

The Business Scenario: Ink, Inc.



Overview of the Business

Ink Inc., located in Tigard, Oregon, is a regional publisher specializing in books that provide practical guidance in legal, tax, and business matters. Ink Inc. sells to bookstores, book wholesalers, and direct to consumers, via orders received by phone, mail, email, or at the company website. To date, its promotional efforts and most of its sales have been concentrated in the Pacific Northwest. Over the past five years the company's rate of growth, historically modest but steady, has accelerated with the introduction of a line of books providing advice to individuals working as independent contractors. Popular interest in such books can be directly linked to the significant increase in businesses' use of contract help, particularly in the area of information systems development. Ink Inc. now hopes to take advantage of this opportunity by extending the reach of its promotional and sales efforts to other major urban markets, including New York, Boston, Dallas-Fort Worth, and the San Francisco Bay Area.

Such a move places the company at the threshold of unprecedented growth. On the other hand, Harve Bookbinder, president of Ink Inc., has recently expressed doubts about whether the company's current approach to order processing and fulfillment can keep up with the anticipated increase in demand. He has also begun to complain about being unable to get the kinds of information about customers' needs and purchasing patterns that he'll need in order to raise an aggressive and well-targeted marketing campaign in these new regional markets. A description of Ink Inc.'s order-handling process and the data involved in that process follows, along with comments noting some (although not all) of the problems that have occurred with it.

Order Processing & Fulfillment

When an order for books is received, the salesperson writes up the order on a personal computer using a standard combined order/invoice form that is available as a Word document. (Orders placed at the website use a relatively primitive order form that is "dumped" to a document file for completion and editing by a salesperson.) The order/invoice form records the customer's account number, name, billing address, and phone number; an invoice number, an invoice date, payment terms, name of carrier, shipping weight, the ship-to address, order subtotal, sales tax, shipping and handling charge, order total, payment-on-invoice (e.g., some orders come pre-paid by check or credit card), and total amount due. For each book-title ordered, the order/invoice form also records a book-title identification number (the ISBN, or International Standard Book Number), first author's last name, book title, availability date, copyright date, unit price, quantity ordered, discount applied (if any), and the net price charged (unit price times quantity ordered less discount).

When the salesperson writes up the order/invoice, s/he typically must look up much of the information required for the form. For examples, the salespeople generally haven't memorized prices, as there are too many titles, and the prices often change. Also, customers often don't know the ISBN, and frequently get authors' names and the titles wrong. To get the required information, the salesperson looks it up in a product information "database" contained in an

Excel spreadsheet file. This spreadsheet file is maintained by the marketing department and copied by “sneaker net” to the individual salespeople’s computers, as the information gets updated. Separate worksheets cover each subject area (legal, tax, business, etc.). Within a worksheet, the publications are arranged, at the time the file is installed on the salesperson’s machine, by date order of publication (latest titles first). Naturally, salespeople have learned how to re-sort the worksheets based on other data columns (e.g., first author’s last name) in order to find publications of interest.

As you might expect, there have been problems with this approach to managing Ink Inc.’s product data. Data-entry errors have occasionally been made in the marketing department; spreadsheets have become corrupted through the salespeople’s manipulations; sometimes, not all salespersons’ machines have been consistently updated. As a consequence, order errors occur (wrong titles ordered, wrong prices assigned, etc.), customer service costs are high, and customer satisfaction suffers when problems happen.

When an order/invoice form is complete, the salesperson prints a copy on a laser printer shared via local area network (LAN) with the other computers in the sales department. The salesperson places the copy in a basket for pick-up by a representative from Inventory/Shipping. Order/invoices are usually picked up four times per day, the warehouse being about half a mile away from the sales office. When an order/invoice form arrives at the warehouse, it is placed at the back of a tray at the shipping desk to await its turn for fulfillment. Orders are processed on a first-in/first-out basis.

