

tomers of a particular segment, and then distribute these arrivals over the sale period, following a given arrival pattern. To avoid confusion with the distribution of the total number of customers, we call the distribution over time an *arrival pattern*.

The following procedure achieves this objective. First, generate a random number n from the (assumed) distribution for the total number of arrivals, representing the aggregate number of customers. Then for each one of these customers, generate their arrival time by considering the arrival-pattern curve as a cumulative distribution over time. That is, generate a uniform random variable between 0 and 1 and use the inverse of the given arrival pattern to generate an arrival time, as shown in Figure 11.10.

While this procedure gives a distribution of customers over time that conforms to both the aggregate demand distribution as well as the arrival pattern, it is important to note that the number of arrivals will not, in general, be independent across disjoint time intervals. Put another way, a RM forecasting system could gain an advantage by basing its forecasts on observed demand to date, since the expectation of future demand conditional on observed demand may be different from the unconditional expected demand. Whether this is as it should be is a matter of debate among RM professionals, but one should be aware that with arbitrary distributions, biases may be introduced into a simulation by using an unconditional distribution when forecasting demand to come.⁹

11.5 Customer Perceptions and Reactions

While firms, for understandable reasons, may be enthusiastic about RM, they may find that their customers are less so. Here we discuss strategies for making RM more palatable in the eyes of customers.

11.5.1 RM Perception Problems

One well-reported incident that highlights the potential customer perception problems with RM occurred in the fall of 2000 when Amazon.com conducted a price experiment, quoting different prices on DVDs to different customers. Several customers discovered the practice by logging onto Amazon.com's site at different times. What they found, which Amazon.com later confirmed, was that customers were given random discounts of between 20% and 40% on selected DVDs. For example, during one online price test conducted by the *E-Commerce Times*, the

⁹If aggregate demand is Poisson, however, then the unconditional distribution of demand to come is the same as the conditional distribution.