internet is that for the first time, users, no matter where they are, have access to a wealth of information, which is not available to past generations. However, this can also be dangerous. In our enthusiasm to make use of the labyrinth network of information, there is a tendency to use the Internet as a starting point and give users access to all the information. The wide acceptance and adoption of Internet

technologies by organisations and individuals of different backgrounds demand for good information design practices to be adopted that will facilitate information storage, education, collective learning and most important fast retrieval and effective delivery [22]. The sharing and exchange of information in all its facets allow teams and companies to capitalise on their intellectual assets and expertise in a global scale. Companies that more thoroughly understand, and take advantage of new networked resources are going to establish a competitive advantage. Small [23] [24] and large corporations (e.g. Chrysler's Extended Enterprise and Sony Corporation) have shown that they can lead in the information age and define the state of the art in developing and adopting new practices to gain a competitive advantage in emerging global networked economies.

Competitors will no longer be disadvantaged by the location of their business or traditional distribution channels. Linux a non-profit making community grew to thousands of people from all over the world, working together and without the aid of managers, managed to turn Linux into one of the best versions of UNIX ever designed and developed [25]. These information and knowledge dissemination networks have given these companies a competitive advantage in the way they design their operations, products and distribution of services. For Sony Corporation, the new kind of computing environment will rely on the technology called Jini (pronounced JEEN-ee), developed by Sun Microsystem [26]. It is based on the concept that devices should work together in which it connects to this collection (e.g. television, audio equipment, digital camera and computer) or network of services by plugging it in, with no drivers to find and no operating system to start or restart.

5.0 Creative Multimedia

Creative Multimedia is much to do with content design. We can define the word content as the substance or material that will give (a product) a distinct form or character [27]. Multimedia can be described as a new medium that will enable diverse content of audio-visual images including computer graphics, animation, sound and text, to be sent out as seamless digital media. It has the underlying potential to integrate the traditional methods of expression to cultivate new activities appropriate for the new era. These methods of expression are diversified, ranging from packaged works for both non-interactive and interactive, installation, network style works and Virtual Reality style works. The integration of arts and science through multimedia that will allow us to overcome problems that neither art nor science alone can solve. The scientist needs the insight of the artist; the artist needs the logic and technical skills of the scientist. Since both science and art were from the beginning closely bound together in the human instinct to survive, they can be reunited (designers). Multimedia does (or does not) mean a lot of media. We believe that multimedia means the multiple ways that you can look at ideas to find relationships in your own unique or creative way (and time). And the fact is there is a lot of different media forms that can express or illustrate this idea for you. It might be straight video, or audio, or text, or a combination, or graphics or slide-shows.

The announcement to develop a national information infrastructure in the early 90's has sparked a global use of information and communication technology (ICT) in developing countries particularly Asia (i.e. Philippines, Thailand, South Korea, Singapore and Malaysia) that integrates features of Internet, Cable TV, Satellite and Telecommunication. For Malaysia, the Multimedia Super Corridor (MSC) initiatives have opened up the country to local and world-wide investments in areas such as education, research and development, new business

venture and working opportunities, besides posing as the 'digital divide' between developed and developing countries. The biggest challenge for the MSC is not just to embrace technology but also to create contents that are relevant to our society and world at large. Creating not just the right environment but also a challenging one to stimulate creativity, must be our priority. This clear vision and objective will ensure that these creative talents can function and excel in the content that they produce. Eventually, the challenge for us is to develop a critical mass of talents, whereby content creation are undertaken not just by inventors but by the users themselves. In order to take the challenge, The Faculty of Creative Multimedia has proposed Palette of Wonders (POW) [28] as a multimedia design platform that exposes creative and innovative ideas to suit the real need of specific users. It focuses on the nature of multimedia, which consist of three different stacks namely multimedia principles, elements and characteristics (figure 2).

