

References and notes

1. K. Flamm, *Creating the Computer: Government, Industry, and High Technology*, Brookings Institution, 1988.
2. S. Levy, *Hackers: The Heroes of the Digital Revolution*, Anchor Press/Doubleday, 1984. One aspect of the Berkeley system was described in L.P. Deutsch and B.W. Lampson, "An Online Editor," *Comm. ACM*, vol. 10, no. 12, Dec. 1967, pp. 793-799.
3. R.L. Crandall, oral history interview by Paul Ceruzzi, 3 May 2002, Charles Babbage Inst. (CBI).
4. T. Haigh, "Biography: Bernard (Bernie) Goldstein," *IEEE Annals of the History of Computing*, vol. 26, no. 1, Jan.-Mar. 2004, pp. 85-90.
5. See "ADAPSO Long-Range Plan, 1985-89," dated 26 Apr. 1985 with annotation "Final Approved Document" in ADAPSO Records (CBI 172), CBI. Hereafter this collection will be referred to as CBI 172.
6. R. Crandall, personal communication to the author, 17 Nov. 2003.
7. Am. Soc. of Assoc. Executives, "ASAE Evaluation Report for ADAPSO, The Computer Software and Services Association," 1988, ADAPSO Records (CBI 172), CBI.
8. Assoc. of Data Processing Service Organizations, board meeting minutes, 28 Oct. 1963, CBI 172, discusses its establishment. Assoc. of Data Processing Service Organizations, incoming board meeting minutes, 26 May 1966, CBI 172, discusses its abandonment.
9. R.L. Crandall, "ADAPSO: Past, Present, Future" (presented at ADAPSO: 25 Years of Leadership), 1986, ADAPSO Records (CBI 172), CBI. Imlay and John Maguire of Software A.G. were longtime chairs of committees in the Image area, continuing to serve into the late 1980s.
10. This description is taken from the masthead of *ADAPSO Update*, copies of which are preserved in the CBI 172 ADAPSO collection.
11. This testimony was given on 2 Apr. 1981. Crandall made similar points in R.L. Crandall, "Trade Barriers to Foreign Expansion by U.S. Computer Service Firms," presented at the Computer Law Association's Program on International Free Trade—The Computer Industry, 9 Oct. 1979, ADAPSO Records (CBI 172), CBI.
12. L. Johnson, "Industry Image," *ADAPSO Reunion Transcript, May 2-4, 2002*, iBusiness Press, 2003, pp. 237-254.
13. *Ibid.*, pp. 77-97.
14. R.L. Crandall and S. Robins, *The Incorruptible Cashier: The Formation of an Industry, 1876-1890*, vol. 1, Vestal Press, 1988, and R.L. Crandall and S. Robins, *The Incorruptible Cashier: The Brass Era, 1888-1915*, vol. 2., Vestal Press, 1996.

Larry A. Welke



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Although Larry Welke never ran a service bureau, shipped a software package, or established a time-sharing firm, he is remembered by his ADAPSO colleagues as the key figure behind its successful expansion into the software field. His own business, International Computer Programs, was the first producer of trade publications devoted to software, making him an important promoter of the early independent software industry.

Career in data processing

Welke's early background was typical of many software industry pioneers. His first exposure to data processing came around 1955, when he began to work on a punched card system for job control as a young General Electric management trainee. As a punched card user he developed a close relationship with the IBM account representative. In the 1950s it was not uncommon for IBM salesmen to act as unofficial job banks for the punched card staff they came into contact with, but in this case Welke was hired away to IBM. At IBM he worked on systems analysis work for customer applications. He was trained to program the then new IBM 650 computer, which during the late 1950s became a common adjunct to conventional punched card machines. He remained at IBM for six years, shifting into a sales job in search of better pay. Welke's departure was prompted by his divorce, something which he believes would have crippled his career in the famously paternalistic IBM of the era.¹

