

Introduction

Innovation is critical for profitable growth. In their search for innovative ideas and technologies, companies are realizing the importance of reaching out to customers, partners, suppliers, amateur inventors, academic researchers, scientists, innovation brokers, and a host of other external entities that together constitute the Global Brain—the vast creative potential that lies beyond the boundaries of the firm. Terms such as communities of creation, innovation networks, open market innovation, and crowdsourcing are being used to refer to the future of innovation in a connected world. The promise of such *network-centric* innovation approaches is resonating in the executive suites of large corporations. A recent survey of CEOs found that the need to expand the innovation horizon by looking beyond the four walls of the company is at the top of the CEO agenda.¹ However, most executives feel that they don't know how to reach the Promised Land. Our conversations with senior executives charged with innovation initiatives suggest that they struggle with a question of singular importance, “How should we *really* go about harnessing the creative power of the Global Brain to enhance our growth and performance?”

Recent examples from companies such as P&G, IBM, Boeing, and Apple illustrate that externally focused innovation can take many forms. There are many different entities that companies can reach

out to and many different types of relationships and networks they can create to harness innovative ideas. Questions abound: What are the different approaches to harnessing external networks for innovation? Which approach is best for our firm? What kinds of innovation projects lend themselves well for these approaches? What role should our firm play in our innovation network? To answer these questions, managers need a good understanding of the emerging landscape of network-centric innovation. Only with a good view of the landscape will they be able to identify the opportunities that network-centric innovation presents.

Beyond the identification of opportunities lie additional questions managers need to ask in exploiting the opportunities. What organizational capabilities do we need? How should our innovation network be designed? What benefits can we expect and how do we measure these benefits? What are the potential risks of opening up innovation? Is there a danger that we could lose control over our innovation initiatives? How should we protect our intellectual property? How should we define success?

We wrote this book to answer these two sets of questions in a practical and direct way so that companies—both large and small—can *explore* as well as *exploit* the power of the Global Brain. We hope to take you on a journey that begins with an awareness of the nature and potential of network-centric innovation to a destination where you will be able to implement a network-centric innovation strategy for your firm.

Throughout this book we will use both these terms: Global Brain to describe the diverse set of external players that constitute the innovation network for the companies; Network-centric innovation to describe the underlying principles of collaborative innovation in such a context.

HOW THIS BOOK CAME ABOUT

Both of the authors have been students of innovation for several years. Ever since the Internet gained critical mass and firms started to realize the power of networks and communities, we have been particularly interested in understanding the nature and the implications of distributed innovation, community-based innovation, and innovation networks.

Satish had studied “Virtual Customer Environments” and the role customers play in supporting and enhancing companies’ innovation efforts.² Mohan had written about the emerging phenomenon of “Communities of Creation” in different contexts and examined their promise as a way of organizing commercial

innovation initiatives.³ Our work had also focused on new types of innovation intermediaries—or “Innomediaries” as Mohan calls them⁴—that link companies with external networks and communities.

A common theme in our research was our interest in the concept of distributed innovation—innovation initiatives that are spread across a diverse network of partners. In the summer of 2005, we participated in a research symposium on distributed innovation organized as part of the Annual Academy of Management Meeting held in Hawaii. While enjoying the sun and the beaches, we began a conversation on the growing importance of innovation networks and communities of creation. Both of us were convinced about the promise and the potential of innovation initiatives centered on such networks of individual inventors, customers, and partners. We believed, based on early evidence from the software and automotive industries, that innovation could be made far more efficient, effective, and speedy if firms could harness all the talent and ideas that lie outside their boundaries. But we suspected that, despite all the hype about the innovative power of external networks, managers had very limited guidance for implementing such network-centric innovation initiatives. We decided to explore this hunch further, to see whether we could make a contribution in this area.

Our vehicle for this exploration was the Kellogg Innovation Network (KIN)—a forum for senior innovation managers of large companies—affiliated with the Center for Research in Innovation and Technology that Mohan directs at the Kellogg School of Management. The KIN is an excellent example of the power of the Global Brain in action. It consists of senior executives from a hand-selected group of leading companies who come together in a collaborative forum to exchange ideas and best practices related to innovation. The research agenda for the KIN emerges from dialogue, discussion, and debate among the members. We initiated conversations with senior managers from KIN member companies such as Motorola, DuPont, IBM, Kraft, and Cargill. We presented our ideas on network-centric innovation in KIN seminars, and our discussions revealed that our hunch was accurate. Most managers indicated that they were very excited and enthusiastic about the opportunities posed by external innovation networks and communities, but were less convinced about their own capabilities to implement such initiatives that involve reaching out to external networks successfully. And all the media hype and buzz about open innovation, open source software, social networking, and Internet-based innovation wasn't helping. There was a lot of heat and dust, but very little enlightenment when it came to execution-related issues.

A survey of senior managers conducted by the management consulting company, Bain & Co., in 2005 supports our observation. A majority (73%) of the survey respondents agreed that companies “can dramatically boost their innovation by collaborating with outsiders,” but they simultaneously expressed “deep dissatisfaction with (their) knowledge about appropriate strategies, practices, and tools” for executing such network-centric innovation.⁵

For companies to be successful in making the shift from *firm-centric* innovation to *network-centric* innovation, managers need to progress beyond a basic awareness of the potential. They need to understand the landscape of network-centric innovation. Next, they need to know the strategies and best practices that are relevant to their business context. We felt that there was a need for a book that would help managers to take these two important steps so they could harness the unbounded creative potential that lies outside their four walls.

