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MBA核心课案例教学推荐教材

# Strategy

(Reprint)

战略管理  
(英文版)





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 中国人民大学出版社

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# 出版说明

随着 MBA 教育逐渐走向成熟，人们对于案例教学已不再陌生，很多院校，特别是首批 MBA 试点院校已经比较普遍地采用案例教学这种模式。案例教学、案例编写也成为全国 MBA 教学指导委员会十分重视并大力推广的重要工作。为满足教学需要，中国人民大学出版社与哈佛商学院出版公司达成了引进出版哈佛商学院案例的协议，围绕 MBA 教学选择了十门课程，包括：战略管理，人力资源管理，营销管理，公司财务管理，领导学，组织行为学，供应链管理，技术与运营管理，财务报告与控制，企业、政府与国际经济，中文版和英文版同时推出。先由哈佛大学教授从其数千个案例中进行选择、推荐，再由中国教授从推荐的案例目录中遴选，在翻译的过程中又作了进一步的调整，最终确定了目前的案例。

多年来，中国人民大学出版社一直在不懈地打造经管类图书的品牌，特别是，作为高等教育教材出版的市场领先者，我们一直希望能为中国的管理教学和实践提供更多、更好的产品。随着中国 MBA 市场规模的扩大，学生人数的增加、素质的提高，教师队伍的成熟，我们发现，案例教学教材的数量不足及质量不高成了一个比较大的问题，基于大量的市场调研，哈佛商学院的案例便成了我们针对 MBA 教学引进案例的首选。毕竟，哈佛大学是最早开始 MBA 教育的，其 MBA 学位计划有近一百年的历史。哈佛案例每年能销 600 万份，其案例教学法也在逐渐为世界上各大学校所熟悉和借鉴。作为一家以为高等教育服务为己任的大学出版社，我们深感哈佛案例的引进对于我国工商管理教育理论和实践的提升具有十分重要的意义，事实上，我们在 2002 年曾引进出版了一套哈佛商学案例，分商务基础系列和实务系列，共 21 种，在当时引起了很大的反响，只是囿于条件，案例没能根据课程设置选取，不便于教师在教学中使用，基于此，便有了我们这套针对 MBA 核心课程的案例。

在运作这套案例的过程中，我们广泛听取了老师们的意见和建议，我们发现，单是引进一些案例并出版不能满足教学的实际需要，对于很多老师来说，如何讲授哈佛案例才是一个难点。同时，我们在前期调研和筹备工作中也深感案例的推广不再局限于传统意义上的图书推广工作，它已超出了传统单纯出版图书的概念，变成了一种教学理念和教学方法的推广，它需要我们提供更多、更长期的后续服务，并改变传统的出版模式。

就在我们策划出版这套案例书之际，哈佛商学院酝酿已久的 PCMPCL (Program on

Case Method and Participant-Centered Learning) 培训计划正式启动。为配合 PCMPCL 项目, 哈佛商学院出版公司邀请包括中国大陆、香港、台湾等地区和新加坡在内的 16 所大学的商学院选派一些教授到哈佛商学院参加哈佛案例教学的培训。首次培训定于 2005 年 8 月, 同年 12 月还将在中国举办第二期有关案例教学与写作的培训。

同时, 为帮助广大教师更好地使用哈佛案例, 中国人民大学出版社还将配套引进案例的教师用书、教学录像等辅助资料(出于授权限制, 仅向使用本案例教学的教师提供)。在案例出版后, 我们还将提供教学支持, 帮助中国教师更好、更便利地使用案例。

运作案例出版的过程是艰苦的, 但结果是美好的、令人难忘的。在和哈佛商学院出版公司的合作中, 我们一次又一次地听到他们虔诚地谈及他们的使命: 改善管理实践。在案例出版的过程中, 很多人做了辛苦的工作, 我们感谢哈佛商学院高级副院长、贝克基金教授史蒂文·C·惠尔赖特(Steve C. Wheelwright)先生, 他为我们的案例出版写了序, 他在这套案例书 10 门课的选择中起了决定性的作用, 没有他的努力, 这套书的出版是不可能的。感谢 John Quelch、Michael Tushman、Debora Spar、Pankaj Ghemawat、David Hawkins 以及 David Upton 等教授, 他们在我们初选案例的过程中给予了建议和指导; 感谢哈佛商学院和哈佛商学院出版公司的下列人员, 他们为案例的挑选做了许多工作: Paul Andrews、Tim Cannon、Tad Dearden、Mike Derocco、Pat Hathaway、Amy Iakovou 和 Carol Sweet; 感谢哈佛商学院出版公司国际部总经理陈欣章先生, 他促成了案例最终出版协议的签订和执行, 并完成了整个过程中的协调工作。最后, 也要感谢所有参加案例中文版翻译的教授, 他们都有自己繁重的教学任务, 在出版时间紧迫的情况下, 各位教授都保质、按时地完成了翻译工作。

