Appendix F: The YOURDON Press Case Study
**F.1 Introduction**

No discussion of systems analysis would be complete without at least one example to illustrate the various modeling tools and techniques discussed in this book. Unfortunately, almost any case study is likely to be either entirely fictitious or a grossly oversimplified and “sanitized” version of a real-world situation. Also, it is difficult to find an example that illustrates both a business- and scientific-oriented application.

This case study describes the requirements for computerization of the information processing activities for YOURDON Press. On the one hand, it is very indicative of a real-world publishing activity that operated for approximately 10 years. Indeed, one of the things I want to show in this case study is that things are not always done for rational reasons (including the formation of companies and the initiation of many systems development projects!), and that most systems have to deal with a lot of annoying unpleasant “glitches” in the real world.

On the other hand, YOURDON Press has now joined the ranks of fictitious examples, for it was acquired by Prentice-Hall in 1986, and its information processing activities have been subsumed into Prentice-Hall’s [1]. Thus, this case study describes what YOURDON Press’ information processing requirements would have been had it continued on as an independent publisher.

The following sections provide a brief background of the YOURDON Press operation, the environmental model of the system, the behavioral model, and the user implementation model.

**F.2 Background**

To understand the workings of YOURDON Press, it is necessary to spend some time explaining the larger context of the corporation within which it existed: YOURDON inc. Without YOURDON inc., there would have been no YOURDON Press; though without YOURDON Press, it is fairly clear that YOURDON inc. would not have achieved the success that it has.

YOURDON inc. was formed as an outgrowth of independent consulting and lecturing activities that I had been carrying out for a number of years in the late 1960s and early 1970s. The company was formed in April 1973 because my accountant told me that a corporation offered some tax advantages that would not be available to me as a self-employed consultant. Notwithstanding this practical tax advice, the new corporation did not really begin conducting any business until April Fool’s Day, 1974.

As is true in most companies (and most data processing projects!), one of the first activities was to think of a proper company name. My wife and I, who served as the company’s sole stockholders, directors, officers, and employees, were rather fond of the name “Artichokes And Other Fur-Bearing Animals, Inc.,” but decided that it would not fit onto our stationery. We finally settled on the name “Superprogrammers, Limited,” and filed the appropriate papers with the State of New York to establish the name. About two weeks later, just as we were about to place some advertisements for our first series of seminars on structured programming, the state informed us that our company name had not been approved: it was too close to the name of an already extant company. When we investigated, we found that the other company was named “Supermarket Products, Inc.” [2] Out of desperation, we quickly chose a name that we were reasonably certain would not be duplicated by any other company: my own name. Thus was YOURDON inc. born.
The company’s initial activities were professional seminars on advanced programming techniques and on-line systems design aimed at veteran programmers and systems analysts in large organizations and government agencies. The seminars involved about 20 hours of classroom lectures and were accompanied by a few hundred pages of class notes; the class notes for the seminar on advanced programming techniques eventually became a textbook: *Techniques of Program Structure and Design*, published by Prentice-Hall in 1975.

Because of the large number of seminar attendees, it proved economical to print the class notes in moderate volume and to bind the pages together; thus, they bore some resemblance to a book, though some of the pages were printed upside down and other pages fell out of the book at the slightest provocation. Nevertheless, some of the seminar attendees asked to purchase additional copies of the class notes, and thus, as a sideline, YOURDON inc. found itself in the business of selling “books.”

However, YOURDON inc. concentrated primarily on training activities: the number of distinct training courses grew to approximately 50 by the mid-1980s, and the company eventually trained some 250,000 data processing professionals throughout the United States and in over 30 other countries. Professional consulting activities also began to grow, and many of the company’s technical staff now serve as consultants, project leaders, and systems analysts on major systems development projects in client companies throughout North America and Europe. And in the mid-1980s, the company entered the CASE market, with an analyst toolkit product of the nature described in Appendix A. In 1987, YOURDON inc. had offices in 8 cities, with a staff of approximately 150 people.

