

## **MAJLIS PERASMIAN "SEMINAR ON VIRTUAL REALITY"**

MINES EXHIBITION CENTRE, SERI KEMBANGAN, SELANGOR, 14 APRIL 1998

Saya ucapkan terima kasih kepada pihak Universiti Malaysia Sarawak dan penganjur-penganjur lain yang telah sudi menjemput saya untuk merasmikan seminar dan bengkel berkenaan dengan 'Virtual Reality' iaitu 'kenyataan yang hampir benar'.

2. Saya percaya seminar dan bengkel ini akan menumpu kepada pelbagai kemungkinan penggunaan 'Virtual Reality' yang mempunyai hubungkait yang rapat dengan negara kita dan negara-negara lain di rantau ini. 'Virtual Reality' mempunyai potensi menyumbang secara berkesan kepada peningkatan produktiviti dan kualiti melalui penggambaran yang hampir benar atau 'real' sesuatu yang hendak dicipta atau diperbuat. Daripada apa yang dilukis dan digambarkan dalam komputer, model prototaip boleh diperbuat dengan cara 'rapid prototyping' atau barangan tertentu boleh dibentuk dan diukir dengan mesin secara terus. Demikian pesawat terbang yang termoden, B777 diperbuat terus dari lukisan dan gambar yang dicipta melalui komputer. 'Mock-up' pesawat tidak diperlukan. Dengan ini proses pembuatan boleh dipercepatkan dan kualiti serta 'precision' dipertahankan. 'Virtual Reality' apabila diperalatkan bersama dengan 'rapid prototyping', 'computer-aided machining' dan 'production' akan mempercepatkan proses penciptaan serta menjamin kualiti dan 'precision'.

3. Just a few years ago, virtual reality was regarded more as a toy than a tool. The use of head-mounted displays and data gloves supported a science fiction impression. The entertainment business embraced the virtual reality tools, promising to provide virtual worlds as computer-generated alternatives to the real world. In business, however, this science fiction orientation detracts from the usefulness of virtual reality. Today practical applications of virtual reality exist, particularly in areas such as architecture and computer-aided engineering design. Virtual reality projects around the world introduced two important innovations: the ability of the end user to gain a feel and experience near real sensations in a simulated world and become part of its dynamics; and the provision of some interesting insights on how people and technology will interact. Both developments attracted lots of media attention that helped publicise virtual reality.

4. Jaron Lanier, the "VR guru" who coined the term "Virtual Reality" and founded the virtual reality industry, is of the opinion that there will be a new emergent social consciousness that can only exist through the medium of virtual reality. People tend to imagine virtual reality as being an escapist thing where they will be more removed from the real world and the need to react with it. On the contrary, virtual reality will make us intensely aware of what the real thing is going to be and to adjust, react and adapt it to the real situations.

5. Perhaps the best known application in virtual reality is the flight simulator. The extensive use of this training tool has saved much time and money without the exposure to the kind of mishaps of actual flights which trainees are prone to.

Over the years the simulators have been vastly improved as to make them as nearly real as possible and this includes the management of emergencies and accidents. There can be no doubt that simulators of all kinds will be used in future for all kinds of training. They will be more simple and less costly. In fact there are already certain applications which use the P.C. It would not be too difficult or take too long a time before simple controls are devised or headsets developed which will enable us to get into the inside of objects in order to see what the hidden inside look like. This would give us a better idea of how to improve on designs for better function and maintenance.

6. In a few years we will see medical virtual realities, where handicapped people can experience full motion interaction with others, where people with movement disabilities or paralysis will be able to experience the functions of a complete body. Another medical use is having surgery simulators so that surgeons can enjoy the same benefits that pilots do and learn without putting lives at risk. Of course, surgeons can do that with cadavers too, but a cadaver isn' t the same thing as a body that really reacts, that can really bleed. The other great advantage is the ability to repeat the procedure any number of times and this will obviously help sharpen the skills. Similarly new techniques can be developed and tried before proceeding to the real thing.

7. While virtual reality is still crude as an enabling technology and major problems exist in the areas of software support, tracking display, image generation and the like, there are a growing number of applications which go well beyond the confines of the virtual reality games. The popularisation of virtual reality on PC-based systems will enable more companies to use the technology in their business and industry. Interactive 3-D tools with real space and virtual reality aspects not only help to produce higher quality designs and a more effective market punch but also shorten development cycles significantly. This provides a competitive edge and also helps to reduce modelling costs substantially. On the other hand, buyers in the future can have a virtual examination of whatever they are buying and make alterations to the colours or shapes in order to see how much better or how much worse the product will be.

8. There are special things about virtual reality to keep in mind. First, it is a reality in that the impossible can be rendered possible, as for example walking through the inside of a small engine which would be impossible with the real thing. We therefore see what the inside looks like. We can enlarge and make out the details. We can thus know more about the design than we can from the actual product or from a full-scale model.

9. As with everything else involving computers the things we see or access depend on what we put in. The more details we put in the more we can learn from the computer simulation of the product or the function of the products. Obviously an understanding of design, materials and engineering involved is very important.

10. Much of the software for virtual reality is already available but it is still necessary to learn about the software and its capacity. Programming after that

will take a long time and will need quite a lot of work. Skills in this area are very important or the potential of the software cannot be fully exploited.