我们希望这套案例书的出版以及后续的培训工作的影响能影响几百、几千乃至上万个 MBA; 我们希望他们能用一种新的视角, 适应国际化的大趋势, 理解现代企业的管理方法, 理性地接受信用经商的理念, 推动中国经济的更大发展; 我们希望能通过我们的出版物来引导中国的管理实践。如能做到此, 那么其间的各种辛苦努力也就值得了。

感谢您选用或关注我们的这套案例书, 对您的任何反馈我们都十分珍视。我们的联系方式: 010-62510566 转 551 或 541; E-mail: [rdcsjg@crup.com.cn](mailto:rdcsjg@crup.com.cn) 或登录: <http://www.rdjg.com.cn>。

中国人民大学出版社  
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# 序

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“培养世界上有影响力的领导人”是哈佛商学院的使命。1908年，哈佛商学院正式成立。为实现这一使命，哈佛商学院通过实施各种项目，影响众多不同的人。哈佛商学院最出名的可能是其MBA项目，但同时我们也通过开展高级管理人员培训项目（Executive Education Program）（包括AMP项目以及其他逾100个为职业经理人开设的各种培训项目）和通过哈佛商学院出版公司的出版物追求我们的使命。我们的出版物包括《哈佛商业评论》、哈佛商学院图书、网络课程，以及哈佛商学院案例研究。

为杰出院校提供建议也是我们使命的一个重要方面。在过去的60年里，哈佛商学院为世界上许多院校不仅提供了教学案例，还通过各种项目帮助他们及其教师提升了自己的案例教学能力。包括：国际教师项目（ITP）、以参与者为中心的教学法培训项目（CPCL）、案例教学与以参与者为中心的教学法培训项目（PCMPCL）。其中，PCMPCL项目发起于2005年8月，其目的在于帮助中国大陆、香港、台湾等地区和新加坡的主要商学院提升其在MBA项目、高级管理人员培训项目以及以管理实践为导向的研究中，熟练运用案例教学和启发式教学的能力。

通过多年的实践，哈佛商学院发现案例教学的应用通常需要经历三个阶段。第一阶段，案例在管理学课堂上是作为概念或原理的例子、说明来使用的。第二阶段，将案例研究作为主要的学习方法，依靠案例讨论。第三阶段，教授开始把他们在案例研究和课程发展上取得的成果大量应用于教学，以便更好地理解 and 传授如何做决定。

为实践我们的使命，哈佛商学院和哈佛商学院出版公司很高兴与中国人民大学出版社携手帮助中国商学院及其教授实现从第二阶段向第三阶段的跨越。我们的努力包括：为来自中国大陆、香港、台湾等地区和新加坡的教授提供为期10天的PCMPCL培训；出版一套根据MBA核心课编辑的案例书（分中文版和英文版）；组织一系列后续服务的案例教学和案例写作的培训班；建立一个服务于中国教师的案例服务中心。

我们这样做的目的有两个，并且这两个方面都与哈佛商学院的使命紧密相连。一

个目的是通过帮助全球教育机构——正如我们在中国发现的那些机构一样——发展他们自身的、着眼于管理实践的案例教学能力，从而促进全球管理教育水平的提高。另一个目的是帮助这些机构培养一些能够在他们的学校中起到带头作用的教师，使他们能够写出新的、能够与世界分享的案例研究和教学资料。这种既符合国际标准，又与中国具体管理实践相关的案例研究正是中国管理教育机构所急需的。

我们很高兴中国人民大学出版社和中国许多优秀的商学院加入我们的队伍。我们希望哈佛案例书在中国的出版能对中国的教育机构、教师及其培养的未来职业经理人有所帮助，帮助他们实现在全球经济中扮演重要角色的梦想。

**史蒂文·C·惠尔赖特 (Steven C. Wheelwright)**

**哈佛商学院高级副院长，贝克基金教授**

**2005年6月**



# PREFACE

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The mission of the Harvard Business School (HBS) is “to educate leaders who will make a difference in the world.” Founded in 1908, when Harvard University was already more than 250 years old, HBS achieves this mission by reaching a wide range of audiences through a variety of programs. While HBS is perhaps best known for its MBA Program, it also pursues this mission through its Executive Education Programs (including the Advanced Management Program as well as over 100 additional programs for practicing managers) and through the publishing activities of Harvard Business School Publishing (HBSP) which include Harvard Business Review, HBS Press (books), E-Learning products, and HBS Case Studies.