YOURDON Press began as a division of YOURDON inc. in 1976 with the softcover publication of three books: *Structured Design*, by Yourdon and Constantine; *Learning to Program in Structured COBOL*, by Yourdon, Gane, and Sarson; and *How To Manage Structured Programming*, by Yourdon. As with so many other real-world business operations, this happened without a great deal of planning or organized thinking: the books seemed like a good way of popularizing the structured techniques concepts being developed and marketed in YOURDON inc.’s training seminars.

The first three books were produced on a simple IBM Selectric typewriter and were bound in 8.5- by 11-inch sheets; all of this predated the days of convenient typesetting and desktop publishing. Advertising was rather modest, consisting of a few Computerworld ads and mailings to YOURDON’s seminar customer list. Sales were equally modest; indeed, for the first several years of its existence, YOURDON Press represented only a tiny fraction of the company’s overall revenues.

Consequently, the information system surrounding the early YOURDON Press activities was modest and entirely manual in nature. Orders were taken over the phone or by mail, but credit card orders were not accepted. Invoices were typed by hand on four-part invoice forms, and orders were individually packed by hand. The inventory was stored in one of the world’s most elegant warehouse spaces: windowed offices of the 38th floor of YOURDON inc.’s offices at 1133 Avenue of the Americas, looking out over all of Manhattan.
Automation arrived at YOURDON inc. in the spring of 1976, in the form of a second-hand PDP-11/45 minicomputer and a mysterious operating system called UNIX [3]. A few months later, a phototypesetter, two dozen terminals, and the TROFF typesetting package were added. This immediately facilitated typeset production of YOURDON Press textbooks and eventually led to the automation of several aspects of YOURDON inc.’s training business and general accounting activities. But the YOURDON Press operational activities, the activities that could be considered as an “information system,” continued to operate in a manual fashion for several more years.

In 1980, a limited number of computerized applications were developed for YOURDON Press, using the convenient pipeline features of the UNIX operating system. Between 1980 and 1985, the C programming language and a number of UNIX shell scripts were used to gradually add a number of simple programs for order processing, sales reports, shipping labels, and various accounting reports. Though these programs were easy to develop and reasonably reliable to operate, they were developed on a piecemeal basis, similar to what one often sees today in an IT organization where the end users have access to spreadsheets, report generators, and fourth generation programming languages. They were also rather limited; for example, if the details of an order needed to be modified subsequent to its entry, the system was unable to accomplish it. Instead, the standard UNIX text editor was used to modify the order, which was stored in the computer as a simple ASCII text string, terminated by an end-of-line character.

One of the most difficult activities in the day-to-day operation of YOURDON Press was the task of producing an up to date statement showing all a customer’s orders, payments, book returns, and credits for a given time period. Equally difficult was the process of reconciling these activities (which took place as interactions between the customers and YOURDON Press administrative personnel) with the financial records maintained by YOURDON inc.’s accounting department. For various reasons, YOURDON Press and the Accounting Department always seemed to be “out of synch” with one another. This was further complicated by the fact that YOURDON inc.’s London office had their own inventory of books and did their own shipping and invoicing independently of the New York office; prices were quoted in pounds sterling rather than dollars and were generally somewhat higher than the prices quoted from the New York office [4]. Once every quarter, when financial statements had to be prepared, long, frustrating, mind-numbing meetings took place in which computer printouts produced by the Accounting Department were manually compared with computer printouts produced by YOURDON Press in order to reconcile differences. Tempers flared; people shouted insults, obscenities, and various epithets at one another; blunt objects were sometimes thrown back and forth across the room. It was not a pleasant activity to look forward to each quarter.

