

## **The public broadcasters for dissemination of science and technology**

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### **Abstract**

The issue of public communication of Science and Technology has been given its due importance in the Brazil's scientific associations as well as in the actions taken by the Federal Government. As part of these actions, official government agencies, which give support to science and technology, have created opportunities for projects to be presented. Brazilian scientists need to ensure that society in general realizes the importance of scientific research and its impact in the lives of people. This article discusses the need for scientific societies to invest in the development of programs which disseminate science and technology through public television broadcasters, and raises awareness of the opportunity derived from the implementation of Digital TV of occupying more and more space in the country's existing programs.

### **Introduction**

The implementation of the Digital TV in Brazil [1] may be the right moment for the scientific community to intensify its actions using television as a more efficient alternative to popularizing science. Together with the internet, including the connection

which exists between them (Interactivity) [1], the Digital TV is in itself an astonishing result of scientific and technological development and could become and even more accessible option than the conventional television has been up to now. The reasons for this will be included in the discussions in this article.

The potential reach of the digital television system has not been thoroughly outlined yet, and the full scope of possibilities from interacting with the internet in the future is still to be perceived. The challenge is not only the use of the technical resources that will become available with this interaction but, above all, attracting an audience who will appreciate the programs on offer, exploiting the resources this new system will offer, especially regarding the dialogue with the viewer. We anticipate that the public will be able to produce the programs they want to watch, making the relationship between the two much more sophisticated or, in other words, demand much more insight from the media professionals to be able to attract their audience.

### **The Digital Era**

Brazil is a country that absorbs new technology very quickly. Once the bureaucratic obstacles are over, the Digital TV (or Digital System) will probably be rapidly implemented, even in greater proportions than has happened with other systems. This was true with the introduction of the DVDs and the expansion of cell phones, despite their lack of quality and being more costly than in other countries.

For the Digital TV, Brazilian researchers have already developed the `GINGA` (Middleware), a software located in the convertors and digital televisions where interactive applications are executed. The `GINGA` consists of operations executed in languages offered by the programs and in the library of functions which allow for the quick and easy development of applications for the digital system.

The term `GINGA`, comes from the word “capoeira” which reproduces certain Brazilian customs in the way of walking, talking, and relating to others. The `GINGA` is already designed for the Brazilian digital system, which is a composition of the Japanese one [3].

Another reason for Brazilians to quickly adapt to the new system is the fast proliferation of the concession of private broadcasting services as well as public ones since the Digital TV frequency BANDA is already well defined. Even though there has

been an accelerated use of Digital TV, the Brazilian bureaucracy is very slow in the implementation of legal processes. This will undoubtedly delay the deadline of 2016, for the complete national change of the new system. From a technical point of view, the frequency wave defined for a digital channel might be subdivided in several formats. For example, a broadcasting company may choose to have one high definition channel (HD) and two more channels in DVD [3].

As such, the university broadcasting service may choose to offer an HD channel for the general public and two other channels for long distance education (EAD), or services for activities from inside the university (intracampus). In other words, the diversification allows for different potentials.

However, these potentials introduce a new problem; it generates the need to create new programming grids for all the channels, new productions, such as news reports, documentaries, information and so forth. Presently, since there are few channels using the digital system the production of material is small. For this reason films, programs and series are frequently repeated on cable television.

### **The diffusion of Science and Technology in the digital system**

If we consider the above, it is possible to reflect on the opportunities brought by the implementation of the digital television system in Brazil in terms of expanding activities leading to the diffusion and popularization of Science and Technology in television. In other words, to produce programs that can be shown in the public broadcasting companies. The theme, science and technology, is not a priority in private broadcasting systems, but for the public ones, the theme will be better accepted. To show cultural and scientific programs will enhance the objectives of these companies.

At the present moment, the major scientific societies of the country, especially the Sociedade Brasileira para o Progresso da Ciência - SBPC and the Academia Brasileira de Ciências - ABC, together with the Federal Government, senators and representatives, have done a great job in contributing with discussions of the projects which are being reviewed by the National Congress and which may result in laws. Many of these projects involve themes of scientific nature, thus, it is important that the scientists' concerns be introduced in these discussions. On the other hand, it is not easy for scientists to debate with government officials and administrators. Arguments and scientific evidence lose

force before the National Congress. Scientists do not have easy access to television, radio or the press. What happens in the scientific world does not reach the population. What do reach them are the opinions of politicians and government officials.

