NEW PARADIGMS IN SCIENCE AND TECHNOLOGY

In the last four decades, coinciding with the existence of *Interciencia*, the concepts regarding the development of science and technology and its role in the advancement of society have gone through important changes. The linear reasoning that predominated for a rather long time, implying that scientific research leads to technological development and the latter, in turn, results in industrial development, power and richness, has been giving way to a realistic vision in which a rather more complex set of events and actors is integrated.

The changes began with the understanding that the development of science and technology, and therefore the eventual appearance of its positive and negative consequences for society, depended on the interaction of three motor and/or executing factors: research, government and industry. Later, the notion of innovation was incorporated, considered as the capacity to apply and obtain benefits from the advances of science and technology, instrumented by the technological innovator as such and by the industrial or commercial entrepreneur, or a mixture of both. Innovation has almost come to be a synonym of progress. In the current issue of *Interciencia* an essay is published where the authors make an effort to synthesize the multiple factors that currently intervene in the dynamics of innovation based on science and technology.

In the model included in the aforementioned essay new factors are considered. They were present since the beginnings but are now highly visible, having acquired a role of great relevance in recent times. The notion of collective or social responsibility has been incorporated, carried out by all the actors that in one way or another intervene in the dynamics of innovation. Civil society is also placed in a visible position. As final beneficiaries or victims of the advancements achieved by science and technology and their implementation, it becomes obvious that the perception that citizens reach concerning these advances must affect, an indeed it does, the acceptance or rejection by society. Consequently, it affects the financing, the legislation, the licensing and the utilization of the new products and services that derive from science and technology. Furthermore, an ever growing citizen participation leads to the fact that such perceptions by the common women and men result in a public opinion that modulates the activity of those responsible for the implementation and vigilance of the corresponding usage regulation.

The involvement of citizens, in turn, brings to a much more notorious level many ethical and environmental considerations that were restricted in the past to the sphere of specialists. Currently, these considerations constitute a part of the thinking of that citizenship that is ever more participative and whose most notorious sources of information, through the media, are the science journalists. The role played by the latter in the molding of public opinion is of such a great relevance that the referred model places them, together with the non-governmental organizations, in an important position as opinion builders within the civil society.

The results and advances achieved through research activities remain a germinal factor and a determinant motor of progress. The work of the scientist, however, is ever more influenced by the demand, which was conceived before as originating in the industry and the wealth producing sector, but is no more exclusive of them. It is now a demand that originates from a more plural and participative society, much better informed and that influences with a lot more strength and determination in public affairs, among which is science and technology.

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