Fortunately, the computer industry of the early 1960s was booming. As an intelligent young man with (by the standards of the field) considerable experience, Welke did not find it hard to get another job. It took him a few years, however, to settle into something he was good at and enjoyed. A short spell at JC Penney trying to manage a large programming team to automate its new catalog business demonstrated to all concerned that his ability to both sell and perform a programming job did not translate into any knowledge of how to manage it. This was followed by an 18-month consulting assignment in Argentina, setting up a computerized record-keeping system for its state electrical company. Returning to data processing management, he created and grew a data processing operation for the Merchant's National Bank of Indianapolis. This time things went bet-

ter, and by 1968 he had risen to be a vice president as his department grew in size and stature.

International Computer Programs

In 1966, however, Welke had begun an entrepreneurial business of his own. In the mid-1960s, the market for application software products was something that many people talked about, but few knew how to do anything about. Welke recalls

that the majority of firms that started say in 1967 and 1968 died before they saw 1970. Because it looked like a good concept but when you had to write it down on paper and try to make it work, it didn't work at all.¹

His exposure to the concept came through participation in the American banking industry. As Welke recounted in an anecdote published in *Annals* discussing the origin and early days of International Computer Programs (ICP), an informal "swap room" at one of its meetings demonstrated a willingness to exchange applications programs within the banking industry.² Although the American Bankers Association decided to produce a catalog of available software (much as the scientific user group SHARE had done more than a decade earlier), Welke was not sure that this could succeed on a volunteer basis, and resolved to do better.

Welke's initial idea was to be a middleman in the software industry. Rather than publishing and selling software, he wanted his firm to sell a newsletter to data processing managers. The *ICP Software Directory* would list all the organizations with computer packages to sell. Initially its focus was limited to banks, but it soon broadened to include other industries, and even scientific and engineering products. The first issue was produced in 1967. (Computing pioneer Robert V. Head had devised a slightly different solution to the same perceived problem in the banking industry, by setting up a separate firm, Software Resources, to package and market, rather than just list, internally produced bank packages with a broader potential market.³) After a slow beginning, things picked up the next year, prompting Welke to quit his bank job and try making a living from publishing. However, few firms were actually buying application software in the 1960s. Subscriptions came primarily from firms researching the market in hopes of entering it. While ICP eked out a profit by running a seminar series in 1969, the recession of 1970 killed this business, too.

Welke sees the resistance to packaged soft-

ware on the part of data processing managers as a combination of self-interested defense of the status quo with some quite sensible caution, given some real disasters afflicting early packaged software suppliers. He recalls that

I used to go around and give presentations to the various professional organizations like Data Processing Management Association or Association of Computing Machinery and invariably at the end of the presentation somebody would raise his hand and say, why should I buy a software product because if I do, what the heck do I do with all my people? And I would say, fire them.¹

Partly for this reason, it was much easier to market systems software such as library or sort routines than application software. System software would make in-house programmers more productive and bring "pretty clever technology" to them. Application software, on the other hand, was an automation of existing business systems that had always been designed and controlled within the firm. This threatened in-house programmers and analysts more fundamentally. In addition, systems software could be sold directly to data processing managers for consumption within the computer department. Application software, in contrast, had to be sold to the business staff involved with the tasks to be automated (payroll, savings account balancing, and the like) as well as to the computer staff who would be installing it.

What saved the firm was its shift to a fundamentally new model. The *ICP Software Directory* was sold to data processing managers and carried listings of software packages without charge to their suppliers. Welke created a new catalog, *The Skinny*, which worked more like the yellow pages: tens of thousands of copies were given away free to data processing managers (initially using the *Datamation* subscription list), while the cost of production was underwritten by charging for each listing. This model, in contrast, was a great success. Most software firms had done little or no advertising prior to this, and so *The Skinny* tapped into a latent demand for affordable, targeted advertising to their customers. Ads tended to be technical and fact heavy, listing technical specifications and features of the package. Data processing managers were still reluctant to purchase software, but this was no longer Welke's immediate problem, as long as the software suppliers still had enough money left to advertise.

