
**SOFTWARE
SERVICE CALLS**

“What can you do?” asked Sam. “The number of service calls we get in any week or month jumps around so much, it’s no wonder that sometimes we seem to be over-staffed, while at other times we are completely swamped and can’t get to all the reported problems anywhere near as quickly as we ought to.” Sam knew his supervisor wouldn’t like his explanation much, but he still felt it was an accurate description of the problem he faced.

Sam managed a department in the national service center for a software development company. As part of the customer service and warranty operation, the national service center staffed a hotline, to which customers could report discrepancies or problems. Customers could file formal, written trouble reports (STR), but Sam was concerned about telephoned trouble reports, not STRs.

His department received direct service requests by phone (SCALLs) for one specific product in the firm’s catalog, a fairly large package for computer-aided design and drafting. The package had been sold for 18 months. His problem was to have the appropriate number of service representatives on hand to provide decent response time to customers. “Decent” was not defined in any specific terms (at least not yet), but Sam agreed with his supervisor that performance lately had certainly been unsatisfactory, at least in spurts. Sam knew that the allocation of service representatives to different products could in principle be changed from time to time. The difficulty was how to know in advance how many would be needed for which product.

Sam stared at the numbers on his desk and remembered the tone in his supervisor’s voice. He had to figure out something. The numbers on his desk are also available in

This case describes a real business situation. The data are used here with the permission of the students who originally provided them to us.

file SERVCALL. Q is the quantity of the product sold in each month, and MONTH is a count of calendar months elapsed since the product's introduction. The other variables are defined above.

DATA SET

MONTH	Q	STR	SCALL
1	20	28	76
2	19	18	63
3	28	10	79
4	37	53	73
5	2	47	89
6	91	41	97
7	4	38	68
8	11	34	118
9	45	66	85
10	4	28	88
11	9	63	99
12	14	58	68
13	10	40	70
14	8	43	84
15	7	41	85
16	9	38	72
17	11	32	74
18	8	33	72