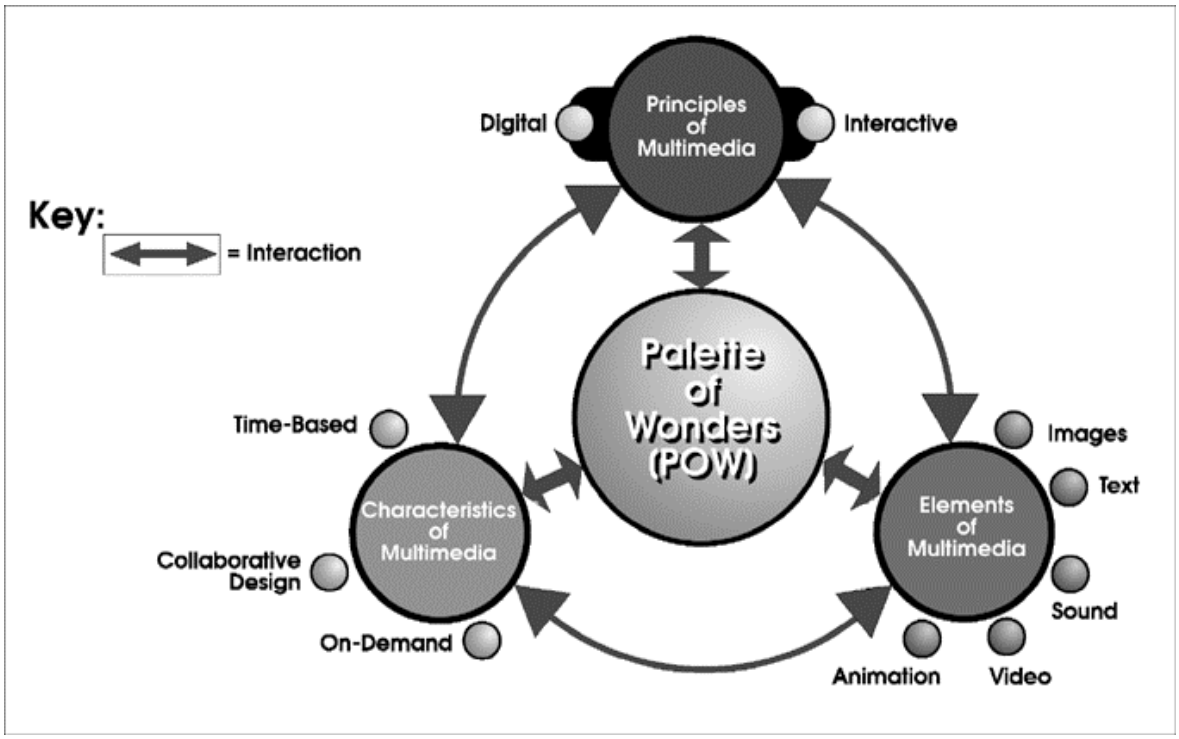


Figure 2: Palette of Wonders [POW]

5.1 Stack 1 - Principles of Multimedia

We believe that multimedia is established on the principles of being digital and interactive [29]. This paradigm shift (i.e. moving from analogue or conventional to digital technologies) has fuelled the convergence of different industries today. Without this combination, the content remains similar to analogue value of which many developers have failed (i.e. creating digital content with full of analogue qualities or passiveness) in contributing to the paradigm shift. With interactivity embedded into multimedia content, it enables the user to a certain degree to control and acquire information. Designers have the ability to experiment and explore elements of multimedia in the form of text, image, sound, video and animation in

developing the content. Never before has designers had the ability to mix and match different media types into one coherent application (i.e. digital format) to convey information.

5.2 Stack 2 - Elements of Multimedia

The second stack represents the elements of multimedia namely text, image, sound, video and animation or better known as the 'spice'. Never before has designers had the ability to mix and match different media types into one coherent application to convey information. This posses a new challenge to designers as they have to incorporate the different media mix to express their ideas. With the availability of multimedia authoring tools, these different digital media can be arranged and designed according to the designer's needs and intentions. This is possible as the format in which these media exist is in one common format, that is the digital format. As content designers, their task is to constantly place a " fresh face" on top of information technology.

5.3 Stack 3 - Characteristics of Multimedia

At the most basic level, a combination of stack 1 and 2 is sufficient to create multimedia content. However, it is suggested that with the adaptation of multimedia characteristics the content will be significant in terms of effective use, marketability, and impact on individual application. This can be identified as time-based, collaborative and on-demand. Since in our daily lives we are used to motion-based situation (e.g. televisions or movies), it is suggested that multimedia designers consider this as one of the key features that easily relates to perception, and thinking attributes. The availability of the Internet could be an advantage to prepare a ‘collaborative’ design society and platform for discussion, decision-making, cross-referencing, linking, retrieving, and data distribution. Because of the complexity of design and demand from specific user and application, multimedia content design should give priority to only on-demand design solution that could be developed such as in the form of data-dependent, and video/audio streaming behaviours.