Thus, by 1986, it was evident that a full-scale system would have to be developed if YOURDON Press was going to continue to grow; initial planning began for the new system. However, it was also evident that a substantial amount of capital would be required to continue growing the business, not only for additional computer equipment, but also to modernize the typesetting equipment (which was now obsolete) and enlarge the editorial and marketing activities of the division. It was finally decided that it would make more sense to have the publishing operation acquired by a larger organization, and this led to the merger with Prentice-Hall. Thus, the system models described below represent what the requirements would have been if YOURDON Press had continued to operate as an independent business.
The planning for a new information system also coincided with a series of organizational changes within YOURDON Press and the rest of YOURDON inc. From its inception in 1974 until approximately 1983, the company had the organizational structure shown in Figure F.1.

![Figure F.1: Organizational structure of YOURDON inc., 1974-1983](image)

Between 1984 and 1986, the company shifted to more of a regional organization, and added a new division for its software product, as shown in Figure F.2.

![Figure F.2: Organizational structure of YOURDON inc., 1984-1986](image)
And during this period, YOURDON Press gradually developed the organizational structure shown in Figure F.3.

As part of this reorganization, the YOURDON Press shipping operations were moved out of the elegant office space occupied by the rest of the staff, and into a warehouse in beautiful downtown Yonkers, New York. Thus, there was a physical separation of some 20 miles between the people entering orders and the people packing books into boxes and sending the orders to the customers.

![Figure F.3: Organizational structure of YOURDON Press](image)

The four major groups within YOURDON Press had the following responsibilities:

* Administrative services was responsible for most of the day to day interactions between YOURDON Press and the customers. Thus, this group accepted orders; produced invoices; received payments, discussed book returns and credits with customers; interacted with the warehouse to arrange for shipments of books; and interacted with the Accounting Department, as discussed above.

* Sales and marketing was responsible for producing catalogs of the various YOURDON Press books; running ads in computer magazines and trade journals; sending promotional brochures to various mailing lists; and soliciting sales via telephone calls to large corporate purchasers of technical computer books.

* Acquisitions was responsible for finding new authors and new books. This part of YOURDON Press carried on all discussions with authors up to the point where a final manuscript was delivered by the author.

* Editorial was responsible for taking a final manuscript and turning it into a published book. This involved not only the copyediting of the book, but also interactions with printers to obtain proposals for the initial printing of the book. Editorial was also responsible for the artwork and production of the book cover, as well as the inside contents.
It should be kept in mind that YOURDON Press was a fairly small operation compared to such well-known publishing operations as McGraw-Hill, Harcourt Brace, Prentice-Hall, and Random House. An idea of the scale of the operation can be gleaned from the following statistics:

* YOURDON Press had approximately 50 books in its list; typically 4 to 6 new titles were added to the list each year.
* The books were written by approximately two dozen authors, and the acquisition group interacted with approximately 200 potential authors, that is, individuals who expressed interest in writing a book, but who had not yet actually finished writing anything.
* YOURDON Press processed approximately 50 orders a day.
* The average order was approximately $100, which typically represented three to four books. Some orders, of course, were for an individual book; some orders were larger. Wild celebrations and cheers broke out whenever an order larger than $5000 was received.
* Approximately 50,000 books per year were shipped.

Aside from its small scale, though, YOURDON Press operated in much the same way that other, larger publishers do. Sales were made via written orders, telephone orders, or walk-in orders (i.e., a customer coming into the YOURDON inc./YOURDON Press offices to purchase a book). Payment could be made in cash (which was rare), by check, or by credit card. As a matter of policy, orders under $100 had to be prepaid; larger orders, especially those from book stores and companies, generally required an invoice.

To understand the publishing business, one must also be familiar with the concept of returns. If an individual customer or corporation felt that a book was not suitable for their needs or if it was received in damaged condition, they could generally return the book and ask for a refund. This would normally happen within a matter of days after the shipment was received by the customer. Book stores, on the other hand, had the privilege of returning up to half of the books in an order within a year of the date that the order was placed; this is common within the publishing industry, because book stores often don’t know in advance how much demand there will be for a book and want to avoid getting stuck with inventory that they can’t sell.

