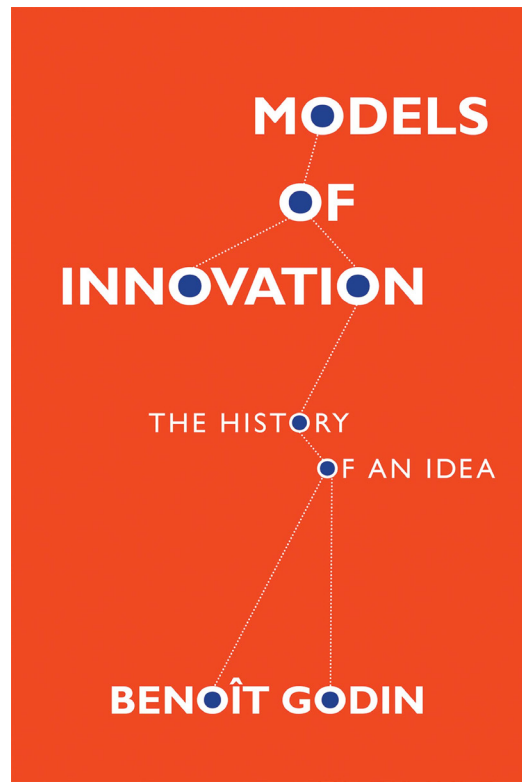


Tracing the History of Models of Innovation



Models of Innovation: The History of an Idea. By Benoît Godin; The MIT Press, 2017, 324 pages, ISBN: 9780262035897.

This book traces the 'genealogy' of 'models' used in the field of Science Technology and Society (STS)/Science Technology and Innovation (STI) studies. Benoît Godin, one of the profound historians of innovation, has earlier worked on the 'genealogy of innovation' and perhaps this is an extension with a twist to investigate models used by the innovation's scholars. Godin argues that the 'models' of innovations are at the core of innovation scholars, policymakers and practitioners. Despite that, he feels that no one has used models in its complex sense; rather, they represent social realities simplistically – notably, he emphasizes the need for the models to be looked at from a historical perspective. Models are in fashion and proposed by authors to take the lead in their field; however, these models die fast too. There is no reflexivity or criticism, or in some cases, extreme criticism is observed among scholars to propose a model of innovation, with a reason of their own.

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Godin further proposed that the models are not the work of an individual or happen in a vacuum. Rather, several known and unknown scholars have contributed to developing a single model and they need to be credited. Keeping these things in mind, Godin has analysed the two categories of innovations models, namely 'process', consisting of 'stage' and 'linear' models and 'system' models in chronological order. However, later in the discussion, he accepts that the models developed are not in chronological order but go back and forth and he cites several examples to that account. This is true also as historians have already discarded the chronological or linear notion of history.

To set the tone of discussion on stage models of innovation, Godin discusses the history of the word 'invention', 'diffusion' and 'innovation' in the first two chapters from the first half of the twentieth century. A complex narrative on the construction of these themes appears mainly from the fields of anthropology and sociology. He puts forth the discussion by bringing in several scholars and their works from these fields and as innovation scholars, perhaps many of us are not aware of these important contributions, which are building blocks of theories and models of innovations. He brings out the

tensions and evolution of a rich field of innovations beyond Schumpeterian tradition (in the field of economics), what we are known and have primarily discussed while working on innovations. Sometimes solely looking at the literature from one field also creates a lock-in in developing models and theories. Thus, these two chapters open up the horizon and compel us to look into the literature from other fields of knowledge in STS/STI studies' true spirit.

Chapters 3-6 presents the historical accounts of linear models of innovations, namely the 'research cycle', a precursor to linear models, 'linear models' and the 'demand-pull' models. Godin argues that linear models emerged in competition with the stage models and mainly came from economics, which most innovation scholars followed. Maurice Holland is credited with the 'research cycle' model, which the author considers as one of the first models in the field of STS/STI studies. This model provided frameworks to explore the importance of basic research and its role in industrial development. Further, Godin argues that Schumpeter's contribution to innovation studies is unparalleled. However, he did not discuss the process of innovation and here the role of William Rupert Maclaurin, a forgotten scholar, comes to the fore. Maclaurin filled the gap by proposing his model, the linear model of technological innovations. Though we study Vannevar Bush and Joseph Schumpeter for their contribution, Maclaurin contributed much by conducting quantitative analysis of 'technological change' of historical type and interviewing with the industrial leaders of his time, which led to the development of linear models of innovation. Further, it led to the development of a 'demand-pull model', which fit into the economic theory and model of that time. Godin explains that it is not that other models do not exist at that point in time, but due to the context and perspective of 'supply' from the industry, this was discussed much. Though it is redundant now and hardly scholars discuss it.

Godin further moves to 'system models' of innovation and explains them in chapters 7-9. He argues that the roots of system models are in the debate of applying a holistic approach to understanding technological innovation, which arises from the debate on 'pure' and 'applied' science from the mid-twentieth century. The industrial leaders were at the centre stage of such a debate and, therefore, Godin also brings out the managerial perspective of system models of innovations. This managerial view of system models is limited to the industry and provides accounts of governments and innovation in policies. Last on the list is the national perspective of system models

and Godin explains its popularity during the late 1980s. The author suggests that the national perspective emphasizes the networks of institutional sectors like government, university, industry and their environments and its goal is innovation. In this context, the progress of the system model is explored in its historical context.

Thus, Godin presents an excellent account of 'models of innovations' in their historical context using genealogy as a methodology. He presents five meanings of 'models' as conceptualisation, narrative, figure, tool and perspective. He argues that models can be seen as having a rhetorical function and explain why these are referred to as 'models' and how they are relevant for diverse communities. He also brings out various forgotten names and debunks the dominant narrative present in the literature where mythological accounts of a few scholars are given more importance than others. Therefore, diverse communities (scholars, policymakers and practitioners) and disciplines (anthropology, sociology, economics, management and many more) contribute to what a model is and their efforts need to be acknowledged. The author further opens up the door to look from other perspectives at the models of innovations, as one may present other genealogical accounts of it.

There are possibilities to explore these models from other perspectives and methodologies, which may shed some more light on models' socio-economic and political dimensions. For instance, the models used in this book represent western scholars in the western context, with a few exceptions. It does not necessarily mean that scholars, other than western countries, have not worked and did not represent their context through such models. However, we have observed that many of these models developed in the western contexts are heavily borrowed as it is or with some minor modifications in non-western contexts. The study of such adoptions would be an exciting contribution, what Godin has done in this book.

The language of the book is straightforward and elaborates on each concept and model in detail. The readers will feel connected and enjoy the narratives presented critically. The book's target audience is diverse and helps students, scholars, policymakers and practitioners explore different models of innovations. The book is published under the 'Inside Technology' series by the MIT press, which has already brought around 91 publications in the field of STS/STI studies. The book's content justifies its inclusion in the series and provides a fresh perspective to the STS/STI community.

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DOI: 10.5530/jscre.9.3.45