附注

第二章

1．LES包括四个指标。其中三个（“早期收益识别”、“预期高收益”和“结构的直接得出”）都包含了领先用户建构的核心成分。第四个（“应用的衍生”）是对许多创新相关的活动的测量，这些活动用户可能都参与了：他们“提议新的应用”、“他们开创这些应用”，以及（因为他们比其他人更早的有需求或问题）他们可能“被作为一个测试点”（Morrison，Midgely & Roberts，2004）。

第三章

1．聚类分析并不规定“正确的”类别数量——它只是简单地将一个样本划分为越来越小的类别，直到分析者叫停。确定一个样本合适的类别数可以用不同的方式。当然，通常可能是“我只希望研究三个市场分割，所以当我的样本被分为三类时我就停止我的分析。”更常见的是，分析者可能会检验每一步方差和的增加，当分析图突然出现拐点时，通常认为达到了理想的类别数了（Myers，1996）。因为这种技术并没有综合类内差异信息，所以它可能会得出一个具有很大的类内变异的答案。“三维聚类标准（CCC）”通过将类内变异和类别变异进行比较在一定程度上解决了这个问题。这种方法建议选择这个值出现波峰时的类别数（Milligan & Cooper，1985）。然而，这种方法看来很少用：克勤和萨克（Ketchen & Shook，1996）发现他们所研究的45个分类问题中，只有5个采用了这种方法。

2．http://groups-beta.google.com/group/comp.infosystems.www.servers.unix

3．http://modules.apache.org/

4．为了测量差异性，法兰克和我分析了我们样本中，在[1；i]范围变化的j标准产品满足i个个体需求的程度。首先，我们将一个产品置于多维的需求空间中（在本研究中，维度＝45）使得它距离每一个个体需求的差距最小（这个步骤类似于聚类分析中的离差平方和方法，同样要最小化类内差异，见Punj & Stewart，1983），然后用欧氏距离的平方来表示“误差项”。我们重复了这些步骤，来确定2个已经最优定位的产品之间的误差、3个产品之间的误差，直到I-1个产品。所有情况下的方差和就是一个衡量j标准产品满足i个个体需求程度的简单指标。这种专门的“变异系数”对需求之间的平均**距离**和需求的**结构**敏感：具有聚集成类趋势的需求的变异系数比那些总体来看分散的需求的变异系数小。为了使得不同人群的系数具有可比性，我们采用了bootstrapping技术，用期望值（这个期望值是通过平均化许多随机分布的同类群体的变异而得到的）去除系数使得数据标准化。这个平均的随机变异系数就是可以用于标准化的合适值：它表明个体的需求之间和需求维度之间没有系统相关性。

5．从概念上看，是可以为任何人生产出“一个完美的产品”的——在这种情况下，需求的误差为零——只要简单地创造所有人所需要的特征（在这个研究中，有45＋92个特征），然后将它们综合到“一个完美的产品”中就可以了。用户然后就可以从这个完美产品的特征菜单选择特征使得它适合自己的品味就可以了。这样做至少在软件业中具有理论的可行性，但是在实物产品领域因为以下两个原因可能性很少：（1）为每个购买产品的顾客提供所有的选择会使得这个商品非常昂贵（而在信息产品中几乎不需要任何代价）；（2）有些选择是互相排斥的（例如汽车不可能同时又是红色又是绿色的）。

6．对私人物品实际支付的意愿和口头支付意愿之间的差异比公共物品的要小得多。在私人物品的例子中，鲁米斯等人（Loomis et al.，1996）发现艺术印刷品的口头支付意愿是实际支付意愿的两倍；威利斯和鲍威（Willis & Powe，1998）发现在一个城堡的游客中，口头支

付意愿比实际支付意愿小60％。而在公共物品的例子中，布朗等人(Brown et al.，1996）在一个拆除荒野中的公路的支付意愿研究中，发现口头支付意愿是实际支付意愿的4～6倍；林德斯和纳普（Lindsey & Knaap，1999）对城市公共园林道的支付意愿研究中，发现口头支付意愿是实际支付意愿的2～10倍；塞普和斯全德（Seip & Strand，1992）发现只有不到10％表示对付费参加环境组织感兴趣的人实际上加入了这个组织。

第六章

1．具有新目标的项目的具体例子，可以考虑Linux开源软件项目的初始阶段。1991年，芬兰的一个学生，李纳斯·托沃兹（Linus Torvalds）希望有一个能在他的配置了386处理器的PC机上运行的Unix操作系统。那时惟一可以获得的软件的Minix，但它是商业的、闭源的，售价150美元。托沃兹认为这个软件太昂贵了，开始开发一个兼容Posix的操作系统，即后来的Linux。托沃兹开始并没有马上广泛的宣扬，也没有雄伟的目标，也没有试图招募贡献者。他只是在1991年7月3日发布的一条消息上简单地陈述了一下他的个人动机，这条消息是给USENET新闻组comp.os.minix的（Wayner，2000）：**因为我正在研究的一个项目（关于minix），我对Posix标准定义感兴趣（Posix是UNIX设计者的一个标准，使用POSIX的软件可以与其他基于UNIX的软件兼容），有人愿意为我指点一下可以机读的最新posix规则吗？ftp站点比较好。**托沃兹收到了不少关于Posix规则的回复消息，人们对这个项目表示了普遍兴趣。1992年初，许多有经验的程序员为Linux作出了贡献，用户人数也每天增长。今天，以参与开发者的人数看，Linux是现有最大的开源软件开发项目。