F.3 The environmental model

F.3.1 The statement of purpose

The purpose of the YOURDON Press Information System (YPIS) is to maintain information needed to sell books to customers. This includes order entry, invoicing, generation of shipping documents, inventory control, and production of royalty reports and accounting reports.
F.3.2 The context diagram

![Context diagram for the YPIS system]

F.3.3 The event list

The event list for YPIS consists of 40 events. Most of the events are flow-driven, though most of the events involving the Accounting Department are temporal. The events are listed next; temporal events are marked with a T notation following the description of the event.

1. Customer orders book (this includes special rush orders, too).
2. Customer sends payment.
3. Customer asks for book information (price, etc.).
4. Customer asks permission to return a book.
6. Customer asks about status of an invoice.
7. Customer needs (monthly) statement. (T)
8. Customer asks for credit memo.
9. Customer wants refund check.
10. Accounting needs (daily) cash receipts. (T)
11. Accounting needs (daily) revenue reports. (T)
12. Accounting needs (monthly) net revenue report. (T)
13. Accounting needs (quarterly) author royalty report. (T)
14. Accounting needs (monthly) inventory data. (T)
15. Accounting needs (monthly) sales commission report. (T)
16. Management sets new credit limit for a customer.
17. Accounting needs (monthly) aged accounts receivable report. (T)
18. Printer offers quotation for print (or reprint) order.
19. Management authorizes a print order.
20. Printer advises exact print quantity and delivery date.
21. Printer sends invoice for print job.
22. Management asks for quotation on print order.
23. Marketing asks for mailing labels from customer database.
25. Marketing needs in-stock date for new titles.
27. Authors need quarterly royalty report. (T)
28. Warehouse needs shipping data and mailing labels. (T)
29. Warehouse receives books from printer.
31. Warehouse conducts (monthly) physical inventory.
32. Warehouse makes shipment of book order to customer.
33. Warehouse announces that a book is out of stock.
34. Acquisition department announces new book project.
35. Salesperson places order on behalf of customer.
36. Marketing declares that a book is out of print.
37. Customer announces a change of address.
38. Author announces a change of address.
39. Customer elects to join agency plan.
40. Invoices need to be sent to customer. (T)

F.4 The behavioral model

F.4.1 The preliminary behavioral model: dataflow diagrams

Each of the 40 events listed in Section F.3.3 has an associated dataflow diagram. Of course, the logistics of printing a book make it unwieldy, to say the least, to connect all 40 diagrams together into a single, composite diagram representing the entire system. As we pointed out in Chapter 19, this is the sort of exercise that requires a very large sheet of paper — or several small sheets of paper taped together. I leave that as an exercise for the reader.

The diagrams were drawn with Version 2.0 the Design software package, from Meta Systems Inc., in Cambridge, Mass [5]. While it does not represent a full-fledged CASE toolkit, it is more sophisticated than most simple graphics packages; and it has the advantage of running on a Macintosh computer, which was used for the preparation of this book. To accommodate the Design program, I have shown stores in the DFDs with the notation given in Figure F.5.
As I drew the preliminary DFDs, I kept notes on errors that I found and changes that I suddenly found that I had to make in other parts of the model; these notes are itemized below each DFD. The reason for doing this is to emphasize that in a real-world project the systems analyst rarely draws a perfect DFD the first time; after thinking about the system and after follow-up interviews with the user, it is inevitable that errors will be found either in the DFD being examined or in some other part of the system model.

No attempt was made to create an organized data dictionary as the preliminary behavior model was developed. After the initial DFD model was created, process specifications were sketched out to see if there were any obvious errors; many such errors are shown as comments on the following pages. A leveled set of DFDs was then created and the data dictionary was then developed.

**Figure F.4: Figure F.5: Notation for stores in the YOURDON Press case study**

**Event 1: Customer orders book**
Notes

1. After the first version of this diagram was drawn, I remembered that credit card orders normally require an authorization if the amount is above some preset limit. YOURDON Press accepted orders paid with Mastercard, Visa, and American Express; hence the interface to the terminator labeled “CREDIT AGENCIES.”