The small population of software firms was also much easier to sell to than the much larger and more diffuse pool of potential software

buyers. This, he recalls, “simplified the business greatly, and gave us an opportunity to focus on a much smaller community of people.”¹ It also gave Welke a long-term identification with, and interest in the continued health of, the software product suppliers:

There were just a couple hundred people to begin with that were in the software product business. A couple of ICP people were assigned to do nothing other than read every magazine and newspaper that came out that had anything to do with technology and spot the company names that were new or different, that we had never heard of before and add them to our database. ... We always knew who they were, where they were, and I could make a point of getting in front of them to tell our story of what we were doing and why they should get involved and all that sort of thing.¹

Along with this went an increasingly close involvement with software producers. In the 1960s, the newly introduced term *software* was used to describe a variety of things, often according to the particular interests of the person doing the defining.⁴ Welke favored an expansive definition of software, and hence a broad and inclusive vision of the software industry itself. In a 1980 *Datamation* article, he wrote that

Software includes, but is not limited to, control programs, executive supervisors, teleprocessors and communications monitors, application programs, programming aids, languages, etc. I do not differentiate on the basis of delivery vehicle used: software could be delivered as a product, with or without large- or small-scale hardware, as a service through a time-sharing network, as one of the value-added components in a facilities management arrangement, etc.⁵

Founding the ADAPSO Software Section

Welke was a member of ADAPSO, having first made contact back in 1966 when he asked the association to allow inclusion of material from its own “Clearing House” software listings in his directory.⁶ He recalls that the first ADAPSO meeting he attended, in 1967, included just 23 people and was more “a bunch of guys who got together” than a formal conference, despite the presence of Ross Perot as keynote speaker.⁷ At this point, ADAPSO remained primarily an organization of service bureau operators. It welcomed the idea of improving its coverage of software, but found this hard to accomplish.

Jerry Dreyer, its ambitious new executive director, publicly bemoaned this in a 1970 *Datamation* article, saying that

The slowness in the development of our Software Section is particularly vexing to us. We have solicited this important segment of the computer services industry on numerous occasions, and the results, as of this writing, have been somewhat disappointing. I personally attribute the inadequate response to a surprising lack of cohesion and sophistication among too many of the software entrepreneurs, who seem to understand the mysteries of Wall Street better than the obvious merits of cooperation.⁸

In 1971, Welke organized a conference to launch a new and more formal ADAPSO Software Section, held in Denver on 21–22 October. The event yielded 26 founding members, and appointed Welke as the new section’s first president.⁹ Anticipating its success, ADAPSO president Bernie Goldstein told the ADAPSO board that the association “would now truly represent all the major aspects of the computer services industry and speak with a united voice.” He commended Welke for his “extraordinary efforts” toward its establishment.¹⁰ As Welke remembers this meeting,

These people were all presidents or CEO’s of their particular companies. They had never met their competitors. ... They’d read about them in the press, they’d seen the advertisements. ... That was a major breakthrough because they found out that their competitor didn’t have two heads, wasn’t ugly, that all the bad things that you always think about a competitor weren’t true.¹

Welke had also been in close touch with the Association of Independent Software Companies (AISC), the first trade group for software companies, some of which were supplying packaged software, but most of which were primarily contract programming firms. This was a small group, with less than 20 members at its peak. The group primarily served firms providing custom software and services under government contract. Its activities, few of which progressed terribly far, consisted of lobbying and proposed legal action and “education efforts” regarding allegedly anti-competitive developments. These included government reliance on various nonprofit software sources when a commercial software industry was now established (particularly the proposed conversion of the nonprofit System Development Corporation to a for-profit corporation), federal government efforts to impose contracts