第七章

1．当他们没有这些品质时，更适合称呼他们为网络——但是社团是比较普遍使用的术语，所以在这里我也采用了这个称呼。

2．黑客（**hacker**），名词，（原指用斧头制作家具的人），1）喜欢探索编程系统的详细情况以及拓展其能力的人，与大多数用户相反，他们愿意为了极小的需要而学习；2）热衷于（甚至是痴迷）编程的人，或者是喜欢编程超过提出编程理论的人；3）有能力提高黑客价值的人；4）擅长快速编程的人……8）[贬义]恶意的管闲事者，试图通过刺探来发现机密信息。即密码黑客、网络黑客。从这个意义上讲这个术语应该是**cracker**[1]（Raymond，1996）。

3．源码是可以被计算机执行以完成程序目标的一系列指令。编程员以源码的形式编写计算机软件，同时记录这些源码以及他们程序每一部分的目的和设计的简短书面说明。将一个程序转换成计算机可以实际运行的形式，可以用程序编译器将源码转换成机器代码。编译过程脱离了程序记录，建立了程序的二进位制形式——由一串串1和0组成的计算机指令序列。二进制码对编程员来说非常难以阅读和理解，因此希望阻止他人理解和修改他们代码的编程员或公司会只公布软件的二进位制码。相反，希望能让他人理解、升级和修改他们软件的编程员或公司会随着软件公布其源码（Moerke，2000；Silmon，1996）。

4．见www.gnu.org/licenses/licenses.huml#GPL

5．http://www.sourceforge.net

6．“开源软件的‘所有者（或维护者）’是指那些拥有被大部分社团公认排他的**重新分配修**

[1] Cracker是以破解各种加密或有限制的商业软件为乐趣的人。他们以年轻人为主，对软件的商业化怀有敌意。一般国外对cracker和hacker有极其明显的区别。Hacker以严格的、天才般的思维感触世界，以漂亮、简洁、完美的编程为自豪，以发现系统及别的bug为乐趣。他们一般不看重解密软件。他们研究的范围一般在“突破（hack）”，真正的hacker突破系统后不破坏系统，认为破坏系统对hacker来说是一种侮辱。译者注。

改版权利的人……根据标准的开源许可证，在开发过程中所有各方都是平等的。但事实上，‘官方（official）’补丁（对软件的改变）与‘游荡者（rogue）’补丁有普遍公认的区别，前者经公认的维护者审定并且被综合到不断改良的软件中，而后者是第三方开发的，并不常见，通常不被信任”（Roymond，1999）。

第八章

1．也可以见Bresnahan & Greenstein，1996b；Bresnahan & Saloner，1997；Saloner & Steinmueller，1996。

第十章

1．ABS制动试图在刹车过程中保持交通工具轮胎的转向。ABS通过自动地、快速地“泵激”制动器发挥作用，其结果是车轮能继续转向而不被“锁定”，操作者就可以继续控制车轮。
2．在一般的文献中，阿姆斯壮（Armstrong，2001）对新产品推广的预测误差的研究表明，销售额预测一般都是乐观的，但是随着预测的销售额数量增加，这种高估误差会减少。库勒和约翰（Coller & Yohn，1998）回顾了有关经营利润预测误差的文献，发现几乎没有系统误差。托尔（Tull，1976）的模型计算得出，1500万美元的收入是一个界限，超过这个值后平均的预测通常是悲观的。因此，我们认为对LU和非LU项目销售额预测数进行类似的缩减是有理由的。即使LU项目成员出于某些理由可能比非LU项目成员在同样的预测中更乐观，但这对我们的发现没有显著的影响，超过60％的LU项目的美元销售额价值预测是与这些项目没有联系的人员作出的（是外部的咨询公司或其他部门的业务分析员得出的）。

参考文献

Achilladelis, B., A. B. Robertson, and P. Jervis. 1971. *Project SAPPHO*. Centre for the Study of Industrial Innovation, London.

Aghion, P., and J. Tirole. 1994. "The Management of Innovation." *Quarterly Journal of Economics* 109: 1185–1209.

Allen, R. C. 1983. "Collective Invention." *Journal of Economic Behavior and Organization* 4, no. 1: 1–24.

Allen, T. J. 1966. "Studies of the Problem-Solving Process in Engineering Design." *IEEE Transactions on Engineering Management* 13, no. 2: 72–83.

Amabile, T. M. 1996. *Creativity in Context*. Westview.

Antelman, Kristin. 2004. "Do Open Access Articles Have a Greater Research Impact?" *College and Research Libraries* 65, no. 5: 372–382.

Antorini, Y. M. 2005. The Making of a Lead User. Working paper, Copenhagen Business School.

Armstrong, J. S., ed. 2001. *Principles of Forecasting*. Kluwer.

Arora, A., A. Fosfuri, and A. Gambardella. 2001. *Markets for Technology*. MIT Press.

Arora, A., and A. Gambardella. 1994. "The Changing Technology of Technological Change." *Research Policy* 23, no. 5: 523–532.

Arrow, K. 1962. "Economic Welfare and the Allocation of Resources for Inventions." In R. R. Nelson, ed., *The Rate and Direction of Inventive Activity*. Princeton University Press.

Arundel, A. 2001. "The Relative Effectiveness of Patents and Secrecy forAppropriation." *Research Policy* 30, no. 4: 611–624.

Balachandra, R., and J. H. Friar. 1997. "Factors for Success in R&D Projects and New Product Introduction: A Contextual Framework." *IEEE Transactions on Engineering Management* 44, no. 3: 276–287.