2. Some further thinking about the credit situation made it obvious that the definition of customer in the CUSTOMERS store would have to include credit-limit as a field. It also became evident that there was a required event to change the customer’s credit limit (event 16), which had not been obvious before.

3. Note that orders are not shipped on a one-at-a-time basis, with the exception of rush orders. Details of a rush order are sent immediately to the warehouse; all other orders are simply stored in the ORDERS store. As a separate event (event 28), the warehouse receives mailing labels and shipping instructions for a group of orders (typically one day’s worth of orders). I had forgotten the rush orders in the initial version of the diagram.

4. When drawing this DFD, I also realized the need for an ARCHIVES store, which is a copy of the customer’s original written order (or, in the case of a telephone order, the salesperson’s order form), plus a copy of the invoice that was generated for the order. The invoice copy is not necessary in an essential model (since it could be regenerated), but the other documents are necessary in case of a subsequent dispute with the customer, and in case of audits or investigations from the tax authorities, and so on.

5. Note that the order can be received by mail, by phone, or in person. We don’t show this in the DFD above, since these are all transporter functions.

6. Note that the system does not reorder books from the printer automatically. Instead, management is informed at various times that inventory has fallen below a preset threshold. This can occur as a result of event 1, as well as several other events.

7. Orders may be received from new customers (especially new book stores or companies that will be doing ongoing business with YOURDON Press). Hence a new record will have to be created in CUSTOMERS with the standard discount rate, and so on. This is the reason for the double-headed arrow between bubble 1 and the CUSTOMERS store.
Notes

1. Payment may cover several different invoices, but it’s not always clear which invoice(s) is/are involved. Sometimes the customers don’t identify the invoice they are paying; sometimes they identify invoices that have already been paid; sometimes they reference nonexistent invoice numbers.

2. Sometimes it’s not even clear where the payment is coming from. This is particularly true in the case of book store chains: XYZ book store in city A may be owned by a conglomerate, PQR, in city B. If a random check arrives from PQR Corp., addressed to YOURDON Press, we may not be able to determine which invoice or even which company is involved. Payments of this kind are put in an accounting category called unapplied cash. The assumption is that if we continue sending overdue invoices to XYZ book store they will call us and tell us that the invoice was paid by PQR.

3. There is no guarantee that the payment will be for the exact amount of the invoice. Some payments are high or low by a small, random amount. Some customers try to avoid paying the sales tax or the shipping and handling fees; this usually results in payments that are one or two dollars too low.
Event 3: Customer asks for book information

Notes

1. The customer is generally asking for such things as the price of the book, or when a new book is expected to be in stock, or the schedule for volume discounts.
Notes

1. Customers are supposed to get approval from YOURDON Press before returning the books. They don’t always do it.
2. Actual returns arrive later on (event 30) and may or may not match the requested return that has been authorized here.
3. Note that a requested return has to be matched up with an original order.
Notes

1. Shipment of a customer’s order may have been delayed because of a backlog in the warehouse or because the book is out of stock. It is this potential delay that typically leads to a customer inquiry.
2. If the customer decides to cancel the order at this point, it is treated as a separate event (event 8).
3. Another possibility is that the order has not been received by YOURDON Press (either because it was lost by the Post Office or somewhere within the mailroom at the customer’s office or at YOURDON’s office).
4. The order may have been received by YOURDON Press and processed; indeed, it is possible that the warehouse even shipped the order, but it may have been lost by the Post Office (or other shipping agency) en route to the customer. This is treated in the same way (e.g., the customer may decide to cancel the order at this point or may ask for a credit and place the order again).
5. While developing this DFD, I realized that invoices have not been sent to the customer (shipping of the books by the warehouse and mailing of the invoice by the main YOURDON Press office are two separate events). Thus, we need a separate store for invoices, and a temporal event to cause the invoices to be sent.
Event 6: Customer asks about status of an invoice

