

Economic Implications Ballot Online Infrastructure

University of Maryland University College

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The purpose of this report is to do a cost analysis of BallotOnline infrastructure over the next 5 years maintaining their current on-premise datacenter model and compare it to the cost of moving to a cloud solution. IT management was given a directive by executive leadership that the IT budget must be reduced over time as a percentage of revenue, and within five years it must comprise no more than 5 percent of revenue. My cost analysis shows that a cloud solution is a viable option because it will reduce the total cost of operating (TCO) of IT budget by approximately \$62 million dollars over a 5-year span.

BallotOnline’s total IT budget over 5 years is projected to be \$64.5 million dollars. The chart below shows the breakdown year over year.

	Current Year (Year 0)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
<b>Revenue</b>	108,000,000.00	110,000,000.00	132,000,000.00	156,000,000.00	186,000,000.00	225,000,000.00	
<b>%</b>	10%	9%	8%	7%	6%	5%	
<b>IT Budget</b>	10,800,000.00	9,900,000.00	10,560,000.00	10,920,000.00	11,160,000.00	11,250,000.00	64,590,000.00

BallotOnline’s IT budget allocations for the current fiscal year:

Budget Item	Allocation for Current Fiscal Year
<b>Capital Expenses</b> Data Center Hardware Purchases Hardware capital expenses are depreciated over a five-year period	4,000,000.00
<b>Operating Expenses Tied to Capital Expenses</b> Support and maintenance expenses for data center hardware purchases	800,000.00
<b>General Operating Expenses (includes data center</b>	6,000,000.00

<b>colocation fees)</b>	
Includes data center colocation fees (space, power, and cooling), telecom costs, staffing, cloud hosting, software, etc.	

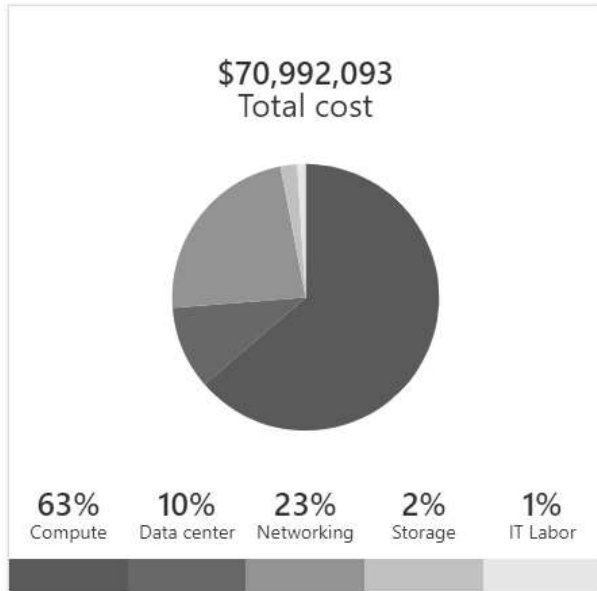
Current server specifications for year 0 of the application and database servers plus the total proposed storage and data transfer needs defined in the table below was used as the input variables in the Microsoft Azure TCO calculator to assess the cost estimate

	Current Year (Year 0)	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Storage (in GB)	0	50000	66500	66500	83125	103906	370031
Data Transfer (in GB)	0	50000	66500	66500	83125	103906	370031
Server Specifications	400 application servers (2 CPUs, 4 cores, 32GB RAM, Linux OS)						
	400 database servers (4 CPUs, 8 cores, 64GB RAM, Linux OS, MySQL DB)						

As a result, it shows that the total on-premises cost of \$70 million dollars versus \$9 million dollars utilizing the Microsoft Azure cloud service.

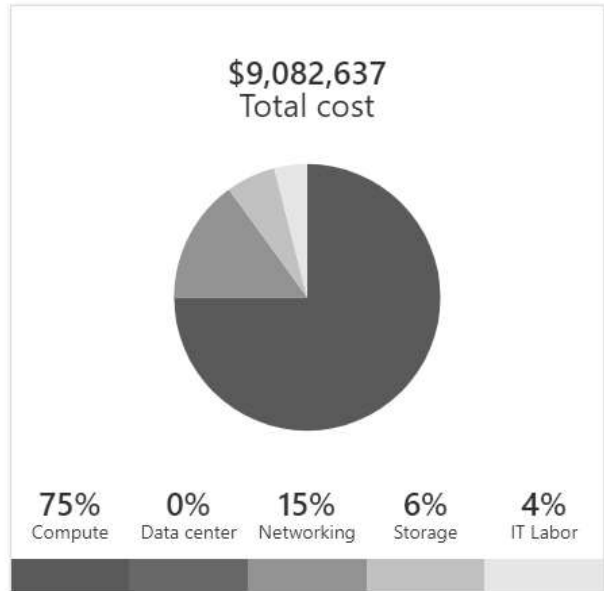
**Total on-premises over 5 year(s)**

TCO of on-premises environments tends to be driven by compute and data center costs.



**Total Azure cost over 5 year(s)**

In Azure, certain cost categories decrease or go away completely.



As you see from the illustration above the TCO of on-premises environment is driven by compute and data center costs while in the Azure cloud it is driven by compute costs. The Total cost is approximately \$9 million over 5 years utilizing the Azure cloud solution coming under budget by \$55 million dollars.

In Conclusion, I recommend going with a cloud solution because it will save BallotOnline approximately \$62 million dollars which can be reallocated to scale up from 800 servers to 2000 as the proposed IT infrastructure. Moreover, we have to move to cloud solution because the on-premises model brings the TCO to over budget by approximately \$6 million dollars.