Shani & Mangal of futurology

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BROADLY SPEAKING, futurology is an exercise in making predictions of the future states of a society, given its present condition and past history. As such it is an interdisciplinary exercise involving the arts, the sciences and technology, social conditions, and many other parameters that characterise the culture of a society. Briefly, one can say that futurology tries to answer the question that many of us ask at some time or the other: Here we are, this is how we have been; now where are we headed?

This exercise is becoming more and more difficult since the parameters specifying science and technology are changing rapidly. So whatever judgment we make today is liable to be falsified in the not too distant future. Besides, the history of past predictions is there to warn us of the fallibility of what we are convinced about today. Let us take a look at some of the expert assessments that went wrong in the past.

Take the prediction of Thomas Alva Edison, the well-known inventor, on the emerging role of alternating currents. In 1889, Edison said: "I have always consistently opposed high-tension and alternating systems of electric lighting, not only on account of danger, but because of their general unreliability and unsuitability for any general system of distribution".

A public prosecutor, bringing Lee DeForest, the inventor of the audion tube to trial on charges of fraudulently using US mail to sell the public stock in his radio telephone company, said: "DeForest has said in many newspapers and over his signature that it would be possible to transmit human voice across the Atlantic before many years. Based on these absurd and deliberately misleading statements, the misguided public... has been persuaded to purchase stock in his company".

And then we have the comment of Admiral Leahy to US President Truman when the atomic bomb was to be made: "That is the biggest fool thing we have ever done. The bomb will never go off, and I speak as an expert in explosives".

Many would agree with the first sentence of the admiral but for a different reason. Not because the bomb, in the view of conventional explosive expert, was not expected to work as it was based on entirely new technology, but because it worked too efficiently and too effectively. This is characteristic of the way science and technology have exceeded the forecasts made about their achievements.

The electronics computer is another case in point. As an undergraduate at Cambridge in the late 1950s, I was a user of the EDSAC which represented one of the pioneering computers in the world. It used space equivalent to a big hall and inputs were fed to this behemoth by punched paper tape. So there was little scope to correct any programming mistakes. But its capacity to store and speed of work were considered far higher than what the manually-operated desktop machines could manage. In the spectacular advances over the past five decades the computer has shrunk but has grown faster and far more efficient as a store of information. A palm-top computer today can far outperform the EDSAC.

Nobody in the 1950s could have predicted such a spectacular achievement. But this is not an exceptional example. In space, atomic energy, medicine and surgery, and so many other fields futurology has fallen short of what actually happened. And this has led skeptics to question the "worthwhileness" of the whole exercise.

Rather than attempt and fail, is it better not to attempt at all? Hardly so! Despite its limitations futurology has its advantages. The predictions are made on the basis of the information available at present. This information is useful in short- and long-term planning without which the society in question will drift with no specific direction. Likewise, even though long-term prediction may go wrong, there usually exists a provision for mid-course correction.

Take the evolution of the age-old library system. Traditionally the library is a storehouse of volumes, books as well as periodicals. It became clear over the last century that the print content was growing rapidly and most libraries faced the so-called "space crunch". When it became more and more difficult to accommodate each and every book or to store the growing number of journals and periodicals, what could the librarian do? One method available to him/her today is to scan and digitise books whose contents are worth preserving. The computerised files will occupy negligible space and the book can be reproduced and printed if necessary.

In this connection the famous Cambridge mathematician G.H. Hardy has described an account in his book *A Mathematician's Apology*. The episode relates to a nightmare that the famous philosopher Bertrand Russell had. Russell dreamt that the year was 2100 AD and he was on the top floor of the Cambridge University Library, watching a member of the library staff sort out the books. As the Cambridge library is one of the select copyright libraries that receives a copy of every book published, its storage problem would naturally be acute. So the librarian was trying to select the books he considered worth keeping. Russell saw the staff member pick, look and discard in a bucket a number of well-known books, retaining only a few on the library shelf. Then he came to Russell's own magnum opus, the *Principia Mathematica*. Russell watched with bated breath as the library assistant picked up the book and started scrutinising it. Would he consign it to the short-listed few on the shelf or will it go down into the bucket of rejects? That was when the nightmare ended and he woke up sweating, not knowing what finally happened.

Well, he need not have worried in the present days of digital storage.

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