Photo courtesy of Charles Babbage Inst., Univ. of Minnesota, Minneapolis



Larry Welke circa 1970s.

severely limiting the levels and durations of software lease payments, and the bundling with hardware sales by computer manufacturers.¹¹

The ADPASO board had been aware of AISC for some time. In 1970 its executive director, Jerry Dreyer, reported that he had met with the AISC board to discuss a merger “although there are some friendly voices in the group, it will continue to be a long battle to bring them into ADAPSO.” He blamed this on the maligned influence of a former leader.¹² As the main point of contact between members of the two groups, it was natural for Welke to see the potential for affiliation between them. A larger, more effective group would be good for the software industry, and therefore good for ICP.

Welke led ADAPSO’s diplomatic efforts with considerable success, working with ASIC on its main tangible activity, the lobbying of government officials responsible for procurement regulations. In February 1972, AISC president Wayne Shelton reported to its members that having attended a meeting of the ADPASO Software Section he “was generally impressed with the meeting itself and the organization” and noted that “many things have changed since our decision two years ago not to be the nucleus of the Software Section of ADAPSO.”¹³ A presentation by Welke to the AISC Executive Committee in April led to approval of the merger concept at a subsequent meeting in May and rapid ratification of the plan through a postal vote of the AISC membership.

With its October 1972 Annual Meeting,

ADAPSO was formally rechartered as a federation of sections. Its Software Section was combined with the formerly independent AISC to produce a new section with around 35 members, known initially as ADAPSO/AISC.¹⁴ Goldstein welcomed the merger as adding “decibels to the ADAPSO industry voice,” and identified Welke and the former AISC president, Shelton, as instrumental in the merger. ADAPSO gained only eight immediate new members from this process (among them Automatic Data Research, the Planning Research Corporation, and Informatics Tisco), but the new organization was well positioned to become the main voice for independent suppliers of software packages and services.¹⁵

Other ADAPSO service

This close relationship worked well for ICP and for ADAPSO/AISC, or as it was soon renamed, the Software Industry Association (SIA). Welke himself called the association “integral with ICP’s success.”¹⁶ This relationship took many forms. As part of a broader recruiting drive in 1973, Welke was formally tasked by the board to solicit software firms on a commission basis.¹⁷

His bigger contribution, however, came with the establishment of annual ICP Million-Dollar Awards ceremonies, held initially in conjunction with the main ADAPSO meetings. As Welke tells the story, he was inspired to create the awards after a financial analyst dismissed the software industry with the comment that no product had ever reached a million dollars in total sales. After realizing that many companies had, in fact, achieved this he decided to publicize the fact by awarding ceremonial plaques to each of the successful products. In 1974, there were three products (Cincom’s Total, ADR’s Autoflow II, and Informatics’ Mark/IV) in the ten million dollar club, eleven in the two million dollar club, and sixteen in the million dollar club.¹⁸ These ceremonies generated a great deal of pride and good feeling within the young industry, and were widely reported within the broader computer press to give a trickle of credibility to successful software firms. They also “generated advertising, revenue, and clients for ICP.”¹⁹

During the 1970s and 1980s Welke served ADAPSO in a number of formal positions, including a two-decade tenure as a board member of its software section, and two separate terms as section chair. Within ADAPSO he spent a five-year spell as Contracts Committee chair, and also served terms as Political Action Committee chair and Program chair. In 1989, he served as ADAPSO vice chair, and in 1990 as chair (as the president was by then known).