Notes

1. The customer’s question may have to do with the discount rate that was quoted on the invoice, or with shipping charges, sales tax, or other aspects of the invoice.
2. If the customer is asking a more general question about all of his orders, payments, and the like, event 7 is the part of the system that handles it.
3. For this event, an invoice-number is necessary in order to retrieve information about the individual order. (invoice-number is a component of invoice-inquiry, as will be seen in the data dictionary.)
Notes

1. While working on this DFD, I discovered the need for an event to let the customer ask for a credit (event 8).
2. Note that this event is temporal (i.e., statements are generated on a regular basis, once a month).
Notes

1. A credit may be given to the customer for a number of different reasons:
   — An error in the original order (perhaps the customer was given the wrong discount, or charged the wrong price, etc.
   — The customer received damaged goods (e.g., the books were mangled by the Post Office).
   — The customer received an undershipment because of an error in the warehouse. At this point, he wants a credit for the books that he did not receive, rather than having the rest of the order filled.
   — The customer overpaid one or more previous invoices and has just discovered that fact (normally the overpayment would become obvious when he received his next statement).
   — There has been an excessive delay in shipment, so the customer has decided to cancel the order.
2. The main thing that has to be done by this bubble is to update the customer’s credit balance.
3. However, note that management must authorize the credit. This event has been drawn to show an immediate response from management, so that a response can be made to the customer. This avoids a “pending” store of credit authorization requests, which would otherwise be necessary.
4. Note that this activity has nothing to do with book returns; those are handled separately.
Event 9: Customer wants refund check

Notes

1. This is OK if the customer does indeed have a credit balance. In most cases, the customer will apply an outstanding credit balance against future purchases. However, sometimes they want a check, either because they don’t plan any future purchases or for some other reason.
Event 10: Accounting needs (daily) cash receipts

Event 11: Accounting needs (daily) revenue reports
Event 12: Accounting needs (monthly) "net" revenue report

Event 13: Accounting needs (quarterly) author royalty report
Notes

1. We need access to the BOOKS store to get the author’s royalty rate for the book (the same author may have different royalty rates for different books).
2. We need access to the AUTHORS store to get the author’s Social Security number, address, and so on.
3. We also need access to the BOOKS store to see if there is an outstanding advance (which may have been granted as a result of event 34) and to update it to reflect the current cumulative royalty owed.
4. Note that royalties for any given period could be negative if book returns for that period exceed the number of new books ordered.
5. We need the ORDERS store because accounting wants details on who bought the books. We don’t need this in event 27.
Notes

1. Inventory is updated asynchronously as a result of orders, returns, receipt of new shipments from the printer, and physical inventory.
2. Note that this report shows books that have been ordered, but that may not have been shipped by the warehouses. It would not necessarily correspond with a physical inventory taken at the same instant because of the pipeline of orders that have been processed but not yet shipped.
Event 15: Accounting needs (monthly) sales commission report

Notes

1. This assumes that salespeople are paid a commission even if the customer hasn’t paid for the order. It ignores the real-world issue of reversing a commission if the customer never does pay for the order, and the associated invoice has to be written off.
2. Note many sales are not associated with any individual salesperson; they are received, unsolicited, as a result of direct mail campaigns, reviews in the computer literature, and the like.
3. This model also assumes that all salespeople are paid at the same commission rate, and that the commission is the same for all books. However, the commission rate can be changed by management each time this event occurs.
4. The model also assumes that we have to show the details of the order to the salespeople, because (being typical paranoid salespeople) they don’t believe the computer.
Notes

1. Management may decide to change the credit limit of a customer for a variety of reasons, the most common of which is slow payment of previous invoices. However, it could also be done if the customer has gone bankrupt or if management feels that general business conditions have changed.
Event 17: Accounting needs (monthly) aged accounts receivable report

Event 18: Printer offers quotation for print (or reprint) order
Notes

1. Note that the system does no processing of the printer’s quotation; it is simply passed on to management.
2. Since the system does no processing, it is not clear why this event needs to occur at all. (On the other hand, one could argue that the system does have the responsibility to serve as the conduit, or interface, between external printers and management within YOURDON Press.) In any case, it provides for the future capability of the system to do automated ordering, based on preset criteria.
Event 19: Management authorizes a print order

Event 20: Printer advises exact print quantity and delivery date
Notes

1. Accounting needs the revised book order information so that they can keep track of unit costs. This, together with event 14, allows accounting to keep track of the value of the inventory on a first-in-first-out (FIFO) basis.