After we decided to embark on the book project, we began with an extensive review of the academic literature as well as practitioner-oriented articles and books in the area of innovation management and networks. This review provided the background material for developing our frameworks and concepts. Next, we identified a number of companies that were leaders in externally focused innovation. These companies ranged from consumer product companies such as Dial, P&G, Staples, and Unilever to technology companies such as IBM, DuPont, Boeing, 3M, and Cisco. We decided to learn from the leaders by conducting in-depth interviews with managers leading innovation initiatives at these firms. Over a period of one year, we talked with more than 50 managers from a wide variety of firms to develop and validate our frameworks and concepts. We also talked with and analyzed the business models of boutique firms that are playing specialist intermediary roles in network-centric innovation. These companies included innovation facilitators like IgniteIP, Eureka Ranch, Evergreen IP, and InnoCentive. We also interviewed several individuals who have played leadership roles in the Open Source Software movement and other network-centric innovation contexts such as online customer communities. The diverse experiences and perspectives that we gleaned from these interviews helped us to develop the frameworks and insights related to network-centric innovation that form the core content of this book.

WHO SHOULD READ THIS BOOK

We have written this book for two primary audiences with a deep interest in innovation management.

The first audience is a CEO or senior business executive who has the primary responsibility for growth and innovation of a business unit or a major corporation. For this audience, we provide an understanding of the nature of externally focused innovation mechanisms that you can exploit for your firm, as well as your roadmap for implementing a network-centric innovation strategy.

The second audience for the book is a manager tasked with leading the innovation initiatives at a large corporation. For you, we bring clarity to the type of innovation networks you should build; the roles that your company should play within these innovation networks, and the competencies that you will need to develop at your firm to execute these roles.

What industries or markets is this book particularly relevant for? Clearly, the frameworks and concepts that we present are applicable to a broad array of industries; our book is particularly relevant for firms in the technology sector (computers, software, telecommunications, chemicals, and so on) and the consumer packaged goods sector. In addition to these sectors, the concepts we present are also relevant to other industries or fields such as health care services, medical devices, automobiles, consumer durables, and the entertainment industry, where network-centric innovation opportunities are rapidly emerging.

HOW THE BOOK IS ORGANIZED

We have organized this book, consisting of 12 chapters, into five parts. Each part addresses a set of fundamental questions related to network-centric innovation:

Part I: From *Firm-Centric* to *Network-Centric* Innovation (Chapters 1 and 2)

Part II: The Landscape of Network-Centric Innovation (Chapters 3 and 4)

Part III: The Four Models of Network-Centric Innovation (Chapters 5 to 8)

Part IV: Executing Network-Centric Innovation (Chapters 9 and 10)

Part V: Globalization and Network-Centric Innovation (Chapters 11 and 12)

We begin Part I by answering some basic questions, such as, “Why should firms ‘innovate beyond boundaries’?” And, “What do you mean by adopting a ‘network-centric innovation’ approach?” Put more simply, “Why should I care about this?” We describe the need for companies to look outside for innovation and make the shift from firm-centric to network-centric innovation. Then, we define the concept of “network-centricity” and describe the principles of network-centric innovation. Using a number of examples, we emphasize that different

“flavors” of network-centric innovation exist, and companies need to carefully map their industry and organizational context to identify the appropriate innovation approach.

In Part II, Chapters 3 and 4, we address the question, “What does the network-centric innovation landscape look like?” We present a conceptual framework to structure the emerging landscape of network-centric innovation. Our framework is based on two central dimensions of network-centric innovation—the nature of the innovation space and the structure of the network leadership. Based on these dimensions, we outline four basic models of network-centric innovation. We also identify other key elements of our conceptual framework—the different types of players in network-centric innovation (that is, a taxonomy of innovation roles) and the different types of innovation management activities and network infrastructure (for example, governance systems, IP rights management systems, and so on).

In Part III, Chapters 5 to 8, we describe in detail the four models of network-centric innovation. In each chapter, we apply the conceptual framework that we develop in Section II to analyze the nature of the innovation roles, innovation management activities, and network infrastructure that apply to that particular model. We use one “anchor” case study to ground our discussion of the important issues.

In Part IV, we address execution-related issues. We start with the question, “Where does my company fit in this landscape?” In Chapter 9, we develop a contingent framework that maps the context for innovation—industry and business environment conditions, technology and market factors, a company’s innovation goals and internal resources—to alternate network-centric opportunities. This contingent framework provides guidelines for managers to evaluate the different types of opportunities and to identify the opportunities that will best align with the firm’s resources, capabilities, and strategy.

In Chapter 10, we address questions such as, “Now that I know the opportunities for my firm, how exactly should I prepare my company to exploit these opportunities?” “What types of capabilities are required?” And, “What types of metrics should be used to evaluate my company’s performance in these initiatives?” We describe different aspects related to preparing the organization for network-centric innovation—cultural readiness, strategic readiness, operational readiness, and so on.

In Part V, Chapters 11 and 12, we broaden our horizon and consider the implications of network-centric innovation for the emerging economies. We ask,

“What opportunities do the different types of network-centric innovation initiatives present to companies in countries such as India, China, Russia, and Brazil?” We identify some of the common trends in the emerging economies and analyze the potential for companies in these countries to plug into the global brain. We offer our final thoughts in the last chapter and leave the reader with a set of best practices and “next practices” that we have identified from our study of leaders in network-centric innovation initiatives.

Join us as we begin this journey by focusing on a question that is on the lips of every CEO: “How can we sustain profitable growth, and why is innovation so important for organic growth?”