Baldwin, C. Y., and K. B. Clark. 2003. Does Code Architecture Mitigate Free Riding in the Open Source Development Model? Working paper, Harvard Business School.

Barnes, B., and D. Ulin. 1984. "Liability for New Products." *AWWA Journal*, February: 44–47.

Baron, J. 1988. *Thinking and Deciding*. Cambridge University Press.

Behlendorf, B. 1999. "Open Source as a Business Strategy." In C. Dibona, S. Ockman, and M. Stone, eds., *Open Sources*. O'Reilly.

Benkler, Y. 2002. "Intellectual Property and the Organization of Information Production." *International Review of Law and Economics* 22, no. 1: 81–107.

Bessen, J. 2003. Patent Thickets. Working paper, Research on Innovation and Boston University School of Law.

Bessen, J. 2004. Open Source Software. Working paper, Research on Innovation.

Bessen, J., and R. M. Hunt. 2004. An Empirical Look at Software Patents. Working paper, Federal Reserve Bank of Philadelphia.

Bijker, Wiebe. 1995. *Of Bicycles, Bakelites and Bulbs*. MIT Press.

Boldrin, M., and D. Levine. 2002. "The Case against Intellectual Property." *AEA Papers and Proceedings*, May: 209–212.

Bresnahan, T. F., and S. Greenstein. 1996a. "Technical Progress and Co-Invention in Computing and in the Uses of Computers." *Brookings Papers on Economic Activity*. *Microeconomics* 1996: 1–77.

Bresnahan, T. F., and S. Greenstein. 1996b. "The Competitive Crash in Large-Scale Commercial Computing." In R. Landau, T. Taylor, and G. Wright, eds., *The Mosaic of Economic Growth*. Stanford University Press.

Bresnahan, T. F., and G. Saloner. 1997. "'Large Firms' Demand for Computer Products and Services: Market Models, Inertia, and Enabling Strategic Change." In D. B. Yoffie, ed., *Competing in the Age of Digital Convergence*. Harvard Business School Press.

Brooks, P. F., Jr. 1979. *The Mythical Man-Month*. Addison-Wesley.

Brown, J. S., and P. Duguid. 1991. "Organizational Learning and Communities-of-Practice: Toward a Unified View of Working, Learning, and Innovation." *Organization Science* 2, no. 1: 40–57.

Brown, T. C., P. A. Champ, R. C. Bishop, and D. W. McCollum. 1996. "Which Response Format Reveals the Truth about Donations to a Public Good." *Land Economics* 72, no. 2: 152–166.

Buenstorf, G. 2002. "Designing Clunkers: Demand-Side Innovation and the Early History of Mountain Bike." In J. S. Metcalfe and U. Cantner, eds., *Change, Transformation and Development*. Physica.

Chamberlin, E. H. 1950. "Product Heterogeneity and Public Policy." *American Economic Review* 40, no. 2: 85–92.

Christensen, C. M. 1997. *The Innovator's Dilemma*. Harvard Business School Press.

Cohen, W. M., A. Goto, A. Nagata, R. R. Nelson, and J. P. Walsh. 2002. "R&D Spillovers, Patents and the Incentives to Innovate in Japan and the United States." *Research Policy* 31 (8–9): 1349–1367.

Cohen, W. M., and D. A. Levinthal. 1990. "The Implications of Spillovers for R&D Investment and Welfare: A New Perspective." *Administrative Science Quarterly* 35:128–152.

Cohen, W. M., R. R. Nelson, and J. P. Walsh. 2000. Protecting Their Intellectual Assets. Working paper, National Bureau of Economic Research.

Coller, M., and T. L. Yohn. 1998. "Management Forecasts: What Do We Know?" *Financial Analysts Journal* 54, no. 1: 58–62.

Connell, J. L., and L. B. Shafer. 1989. *Structured Rapid Prototyping*. Prentice-Hall.

Conner, K. R., and C. K. Prahalad. 1996. "A Resource-Based Theory of the Firm: Knowledge versus Opportunism." *Organization Science* 7, no. 5: 477–501.

Cook, T. D., and D. T. Campbell. 1979. *Quasi-Experimentation*. Houghton Mifflin.

Csikszentmihalyi, M. 1975. *Beyond Boredom and Anxiety*. Jossey-Bass.

Csikszentmihalyi, M. 1990. *Flow*. Harper and Row.

Csikszentmihalyi, M. 1996. *Creativity*. HarperCollins.

Dam, K. W. 1995. "Some Economic Considerations in the Intellectual Property Protection of Software." *Journal of Legal Studies* 24, no. 2: 321–377.

Danneels, Erwin. 2004. "Disruptive Technology Reconsidered: A Critique and Research Agenda." *Journal of Product Innovation Management* 21: 246–258.

Dasgupta, P., and P. A. David. 1994. "Toward a New Economics of Science." *Policy Research* 23: 487–521.

David, P. A. 1992. "Knowledge, Property, and the System Dynamics of Technological Change." *Proceedings of the World Bank Annual Conference on Development Economics* 1992: 215–247.

David, P. A. 1998. Knowledge Spillovers, Technology Transfers, and the Economic Rationale for Public Support of Exploratory Research in Science. Background paper for European Committee for Future Accelerators.

de Fraja, G. 1993. "Strategic Spillovers in Patent Races." *International Journal of Industrial Organization* 11, no. 1: 139–146.

Dellarocas, C., N. F. Awad, and X. (M.) Zhang. 2004. Exploring the Value of Online Reviews to Organizations. Working paper, MIT Sloan School of Management.

Duke, R. 1988. *Local Building Codes and the Use of Cost-Saving Methods*. US Federal Trade Commission, Bureau of Economics.

