

Role of Ethics in Technological Innovation, for deriving Societal and Economic Values

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At a time when technology is shifting and changing with kaleidoscopic swiftness, survival of businesses largely depends on their inevitable ability to adopt technology. The implications are several. In order to explore these implications, it is necessary to define certain key terms within the framework of language.

Technology can be defined as applied science. It is the application of scientific knowledge for practical purposes. Innovation is defined as the process of finding creative solutions for critical problems in products or services. Innovation is different from discovery. A discovery can be casual as in the case of the discovery of Penicillin. Alexander Fleming accidentally found the bacteria dead in his Petri dish and he realized that it was the presence of Penicillium fungi that caused it. This discovery led to a technology leap in the control of deadly diseases. On the other hand, James Watson and Francis Crick

found DNA as a result of their purposeful search, employing many different and novel methods for their research process. The identification of DNA is innovation, which can be termed as “purposeful discovery”. It can be noticed that both Penicillin and DNA have contributed to technology with real-life applications in diverse fields like medicine, agriculture, animal husbandry and crime detection.

Innovation is, therefore, purposeful discovery. The significant factor in innovation is the purposeful application of human ‘mind’ and the existence of an overall direction and end purpose. The whole dynamics of the process of innovation change when the human mind is involved. This is because the “quality” of the end-purpose and orientation of the mind of those who promote the innovation largely influence the outcome of their endeavors. This can be illustrated by two examples.

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Two Examples

Amul is an extremely popular brand of milk and milk products produced in Anand in Gujarat, India (<http://www.amul.com/>). According to the US Department of Agriculture's report (2011), with 121.5 million metric ton production, India is the largest producer of milk and milk products in the world today. Started in the year 1946, today three million milk producers in Gujarat jointly own Amul. It is a shining example of technological innovation reaping societal as well as economic benefits. The formation of Amul was in response to the exploitation of the marginal milk producers by the traders and agents of

Polson Dairy - the only existing dairy at that time, which was supplying milk to the city of Mumbai. Polson Dairy was holding the monopoly for this. Milk producers had to travel long distances to deliver their produces, and often, by the time they reach the milk collection point, their milk would have turned sour in summer. Further, the agents and traders arbitrarily fixed the prices of buffalo and cow milk.

Under the advice of the visionary leader Sardar Vallabhai Patel, the villagers formed "Kaira District Co-operative Milk Producers union Ltd" in 1946 and started supplying milk directly to the city of Mumbai. Co-operative societies were soon formed in all villages, in Gujarat, bringing all milk producers together. Collective leadership of three remarkable men, Dr. Varughese Kurian, HM Dayala, TK Patel, took Amul to

unprecedented success. Dayala's innovation of making skimmed milk powder out of Buffalo milk was a world-first. Dr. Kurian converted the innovation to commercial scale of production. Amul spurred India's white revolution. Amul's reported revenue for the year 2012-13 was US\$ 2.15 billion. They have 30 milk processing plants in the state of Gujarat. Amul's "Mother Dairy" in Gandhinagar, Gujarat, India, is Asia's largest state of the art milk processing plant, with a capacity to process 3.0 million liters of milk and 160 tons of milk powder every day. In June 2013, Amul announced their initiative to set up their first overseas dairy plant in the Waterloo village, near New York city. Undoubtedly, Amul is a splendid example to illustrate how technological innovation can lead to societal and economic values.

Indian Premier League (IPL) cricket championship is one of the world's largest sporting events today (<http://www.iplt20.com>). Inaugurated hardly five years ago in 2008, IPL is currently considered as the world's richest showcase-cricket-match, where top Indian and International players are into the team through auction. Rich and powerful individuals largely own the teams. The brand value of IPL cricket championship, at its 6th season in 2013 April, was pegged at US\$ 3.03 billion. The innovative use of the power of technology was indeed high in IPL matches. IPL became the first sporting event, in 2010, to be broadcast live on YouTube. The IPL Championship's title rights for 2012 season have gone to Pepsi at US\$ 66 million.