Providing guidance for leading academic institutions continues to be an important aspect of the HBS Mission. Over the past 60 years, HBS has not only made its case studies available throughout the world, but has assisted other Universities and their faculties in developing their ability to teach by the case method. This has included the offering of such courses as The International Teachers Program (ITP), Colloquium on Participant Centered Learning (CPCL) and the Program on Case Method and Participant Centered Learning (PCMPCL). The PCMPCL Program initiated in August of 2005 is aimed at helping leading Business Schools in Greater China and Singapore to develop excellence in the use of the case method and participant centered learning in both MBA and Executive Programs, as well as in practitioner-oriented research.

HBS has discovered over the years that adoption of the case method often proceeds through three stages. The first stage is where cases are used as examples and illustrations of principles and concepts being taught in a Management Course. The second stage is where cases become a primary means of learning, with a majority of the class sessions in a program relying on field-based cases. The third stage is then where the faculty begin doing significant amounts of their case-based research and curriculum development to better understand and teach about decision making.

Consistent with our mission, we at HBS and at HBS Publishing are pleased to offer—in conjunction with our partner, China Renmin University Press—a comprehensive approach to Chinese Business Schools and their faculty, that is focused on helping them progress through



the second stage of participant-centered learning and into that third stage. This overall effort consists of offering the 10-day PCMPCL Course to teams of business school faculty from Greater China and Singapore, providing a series of case books (through China Renmin University Press) tailored to the Ministry of Education's MBA curriculum recommendations, offering a set of follow-up case teaching and case writing seminars in China, and establishing an academic support center to assist faculty with their unique course and case requirements.

Our purposes in doing this are two-fold, but both are directly tied to the HBS Mission. One purpose is to facilitate better management education throughout the global economy by assisting leading educational institutions—such as those found in China—in developing their capabilities in practitioner focused, case based teaching. The other purpose is to help the leadership at such institutions to develop a critical mass of faculty who can lead the efforts of their own institutions in creating additional case-based teaching and research materials that can be shared with other parts of the world. Such China-specific management materials of a world class caliber are anxiously needed by academics elsewhere in the world.

We are pleased that China Renmin University Press and so many leading Chinese Management Schools would join with us in pursuit of these purposes. We anticipate that this series of case books will be a significant contributor to the pursuit of the important role that Chinese Educational Institutions, their faculty, and the practitioners they serve will have in the global economy.

Steven C. Wheelwright  
Baker Foundation Professor  
Senior Associate Dean, Publication Activities  
Harvard Business School  
Harvard University  
Boston, Ma 02163  
June 2005

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STEPHEN P. BRADLEY

## Crown Cork & Seal in 1989

John F. Connelly, Crown Cork & Seal's ailing octogenarian chairman, stepped down and appointed his long-time disciple, William J. Avery, chief executive officer of the Philadelphia can manufacturer in May 1989. Avery had been president of Crown Cork & Seal since 1981, but had spent the duration of his career in Connelly's shadow. As Crown's new CEO, Avery planned to review Connelly's long-followed strategy in light of the changing industry outlook.

The metal container industry had changed considerably since Connelly took over Crown's reins in 1957. American National had just been acquired by France's state-owned Pechiney International, making it the world's largest beverage can producer. Continental Can, another long-standing rival, was now owned by Peter Kiewit Sons, a privately held construction firm. In 1989, all, or part of Continental's can-making operations, appeared to be for sale. Reynolds Metals, a traditional supplier of aluminum to can makers, was now also a formidable competitor in cans. The moves by both suppliers and customers of can makers to integrate into can manufacturing themselves had profoundly redefined the metal can industry since John Connelly's arrival.

