person at the top of the waiting list. For the past few years, the length of the waiting list has remained relatively steady, at approximately 20 names.

However, during the past winter two events occurred that have suddenly increased the demand for shares in the club. The winter was especially severe, and subzero weather and heavy ice storms caused both the town and the county pools to buckle and crack. The problems were not discovered until maintenance crews began to prepare the pools for the summer, and repairs cannot be completed until the fall. Also during the winter, the manager of the local country club had an argument with her board of directors and one night burned down the clubhouse. Although the pool itself was not damaged, the dressing room facilities, showers, and snack bar were destroyed. As a result of these two events, the Valley Swim Club was inundated with applications to purchase shares. The waiting list suddenly grew to 250 people as the summer approached.

The board of directors of the swim club had refrained from issuing new shares in the past because there never was a very great demand, and the demand that did exist was usually absorbed within a year by stock turnover. In addition, the board has a real concern about overcrowding. It seemed like the present membership was about right, and there were very few complaints about overcrowding, except on holidays such as Memorial Day and the Fourth of July. However, at a recent board meeting, a number of new applicants had attended and asked the board to issue new shares. In addition, a number of current shareholders suggested that this might be an opportunity for the club to raise some capital for needed repairs and to improve some of the existing facilities. This was tempting to the board. Although it had set the share price at $500 in the past, the board could set it at a much higher level now. In addition, an increase in attendance could create a need for more lifeguards.

Before the board of directors could make a decision on whether to sell more shares and, if so, how many, the board members felt they needed more information. Specifically, they would like a forecast of the average number of people (family members, guests, etc.) who might attend the pool each day during the summer, with the current number of shares.

The board of directors has the following daily attendance records for June through August from the previous summer; it thinks the figures would provide accurate estimates for the upcoming summer:

M-139	W-380	F-193	Su-399	T-177	Th-238
T-273	Th-367	Sa-378	M-197	W-161	F-224
W-172	F-359	Su-461	T-273	Th-308	Sa-368
Th-275	Sa-463	M-242	W-213	F-256	Su-541
F-337	Su-578	T-177	Th-303	Sa-391	M-235
Sa-402	M-287	W-245	F-262	Su-400	T-218
Su-487	T-247	Th-390	Sa-447	M-224	W-271
M-198	W-356	F-284	Su-399	T-239	Th-259
T-310	Th-322	Sa-417	M-275	W-274	F-232
W-347	F-419	Su-474	T-241	Th-205	Sa-317
Th-393	Sa-516	M-194	W-190	F-361	Su-369
F-421	Su-478	T-207	Th-243	Sa-411	M-361
Sa-595	M-303	W-215	F-277	Su-419	
Su-497	T-223	Th-304	Sa-241	M-258	
M-341	W-315	F-331	Su-384	T-130	
T-291	Th-258	Sa-407	M-246	W-195	

Develop a forecasting model to forecast daily demand during the summer.

Case Problem

Forecasting Airport Passenger Arrivals

Since the terrorist attacks of 9/11 and because of the ensuing measures to increase airline security, airports have faced the problem of long waiting lines and waiting times at security gates. Waiting lines can be as long as hundreds of yards, and waiting times can sometimes be hours. In their efforts to reduce waiting lines and times, or at least to not have them become longer as airline demand increases, airports have analyzed their existing security systems and sought quantitative solutions. One of the key components of any effort to operationally improve airport security procedures is forecasting passenger arrivals at security checkpoints in order to determine how many security checkpoints and staff are needed. At Berry International Airport (BEI), security analysts would like to forecast passenger arrivals for next July, the airport's busiest travel month of the year, for the purpose of determining how many security checkpoints they should staff during the month so that waiting lines and times will not be excessively long. Demand for airline travel has generally been increasing during the past 3 years. There are two main concourses at BEI, North and South, each serving different airlines. The following table shows passenger arrivals at the South concourse for 10 days (selected randomly) in 2-hour segments from 4:00 A.M. to 10:00 P.M. for the month of July for the past 3 years.