Welke’s natural flamboyance and sociability

served him well within ADAPSO. Colleagues remember his fondness for pranks, and for lavish showmanship. For many years, for example, Welke would bring the ICP hot air balloon with him to events, offering rides to his colleagues. His knack for self promotion meshed with the industry's need for visibility. Welke himself attributes his business success to his love of talking. Having been "born with a crooked arm," during his childhood he wanted to avoid getting into too many losing fights without running away. He learned that "if I made them laugh, they would be friends, you know, or they would look more kindly on me despite the fact that I was pretty much of an ugly, little crippled kid."¹

His unique position, as a member of the inner circle of ADAPSO's Software Section who was not himself in the software business, made Welke a key focal point for the group. Indeed, he was given a special exemption to serve as a full member of ADAPSO despite running a business otherwise eligible only for associate membership. His interest was primarily in the fortunes of the industry as a whole, rather than in any one software firm. He also knew that firms would be much more successful in building their businesses if customers could have some confidence in the soundness of the whole software product concept. The issues involved were not mere trivial ones of presentation and marketing, but were crucial to the creation of the software package as a viable product, and so of the packaged software industry as a viable business.

As Welke recalled recently:

In the 1960s, the most basic legal and commercial issues lacked clear definition. 'If I write a program for you and you pay me for it, who owns the program? Do you or do I? Or can I write the program and let you use it but I retain the ownership of the thing.' Well nobody had raised the question before. How do you price something like that? Better than that, how do you price it the second time you sell it, and the third time and on and on. How do you maintain it? Do you charge for that? Is that customizing? Is that per hour? That whole set of business disciplines was something that no one had done before and consequently it was really pioneer work on the part of anybody that was doing it.¹

Maturity and decline of ICP

In the mid-1970s, the advertising-supported *Skinny* was becoming unmanageably large, and so Welke broke it apart to form a number of more targeted publications, each with the same basic model. ICP finished up with five publications, four of which covered software products

of all kinds aimed at a specific industry. For example, one covered banking, and another insurance. (The fifth covered the cross-industry function of accounting and administration.) As the software market diversified, these publications listed minicomputer software alongside mainframe offerings. Each offered a lower advertising rate and a smaller, more targeted population. Collectively, however, they provided more revenue and better coverage.

Another new publication, *Bottomline Magazine*, proved ahead of its time. The idea was to provide a computer technology magazine for senior management, focusing on the business benefits of computer technology rather than on the technical and product details that filled magazines intended for data processing staff. This was a bold move, in many ways anticipating the CIO movement of the late 1980s and early 1990s with its push for top executives to recognize the business importance of information technology. Unfortunately, Welke "lost a ton of money on it"¹ and the project was rapidly abandoned. On seeing that it concerned computers,

the CEO who received the magazine never even opened it, just automatically routed it down to the DP manager anyhow. So we were sending it to what we thought was the right audience but they didn't look at themselves as the audience.¹

While data processing managers were happy to return the cards to request a new issue and confirm their credentials as recipients, this was not the audience Welke had promised to advertisers. (Even today, nobody has succeeded in this task. A similar fate recently befell the snappily written *Darwin Magazine*, launched by the publishers of *CIO Magazine* to explain corporate technology issues to top managers.)

ICP continued to diversify and shuffle its portfolio of publications. By 1981 it published six "Interface" publications, the *ICP Directory* (now covering services as well as products) and the *ICP Insider's Letter* (a successor to an earlier ICP software newsletter). In the mid-1980s, it added a version of the directory for microcomputer software. At this point, Welke was talking up ICP as a model company for Toffler's "third wave" environment, where "We have a lot of people who are very creative ... who are given an area where they can get problems they can solve.... You find that in that environment they work harder than ever."¹⁹ This was, as Welke himself admitted, a management philosophy taken from the high-margin software industry in which a handful of creative individuals were seen as the key corporate assets.¹⁹

Background of Larry Welke

Born 7 July 1931. **Education:** Marquette University, BA (economics), 1954. **Positions held:** General Electric: management trainee, 1954–1956; IBM: Data Processing Division, systems analyst, DP sales, 1956–1962; JC Penney: manager, systems and programming, 1962–1963; Middle West Utilities: computer consultant (in Argentina), 1963–1964; Merchants National Bank: vice president, Customer Data Services, 1964–1968; International Computer Products, president, 1966–1996; info-partners international, president, 1997–2003; iBusiness Press, president, 2002–present.