Early encouraging results are demonstrated in our classes online and students content design portfolio. The expanded version of the suggested platform was originally developed by the Faculty of Creative Multimedia, Multimedia University and has been implemented in the design of the ‘i-Putra’ portal (http;//www.i-putra.com.my) together with one of the local content developers (I-Design Sendrian Berhad). It is basically a digital softcity of Malaysia’s new administrative capital, Putrajaya. It is designed to be fully interactive channel of content, context, community and commerce for the user to search, explore, and venture business to support the intelligent city requirement (figure 3).

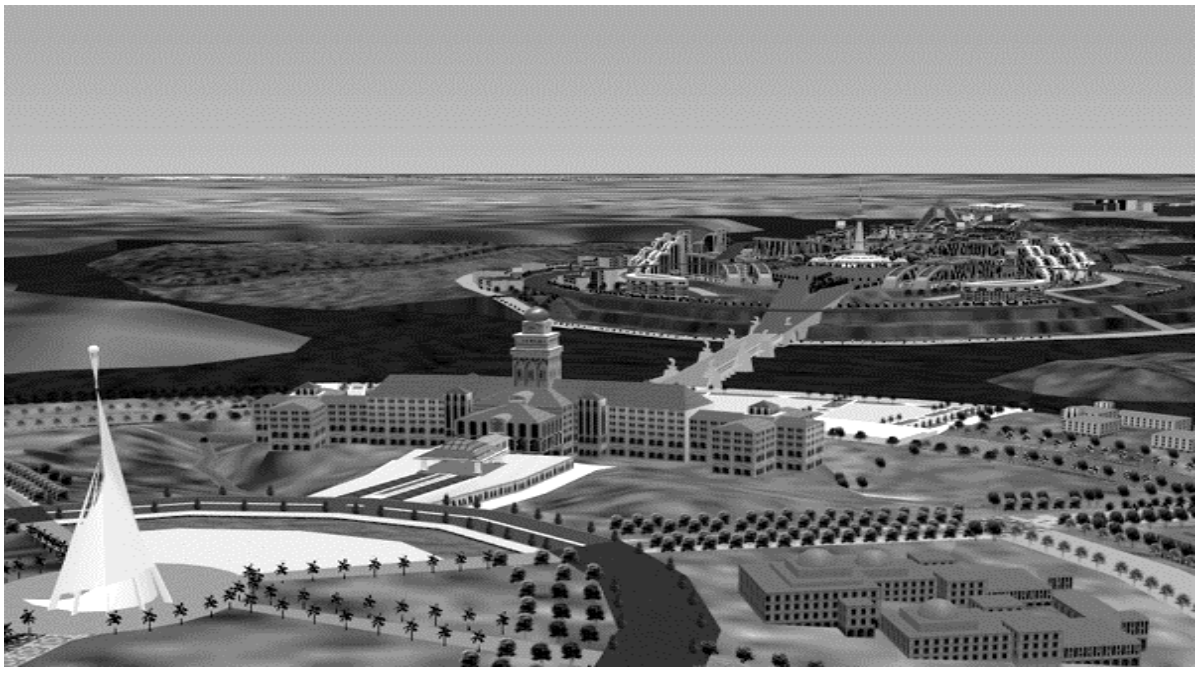


Figure 3: An aerial view shot of Putrajaya real-time simulation (courtesy of Faculty of Creative Multimedia, Multimedia University, Malaysia, 2001)

6.0 Conclusion

Content development particularly creative multimedia is believed to be one of the most demanding skills set needed in the 21st Century due to the ability and power to change the way we think, work, produce, act on, innovate and do business. We see multimedia tools as being the common denominator to integrate the sciences and the arts and to accelerate the process of re-convergence in order to reduce the gap for effective and meaningful results. As individual becomes groups, and groups become communities, and communities become villages, and villages become nations, the critically scarce resources that need to be conserve in the future is the creativity of users of these tools.

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