The population must be better informed about the influence science and technology can make in the decisions that are made which will make a difference in their lives. It is imperative to intensify the actions which promote science and technology. This also includes actions being discussed in the National Congress which, if approved, will become public policies.

In order to illustrate our concerns, we would like to highlight certain points which were discussed in the National Congress and which were turned into laws. The discussion about what is being done with our forests received much effort from the scientists to make people aware of the harmful consequences to the environment. Several meetings occurred in the House of Representatives and Senate. The project which was approved was one that pleased the armed forces much more because of their ideology in relation to the landowners and the defenders of the rural workers (MST). The final document included aspects which satisfied these, but none of the scientist's concerns regarding the forests and climate change.

For the population in general, the participation of the scientific community never existed, simply because there was no space in the general media for scientists to express themselves and show the population their concerns.

Another interesting example, which had a different effect, was the discussion about stem cells research. In this case, the scientific community had more access to television. Nevertheless, before the scientific proposal was accepted, there was a concern that it might not be, because the judge who would finally make the decision had a very religious profile, so there was a doubt whether he would give in to his beliefs or to science. The fact that the media was interested in this discussion put the scientific community in evidence. People with special needs were used on television as a means for softening the judge's opinion.

Other examples which are worth mentioning were discussions on GM Foods (Genetically Modified Foods) and the petrol royalties of the pre-salt layer. In both of these cases the scientific communities had very little opportunity to express their opinion

on the matter. In the first case, it was the rural workers organization (MST) against the food and fertilizing industries which had their say. In the second example, the discussion was concentrated on the opposition between the Federal and State Governments. Even though the scientists were claiming the royalties for health and educational programs, they were not heard. However, the final result of this discussion was positive since the Federal Government, coincidentally, had the same opinion as the scientists.

The examples given above emphasize the vulnerability of the scientific communities in order to defend their ideas publicly and show the population how these discussions affect their lives directly. It is impossible for these communities to show their concerns at the time the discussions are being held because they have no access to the means of mass communication.

It is for that matter that we propose the need for scientific communities to be permanently present in the lives of the population, using the media, especially the television and the production of materials, enabling scientists to have a more active communication channel. The challenge is to expand the scientific dissemination through the use of television, especially now, when public broadcasting companies are being created:

- *The need to convince the Academy of Science of the importance of television as a tool for the awareness of the population on national debates which deal with themes that directly concern them.*

It is important that the Brazilian population hear from the scientists what arguments are being discussed. If they are able to produce documentaries then the population will hear scientific arguments and explanations. The correct message will then be conveyed by the Science Society and not by interlocutors. On the other hand, researchers must realize their roles in public communication of science and in using accessible language possible to be understood by all.

- *the need to prepare more specialists in science journalism and communicating science.*

There are still few courses that specialize in scientific information. This is probably due to the small demand by both the general media and in scientific production,

such as magazines. In other words, scientific journalism in Brazil is a field in need of further exploration.

*- create tools to attract the population towards public TV.*

This is an important and difficult role to be achieved because the population is connected to social networks. They watch television and surf on the web at the same time. If the public broadcasting companies make the connection between the two, they will be able to attract the attention of the population that expresses themselves more critically and has more influence. So, why should scientists have to worry about this? The reason would be that the population can influence the decisions made by the National Congress such as, reducing funds or even stopping certain researches indefinitely. These are some of the aspects which raise concern and give reason for the investment of making science more popular. We are not saying that the scientist should not concentrate on his or her research and take on the role of a journalist but he should create opportunities for his work to become known so the population can understand that his research may influence their lives and so, they can form an opinion at times when their support is crucial.

With these elements, we have to analyze the offers that the television gives us. Even though the social networks have shown us their power of convincing and mobilizing, it is the television that is still the broader vehicle of information and where problems are expressed in a more determining way. This is the main reason why the dissemination of science should be given special attention by scientists.

### **Bibliography**

Official site of Digital TV in Brazil, <http://www.dtv.org.br/> [data of access in 02<sup>Th</sup> February, (2014)].

Official site of Ginga, <http://www.ginga.org.br/pt-br/sobre> [data of access in 02<sup>Th</sup> February, (2014)].

Proliferation of broadcasting companies 5 – the division of the band in sub channels.

Bucci, Eugênio (2010), “É possível fazer televisão pública no Brasil?”, *Novos Estudos – CEBRAP*, *version* ISSN 0101-3300 . no.88 São Paulo Dec. Available at: <http://dx.doi.org/10.1590/S0101-33002010000300001>[date of access, 03<sup>Th</sup> February.]