11. We therefore need to train a lot of people in the application of the software if not in the writing of the software itself. Fortunately the training required is less difficult as the software is getting more and more user-friendly.

12. Today there exists an impressive array of virtual reality applications in manufacturing, finance, education, medicine etc. But there is also a need for new, imaginative implementations due to the rapid changes in business and industry caused by the availability of computers and data. While the new technology can bring about progress and enhance the quality of life and the wealth of our society, it can also do a lot of damage.

13. The economic turmoil that we are experiencing today is a direct result of the application of virtual reality to business and in fact by making virtual business possible and real. Where before we have to deal in real money, goods and services, today none of these are really necessary. As a result there seems to be no limit to the amount of business that can be done and profits made. Unfortunately in the process real money, real jobs and real business can be very badly damaged. Currency trading is a very good example of how virtual money can be used for trading and considerable real profits or losses made.

14. In currency trading a trader can borrow millions of unit of any currency without actually taking or handling the money. Figures are changed on the computer screen to show that the money has been borrowed. The trader then sells the currency by recording the transaction on computers and this change appears on the screens of all the computers in the trading rooms of banks and currency traders. Likewise he can buy the currency without actually taking possession of it. Only the figures on the computer screen change to record the transaction.

15. Now, in the rule devised by the currency traders, the currency depreciates in value every time it is sold. In normal commodity trading the price remains so long as there is a willing buyer and willing seller. But currency traders dealing with virtual money are not constrained by the supply of the currency. Since it is possible to sell the currency repeatedly, the figures on the screens will change and the currency devalues to any level desired. In one case the currency went down by 600 percent i.e. it ceases to be money altogether. The trader can then buy the currency at the much-depreciated price and deliver, again via the computer to the buyers to whom he had previously sold at a higher price, pocketing a big profit. The money borrowed, which had never really been taken out of the bank, is now electronically returned to the bank and a fee or commission paid. Thus, vast sums of money can be borrowed, sold and bought without a single coin or note becoming involved. In other words, the money traded was virtual, not real. It is not surprising that in one day one trillion U.S. dollars are traded i.e. about 20 times the trade in goods and services worldwide.

16. The trading is in virtual money but the effect of devaluation is very real.

Today whole countries and regions are impoverished because of currency trading, in some cases by 400 percent. Banks, businesses are bankrupted, millions of workers thrown out of jobs, high inflation results in people not being able to buy food or medicine and a host of catastrophes befall people, real people, not virtual people. To import goods or services with currency that has fallen by 400 percent requires four times the amount of local currency compared to before the devaluation. How is an importer, how is a country going to find four times the amount of money when the economy has gone into recession, consumers have no money to spend and all economic activities which can generate profits grind to a halt?

17. The point that is to be made here is that virtual reality, as with everything else conceived or invented by Man, can benefit humankind or can damage it. Whether it does one or the other depends on the users i.e. the individual society or the state. There is a tendency for people to be carried away by new skills and powers that they develop. Man is by nature schizophrenic. He is both good and bad. The struggle between good and bad goes on all the time in Man and in the society he creates. In this struggle there is an ebb and flow that is comparable with that of tidewater. When an idea catches on, the tendency is for it not only to spread but to widen i.e. to expand in terms of interpretation, scope and application. In the process the original objective and principle may become very thin, very vague and may actually deviate from the original. And so it can be with virtual reality. Instead of constructive things virtual reality may and can result in destructive or morally unacceptable products. Thus the Internet for example is the greatest instrument for direct communication of the truth, free of Government or non- Government censorship and distortions. But it is clear that the Internet too can be a medium for untruth, and for a variety of rather unacceptable activities. The solution does not lie in technology. It lies in the return to good ethics and values. It is worthwhile to ponder over this even as we rave over the wonder of virtual reality.

18. I wish to congratulate UNIMAS and all co-organisers for taking this very bold and brave initiative in organising this seminar and workshop that can directly and indirectly give birth to solutions for macroeconomic improvements. Although UNIMAS is a relatively young university, it has the potential to explore new vistas through innovations and collaborations with international institutions, such as Fraunhofer IAO, Germany; University of Nottingham, UK, and Linköping University, Sweden. Virtual reality projects have made headway in these internationally-renowned institutions.

19. The establishment of the UNIMAS Reality Centre in Technology Park Malaysia is to support R&D in virtual reality. It is indeed a timely move. To make it a reality, investments in the centre are very much needed. I therefore call upon organisations and industries, local and foreign, to collaborate and form a consortium. I believe the workshop tomorrow will discuss some of the projects that can be initiated on a collaborative basis to identify the niche areas of virtual reality application. I hope in the near future there will be an equivalent of the worldwide manufacturing web -- that is a "web" of virtual reality centres and

laboratories Malaysia-wide that will be part of a National Virtual Reality Centre.

20. I hope this seminar and workshop will inspire many organisations in Malaysia to consider the applications of virtual reality in their business and industry. Virtual reality has a very important message, which is essential to the improvement of our economy and society. Clearly, R&D initiatives are greatly needed in order to propel our economy onto a higher stage of development. This seminar/workshop provides a platform for international exchange of knowledge and practical experiences that can enhance R&D efforts.

21. On this note I hereby declare open VR ' 98 Seminar and Workshop on Virtual Reality.