2. Note that this assumes that the printer won’t make major changes to his initial quotation. In practice, the printer typically underprints or overprints the quantity originally quoted by 1% to 2% (e.g., a print order for 2000 copies of a book might actually result in a print run of 2037 books). Typically, the printer also waits until this point to quote shipping and other charges.
Notes

1. This assumes that management will respond to the printer’s invoice immediately. Note that YPIS does not produce a check, but merely informs accounting that a check should be cut.
2. This model assumes that there will be a separate invoice for each print order. It also assumes that there is only one print order outstanding at any given time.
3. Note that invoicing is asynchronous from the shipment of books by the printer. As a separate event, the warehouse informs the system that books have been received from the printer.
4. This also assumes that the invoice amount is the same as that shown on the revised estimate (event 20).
5. Note that some printers insist on partial prepayment of invoices; this model does not take that into account.
Event 22: Management asks for quotation on print order

Notes

1. Note that multiple printers are generally queried in order to get a range of price quotations. These quotations are received as an asynchronous event, and each quotation is sent to management (event 18).
2. Note that the printers do not respond with a quotation right away; however, we assume that they eventually will respond.
Event 23: Marketing asks for mailing labels from customer database

Event 24: Marketing needs statistics on book sales
Event 25: Marketing needs in-stock date for new titles

Event 26: Editors announce new book title (date ready for printer)
Notes

1. While developing this model, I saw the need to eventually delete books from the system. This happens rarely, but marketing eventually decides when to “kill” a book by declaring it out of print (event 36).
2. While this event actually creates a new book record (the book is not considered real and part of the system until the editors have substantially finished editing the book and are about ready to send it to a printer), we must also create an author record. This is done by event 34.
Event 27: Authors need quarterly royalty report.

Notes

1. This is similar to event 13, except that the report goes to the authors rather than to accounting.
2. Note that accounting wants to see detailed information, including an identification of the customers to whom a book was sold. Authors are not given this information.
Event 28: Warehouse needs shipping data and mailing labels

Event 29: Warehouse receives books from printer
Notes

1. This does not take into account the possibility of a partial shipment from the printer. This does occasionally happen: if there is a tremendous demand for a new book (or for a reprint of an existing book), the printer might rush-ship the first few hundred copies (perhaps by air freight) and then forward the rest of the print order later.

2. This assumes also that the amount received by the warehouse is the same as the amount specified in event 20.
Notes

1. The system may instruct the warehouse to refuse the book returns if they have not been authorized. This means that the warehouse will notify the Post Office (or whatever shipping agency brought the books) that the package(s) should be returned to the sender.

2. Note that it is sometimes impossible to tell who sent the books back; that is, the information that the warehouse finds in the package of books may not correspond to any known customer.
Event 31: Warehouse conducts (monthly) physical inventory

Event 32: Warehouse makes shipment of book order to customer
Notes

1. This assumes that there are no partial shipments of an order to a customer.

Event 33: Warehouse announces that book is out of stock

Notes

1. Note that the out-of-stock situation could occur either because a previously ordered reprint has not yet arrived; or because of an unexpectedly large order; or because of pilferage within the warehouse, and so on.
2. As a result of the out-of-stock situation, subsequent processed orders may not be filled for the time being, but that’s the warehouse’s problem to manage.
Event 34: Acquisition department announces new book project

