

Innovations contests and the role of public agencies in the USA: an institutional approach

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The economic literature on Intellectual Property and more especially on patents has been expanded since several decades, as consequence of the vertiginous growth of the number of patents all over the world (See for instance, Boldrin et Levine, 2013). If patents illustrate an ancient innovation incentive mechanism, other institutional arrangements have coexisted with IP throughout the centuries. Several historical works put in light the role of procurement contracts and innovation contests in the emergence of major innovations, especially in the 19 century (David 1993).

An innovation contest or a prize can be defined as "*challenge by one party (a seeker) to a third party or parties (a solver) to identify a solution to a particular problem or reward contestants for accomplishing a particular goal*" (Challenge.Gov). The winner of this competition receives a prize which may be monetary or non monetary.

Since the 90s, one can observe a growth of innovation contests, especially in the US, through the sponsorship of private but also public organizations such as federal agencies.

The aim of this article is to highlight and analyze the origin of this renewed interest of the US federal state for the prize. Firstly, if the standard economic scholars consider a contest as an alternative tool to a patent, this approach cannot explain in a satisfactory way the involvement of the US federal agencies in the prizes. Relying on an institutional approach, and especially Innovation System's approach, we show that prizes are not comparable to patents, because they vary in nature, and display both common and different properties *vis à vis* patents. In order to identify the properties of prizes, we rely on US *grand* challenges that have been studied in the literature and on the various reports and documents published by the administration of president Obama. Secondly, we explain that the nature and properties of prizes, allow federal agencies to launch prizes that combine technological, environment and society challenges, in order to guide innovations toward the majors goals identifies by the public authorities for the future. This article contributes to the economic literature on patents,

in illustrating the fact that prizes and patents could not be strictly considered as alternatives, because of their different nature, but rather complementary in given circumstances. In this view, we made the choice to use an institutional framework in order to focus on the characteristics of contests. By using the functional approach of innovation system we aim to give an explanation of this phenomenon. We stand that prize system is a specific institutional tool which few properties and characteristics are different from patents. Public administration use prize in order to stimulate / induce innovation in special case. In this view we propose a complementary approach of patent and prize with a possible articulation.

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