Reflecting on these dramatic changes, Avery wondered whether Crown, with \$1.8 billion in sales, should consider bidding for all or part of Continental Can. Avery also wondered whether Crown should break with tradition and expand its product line beyond the manufacture of metal cans and closures. For 30 years Crown had stuck to its core business, metal can making, but analysts saw little growth potential for metal cans in the 1990s. Industry observers forecast plastics as the growth segment for containers. As Avery mulled over his options, he asked: Was it finally time for a change?

### The Metal Container Industry

The metal container industry, representing 61% of all packaged products in the United States in 1989, produced metal cans, crowns (bottle caps), and closures (screw caps, bottle lids) to hold or seal an almost endless variety of consumer and industrial goods. Glass and plastic containers split the balance of the container market with shares of 21% and 18%, respectively. Metal cans served the beverage, food, and general packaging industries.

Metal cans were made of aluminum, steel, or a combination of both. Three-piece cans were formed by rolling a sheet of metal, soldering it, cutting it to size, and attaching two ends, thereby creating a three-piece, seamed can. Steel was the primary raw material of three-piece cans, which

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Professor Stephen P. Bradley and Research Associate Sheila M. Cavanaugh prepared this case. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

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were most popular in the food and general packaging industries. Two-piece cans, developed in the 1960s, were formed by pushing a flat blank of metal into a deep cup, eliminating a separate bottom, a molding process termed "drawn and ironed." While aluminum companies developed the original technology for the two-piece can, steel companies ultimately followed suit with a thin-walled steel version. By 1983, two-piece cans dominated the beverage industry where they were the can of choice for beer and soft drink makers. Of the 120 billion cans produced in 1989, 80% were two-piece cans.

Throughout the decade of the 1980s, the number of metal cans shipped grew by an annual average of 3.7%. Aluminum can growth averaged 8% annually, while steel can shipments fell by an average of 3.1% per year. The number of aluminum cans produced increased by almost 200% during the period 1980–1989, reaching a high of 85 billion, while steel can production dropped by 22% to 35 billion for the same period (see **Exhibit 1**).

### Industry Structure

Five firms dominated the \$12.2 billion U.S. metal can industry in 1989, with an aggregate 61% market share. The country's largest manufacturer—American National Can—held a 25% market share. The four firms trailing American National in sales were Continental Can (18% market share), Reynolds Metals (7%), Crown Cork & Seal (7%), and Ball Corporation (4%). Approximately 100 firms served the balance of the market.

**Pricing** Pricing in the can industry was very competitive. To lower costs, managers sought long runs of standard items, which increased capacity utilization and reduced the need for costly changeovers. As a result, most companies offered volume discounts to encourage large orders. Despite persistent metal can demand, industry operating margins fell approximately 7% to roughly 4% between 1986 and 1989. Industry analysts attributed the drop in operating margins to (1) a 15% increase in aluminum can sheet prices at a time when most can makers had guaranteed volume prices that did not incorporate substantial cost increases; (2) a 7% increase in beverage can production capacity between 1987 and 1989; (3) an increasing number of the nation's major brewers producing containers in house; and (4) the consolidation of soft drink bottlers throughout the decade. Forced to economize following costly battles for market share, soft drink bottlers used their leverage to obtain packaging price discounts.<sup>1</sup> Over capacity and a shrinking customer base contributed to an unprecedented squeeze on manufacturers' margins, and the can manufacturers themselves contributed to the margin deterioration by aggressively discounting to protect market share. As one manufacturer confessed, "When you look at the beverage can industry, it's no secret that we are selling at a lower price today than we were 10 years ago."

**Customers** Among the industry's largest users were the Coca-Cola Company, Anheuser-Busch Companies, Inc., PepsiCo Inc., and Coca-Cola Enterprises Inc. (see **Exhibit 2**). Consolidation within the soft drink segment of the bottling industry reduced the number of bottlers from approximately 8,000 in 1980 to about 800 in 1989 and placed a significant amount of beverage volume in the hands of a few large companies.<sup>2</sup> Since the can constituted about 45% of the total cost of a packaged beverage, soft drink bottlers and brewers usually maintained relationships with more than one can supplier. Poor service and uncompetitive prices could be punished by cuts in order size.

**Distribution** Due to the bulky nature of cans, manufacturers located their plants close to customers to minimize transportation costs. The primary cost components of the metal can included

<sup>1</sup>Salomon Brothers, *Beverage Cans Industry Report*, March 1, 1990.

<sup>2</sup>T. Davis, "Can Do: A Metal Container Update," *Beverage World* (June 1990): 34.

