Chapter XI
Directions in the Field of Technology Innovation Management

INTRODUCTION

Although the goal of this book is to provide foundational knowledge through in-depth consideration of the seminal literature in the technology innovation management field, we now offer some thoughts on integrating the past, present, and future research directions in this field. The underlying theme that holds together the research considered in this book is the tension between the old (current routine) and the new (innovation). Mainstream business and management theory, like economic theory, focuses on the assumption of equilibrium. The study of technology innovation management at its core considers how to manage in the face of dynamics caused by the novelty and uncertainty associated with innovation. The nature of these dynamics can differ depending on a variety of factors. In some cases, the innovation causes smaller disruptions, due either to the magnitude or the nature of its effects. Such changes are often associated with terminology such as continuous, evolutionary, incremental, or sustaining. At other times, the disruptions are quite large, either due to a greater magnitude of change or a substantial difference in the change. These changes are often associated with terms such as discontinuous, disruptive, radical, or revolutionary. A major challenge to technology innovation management research is that the assumption of equilibrium is needed in many cases to allow for sufficient simplification of phenomena to produce generalizable theory and solutions that are tractable and close formed.

While it is difficult to produce elegant theory and formulations in a dynamic environment, it is still possible. Even if it were not possible, research in this area is still worthwhile to conduct. While it may be possible for academic researchers to overlook inconvenient phenomena for the sake of simplifying reality to develop theory, practitioners must make decisions in both the presence and absence of theory. Consequently, no matter how context dependent or limited in explanatory power the early attempts at theory are, these attempts are still worthwhile, since they are a step forward in assisting practitioners in moving beyond intuition. For many researchers the need to support practitioners (managers) in a highly applied field (business and management) is a suitable call for research efforts. For those whose outlook is specifically on basic science, the feeling might be, *Why should we place our efforts into helping practitioners? This is the job of consultants—not research academics.* In this case, it is worth considering that research on technology and innovation management is still extremely worthwhile, since while theory exists, competing concepts and perspectives jostle for recognition and acceptance. This current status describes a field that is at the focal point of Kuhn's view of scientific revolutions (1962). That is, disagreement on theory exists because the field of technology innovation management currently sits in the messiest part of scientific evolution—a scientific revolution. Unsurprisingly, it is not clear when our field will emerge from this state. However, it places this sub-field of business and management research apart from many other areas of study, where the focus is currently on traditional science—incremental change driven by empirical studies.

Having just considered the status of technology innovation management research from an evolutionary standpoint and having considered the seminal works in this field throughout the text, we will turn our attention to more recent events. While it is not possible to state with any certainty which recent research will be considered seminal work several decades from now, it is possible to give insights into current trends in research and to project these out into the future. The consideration of open source was an attempt to make a prediction in the massive sub-field of information systems. Time will tell whether that subject and the articles discussed in this section become seminal.

Where Is Seminal Work Published and Why?

This leads to the question: where does seminal work come from? Based on our observations of the most frequently cited works in Technology and Innovation Management, most of the articles came from mainstream management journals as opposed to specialty journals. Clearly, as will be discussed further below, many articles that appear in a specialty journal in any field have an appeal that is too narrow to fit in a broader scope management journal. As a result, an innovation