Efron, B. 1979. "Bootstrap Methods: Another Look at the Jackknife." *Annals of Statistics* 7: 1–26.

Ehrenkrantz Group. 1979. *A Study of Existing Processes for the Introduction of New Products and Technology in the Building Industry*. US Institute of Building Sciences.

Elrod, T., and A. P. Kelman. 1987. Reliability of New Product Evaluation as of 1968 and 1981. Working paper, Owen Graduate School of Management, Vanderbilt University.

Enos, J. L. 1962. *Petroleum Progress and Profits*. MIT Press.

Fleming, L. 2001. "Recombinant Uncertainty in Technological Search." *Management Science* 47, no. 1: 117–132.

Foray, D. 2004. *Economics of Knowledge*. MIT Press.

Franke, N., and H. Reisinger. 2003. Remaining within Cluster Variance. Working paper, Vienna

Business University.

Franke, N., and S. Shah. 2003. “How Communities Support Innovative Activities: An Exploration of Assistance and Sharing Among End-Users.” *Research Policy* 32, no. 1: 157–178.

Franke, N., and E. von Hippel. 2003a. Finding Commercially Attractive User Innovations. Working paper, MIT Sloan School of Management.

Franke, N., and E. von Hippel. 2003b. “Satisfying Heterogeneous User Needs via Innovation Toolkits: The Case of Apache Security Software.” *Research Policy* 32, no. 7: 1199–1215.

Freeman, C. 1968. “Chemical Process Plant: Innovation and the World Market.” *National Institute Economic Review* 45, August: 29–57.

Friedman, D., and D. McAdam. 1992. “Collective Identity and Activism: Networks, Choices, and the Life of a Social Movement.” In A. D. Morris and C. McClurg, eds., *Frontiers in Social Movement Theory*. Yale University Press.

Gallini, N., and S. Scotchmer. 2002. “Intellectual Property: When Is It the Best Incentive System?” In A. Jaffe, J. Lerner, and S. Stern, eds., *Innovation Policy and the Economy*, volume 2. MIT Press.

Green, P. E. 1971. “A New Approach to Market Segmentation.” *Business Horizons* 20, February: 61–73.

Green, P. E., and C. M. Schaffer. 1998. “Cluster-Based Market Segmentation: Some Further Comparisons of Alternative Approaches.” *Journal of the Market Research Society* 40, no. 2: 155–163.

Hall, B. H., and R. Ham Ziedonis. 2001. “The Patent Paradox Revisited: An Empirical Study of Patenting in the US Semiconductor Industry, 1979–1995.” *RAND Journal of Economics* 32, no. 1: 101–128.

Hall, B. H., and D. Harhoff. 2004. “Post-Grant Reviews in the US Patent System: Design Choices and Expected Impact.” *Berkeley Law Technology Journal*, in press.

Harhoff, D. 1996. “Strategic Spillovers and Incentives for Research and Development.” *Management Science* 42, no. 6: 907–925.

Harhoff, D., J. Henkel, and E. von Hippel. 2003. “Profiting from Voluntary Information Spillovers: How Users Benefit by Freely Revealing Their Innovations.” *Research Policy* 32, no. 10: 1753–1769.

Hecker, F. 1999. “Setting Up Shop: The Business of Open Source Software.” *IEEE Software* 16, no. 1: 45–51.

Heller, M. A. 1998. “The Tragedy of the Anticommons: Property in the Transition from Marx to Markets.” *Harvard Law Review* 111: 621–688.

Heller, M. A., and R. S. Eisenberg. 1998. “Can Patents Deter Innovation? The Anticommons in Biomedical Research.” *Science Magazine* 280 (5364): 698–701.

Henkel, J. 2003. “Software Development in Embedded Linux: Informal Collaboration of Competing Firms.” In W. Uhr, W. Esswein, and E. Schoop, eds., *Proceedings der 6. Internationalen Tagung Wirtschaftsinformatik 2003*, volume 2. Physica.

Henkel, J. 2004a. The Jukebox Mode of Innovation. Discussion paper, CEPR.

Henkel, J. 2004b. Patterns of Free Revealing. Working paper, University of Munich.

Henkel, J., and S. Thies. 2003. “Customization and Innovation: User Innovation Toolkits for Simulator Software.” In Proceedings of the 2003 Congress on Mass Customization and Personalization (MCPC 2003), Munich.

Henkel, J., and E. von Hippel. 2005. “Welfare Implications of User Innovation.” *Journal of Technology Transfer* 30, no. 1/2: 73–87.

Herstatt, C., and E. von Hippel. 1992. “From Experience: Developing New Product Concepts via the Lead User Method.” *Journal of Product Innovation Management* 9, no. 3: 213–222.

Hertel, G., S. Niedner, and S. Herrmann. 2003. “Motivation of Software Developers in Open Source Projects: An Internet-Based Survey of Contributors to the Linux Kernel.” *Research Policy* 32, no. 7: 1159–1177.

Hienerth, C. 2004. “The Commercialization of User Innovations: Sixteen Cases in an Extreme Sporting Industry.” In Proceedings of the 26th R&D Management Conference, Sesimbra, Portugal.

Hirschleifer, J. 1971. “The Private and Social Value of Information and the Reward to Inventive Activity.” *American Economic Review* 61, no. 4: 561–574.

Hollander, S. 1965. *The Sources of Increased Efficiency*. MIT Press.

Horwich, M. 1982. *Clipped Wings*. MIT Press.