(1) raw materials at 65%; (2) direct labor at 12%; and (3) transportation at roughly 7.5%. Various estimates placed the radius of economical distribution for a plant at between 150 and 300 miles. Beverage can producers preferred aluminum to steel because of aluminum's lighter weight and lower shipping costs. In 1988, steel cans weighed more than twice as much as aluminum.<sup>3</sup> The costs incurred in transporting cans to overseas markets made international trade uneconomical. Foreign markets were served by joint ventures, foreign subsidiaries, affiliates of U.S. can manufacturers, and local overseas firms.

**Manufacturing** Two-piece can lines cost approximately \$16 million, and the investment in peripheral equipment raised the per-line cost to \$20–\$25 million. The minimum efficient plant size was one line and installations ranged from one to five lines. While two-piece can lines achieved quick and persistent popularity, they did not completely replace their antecedents—the three-piece can lines. The food and general packaging segment—representing 28% of the metal container industry in 1989—continued using three-piece cans throughout the 1980s. The beverage segment, however, had made a complete switch from three-piece to two-piece cans by 1983.

A typical three-piece can production line cost between \$1.5 and \$2 million and required expensive seaming, end-making, and finishing equipment. Since each finishing line could handle the output of three or four can-forming lines, the minimum efficient plant required at least \$7 million in basic equipment. Most plants had 12 to 15 lines for the increased flexibility of handling more than one type of can at once. However, any more than 15 lines became unwieldy because of the need for duplication of set-up crews, maintenance, and supervision. The beverage industry's switch from three- to two-piece lines prompted many manufacturers to sell complete, fully operational three-piece lines "as is" for \$175,000 to \$200,000. Some firms shipped their old lines overseas to their foreign operations where growth potential was great, there were few entrenched firms, and canning technology was not well understood.

**Suppliers** Since the invention of the aluminum can in 1958, steel had fought a losing battle against aluminum. In 1970, steel accounted for 88% of metal cans, but by 1989 had dropped to 29%. In addition to being lighter, of higher, more consistent quality, and more economical to recycle, aluminum was also friendlier to the taste and offered superior lithography qualities. By 1989, aluminum accounted for 99% of the beer and 94% of the soft drink metal container businesses, respectively.

The country's three largest aluminum producers supplied the metal can industry. Alcoa, the world's largest aluminum producer with 1988 sales of \$9.8 billion, and Alcan, the world's largest marketer of primary aluminum, with 1988 sales of \$8.5 billion, supplied over 65% of the domestic can sheet requirements. Reynolds Metals, the second-largest aluminum producer in the United States, with 1988 sales of \$5.6 billion, supplied aluminum sheet to the industry and also produced about 11 billion cans itself.<sup>4</sup> Reynolds Metals was the only aluminum company in the United States that produced cans (see Exhibit 3).

Steel's consistent advantage over aluminum was price. According to The American Iron and Steel Institute in 1988, steel represented a savings of from \$5 to \$7 for every thousand cans produced, or an estimated savings of \$500 million a year for can manufacturers. In 1988, aluminum prices increased

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<sup>3</sup>J.J. Sheehan, "Nothing Succeeds Like Success," *Beverage World* (November 1988): 82.

<sup>4</sup>Until 1985, aluminum cans were restricted to carbonated beverages because it was the carbonation that prevented the can from collapsing. Reynolds discovered that by adding liquid nitrogen to the can's contents, aluminum containers could hold noncarbonated beverages and still retain their shape. The liquid nitrogen made it possible for Reynolds to make cans for liquor, chocolate drinks, and fruit juices.



an estimated 15%, while the lower steel prices increased by only 5% to 7%. According to a representative of Alcoa, the decision on behalf of the firm to limit aluminum price increases was attributed to the threat of possible inroads by steel.<sup>5</sup>

## Industry Trends

The major trends characterizing the metal container industry during the 1980s included (1) the continuing threat of in-house manufacture; (2) the emergence of plastics as a viable packaging material; (3) steady competition from glass as a substitute for aluminum in the beer market; (4) the emergence of the soft drink industry as the largest end-user of packaging, with aluminum as the primary beneficiary; and (5) the diversification of, and consolidation among, packaging producers.

