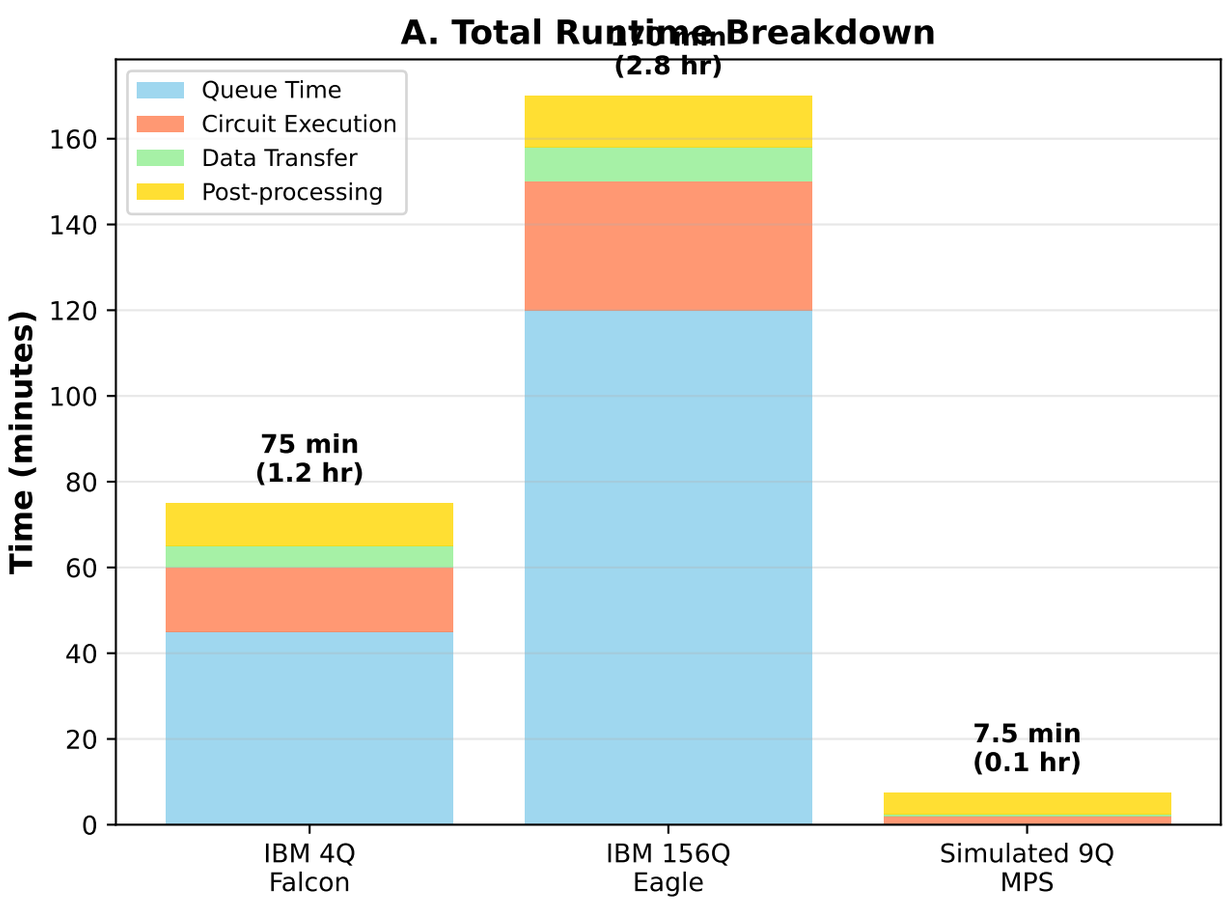
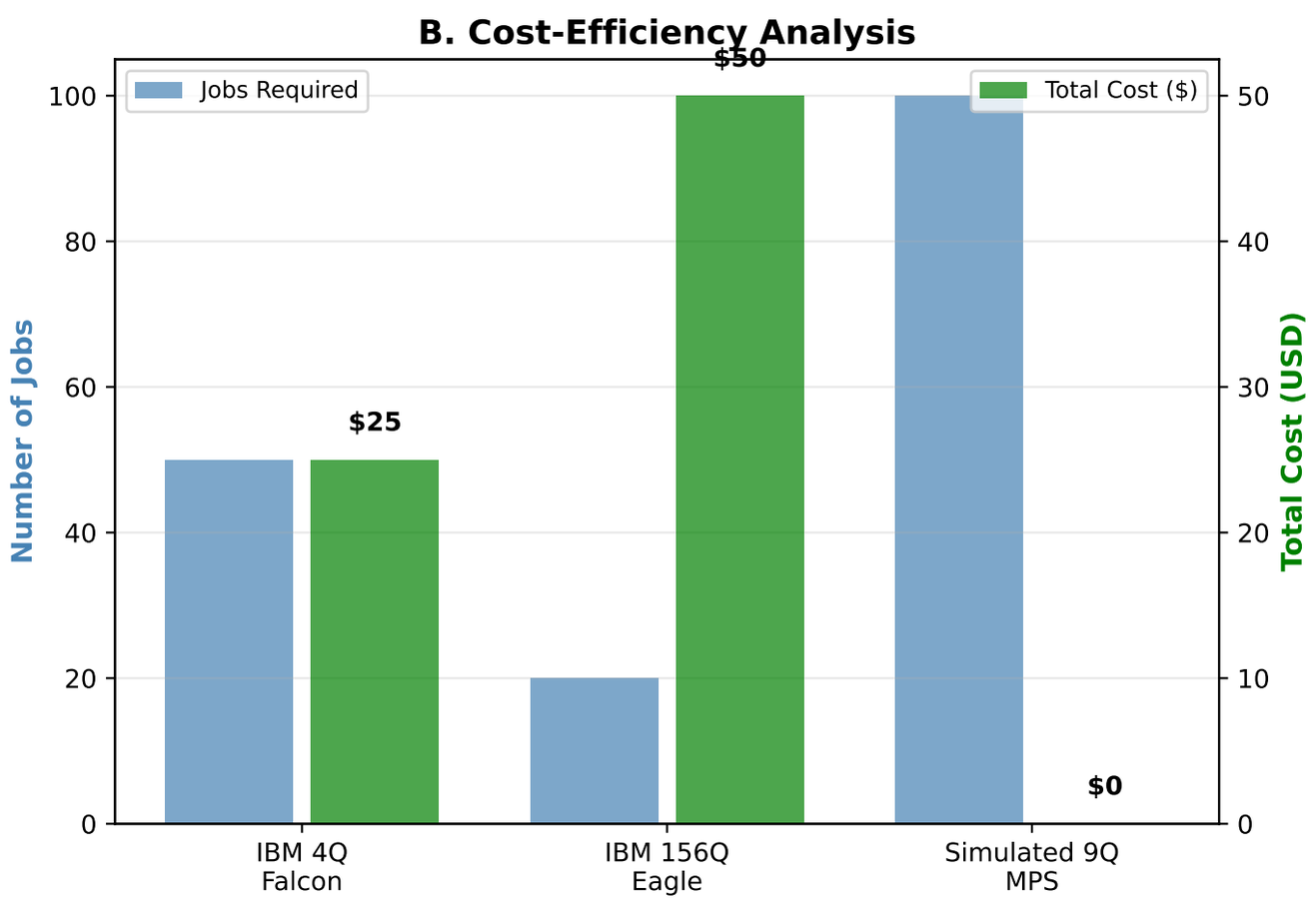
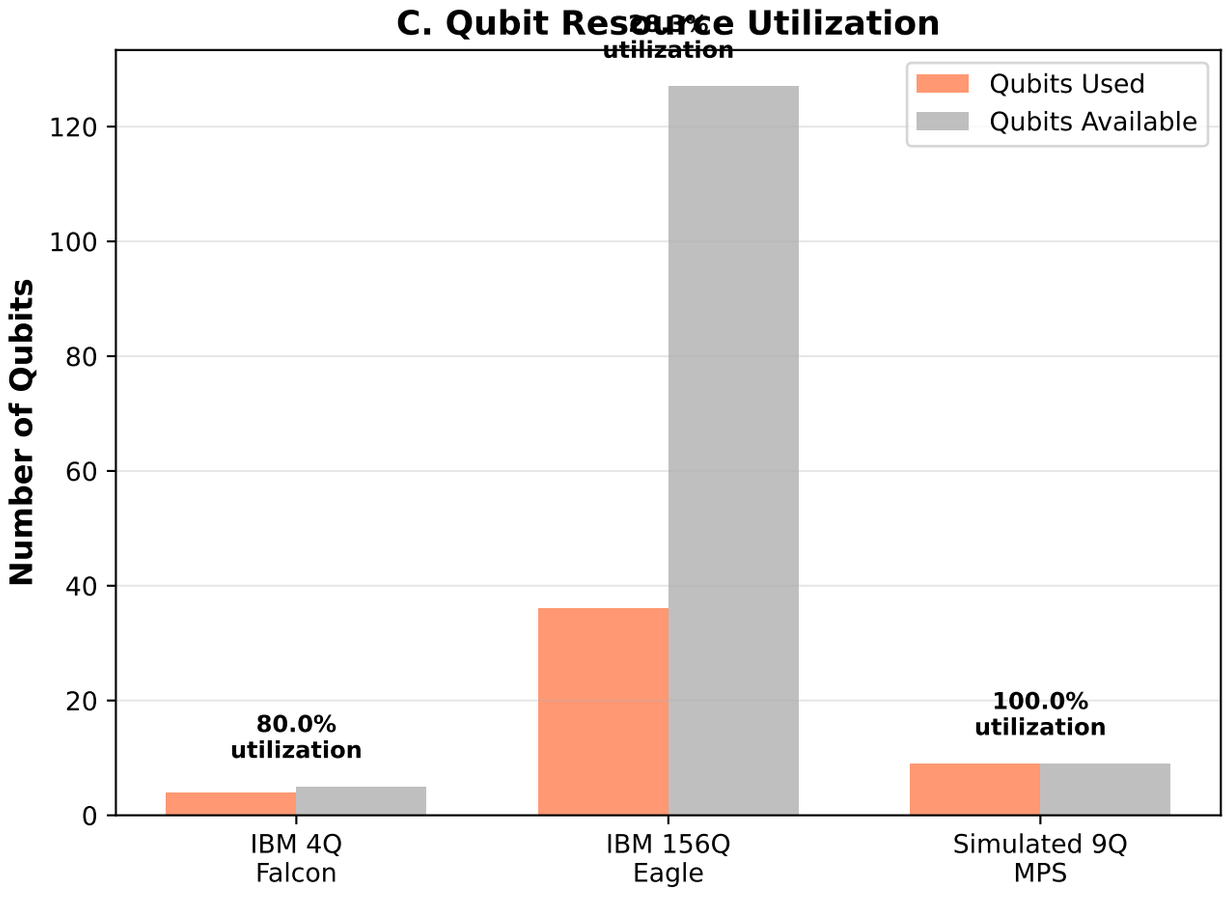
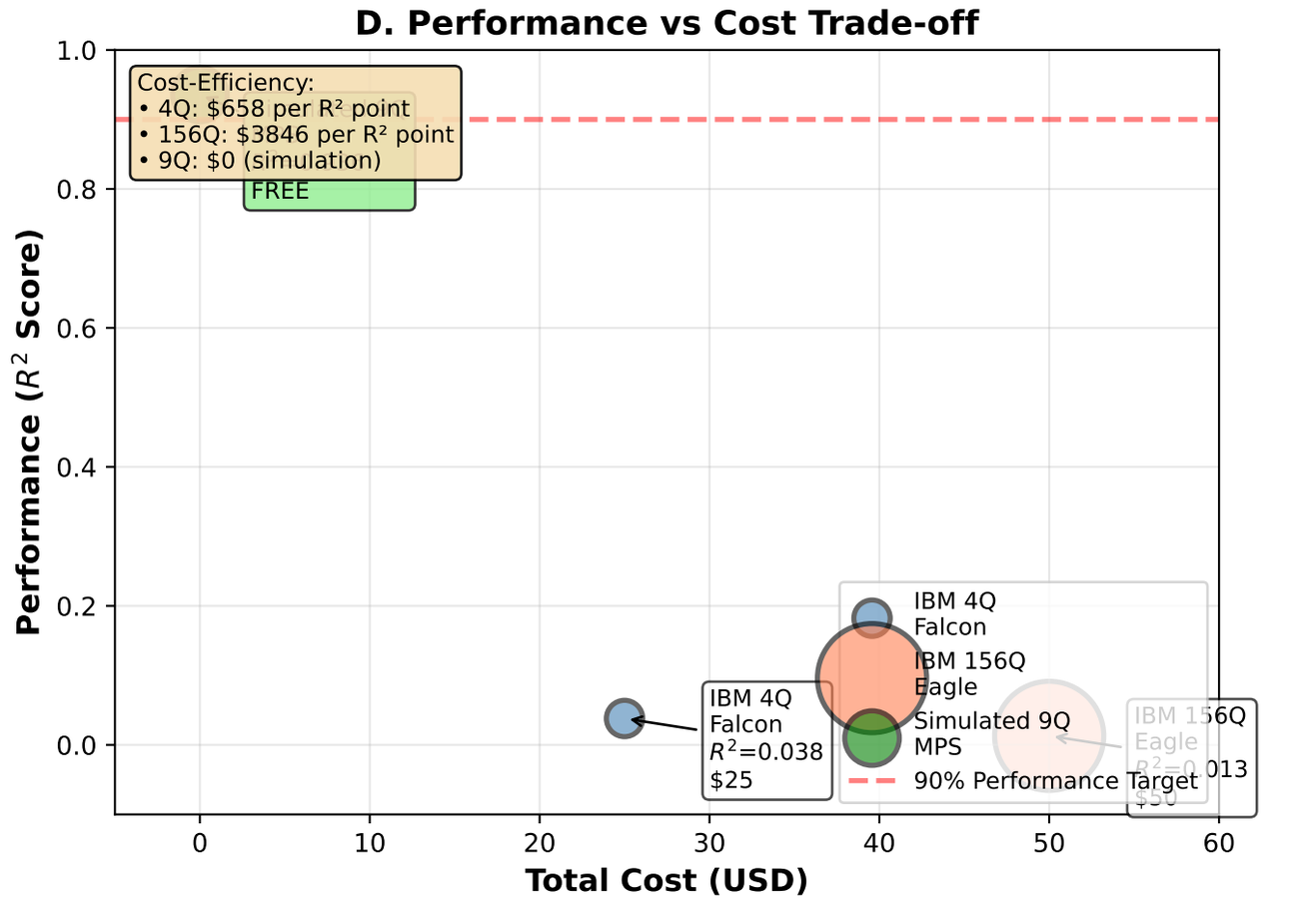

A. Total Runtime Breakdown
Time (minutes)
Queue Time
Circuit Execution
Data Transfer
Post-processing
75 min
(1.2 hr)
170 min
(2.8 hr)
7.5 min
(0.1 hr)
IBM 4Q
Falcon
IBM 156Q
Eagle
Simulated 9Q
MPS


B. Cost-Efficiency Analysis
Number of Jobs
Total Cost (USD)
Jobs Required
Total Cost ($)
$25
$50
$0
IBM 4Q
Falcon
IBM 156Q
Eagle
Simulated 9Q
MPS


C. Qubit Resource Utilization
Number of Qubits
Qubits Used
Qubits Available
80.0%
utilization
100.0%
utilization
100.0%
utilization
IBM 4Q
Falcon
IBM 156Q
Eagle
Simulated 9Q
MPS


D. Performance vs Cost Trade-off
Performance (R^2 Score)
Total Cost (USD)
Cost-Efficiency:
• 4Q: $658 per R² point
• 156Q: $3846 per R² point
• 9Q: $0 (simulation)
FREE
IBM 4Q
Falcon
IBM 156Q
Eagle
Simulated 9Q
MPS
90% Performance Target
IBM 4Q
Falcon
R^2=0.038
$25
IBM 156Q
Eagle
R^2=0.013
$50