According to reports available in the public domain, the amount of player's contract salaries totaled up to around US\$ 12 million in the last season. The original franchise cost for the 9 teams totaled to US\$ 1.2 billion, according to reports. Besides, there are other benefits for the players. Players are entitled to business-class travel, five-star hotel stay, and a \$100 daily allowance. The team owner picks up the service-tax liability, and in the case of foreign players, the team owner contributes 10% of the player's salary to their national cricket boards. For the first 5 years until 2012, DLF Limited (Delhi Land & Finance) sponsored the IPL after paying a sponsorship fee of US\$50 million. The next 5-year sponsorship contract has gone to Pepsi for a fee of US\$ 66 million. In 2008, Sony paid US\$1 billion for the broadcasting rights for the following 10 years. These economics tell the tale of IPL's enormous economic success, hitherto unmatched in the history of sporting events. However, has it contributed to societal values, beyond the point of just being a sporting entertainment? Today, IPL is plagued with controversies of "match fixing" scandals between players and bookies, "alleged acts of independent misdemeanors" amongst the IPL's officialdom, increasing underworld influences for various profiteering ventures and so on and so forth. Consequently, the sport-fans and spectators are taken for a ride. These allegations and controversies rage in spite of having apparently strict rules and regulations remaining in IPL. The

entire gamut of technological possibilities is utilized to the maximum in order to make IPL a successful sports-business model. This is a shining example illustrating that the technological innovation can be engineered to bring economic values but not necessarily bring societal values.

Mental Orientation and Ethics

It can be seen that, essentially, human mind can be aligned only in one of the two fundamental orientations, based on the intention of all human endeavors. An action can either be accomplished in the service of oneself or in the service of others. Actions carried out in the service of oneself can be termed as "service-to-self" (STS) and actions carried out in the service of others can be termed as "service-to-others" (STO). Ultimately, all actions reflect the STS/STO attitude of the actor. Without any value judgment of the STO/STS actions, from its cause and effect dynamics alone, it can be seen that societal values are substantially derived from STO actions.

STS actions will, undoubtedly, result in a more stable and adaptable individual or entity. STS actions are the default, instinctual, survivalistic, and automated response, noticeable in the animal kingdom. However, cohesiveness, harmony, and greater societal stability arise from STO actions. A stable and harmonious society is vital to humanity. This principle is demonstrably visible in the way the human physical body is organized.

Human body is a harmonious collection of 50 to 60 trillion cells. There are 260 different types of cells, discharging different functions in the service of the entity called “whole body”. The morphology of these 260 different cells is suited to do just those different functions for the highest good of the whole organism. Each of these cells has its own independent functional abilities, just as the whole organism has its overall wholesome functional abilities. Each of its cells too has its own independent digestive system, excretory system, reproductive system and so on and so forth. However, all cellular functions are oriented towards the welfare of the whole organism. If any of these cells start using its own independent digestive system, reproductive system etcetera, then that condition is called “cancer”, which eventually leads to the destruction of the organism. While the cells take care of themselves, all their functions are holistically oriented towards the greater benefit of the organism. Any shift in this perfect harmonious balance will result in the eventual death of the organism. This is an inspiring example of harmony instituted by the STS-STO balance.

Ethics is nothing but the STS-STO balance. The STS actions should never be in conflict with the similar actions of others and vice versa. This means an overriding STO orientation is the key to the survival of the entity. STS actions without consideration to the overall welfare, as well as STO orientation are suicidal. Business units are no different from these examples.

Business Ethics and Societal Values

Business units are akin to the specialized cells in the human body. Specialized cells form specialized tissues, which in turn form specialized organs serving the whole body. Cells have no existence without the whole body. Similarly, the businesses serve the society. Businesses have no existence without the society it is serving. At every level of its organization, be it at the employee level or employer level or customer interaction level, a healthy STS-STO orientation is of paramount importance. These are like self-repeating fractal designs. One is there within the other. The other is there within the one. Part is there in the whole, and the whole is there in the part. Businesses exist in societies. Employers, employees, and customers exist within the context of the businesses, whereas a society is comprised of all of them.

The first step towards realizing ethics in business is to become consciously aware of the STS-STO parameters in guiding all endeavors at all levels of employee-employer-customer-societal interactions. This is the essence of business ethics.

Without diligent and conscious application of business ethics, there is no real technological innovation, and there is no real economic value in technological innovation. Consequently, there will be absolutely no societal value either in the whole process.