



Figures and achievements in MMS as landmarks in history of MMS for inspiration of IFToMM activity



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ABSTRACT

Significance of the past technology in MMS can be highlighted by identifying figures and achievements that had relevant impacts in the evolution of MMS. The concept of Landmark is proposed and can be properly used for such an emphasis of the past with a modern valorisation of the past, even for fruition by large public. In this paper aspects and evaluations are proposed for Landmark identification of past achievements and past figures in MMS. Examples are briefly discussed both in figures and achievements to clarify the landmark MMS values, even from the recent history of IFToMM.

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1. Introduction

It is well understood that a memory of the past helps for a sure identity of subjects, communities, and persons and it can be considered a heritage that deserves to be preserved for the future generations. Such a memory is today identified as Cultural Heritage mainly but not only for preservation of past developments and achievements in the broad sense of humanity experience [34].

In technical fields such an attention to a memory of the past is addressed as History of Science and Technology, including History of Engineering with its specific expertise. History of MMS (in the past TMM) is the historiographic area dealing with history of MMS (Mechanism and Machine Science).

Since the beginning of a well-recognized discipline on TMM (Theory of Machines and Mechanisms) (now MMS) attention has been devoted to History of TMM to track and record technical past of MMS developments, like in [4,14–17,19,22,28,30,32], just to cite few significant literature sources.

Only recently History of MMS is recognized with technical contents not only for memory purposes (to give credits to inventors and scientists, and to track evolution of engineering procedures and theories), but even for orienting future developments along well-identified directions of MMS development, [10]. But this approach cannot be yet recognized as a technical Cultural Heritage of MMS achievements, since this historical awareness is still restricted to a small well identified technical community and is not available to a wide public for a general understanding and appreciation, as stressed in [11,12].

In general, Cultural Heritage is defined as the legacy of products of human ingenuity in the form of physical artifacts and intangible attributes of a group or community that are inherited from past generations, maintained in the present and bestowed for the benefit of future generations, as claimed in [34].

In general, physical or tangible Cultural Heritage products are understood as buildings and historic places, monuments, artifacts, etc., that are considered worthy of preservation for the future. These products include objects in full state or remains that

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are significant for the Archaeology, Architecture, Science or Technology of a specific culture. The significance of physical artifacts can be recognized with socioeconomic, political, ethnic, religious and philosophical impacts on large/particular groups of people. Intangible products of Cultural Heritage value refer to achievements that are not in general expressed with physical artifacts, such as behaviors, attitudes, knowledge, etc. and in general they are more difficult to be preserved than physical objects.

Tangible MMS products can be recognized in machines that have been built and operated successfully, but even unsuccessfully, in the past as a contribution to the evolution of Technology and Society at local and worldwide levels. Even plans, drawings, and patents are recognized as MMS products with value of Cultural Heritage and in fact, they are often stored and used in museums and exhibitions of History of Science and Technology. Intangible MMS products can be also considered when referring to acquired knowledge that has been expressed in theories, algorithms, and reasoning for design and operation of machines. In general, those intangible MMS products are difficult to be identified and stored when they have been not reported in specific reports or books dealing with corresponding tangible MMS products. In addition, even when reported in written documents or books those intangible MMS products are not considered worth full of consideration for Cultural Heritage since their technical contents make very often difficult the understanding and fruition from non-expert public, [12]. Thus, the true contribution remains hidden or even forgotten in old books or manuscripts that are stored in libraries and personal archives.

This paper is an attempt to give merit of Cultural Heritage value to products of MMS activities with the concept of landmark by referring to a technical content that can be understood even to a large public and can be useful to current professionals.

2. The concept of landmark

A landmark in MMS can be defined as an achievement or a figure with considerable impact and influence either in machine technology or in MMS knowledge. For example such a value is recognized by ASME since 1970s' through a specific Landmark program as specifically related only to machine designs, as reported in [3]. Besides giving criteria for landmark exhibitions, the ASME Heritage & History Committee has worked out publications and books [2,5], with collections of most significant recognized landmarks for dissemination purposes and fruition by a large public. However, a more wide value can be appreciated when those historical achievements and figures will be considered as part of Cultural Heritage either as tangible or intangible products as attempted in [11].

In this paper the concept of MMS landmark is proposed with technical peculiarities from MMS as milestone achievements not only in the historical evolution of MMS but even in technological developments both with theoretical and practical aspects referring to MMS.

Fig.1 summarizes aspects that can be considered fundamental for recognizing a value of MMS landmark with an enlarged perspective that is still focused on MMS.

Beside an identification with significant values, landmarks can be characterized by the purposes of their qualification that can be summarized in giving merits to achievements and figures in technical fields for a clear understanding by a large public. Such an understanding can be emphasized in the exhibition of remains or full samples of those achievements when they refer to the so-called tangible products of Cultural Heritage. In the case of landmark figures and their works even as intangible products, the landmark character can be explained with their legacy in the evolution of technical fields in which those figures worked with influential results.

In the case of MMS, the specific technical content refers to machines and mechanisms within all the disciplines that can contribute and have contributed to significant developments of mechanical systems as results of activities of figures and community working specifically in those areas. It can be noted that not only in Cultural Heritage frames but even in scientific-technical communities there is very often a lack of awareness of technical landmarks that can help not only to recognize the past but to help to track the trends. In the area of MMS attention has been recently addressed to such a heritage by reinvigorated activity of communities working on history of science and technology with some specific attention on MMS fields. In particular, the activity of the IFToMM Permanent Commission of History of MMS has contributed and still contributes to such a specific attention as regarding with heritage on MMS through works of specific researches that are published in the book proceedings of HMM symposium (that was started in 2000 with a 4-year frequency), [6–8,23,26,35], CD proceedings of workshop (that was started in 2002 with annual frequency), and books in the Springer book series on History of MMS. This IFToMM attention to the history of MMS is aimed to rediscover and evaluate the significance and achievements in past figures and works in the areas of MMS from the very past up to very recent results with a technical insight that is proper of the MMS community. The significance in MMS can be given accordingly to the landmark criteria that are

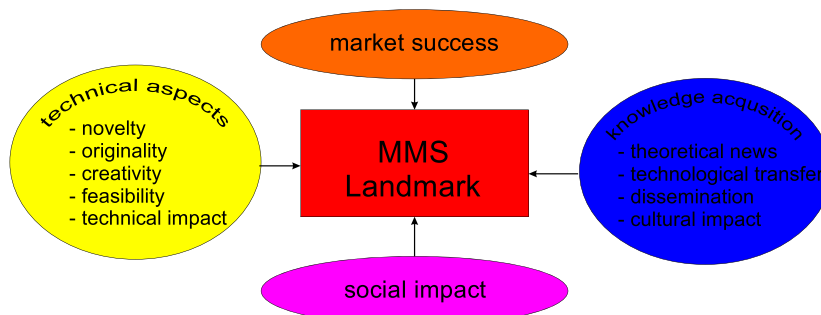


Fig. 1. A scheme for criteria in MMS landmark identification.

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