**In-house manufacture** Production of cans at "captive" plants—those producing cans for their own company use—accounted for approximately 25% of the total can output in 1989. Much of the expansion in in-house manufactured cans, which persisted throughout the 1980s, occurred at plants owned by the nation's major food producers and brewers. Many large brewers moved to hold can costs down by developing their own manufacturing capability. Brewers found it advantageous to invest in captive manufacture because of high-volume, single-label production runs. Adolph Coors took this to the extreme by producing all their cans in-house and supplying almost all of their own aluminum requirements from their 130 million-pound sheet rolling mill in San Antonio, Texas.<sup>6</sup> By the end of the 1980s, the beer industry had the capacity to supply about 55% of its beverage can needs.<sup>7</sup>

Captive manufacturing was not widespread in the soft drink industry, where many small bottlers and franchise operations were generally more dispersed geographically compared with the brewing industry. Soft drink bottlers were also geared to low-volume, multilabel output, which was not as economically suitable for the in-house can manufacturing process.

**Plastics** Throughout the 1980s, plastics was the growth leader in the container industry with its share growing from 9% in 1980 to 18% in 1989. Plastic bottle sales in the United States were estimated to reach \$3.5 billion in 1989, with food and beverage—buoyed by soft drinks sales—accounting for 50% of the total. Plastic bottles accounted for 11% of domestic soft drink sales, with most of its penetration coming at the expense of glass. Plastic's light weight and convenient handling contributed to widespread consumer acceptance. The greatest challenge facing plastics, however, was the need to produce a material that simultaneously retained carbonation and prevented infiltration of oxygen. The plastic bottle often allowed carbonation to escape in less than 4 months, while aluminum cans held carbonation for more than 16 months. Anheuser-Busch claimed that U.S. brewers expected beer containers to have at least a 90-day shelf-life, a requirement that had not been met by any plastic can or bottle.<sup>8</sup> Additionally, standard production lines that filled 2,400 beer cans per minute required containers with perfectly flat bottoms, a feature difficult to achieve using plastic.<sup>9</sup> Since 1987, the growth of plastics slowed somewhat apparently due to the impact on the

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<sup>5</sup>L. Sly, "A 'Can-Do Crusade' By Steel Industry," *The Chicago Tribune* (July 3, 1988): 1.

<sup>6</sup>Merrill Lynch Capital Markets *Containers and Packaging Industry Report*, March 21, 1991.

<sup>7</sup>Salomon Brothers Inc. *Containers/Packaging: Beverage Cans Industry Report*, April 3, 1991.

<sup>8</sup>A. Agoos, "Aluminum Girds For The Plastic Can Bid," *Chemical Week* (January 16, 1985): 18.

<sup>9</sup>B. Oman, "A Clear Choice?" *Beverage World* (June 1990): 78.

environment of plastic packaging. Unlike glass and aluminum, plastics recycling was not a "closed loop" system.<sup>10</sup>

There were many small players producing plastic containers in 1988, often specializing by end-use or geographic region. However, only seven companies had sales of over \$100 million. Owens-Illinois, the largest producer of plastic containers, specialized in custom-made bottles and closures for food, health and beauty, and pharmaceutical products. It was the leading supplier of prescription containers, sold primarily to drug wholesalers, major drug chains, and the government. Constar, the second-largest domestic producer of plastic containers, acquired its plastic bottle operation from Owens-Illinois, and relied on plastic soft drink bottles for about two-thirds of its sales. Johnson Controls produced bottles for the soft drink industry from 17 U.S. plants and six non-U.S. plants, and was the largest producer of plastic bottles for water and liquor. American National and Continental Can both produced plastic bottles for food, beverages, and other products such as tennis balls (see Exhibit 4 for information on competitors).

**Glass** Glass bottles accounted for only 14% of domestic soft drink sales, trailing metal cans at 75%. The cost advantage that glass once had relative to plastic in the popular 16-ounce bottle size disappeared by the mid-1980s because of consistently declining resin prices. Moreover, soft drink bottlers preferred the metal can to glass because of a variety of logistical and economic benefits: faster filling speeds, lighter weight, compactness for inventory, and transportation efficiency. In 1989, the delivered cost (including closure and label) of a 12-ounce can (the most popular size) was about 15% less than that of glass or plastic 16-ounce bottles (the most popular size).<sup>11</sup> The area in which glass continued to outperform metal, however, was the beer category where consumers seemed to have a love affair with the "long neck" bottle that would work to its advantage in the coming years.<sup>12</sup>