Hunt, R. M., and J. Bessen. 2004. “The Software Patent Experiment.” *Business Review, Federal Reserve Bank of Philadelphia* Q3: 22–32.

Jensen, M. C., and W. H. Meckling. 1976. “Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure.” *Journal of Financial Economics* 3, no. 4: 305–360.

Jeppesen, L. B. 2004. Profiting from Innovative User Communities. Working paper, Department of Industrial Economics and Strategy, Copenhagen Business School.

Jeppesen, L. B. 2005. “User Toolkits for Innovation: Users Support Each Other.” *Journal of Product Innovation Management*, forthcoming.

Jeppesen, L. B., and M. J. Molin. 2003. “Consumers as Co-developers: Learning and Innovation Outside the Firm.” *Technology Analysis and Strategic Management* 15, no. 3: 363–84.

Jokisch, M. 2001. Open Source Software-Entwicklung: Eine Analyse des Geschäftsmodells der STATA Corp. Master’s thesis, University of Munich.

Ketchen, D. J., Jr., and C. L. Shook. 1996. “The Application of Cluster Analysis in Strategic Management Research: An Analysis and Critique.” *Strategic Management Journal* 17, no. 6:

441–459.

Knight, K. E. 1963. A Study of Technological Innovation: The Evolution of Digital Computers. PhD dissertation, Carnegie Institute of Technology.

Kollock, P. 1999. "The Economies of Online Cooperation: Gifts and Public Goods in Cyberspace." In M. A. Smith and P. Kollock, eds., *Communities in Cyberspace*. Routledge.

Kotabe, M. 1995. "The Return of 7-Eleven . . . from Japan: The Vanguard Program." *Columbia Journal of World Business* 30, no. 4: 70–81.

Kristensen, P. S. 1992. "Flying Prototypes: Production Departments' Direct Interaction with External Customers." *International Journal of Operations and Production Management* 12, no. 2: 195–211.

Lakhani, K. 2005. Distributed Coordination Practices in Free and Open Source Communities. PhD thesis, Massachusetts Institute of Technology.

Lakhani, K. R., and E. von Hippel. 2003. "How Open Source Software Works: 'Free' User-to-User Assistance." *Research Policy* 32, no. 6: 923–943.

Lakhani, K. R., and B. Wolf. 2005. "Why Hackers Do What They Do: Understanding Motivation and Effort in Free/Open Source Software Projects." In J. Feller, B. Fitzgerald, S. Hissam, and K. R. Lakhani, eds., *Perspectives on Free and Open Source Software*. MIT Press.

Lerner, J., and J. Tirole. 2002. "Some Simple Economics of Open Source." *Journal of Industrial Economics* 50, no. 2: 197–234.

Lessig, L. 2001. *The Future of Ideas*. Random House.

Lettl, C., C. Herstatt and H. Gemünden. 2004. The Entrepreneurial Role of Innovative Users. Working paper, Technical University, Berlin.

Levin, R. C., A. Klevorick, R. R. Nelson, and S. G. Winter. 1987. "Appropriating the Returns from Industrial Research and Development." *Brookings Papers on Economic Activity* 3: 783–820.

Levy, S. 1984. *Hackers*. Doubleday.

Lilien, G. L., P. D. Morrison, K. Searls, M. Sonnack, and E. von Hippel. 2002. "Performance Assessment of the Lead User Idea-Generation Process for New Product Development." *Management Science* 48, no. 8: 1042–1059.

Lim, K. 2000. The Many Faces of Absorptive Capacity. Working paper, MIT Sloan School of Management.

Lindsey, G., and G. Knaap. 1999. "Willingness to Pay for Urban Greenway Projects." *Journal of the American Planning Association* 65, no. 3: 297–313.

Loomis, J., T. Brown, B. Lucero, and G. Peterson. 1996. "Improving Validity Experiments of Contingent Valuation Methods: Results of Efforts to Reduce the Disparity of Hypothetical and Actual Willingness to Pay." *Land Economics* 72, no. 4: 450-461.

Lüthje, C. 2003. "Customers as Co-Inventors: An Empirical Analysis of the Antecedents of

Customer-Driven Innovations in the Field of Medical Equipment." In Proceedings of the 32th EMAC Conference, Glasgow.

Lüthje, C. 2004. "Characteristics of Innovating Users in a Consumer Goods Field: An Empirical Study of Sport-Related Product Consumers." *Technovation* 24, no. 9: 683–695.

Lüthje, C., C. Herstatt, and E. von Hippel. 2002. The Dominant Role of Local Information in User Innovation: The Case of Mountain Biking. Working Paper, MIT Sloan School of Management.

Machlup, F. 1962. *Knowledge Production and Distribution in the United States*. Princeton University Press.

Mansfield, E. 1968. *Industrial Research and Technological Innovation*. Norton.

Mansfield, E. 1985. "How Rapidly Does New Industrial Technology Leak Out?" *Journal of Industrial Economics* 34: 217-223.

Mansfield, E., J. Rapoport, A. Romeo, S. Wagner and G. Beardsley. 1977. "Social and Private Rates of Return from Industrial Innovations." *Quarterly Journal of Economics* 91, no. 2: 221–240.

Mansfield, E., A. Romeo, M. Schwartz, D. Teece, S. Wagner and P. Brach. 1982. *Technology Transfer, Productivity, and Economic Policy*. Norton.

Mansfield, E., and S. Wagner. 1975. "Organizational and Strategic Factors Associated With Probabilities of Success in Industrial R&D." *Journal of Business* 48, no. 2: 179-198.

Marples, D. L. 1961. "The Decisions of Engineering Design." *IRE Transactions on Engineering Management*, June: 55–71.

