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A BOOK ON TECHNOLOGY

Technology: the double-edged sword

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The role of technology in the process of change towards democratisation—is the focus of Sam Pitroda's book *Exploding Freedom: Roots in Technology*. In the title, Pitroda refers to the freedom experienced during the change from a socialist system to a democratic system of functioning. In all his analysis, Pitroda views technology as the most potent tool in this process of democratisation.

The author, Sam Pitroda is undoubtedly a technocrat of national and international repute. After spending the prime of his career in the USA, he returned to India to focus his attention on technology issues in general and telecom development in particular. On the later, Pitroda established the Center for Development of Telematics (C-DOT), which is closely associated with him and regarded as his brainchild. Subsequently, he was appointed Advisor to the Prime Minister on National Technology Missions related to water, immunization, literacy, oilseeds and telecom. Presently, he continues as the Advisor to the Prime Minister and also chairs the Centre for Development of Advanced Computing (C-DAC). Given such a wealth of experience, both Indian and overseas, it is quite obvious that there are few people more qualified than Sam Pitroda to put forth the ideas spelling out the importance of technology through a full-fledged book.

He starts by addressing World War II and the post-war reconstruction. Since it was the atomic bombs dropped on Hiroshima and Nagasaki in Japan that ended the war, it was technology that had to intervene to end this long-drawn world conflict, he says. In a certain sense, technology had come to the rescue of mankind and put an end to further killing. But in the process the destructive power of the atomic bomb

was discovered. This awesome destruction should have been enough to put man permanently off technology, but it was soon discovered that technology was required to rebuild from the ruins of the war. During the reconstruction phase the roots in technology were particularly pronounced since both the positive and negative impacts of technology manifested themselves.

Pitroda also notes that the end of the war also gave rise to political conflicts. All through the Cold War years, capitalistic countries raced ahead economically leaving far behind the socialist countries in what was undoubtedly a technology-driven economic growth. Pitroda claims that it was technology, specifically media communication, that made it possible for the socialist countries to realise the success of the capitalistic countries. Through constant exposure to the affluence of the western developed nations these countries realized the extent to which they were lagging behind. In fact Pitroda claims that this was the genesis of Perestroika, the next topic of deliberation.

From the contents of the book, it is quite clear that Pitroda is an ardent admirer of Gorbachov for this statesmanship. In a separate chapter, Pitroda describes the exploding freedom—Perestroika—which has brought in a new era not only for the former Soviet Union but for the whole world—once again its roots were in technology.

With the democratization or the explosion of freedom in the former East Bloc Pitroda moves onto describing the new challenges that have to be faced. Democratization has brought about a change and coping with it through changed management is itself a major challenge.

Pitroda emphasises that economic restructuring

by itself will be insufficient. Taking the example of the former Soviet Union, Pitroda builds a case for the need for both economic restructuring combined with political and administrative reforms to ensure an effective transition to the successful development model similar to that followed in the West. In the light of the problems the former Soviet Union is facing, one may wonder how successful the transition has been. Once again one may wonder whether Pitroda is correct with regard to making a

when it was introduced.

Mobilization of resources both internal and external is yet another is yet another challenge. External resources include technology and financial support from the developed world so that the countries which had a socialist system could catch up with the Western world. This needs to be combined with generating and harnessing human resources within the

Electronics and biotechnology are futuristic technologies. Electronics has established a large industrial base while biotechnology which is still upcoming will have a critical role to play.

complete shift to a capitalistic system a necessary condition for proper economic development. After all China the rate at which in currently advancing and continuing with the socialist system may end up being a superpower by 2025 AD as many predict.

For manufacturing industries, Pitroda suggests improved information tools such as Computer Aided Design (CAD) and improved management information systems. Just as one begins doubting the efficacy of this statement in the context of a labour-rich country, Pitroda illustrates the example—though not from the manufacturing industry—of the computerisation of the railway reservation in India, which has undoubtedly been a success and which was quite sternly opposed by labour unions

socialist countries.

With regard to the developing nations, Pitroda warns that these nations are likely to be marginalised if they are unable to respond effectively to the demands of globalization which results out of a global democratization. Pitroda stresses that it is in the interest of the developed countries to give sufficient attention to the developing countries otherwise the whole concept of globalization will suffer a setback.

In a rather hopeful exclusive chapter *New World: The hope*, Pitroda predicts rather optimistically the emergence of a new social order and political systems driven by developments in technology. He also visu-