

Management claimed one distribution center could sell as many products in one day as 18 metropolitan-area supermarkets. Orders could be entered on the Internet 24 hours per day, every day, and the goods would be delivered from the distribution centers. The company expected to have only about 900 to 1,000 employees per center, compared with about 2,200 to 2,700 for the supermarkets. The company kept real estate costs low by having only one large site per metropolitan region, and the sites were located in low-cost industrial areas rather than in high-priced residential neighborhoods. Thus Webvan would achieve a much higher operating margin than supermarkets, more than enough to pay for such added expenses as software and delivery.

The grocery business is difficult to break into. Customers expect high quality and yet prefer not to pay extra for convenience. Polls show the majority wants to smell the strawberries and squeeze the tomatoes before purchasing them. The most difficult challenge is breaking consumers' habits of actually going to the store.

Webvan's top management believed that the leverage in groceries was distribution. The company decided on a hub-and-spoke model (distribution center (hub) to the local centers (spoke)) in which orders would be filled in the massive warehouses and then taken to tiny transfer stations that served specific neighborhoods where they would be transferred to a leased fleet of Webvan trucks for delivery. Thus, Webvan could efficiently serve a 60-mile, heavily populated radius. Time-starved shoppers would be lured by the convenience of being able to order products 24 hours a day and having the goods home delivered exactly at the time of their choosing.

The original plan was for a rapid rollout in 26 U.S. metropolitan areas by the end of 2001. Customers included not only people who are at home but also office workers who would use their work computers to order groceries for home and even order lunches and snacks for the office. The long-range plan was to expand into other businesses. If Webvan could deliver groceries to a number of places in a neighborhood, it was set up to deliver other products as well.

The model relied on extremely sophisticated, highly automated information systems centered in the warehouses. An inhouse engineering team worked with Optimum Inc. of WhitePlains, New York, to design and build systems for warehouse management, routing and scheduling, and for communication with suppliers. The systems were designed to handle as many as 50,000 items, leaving plenty of room for expansion into non-grocery products. A data repository in San Jose, California, served as the information center for all the warehouses.

The warehouses had three temperature zones for shelf items, fresh items (such as vegetables and meats), and frozen foods. Every warehouse had 12 huge carousels, each of which held up to 7,500 items. An employee stationed at each carousel could stand still rather than having to move around to pick the items. When they were picked, the items were placed in totes and moved around using the warehouses 4 1/2 miles of conveyer belts.

The ordering process began when customers placed their orders on Webvan's Web site. When the order was completed, customers selected an open 30-minute delivery time slot in any of the next seven days. The delivery optimizer marked slots as taken if they had already been reserved or if they were too far away from the delivery location of the new order for on-time delivery.