Unfortunately for ICP, the very growth and mainstream acceptance of the software product industry encouraged by ADAPSO soon changed the dynamics of the computer publishing industry, putting a premium on more mundane kinds of managerial expertise. During the 1980s, larger and more tightly managed competitors such as Ziff-Davis and VNU moved into the markets for controlled circulation magazines and trade directories. As an increasingly large proportion of the overall computer industry, software firms received extensive coverage and advertised widely in the leading trade publications such as *Computerworld* and *Datamation*. The larger software firms, such as Oracle and Computer Associates, could now afford to advertise in general business publications. Meanwhile, ICP had put itself more squarely in the path of these competitors, by shifting the focus of the magazines toward editorial content rather than simple advertising and listing products. Welke blames this on his having “caved into the guy who was running the editorial content part of the business at the time.” Editorial content began at around 15 percent of the magazines, and by his estimation finished up at around 45 or 50 percent. While this enhanced the appeal of the publications, it raised costs enormously since the magazines were now bigger and, more importantly, journalists and editors had to be paid.

By the late 1980s, ICP’s trade publication business was dwindling away. Publication of the directories, more diversified than ever, continued into the 1990s in book form. CD-ROM versions were also produced. ICP was formally dismantled in 1996, since which time Welke has been a self-employed small businessman. His new firm was known as info-partners international, inc. It traded on his abilities as a speaker and sales consultant. Until 2000, it continued to offer the ICP database in online form. Welke’s particular interest in recent years has been in the use of the Internet as a sales tool, something he wrote about in a book, *The End of Selling As We Know It*.²⁰ He recently

returned to the publishing field with another small business, the iBusiness Press imprint.

With info-partners, Welke has specialized in working with regional IT associations, including tailored versions of his Million Dollar Awards program. As computer firms multiplied nationally, these regional associations had become an important forum for grassroots activity within the industry, especially as small firms began to feel marginalized within ADAPSO and other national organizations. Welke had been instrumental in the formation of CRITA, the Council of Regional Technology Associations, as an umbrella group for these organizations.⁷ In 1990, he had helped to found the Indiana Software Association. This took off after several false starts. As Welke recalls, “In Indianapolis, I brought six guys together in 1985. It didn’t work. We brought them together again in ‘86. It still didn’t work. We did that until 1990 and, in the sixth year, we finally began expanding.”⁷ In many ways, these groups were a natural continuation of his early work with ADAPSO, at a time when the national software industry had been small enough to work with on an intimate and personal basis.

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References and notes

1. The information on Welke’s career is from L. Welke, oral history interview by Thomas Haigh, 3 May 2002, OH 369, Charles Babbage Inst. (CBI). Information on Welke not otherwise cited is derived from this source.
2. L. Welke, “Founding the ICP Directories,” *IEEE Annals of the History of Computing*, vol. 24, no. 1, Jan.–Mar. 2002, pp. 85–89.
3. R.V. Head, “The Travails of Software Resources,” *IEEE Annals of the History of Computing*, vol. 24, no. 1, Jan.–Mar. 2002, pp. 82–85. Banking was an important early source of interest in software packages. Banks were federally regulated and so did pretty much the same things in the same way across the US. In addition, regulation also kept them artificially small, creating a large potential market and making in-house development proportionally more expensive.
4. T. Haigh, “Software in the 1960s as Concept, Service, and Product,” *IEEE Annals of the History of Computing*, vol. 24, no. 1, Jan.–Mar. 2002, pp. 5–13.
5. L. Welke, “The Origins of Software,” *Datamation*,

