

The Impact of Space Activities upon Society



I believe that space activities are impacting society through...

..., three distinct ways – each of which provides a different, though continuous, viewpoint that is stimulating the imagination and interest of the public at large and providing it with a new impetus to learn more.

Firstly, let us take science fiction – a genre full of rich ideas as well as images. Science-fiction literature, artwork and films, are full of descriptions of space technologies and systems – often just pure imagination, sometimes based on some semblance of fact. Early science-fiction authors, artists, and illustrators described space concepts and spacecraft based on the limited scientific knowledge available at the time, whereas more modern writers generally portray the same basic systems as used in real life spaceflight in their literature and art, even though artistic licence is often employed. But the fantastic cover art of SF magazines and books, and the stories themselves, have, over the years, produced a certain yearning and thirst for more knowledge about space. The SF films currently being produced are piquing the curiosity, excitement, even fear, of millions of people and are raising the expectations of what might be found in space. Such films enable people to become aware of the possibilities of, say, settlements on other planets or asteroid strikes on the Earth (something that will affect their lives directly), and thus they not only prepare the public for such eventualities, but also give them a more urgent and personal interest in space and its exploration.

Secondly, there have always been explorers and pioneers – it is a basic instinct – from animals in search of new pastures and prehistoric man who crossed continental divides in pursuit of food and to find new places to live, to people in our own times who have sailed the oceans and traversed the land in search of adventure. Where would we be today without the great explorers of the past? We have an in-built need to explore new places – especially the tiny pinpricks of stars in the night sky – simply because they are there and we are curious.

Besides being curious, people are also, for the most part, inherently superstitious – and so are awed by natural phenomena in the heavens – auroras, rainbows, eclipses, meteor showers, the spectacular Milky Way. Good press, television and web coverage is now enabling people to participate in rare events like the transit of Venus or red sprites and share the noise and risks of launch vehicles blasting into space – including those heralding a new era of space tourism. Pictures of the Earth from space, stunning real-life images from the surfaces of other planets, the discovery of ice or water, all create a climate of wonder and fascination in the public. Who has not been excited by the sight of a satellite moving against the stars, or been amazed at seeing Mir or the International Space Station going overhead and realizing that men were actually inside the orbiting spacecraft. Or to gaze at the Moon and know that men had walked on its surface. The pride shown by the general public in elements of its country's space endeavours (e.g. Apollo or even Beagle 2) show that society is becoming more accepting of space programmes, more

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aware of the exploration of space, and increasingly interested in the possibilities that life in some form or other may eventually be found out there.

Thirdly, on the other hand, although the general public is aware that space ventures are exceedingly expensive, they are becoming increasingly informed, through proactive space technology-transfer programmes, of the economic, social and medical benefits that can result from space research and development. Innovative adaptations of space technologies, transferred to Earth applications, are enhancing the quality of life for many, bringing economic benefits to society, and contributing to industrial competitiveness. The continuous striving to find new opportunities and markets for space-based technologies, which eases the burden imposed on public resources by adapting technologies developed for one sector for use in another, is having a three-fold effect.

First, there is the creation of a growing awareness of space agencies and their space activities in the eyes of the public due to the very nature of technology-transfer applications. Examples are the visibility of ESA in sporting events such as the 24 Hours at Le Mans endurance race, the Dakar Rally, or the America's Cup yacht race, etc., whereby ESA's name is seen by millions worldwide; and increasing involvement in the world of fashion and luxury goods. Second, there is a growing sense that space agencies can help to provide solutions to problems that, while important to only certain segments of society, nevertheless provide a degree of hope in facing

adversity. Examples, taken from ESA, are the creation of a special UV bodysuit for sufferers of Xeroderma Pigmentosum; a needleless injection system to overcome fear of injections and to avoid contamination; and the development of a system to detect landmines. Third, by proactive lateral thinking, new applications and hence markets are being discovered for products from space companies at the outset. Such an approach: maximizes the return on investment in space activities; minimizes duplication of R&D and opens the door for dual-use; provides new opportunities for collaboration; and moves research (particularly from universities) to the marketplace more quickly. This in turn provides an incentive for the space industry to become more competitive and efficient and enables companies (both space-technology donors, as well as technology receivers) to increase their turnover. Furthermore, by fostering young entrepreneurs, opportunities can be provided for the creation of new and innovative products and services based on space technologies, thus stimulating the growth of start-up companies as well as contributing to the well-being of society.

In conclusion, space activities, as adumbrated by science fiction, space exploration and space spin-offs, are having a definite impact on society because they are bringing home to it in a very public manner the enormous opportunities which are within its grasp.