Notes

1. This shows that event 13 must read the BOOKS store to see if there is an outstanding advance.
2. This event also creates a new author record if it is a new author.
Notes

1. Note that this is the same as event 1, except that the order is placed by a salesperson instead of the customer.
Event 36: Marketing declares that a book is out of print

Notes

1. This can be accomplished externally by simply stopping all advertising for a specified book. Eventually the orders will trickle away to zero.
2. When it is accomplished as shown here, it precludes further orders. The assumption is that the warehouses will dispose of the remaining stock in order to free up inventory space.
3. In real-world situations, provisions are often made to “remainder” the existing stock of the book at this point. Either the author or a discount book store may be allowed to buy the remaining stock for, say, $0.10 per copy.
4. Note that the book record cannot be deleted from BOOKS until at least after the monthly accounting reports and the quarterly royalty statement has been produced. In addition, there may still be a pipeline of outstanding orders that have not yet been shipped by the warehouse.
5. Note that all the warehouses need to be informed when this event occurs.
6. We are assuming at this point that there are no outstanding orders due from the printer: if sales have been slow enough to consider putting the book out of print, it is virtually impossible to imagine that a reprint order would have been issued.
Event 37: Customer announces a change of address

Event 38: Author announces a change of address
Notes

1. The agency plan is known by a number of other names in the publishing industry (e.g., “standard shipment plan,” “guaranteed shipment plan,” “standing order plan,” etc.). It is used almost exclusively by book stores. The book store places an initial order for a certain number of books and agrees that it will accept a certain number of copies of each new book that YOURDON Press publishes.

Event 39: Customer elects to join agency plan
Event 40: Invoices need to be sent to customer
Endnotes

1. Prentice-Hall’s information processing activities, meanwhile, are being subsumed into its new parent company, Simon & Schuster. And Simon & Schuster is part of an even larger company, Pearson Educational Group, which all goes to show that systems are almost always part of larger systems.

2. When we investigated, we found that Supermarket Products was located somewhere on the periphery of New York City and was chiefly involved in importing bananas from Guatemala. We didn’t see what this had to do with computers or why the state felt that our name would impinge on poor old Supermarket Products, but we decided not to fight the bureaucracy.

3. UNIX is not so mysterious now, of course, but in the mid-1970s hardly anyone outside Bell Laboratories and a few universities had heard of it. Neither I nor most of my colleagues at YORUDON were all that prescient; we owed our decision, which we later came to appreciate very much, to the urgings of Dr. P.J. Plauger, who had joined the company from Bell Labs in 1975. Plauger is widely known for books co-authored with Brian Kernighan, including The Elements of Programming Style (Reading, Mass.: Addison-Wesley, 1973) and Software Tools (New York: McGraw-Hill, 1976).

4. The issue of separate inventories, and sales from separate offices was looming on the horizon as a larger and larger problem. Each of the various YOURDON offices insisted that they needed to have a small, local inventory to service the walk-in customers who wanted to be able to get a book right away, rather than waiting several days (or weeks) for a shipment from Galactic Headquarters. And the Canadian office argued that it needed its own pricing structure (i.e., prices quoted in Canadian dollars rather than U.S. dollars) and its own marketing/advertising campaign to appeal to the Canadian market in a different way than the U.S. market. In some cases, the remote offices would simply give the book to the customer and ask the central New York office to generate the invoice. In other cases, the customer would pay for the book on the spot, and ask for a receipt. Sales from the London office accounted for roughly 10% of the overall YOURDON Press revenues, while sales from the other offices accounted for less than 1% of the overall YOURDON Press revenues.

5. While preparing the second edition of this book in the spring of 2000, I contacted the vendor to see if they had an updated version of their Macintosh drawing tool. It was no great surprise to learn that they had created a Microsoft Windows version of their product subsequent to the original publication of this book in 1988; what was slightly more surprising was that both the Windows version and Mac version had been withdrawn from the market. The company still does have an excellent business process modeling tool, but the traditional structured analysis CASE tool market has indeed fallen on hard times.