

## **“Paradigms and Paradoxes”**

**R. C. Heterick, Jr., President and CEO of EDUCOM**

**Tues., October 21, 4:30-5:30 p.m. in Donaldson Brown Auditorium**

*Virginia Tech's Information Systems, Computer Science Department, and Office of University Development are pleased to present Dr. Heterick who will address the topic of "Paradigms and Paradoxes." EDUCOM, located in Washington, D.C., is a consortium of 600 higher education institutions and 100 Corporate Associates dedicated to transforming education through the use of information technology. The consortium assumes a national advocacy role on behalf of its members in encouraging the expansion of national networking, the availability of scholarly materials on the network, and the infusion of information technology into teaching and learning.*

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### **ABSTRACT**

For half a millennium our society has been organized around a print paradigm. The development of movable type had the effect of democratizing information by creating an economical way for the average citizen to acquire information. In the last decade or two a new alternative to the print paradigm has been forming. This new paradigm is based on the confluence of a whole series of digital technologies. The new digital paradigm seems likely to subsume the old paper paradigm.

Chief among the reasons for believing in a new digital paradigm is the phenomena of exponentially decreasing costs and exponentially increasing capability of the digital technologies. Each new generation of these technologies shortens the time-to-market and increases the leverage afforded by their use. One of the paradoxes accompanying early adoption of these technologies is failure to recognize that they require that we change the way we do business. Early adopters saw the technology as a way to cut costs of doing business the "old" way. It doesn't require many new generations of the technology to realize that using it as a substitute for the "old" way misses the fundamental nature of the paradigm shift and requires us to engage in "reengineering" to fully capture the potential of the technology.

The computer and communications technologies have been characterized by very rapid diffusion rates. In fact, it seems safe to observe that whatever the technological merits of a particular innovation, if it doesn't demonstrate rapid diffusion and acceptance it is most unlikely to ever capture a meaningful market share. Digital technologies that are disintermediated will experience much more rapid diffusion rates.

The agriculture revolution provided humankind with a leverage of about 100. During the agriculture revolution the driving force of society was human labor and the measure of wealth was land. The industrial revolution provided a leverage of about 1000. The driving force of society was capital and the measure of wealth was artifacts--refrigerators, autos, etc. The information revolution provides a leverage of over one million in computing and an additional million in communications. This billion-fold leverage will change society in ways far more dramatic than either the agriculture or industrial revolutions. During the information revolution knowledge will be the driving force of society and access (to that knowledge) will be the measure of wealth.