**Soft drinks and aluminum cans** Throughout the 1980s, the soft drink industry emerged as the largest end-user of packaging. In 1989, soft drinks captured more than 50% of the total beverage market. The soft drink industry accounted for 42% of metal cans shipped in 1989—up from 29% in 1980. The major beneficiary of this trend was the aluminum can. In addition to the industry's continued commitment to advanced technology and innovation, aluminum's penetration could be traced to several factors: (1) aluminum's weight advantage over glass and steel; (2) aluminum's ease of handling; (3) a wider variety of graphics options provided by multipack can containers; and (4) consumer preference.<sup>13</sup> Aluminum's growth was also supported by the vending machine market, which was built around cans and dispensed approximately 20% of all soft drinks in 1989. An estimated 60% of Coca Cola's and 50% of Pepsi's beverages were packaged in metal cans. Coca Cola Enterprises and Pepsi Cola Bottling Group together accounted for 22% of all soft drink cans shipped in 1989.<sup>14</sup> In 1980, the industry shipped 15.9 billion aluminum soft drink cans. By 1989, that figure had increased to 49.2 billion cans. This increase, representing a 12% average annual growth rate, was achieved during a decade that experienced a 3.6% average annual increase in total gallons of soft drinks consumed.

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<sup>10</sup>In response to public concern, the container industry developed highly efficient "closed loop" recycling systems. Containers flowed from the manufacturer, through the wholesaler/distributor, to the retailer, to the consumer, and back to the manufacturer or material supplier for recycling. Aluminum's high recycling value permitted can manufacturers to sell cans at a lower cost to beverage producers. The reclamation of steel cans lagged that of aluminum because collection and recycling did not result in significant energy or material cost advantages.

<sup>11</sup>N. Lang, "A Touch of Glass," *Beverage World* (June 1990): 36.

<sup>12</sup>Lang, "A Touch of Glass."

<sup>13</sup>U.S. Industrial Outlook, 1984-1990.

<sup>14</sup>The First Boston Corporation, *Packaging Industry Report*, April 4, 1990.



**Diversification and consolidation** Low profit margins, excess capacity, and rising material and labor costs prompted a number of corporate diversifications and subsequent consolidations throughout the 1970s and 1980s. While many can manufacturers diversified across the spectrum of rigid containers to supply all major end-use markets (food, beverages, and general packaging), others diversified into nonpackaging businesses such as energy (oil and gas) and financial services.

Over a 20-year period, for example, American Can reduced its dependence on domestic can manufacturing, moving into totally unrelated fields, such as insurance. Between 1981 and 1986 the company invested \$940 million to acquire all or part of six insurance companies. Ultimately, the packaging businesses of American Can were acquired by Triangle Industries in 1986, with the financial services businesses re-emerged as Primerica. Similarly, Continental Can broadly diversified its holdings, changing its name to Continental Group in 1976 when can sales dropped to 38% of total sales. In the 1980s, Continental Group invested heavily in energy exploration, research and transportation, but profits were weak and they were ultimately taken over by Peter Kiewit Sons in 1984.

While National Can stuck broadly to containers, it diversified through acquisition into glass containers, food canning, pet foods, bottle closures, and plastic containers. However, instead of generating future growth opportunities, the expansion into food products proved a drag on company earnings.

Under the leadership of John W. Fisher, Ball Corporation, a leading glass bottle and can maker, expanded into the high-technology market and by 1987 had procured \$180 million in defense contracts. Fisher directed Ball into such fields as petroleum engineering equipment, photo-engraving and plastics, and established the company as a leading manufacturer of computer components.

### *Major Competitors in 1989*

For over 30 years, three of the current five top competitors in can manufacturing dominated the metal can industry. Since the early 1950s, American Can, Continental Can, Crown Cork & Seal, and National Can held the top four rankings in can manufacturing. A series of dramatic mergers and acquisitions among several of the country's leading manufacturers throughout the 1980s served to shift as well as consolidate power at the top. Management at fourth-ranked Crown Cork & Seal viewed the following four firms as constituting its primary competition in 1989: American National Can, Continental Can, Reynolds Metals, and Ball Corporation. Two smaller companies—Van Dorn Company and Heekin Can—were strong competitors regionally (see **Exhibit 5**).