- vol. 26, no. 12, Dec. 1980, pp. 127-130.
6. Assoc. of Data Processing Service Organizations, board meeting minutes, 12-13 Oct. 1966, ADAPSO Records (CBI 172), CBI. Hereafter, citations to this collection will be shortened to CBI 172.
 7. L. Johnson, "ADAPSO Conferences Workshop," *ADAPSO Reunion Transcript, May 2-4, 2002*, iBusiness Press, 2003, pp. 77-97.
 8. J.L. Dreyer, "The ADAPSO Story," *Datamation*, vol. 16, no. 3, Mar. 1970, pp. 55-58.
 9. L. Welke, letter to members of the software industry, 1 Nov. 1971, Martin A. Goetz Papers (CBI 159), CBI.
 10. Assoc. of Data Processing Service Organizations, minutes of meeting of the retiring board of directors, 20 Oct. 1971, CBI 172, CBI.
 11. The characterization of AISC given here is based on various minutes, official documents, and correspondence found in Martin A. Goetz Papers (CBI 159), CBI. The foundation of AISC was reported in "Software Companies Organize," *Computerworld*, 1968 (clipping available in CBI 159). Its 11 founding members included Walter Bauer of Informat-ics and representatives of Applied Data Research, Auerbach Associates, Computer Applications International, Planning Research Corporation, and Computer Usage Corporation.
 12. Assoc. of Data Processing Service Organizations, meeting of the board of directors minutes, 17 June 1970, CBI 172. The first presidents of AISC were William Wolf and Richard C. Jones.
 13. W. Shelton, status report to AISC members, 22 Feb. 1972, Martin A. Goetz Papers (CBI 159), CBI.
 14. The merger was reported in "ADAPSO/ASIC," *ADAPSO News* (CBI 172), vol. 2, no. 4, July-Aug. 1972, pp. 5. The figure of 35 members comes from "Software News," *ADAPSO News* (CBI 172), vol. 4, no. 2, Mar.-Apr. 1974, pp. 9-10.
 15. Eight new members are reported as a result of the merger in Assoc. of Data Processing Service Organizations, minutes of meeting of ADAPSO board of directors, 21 June 1972, CBI 172, CBI.
 16. L. Welke, "Founding the ICP Directories," *IEEE Annals of the History of Computing*, vol. 24, no. 1, 2002, p. 87.
 17. Assoc. of Data Processing Service Organizations, minutes of meeting of ADAPSO board of directors, 1 Feb. 1973, CBI 172, CBI.
 18. "Software News," *ADAPSO News* (CBI 172), vol. 4, no. 2, Mar.-Apr. 1974, pp. 9-10.
 19. "Larry A. Welke," *ICP Interface*, special edition, 1981, pp. 34-42.
 20. L.A. Welke, *The End of Selling As We Know It: An Executive's Guide to Customer Creation*, Authorhouse, 2001.

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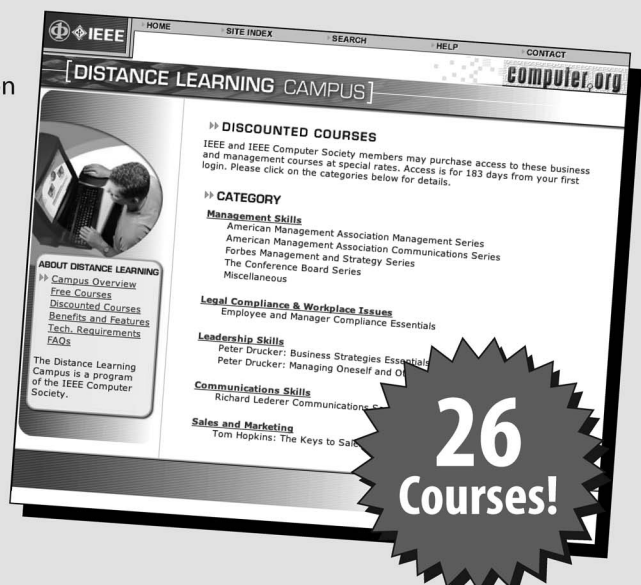
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