Martin, J. 1991. *Rapid Application Development*. Macmillan.

Matthews, J. 1985. *Public Access to Online Catalogs*, second edition. Neal-Schuman.

Maurer, S. 2005. "Inside the Anticommons: Academic Scientists' Struggle to Commercialize Human Mutations Data, 1999–2001." *Research Policy*, forthcoming.

Mead, C., and L. Conway. 1980. *Introduction to VLSI Systems*. Addison-Wesley.

Means, R. S. 1989. *Building Construction Cost Data 1989*. R. S. Means.

Merges, R., and R. R. Nelson. 1990. "On the Complex Economics of Patent Scope." *Columbia Law Review* 90: 839–916.

Merton, R. K. 1973. *The Sociology of Science*. University of Chicago Press.

Meyer, M. H., and L. Lopez. 1995. "Technology Strategy in a Software Products Company." *Journal of Product Innovation Management* 12, no. 4: 194–306.

Milligan, G. W., and M. C. Cooper. 1985. "An Examination of Procedures for Determining the Number of Clusters in a Data Set." *Psychometrica* 45: 159–179.

Mishina, K. 1989. Essays on Technological Evolution. PhD thesis, Harvard University.

Mitchell, R. C., and R. T. Carson. 1989. *Using Surveys to Value Public Goods*. Resources for the

Future.

Moerke, K. A. 2000. “Free Speech to a Machine.” *Minnesota Law Review* 84, no. 4: 1007–1008.

Mollick, E. 2004. Innovations from the Underground: Towards a Theory of Parasitic Innovation. Master’s thesis, Massachusetts Institute of Technology.

Mountain Bike. 1996. *Mountain Biking Skills*. Rodale.

Morrison, P. D., J. H. Roberts, and D. F. Midgley. 2004. “The Nature of Lead Users and Measurement of Leading Edge Status.” *Research Policy* 33, no. 2: 351–362.

Morrison, P. D., J. H. Roberts, and E. von Hippel. 2000. “Determinants of User Innovation and Innovation Sharing in a Local Market.” *Management Science* 46, no. 12: 1513–1527.

Muñiz, A. M., Jr., and T. C. O’Guinn. 2001. “Brand Community.” *Journal of Consumer Research* 27: 412–432.

Muñiz, A. M., Jr., and H. J. Schau. 2004. When the Consumer Becomes the Marketer. Working paper, DePaul University.

Myers, J. H. 1996. *Segmentation and Positioning for Strategic Marketing Decisions*. American Marketing Association.

National Sporting Goods Association. 2002. *Sporting Goods Market in 2001*.

Neil, H., R. Cummings, P. Ganderton, G. Harrison, and G. McGuckin. 1994. “Hypothetical Surveys and Real Economic Commitments.” *Land Economics* 70: 145–154.

Nelson, R. R. 1982. “The Role of Knowledge in R&D Efficiency.” *Quarterly Journal of Economics* 97, no. 3: 453–470.

Nelson, R. R. 1990. What Is Public and What Is Private About Technology? Working paper, Consortium on Competitiveness and Cooperation, University of California, Berkeley.

Nelson, R. R. 1993. *National Innovation Systems: A Comparative Analysis*. Oxford University Press.

Nuvolari, A. 2004. “Collective Invention during the British Industrial Revolution: The Case of the Cornish Pumping Engine.” *Cambridge Journal of Economics* 28, no. 3: 347–363.

Ogawa, S. 1998. “Does Sticky Information Affect the Locus of Innovation? Evidence from the Japanese Convenience-Store Industry.” *Research Policy* 26, no. 7–8: 777–790.

Oliver, P. E. 1980. “Rewards and Punishment as Selective Incentives for Collective Action: Theoretical Investigations.” *American Journal of Sociology* 85: 1356–1375.

Oliver, P. E., and G. Marwell. 1988. “The Paradox of Group Size in Collective Action: A Theory of the Critical Mass II.” *American Sociological Review* 53, no. 1: 1–18.

Olson, E. L., and G. Bakke. 2001. “Implementing the Lead User Method in a High Technology Firm: A Longitudinal Study of Intentions versus Actions.” *Journal of Product Innovation Management* 18, no. 2: 388–395.

Olson, M. 1967. *The Logic of Collective Action*. Harvard University Press.

O'Mahony, S. 2003. "Guarding the Commons: How Open Source Contributors Protect Their Work." *Research Policy* 32, no. 7: 1179–1198.

Ostrom, E. 1998. "A Behavioral Approach to the Rational Choice Theory of Collective Action." *American Political Science Review* 92, no. 1: 1–22.

Pavitt, K. 1984. "Sectoral Patterns of Technical Change: Towards a Taxonomy and a Theory." *Research Policy* 13 (6): 343–373.

Penning, C. 1998. *Bike History*. Delius & Klasing.

Perens, B. 1999. "The Open Source Definition." In C. DiBona, S. Ockman, and M. Stone, eds., *Opensources*. O'Reilly.

Pinch, T., and R. Kline. 1996. "Users as Agents of Technological Change. The Social Construction of the Automobile in Rural America." *Technology and Culture* 37: 763–795.

Pinch, T. J., and W. E. Bijker. 1987. "The Social Construction of Facts and Artifacts." In W. Bijker, T. Hughes, and T. Pinch, eds., *The Social Construction of Technological Systems*. The MIT Press.

Pine, J. B. II. 1993. *Mass Customization*. Harvard Business School Press.

Polanyi, M. 1958. *Personal Knowledge*. University of Chicago Press.