**American National Can** Representing the merger of two former, long-established competitors, American National—a wholly-owned subsidiary of the Pechiney International Group—generated sales revenues of \$4.4 billion in 1988. In 1985, Triangle Industries, a New Jersey-based maker of video games, vending machines and jukeboxes, bought National Can for \$421 million. In 1986, Triangle bought the U.S. packaging businesses of American Can for \$550 million. In 1988, Triangle sold American National Can (ANC) to Pechiney, S.A., the French state-owned industrial concern, for \$3.5 billion. Pechiney was the world's third-largest producer of aluminum and, through its Cebal Group, a major European manufacturer of packaging. A member of the Pechiney International Group, ANC was the largest beverage can maker in the world—producing more than 30 billion cans annually. With more than 100 facilities in 12 countries, ANC's product line of aluminum and steel cans, glass containers and caps and closures, served the major beverage, food, pharmaceuticals, and cosmetics markets.

**Continental Can** Continental Can had long been a financially stable container company; its revenues increased every year without interruption from 1923 through the mid-1980s. By the 1970s, Continental had surpassed American Can as the largest container company in the United States. The year 1984, however, represented a turning point in Continental's history when the company became an attractive takeover target. Peter Kiewit Sons Inc., a private construction firm in Omaha, Nebraska, purchased Continental Group for \$2.75 billion in 1984. Under the direction of Vice Chairman Donald Strum, Kiewit dismantled Continental Group in an effort to make the operation more profitable. Within a year, Strum had sold \$1.6 billion worth of insurance, gas pipelines and oil and gas reserves. Staff at Continental's Connecticut headquarters was reduced from 500 to 40. Continental Can generated sales revenues of \$3.3 billion in 1988, ranking it second behind American National. By the late 1980s, management at Kiewit considered divesting—in whole or in part—Continental Can's packaging operations, which included Continental Can USA, Europe, and Canada, as well as metal packaging operations in Latin America, Asia, and the Middle East.

**Reynolds Metals** Based in Richmond, Virginia, Reynolds Metals was the only domestic company integrated from aluminum ingot through aluminum cans. With 1988 sales revenues of \$5.6 billion and net income of \$482 million, Reynolds served the following principal markets: packaging and containers; distributors and fabricators; building and construction; aircraft and automotive; and electrical. Reynolds' packaging and container revenue amounted to \$2.4 billion in 1988. As one of the industry's leading can makers, Reynolds was instrumental in establishing new uses for the aluminum can and was a world leader in can-making technology. Reynolds' developments included high-speed can-forming machinery with capabilities in excess of 400 cans per minute, faster inspection equipment (operating at speeds of up to 2,000 cans per minute), and spun aluminum tops which contained less material. The company's next generation of can end-making technology was scheduled for installation in the early 1990s.

**Ball Corporation** Founded in 1880 in Muncie, Indiana, Ball Corporation generated operating income of \$113 million on sales revenues of \$1 billion in 1988. Considered one of the industry's low-cost producers, Ball was the fifth-largest manufacturer of metal containers as well as the third-largest glass container manufacturer in the United States. Ball's packaging businesses accounted for 82.5% of total sales and 77.6% of consolidated operating earnings in 1988. Ball's can-making technology and manufacturing flexibility allowed the company to make shorter runs in the production of customized, higher-margin products designed to meet customers' specifications and needs. In 1988, beverage can sales accounted for 62% of total sales. Anheuser-Busch, Ball's largest customer, accounted for 14% of sales that year. In 1989, Ball was rumored to be planning to purchase the balance of its 50%-owned joint venture, Ball Packaging Products Canada, Inc. The acquisition would make Ball the number two producer of metal beverage and food containers in the Canadian market.

**Van Dorn Company** The industry's next two largest competitors, with a combined market share of 3%, were Van Dorn Company and Heekin Can, Inc. Founded in 1872 in Cleveland, Ohio, Van Dorn manufactured two product lines: containers and plastic injection molding equipment. Van Dorn was one of the world's largest producers of drawn aluminum containers for processed foods, and a major manufacturer of metal, plastic and composite containers for the paint, petroleum, chemical, automotive, food, and pharmaceutical industries. Van Dorn was also a leading manufacturer of injection molding equipment for the plastics industry. The company's Davies Can Division, founded in 1922, was a regional manufacturer of metal and plastic containers. In 1988, Davies planned to build two new can manufacturing plants at a cost of about \$20 million each. These facilities would each produce about 40 million cans annually. Van Dorn's consolidated can sales of \$334 million in 1988 ranked it sixth overall among the country's leading can manufacturers.