

Chapter 14

Creative Interfaces: Development of New Integrated and Visual Solutions

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ABSTRACT

Recent developments in process interaction solutions are helping companies and educational institutions to reduce training costs, enhance visualization, and increase communication. Service personnel can make more informed decisions by allowing a broad range of employees to access data instantly. New 3D interactive technologies incorporated into training applications and learning environments together with the introduction of the one projector 3D solution is rapidly changing the landscape for education. Over the last 10 years, virtual reality applications have been applied in various industries; medical, aircraft computer modeling, training simulations for offshore drilling platforms, product configuration, and 3D visualization solutions for education and R&D. This paper examines emergent visualization technologies, their influence on market growth and on new perceptions of learning and teaching. It describes the interrelationship between technology development, technology providers, product launches, R&D, and the motivation to learn and teach new skills. The paper incorporates social, technological, and global markets growth drives, describing the pull and drag synergy between these forces.

INTRODUCTION

In his “Strategy for America Innovation, Grand Challenges” of the 21st century” President Obama identified the following grand challenge: “Develop an Educational software that

is as compelling as the best video game and as effective as a personal tutor; online courses that improve the more students use them; and a rich, interactive digital library at the fingertips of every child.” The society is in the aftermath of the industrial revolution, which creates new opportunities for learning, community development, and trade. One of the main social factors is

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technology as an agent of change in interaction between people. This new society requires new approaches in a number of areas for people to identify themselves in their surroundings and to further develop interdisciplinary knowledge sharing. Today we live in an interaction society, which means a fundamental change, as great as when society went from newspapers and printed media to movable and auditory media. Though, the difference is far greater this time because the shift is much faster when decentralization of information means an exponential spreading effect. This article tells about some new integrative and visual solutions in creating interfaces, networking engines, visualization technologies, and 3D interactive virtual-world platforms exemplified by new technologies developed at EON Reality, Inc.

1. DEVELOPMENT OF NEW CREATIVE INTERFACES

Interactive 3D and innovative visualization technologies, including Virtual Reality, are a part of the infrastructure platform that supports 21st century training and development in the global competitiveness. Technology companies are collaborating with educational institutions and governments all over the world to develop new

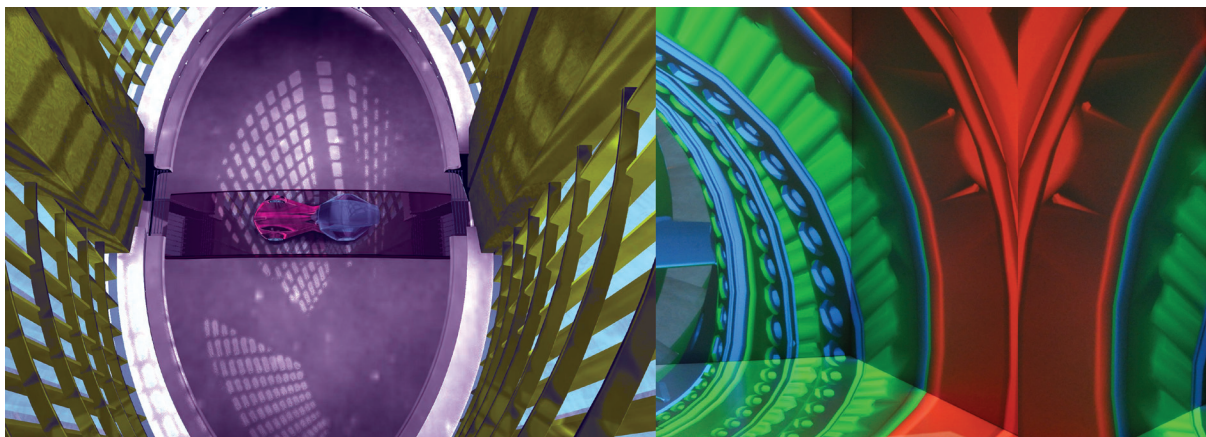
applications, and thus unfold new solutions for learning and training.

While the Internet has reduced communication barriers across geographical boundaries, effective communication remains a challenge when there is a lack of consistent, scalable and illustrative interfaces. The issues and gaps include:

- Integrated communication and end work flow
- Scalable and integrated configurations for planning and design
- Remote information exchange and access to diverse global networks without traveling
- Integration with large-scale displays (from laptop to “CAVE” solutions) to further reinforce understanding and create a pedagogical experience that is easy to understand and remember longer.

Collaborative 3D solutions/immersive 3D communication, virtual meetings and events technology aim to fill this gap by providing a platform where people can present their ideas, communicate complex concepts and collaborate using rich media objects such as web pages, presentation slides, video, live feeds and interactive 3D content (Figure 1).

Figure 1. Development of new creative interfaces



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