Poolton, J., and I. Barclay. 1998. "New Product Development: From Past Research to Future Applications." *Industrial Marketing Management* 27: 197–212.

Porter, M. E. 1991. *Competitive Advantage of Nations*. Free Press.

Prügl, R., and N. Franke. 2005. Factors Impacting the Success of Toolkits for User Innovation and Design. Working paper, Vienna University of Economics.

Punj, G., and D. W. Stewart. 1983. "Cluster Analysis in Marketing Research: Review and Suggestions for Application." *Journal of Marketing Research* 20, May: 134–148.

Raymond, E., ed. 1996. *The New Hacker's Dictionary*, third edition. MIT Press.

Raymond, E. 1999. *The Cathedral and the Bazaar*. O'Reilly.

Redmond, W. H. 1995. "An Ecological Perspective on New Product Failure: The

Effects of Competitive Overcrowding." *Journal of Product Innovation Management* 12: 200–213.

Riggs, W., and E. von Hippel. 1994. "Incentives to Innovate and the Sources of Innovation: The Case of Scientific Instruments." *Research Policy* 23, no. 4: 459–469.

Rogers, E. M. 1994. *Diffusion of Innovation*, fourth edition. Free Press.

Rosenberg, N. 1976. *Perspectives on Technology*. Cambridge University Press.

Rosenberg, N. 1982. *Inside the Black Box*. Cambridge University Press.

Rothwell, R., C. Freeman, A. Horsley, V. T. P. Jervis, A. B. Roberts, and J. Townsend. 1974. "SAPPHO Updated: Project SAPPHO Phase II." *Research Policy* 3, no. 3: 258–291.

Saloner, G., and W. E. Steinmueller. 1996. Demand for Computer Products and Services in Large European Organizations. Research paper, Stanford Graduate School of Business.

Sattler, H. 2003. "Appropriability of Product Innovations: An Empirical Analysis for Germany." *International Journal of Technology Management* 26, no. 5–6: S. 502–516.

Schmookler, J. 1966. *Invention and Economic Growth*. Harvard University Press.

Schrage, M. 2000. *Serious Play*. Harvard Business School Press.

Schreier, M., and N. Franke. 2004. Value Creation by Self-Design. Working paper, Vienna University of Economics.

Seip, K., and J. Strand. 1992. "Willingness to Pay for Environmental Goods in Norway: A Contingent Valuation Study with Real Payment." *Environmental and Resource Economics* 2: 91–106.

Shah, S. 2000. Sources and Patterns of Innovation in a Consumer Products Field. Working paper, MIT Sloan School of Management.

Shah, S., and M. Tripsas. 2004. When Do User-Innovators Start Firms? Working paper, University of Illinois.

Shapiro, C. 2001. "Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting." In A. Jaffe, J. Lerner, and S. Stern, eds., *Innovation Policy and the Economy*, volume 1. MIT Press.

Simon, E. 1996. "Innovation and Intellectual Property Protection: The Software Industry Perspective." *Columbia Journal of World Business* 31, no. 1: 30–37.

Slater, Stanley F., and Narver, John C. 1998. "Customer-Led and Market-Oriented: Let's Not Confuse the Two." *Strategic Management Journal* 19, no. 1:1001–1006.

Slaughter, S. 1993. "Innovation and Learning during Implementation: A Comparison of User and Manufacturer Innovations." *Research Policy* 22, no. 1: 81–95.

Smith, A. 1776. *An Inquiry into the Nature and Causes of the Wealth of Nations*. Modern Library edition. Random House, 1937.

Spence, M. 1976. "Product Differentiation and Welfare." *American Economic Review* 66, no. 2, Papers and Proceedings: 407–414.

Taylor, C. T., and Z. A. Silberston. 1973. *The Economic Impact of the Patent System*. Cambridge University Press.

Taylor, M., and S. Singleton. 1993. "The Communal Resource: Transaction Costs and the Solution of Collective Action Problems." *Politics and Society* 21, no. 2: 195–215.

Tedd, L. A. 1994. "OPACs through the Ages." *Library Review* 43, no. 4: 27–37.

Teece, D. J. 1977. “Technology Transfer by Multinational Firms: The Resource Cost of Transferring Technological Know-How.” *Economic Journal* 87: 242–261.

Thomke, S. H. 1998. “Managing Experimentation in the Design of New Products.” *Management Science* 44, no. 6: 743–762.

Thomke, S. H. 2003. *Experimentation Matters*. Harvard Business School Press.

Thomke, S. H., and E. von Hippel. 2002. “Customers as Innovators: A New Way to Create Value.” *Harvard Business Review* 80, no. 4: 74–81.

Thomke, S. H., E. von Hippel, and R. Franke. 1998. “Modes of Experimentation: An Innovation Process—and Competitive—Variable.” *Research Policy* 27, no. 3: 315–332.

Tirole, J. 1988. *The Theory of Industrial Organization*. MIT Press.

Tull, D. 1967. “The Relationship of Actual and Predicted Sales and Profits in New Product Introductions.” *Journal of Business* 40: 233–250.

Tyre, M., and E. von Hippel. 1997. “Locating Adaptive Learning: The Situated Nature of Adaptive Learning in Organizations.” *Organization Science* 8, no. 1: 71–83.

Urban, G. L., and E. von Hippel. 1988. “Lead User Analyses for the Development of New Industrial Products.” *Management Science* 34, no. 5: 569–82.

Utterback, J. M., and W. J. Abernathy. 1975. “A Dynamic Model of Process and Product Innovation.” *Omega* 3, no. 6: 639–656.

van der Plas, R., and C. Kelly. 1998. *The Original Mountain Bike Book*. MBI.