When an order/invoice reaches the front of the tray, a shipping clerk heads into the warehouse with the form and a cart, seeking the titles ordered. The titles are stocked on racks and shelves in order by ISBN. (Where an ISBN is missing or in error on the form – something that happens occasionally – the clerk must call the salesperson of record to get clarification on the ordered item.) As the shipping clerk collects the books for the order, s/he checks them off on the form. Should a title be sold out or be in insufficient quantity to satisfy an order for multiple copies, the shipping clerk notes the item as a “back-order” on the order/invoice. Once all the available titles, in the appropriate quantities, are collected for the order, the shipping clerk makes three additional copies of the form, using a copy machine located at the shipping desk. The shipping clerk then packages up the books and includes inside the package one copy of the order/invoice, which serves as a packing slip.

The shipping clerk then files another copy of the order/invoice at the shipping desk in one of two files: a file for Completed Orders, or a file for Unfinished Orders (that is, orders having back-ordered items). In both files, order/invoice forms are filed by order/invoice number. On an on-going basis, an inventory-control clerk will go through the files for both types of orders and manually update a comprehensive spreadsheet file used to track inventory, in order to reflect the quantities of the items that were sold from stock. The inventory-control clerk will also note, in a special column in the inventory spreadsheet, the products for which back-orders have been identified. This subsequently helps to alert inventory & shipping staff to complete the fulfillment of the affected orders, once more copies of the titles in question are produced. (The Production Manager consults the inventory file in determining if and when to produce and bind additional

copies of a given title. This business process, however, is beyond the scope of interest in this exercise.)

Returning to order processing, the shipping clerk paper-clips together the remaining two copies of the order/invoice and places them in a basket for transport to Accounting.

When the order/invoice arrives at Accounting, a bookkeeper checks the totals on the order/invoice form, adjusts the total-amount-due to reflect pre-payments and any back-ordered titles (customers are not charged for books until they are shipped), and then sends one copy of the order/invoice form to the customer as an invoice. The last remaining copy of the form is filed by order/invoice number in a file drawer for Orders In Process. Invoicing is sometimes delayed when a bookkeeper must check back with Inventory/Shipping because s/he has difficulty reading the notations made on the order/invoice form, either due to illegible handwriting or poor copy quality.

If a customer calls to inquire about the status of an order, s/he is transferred to the shipping desk in Inventory/Shipping. Here, the clerk taking the call searches through the files for Completed Orders and/or Unfinished Orders to locate Inventory/Shipping's copy of the order/invoice. If the customer has already received an invoice and is calling about back-ordered books or a fulfillment error, s/he can usually provide the order/invoice number. This obviously speeds up the search process. Otherwise, the clerk uses the approximate date of the order to "zero in" on the part of the file likely to contain the form, and then scans the forms in that general area for the customer's name. Once retrieved, the form provides information on shipment date, mode of shipment, backordered titles, and so forth that a customer is usually seeking. However, because of filing errors and the occasional loss of paperwork in transit between locations, an Inventory/Shipping Clerk may be unable to answer a customer's inquiry at once, and a trace must then be placed seeking the related copy of the document maintained in Accounting.

When back-ordered books come into inventory, the corresponding order/invoices are located and pulled from the file. (Again, the back-ordered "flag" in the inventory spreadsheet file serves to alert staff to the fact that back orders must be sought and fulfilled for those particular titles.) For each order/invoice, a back-order memo is prepared and three copies are made. One copy serves as the packing slip that accompanies the book(s) shipped to the customer; one copy is attached to Inventory/Shipping's file copy of the original order/invoice; and one copy is sent to Accounting. Accounting then prepares a revised order/invoice to send to the customer reflecting the additional charges for the follow-up shipment.

In laying plans for a marketing campaign in the Bay Area, Harve Bookbinder and his vice-president of marketing, Irwin Wiley, recently needed information on how sales of Ink Inc.'s different categories of books (legal, tax, business) had historically been distributed among the different types of customers (wholesaler, retailer, consumer). It took a team of five college interns working all summer with the invoice files in Accounting to assemble the report Bookbinder and Wiley were seeking.