**Problem 16-57**

Given the following cost-of-quality data:

| Quality Cost | Amount ($) |
|---|---:|
| **Loan Processing** | |
| Run credit checks | 2,409.32 |
| Review documents | 3,181.80 |
| Make document corrections; gather additional information | 1,333.50 |
| Prepare tickler file; review and follow up on titles, insurance, second meetings | 167.95 |
| Review all output | 2,676.44 |
| Correct rejects and incorrect output | 438.05 |
| Reconcile incomplete collateral report | 74.34 |
| Handle dealer problem calls; address associate problems; research and communicate information | 2,360.00 |
| Compensate for system downtime | 526.74 |
| Conduct training | 1,235.00 |
| **Loan Payment** | |
| Receive, inspect, and process payments | 830.00 |
| Respond to inquiries when no coupon is presented with payments | 849.75 |
| **Loan Payoff** | |
| Receive, inspect, and process payoff and release documents | 296.26 |
| Research payoff problems | 15.77 |

We can classify these into the appropriate cost-of-quality categories: appraisal, internal failure and external failure. Using the definitions for the four categories, we have:

| Quality Cost | Cost Classification |
|---|---|
| **Loan Processing** | |
| Run credit checks | Appraisal |
| Review documents | Appraisal |
| Make document corrections; gather additional information | Internal Failure |
| Prepare tickler file; review and follow up on titles, insurance, second meetings | Appraisal |
| Review all output | Appraisal |
| Correct rejects and incorrect output | Internal failure |
| Reconcile incomplete collateral report | Internal failure |
| Handle dealer problem calls; address associate problems; research and communicate information | External failure |
| Compensate for system downtime | Internal failure |
| Conduct training | Prevention |
| **Loan Payment** | |
| Receive, inspect, and process payments | Appraisal |
| Respond to inquiries when no coupon is presented with payments | external failure |
| **Loan Payoff** | |
| Receive, inspect, and process payoff and release documents | Appraisal |
| Research payoff problems | External Failure |

Summing the cost of each category, and divding that by the total sum for all categories, we get the following table:

| Quality Cost Category | Total Amount ($) | Percentage of Total Quality Cost (%) |
|---|---|---|
| Prevention | 1235.00 | 7.53% |
| Appraisal | 9561.77 | 58.32 % |
| Internal Failure | 2372.63 | 14.47% |
| External Failure | 3225.52 | 19.67% |

Using the Excel template, with the above table, we get the following pareto diagram:
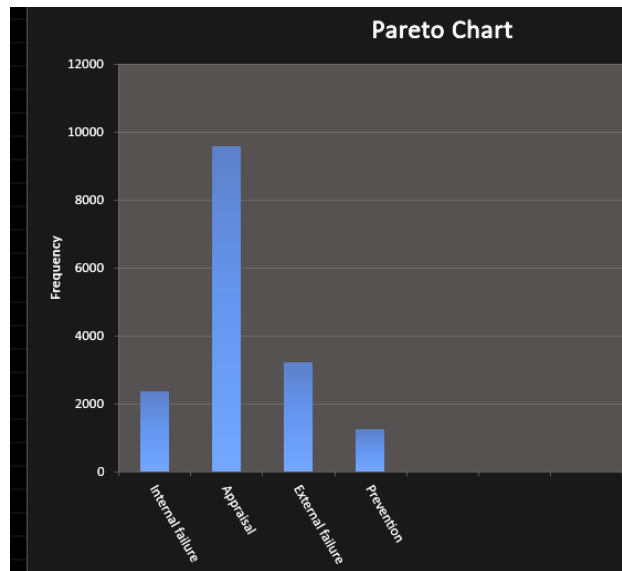
We can see that Appraisal activies appear to be keeping failure costs relatively low; and with better prevention, we can lower them.