Varian, H. R. 2002. “New Chips Can Keep a Tight Rein on Consumers.” *New York Times,* July 4.

von Hippel, E. 1976. “The Dominant Role of Users in the Scientific Instrument Innovation Process.” *Research Policy* 5, no. 3: 212–39.

von Hippel, E. 1977. “Transferring Process Equipment Innovations from User- Innovators to Equipment Manufacturing Firms.” *R&D Management* 8, no. 1:13–22.

von Hippel, E. 1986. “Lead Users: A Source of Novel Product Concepts.” *Management Science* 32, no. 7: 791–805.

von Hippel, E. 1988. *The Sources of Innovation*. Oxford University Press.

von Hippel, E. 1994. “Sticky Information and the Locus of Problem Solving: Implications for Innovation.” *Management Science* 40, no. 4: 429–439.

von Hippel, E. 1998. “Economics of Product Development by Users: The Impact of Sticky Local Information.” *Management Science* 44, no. 5: 629–644.

von Hippel, E. 2001. “Perspective: User Toolkits for Innovation.” *Journal of Product Innovation Management* 18: 247–257.

von Hippel, E., and S. N. Finkelstein. 1979. “Analysis of Innovation in Automated Clinical Chemistry Analyzers.” *Science and Public Policy* 6, no. 1: 24–37.

von Hippel, E., N. Franke, and R. Prügl. 2005. Screening vs. Pyramiding. Working paper, MIT Sloan School of Management.

von Hippel, E., and R. Katz. 2002. "Shifting Innovation to Users via Toolkits." *Management Science* 48, no. 7: 821–833.

von Hippel, E., S. H. Thomke, and M. Sonnack. 1999. "Creating Breakthroughs at 3M." *Harvard Business Review* 77, no. 5: 47–57.

von Hippel, E., and M. Tyre. 1995. "How 'Learning by Doing' is Done: Problem Identification in Novel Process Equipment." *Research Policy* 24, no. 1: 1–12.

von Hippel, E., and G. von Krogh. 2003. "Open Source Software and the "Private-Collective" Innovation Model: Issues for Organization Science." *Organization Science* 14, no. 2: 209–223.

von Krogh, G., and S. Spaeth. 2002. Joining, Specialization, and Innovation in Open Source Software Development. Working paper, University of St. Gallen.

von Krogh, G., S. Haefliger and S. Spaeth. 2004. The Practice of Knowledge Reuse in Open Source Software. Working paper, University of St. Gallen.

Wellman, B., J. Boase, and W. Chen. 2002. The Networked Nature of Community On and Off the Internet. Working paper, Centre for Urban and Community Studies, University of Toronto.

Wenger, E. 1998. *Communities of Practice*. Cambridge University Press.

Wayner, P. 2000. *Free for All*. Harper Business.

Weber, S. 2004. *The Success of Open Source*. Harvard University Press.

Willis, K. G., and N. A. Powe. 1998. "Contingent Valuation and Real Economic Commitments: A Private Good Experiment." *Journal of Environmental Planning and Management* 41, no. 5: 611–619.

Wind, Y. 1978. "Issues and Advances in Segmentation Research." *Journal of Marketing Research* 15, August: 317–337.

Winter, S. G., and G. Szulanski. 2001. "Replication as Strategy." *Organization Science* 12, no. 6: 730–743.

Young, G., K. G. Smith, and C. M. Grimm. 1996. "Austrian and Industrial Organization Perspectives on Firm Level Competitive Activity and Performance." *Organization Science* 7, no. 3: 243–254.

作者介绍：

埃里克·冯·希普尔是创新管理专家，麻省理工学院斯隆管理学院创新和企业家精神负责人。他也是《创新的源泉》一书的作者。

封底：

“埃里克·冯·希普尔写了一本真正重要的创新书籍。《民主化创新》一书将大量的案例和数据与清晰的、系统的理论框架相结合，颠覆了我们许多人头脑中的创新经济学观点。冯·希普尔为我们提供了一本神奇的书籍，它将挑战创新理论和实务”。

尤查•本科勒(Yochai Benkler)，耶鲁大学法学院，法学教授

“每一个关心企业增长和创新的管理者都应该读读这本书。它告诉公司如何以令人振奋的发现新产品和市场增长的方法来替代过时的创新范式。”

克莱顿·克里斯坦森(Clayton, M. Christensen)，哈佛商学院，《创新者的窘境》作者

“冯•希普尔写的是21世纪必备创新指南。希望组织成长的企业领导会发现他的概念和方法具有非常有价值。”

罗杰•莱西(Roger Lacey)，3M公司电子商务、公司计划和战略员工副总

“埃里克·冯·希普尔善于发现技术创新中的重要观点，它们不同于传统的常识和传统的学术观点。他的关于用户——而非供应商——在技术前沿起重要作用的著作从全新的视角研究创新。这本书是知识的盛宴。”

理查德•纳尔逊(Richard R. Nelson)，哥伦比亚大学国际与公共事务学院、商学院、法学院教授

“这是有关被忽视的用户在创新中的作用的非常重要、原创的论断。冯·希普尔拓展了他的关于领先用户的开创性研究，展示了向市场公开新产品开发所带来的经济效益。每个在已有的或新兴的产业中进行产品开发管理的人，没有一个可以忽视创新过程中用户的力量和价值。”

安德鲁•哈格顿（Andrew Hargadon），《突破如何发生：令人惊异的公司创新事实》的作者