[**MGS659LECS1S:Seminar On E-Commerce:217111704**](https://ublearns.buffalo.edu/webapps/blackboard/execute/launcher?type=Course&id=_146136_1&url=)

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**Case Questions - Vungle**

1. Using an online AB calculator, compute the install per impression conversion rate for (A) vs. (B) and test whether (B) is superior. State any assumptions.

Ans.

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| Dates | Impressions for Vungle (A) | Installs for Vungle (A) | Impressions for Vungle (B) | Installs for Vungle (B) | Outcome | CTR A vs CTR B |
| 1 June- 5 June 2014 | 31,333,451 | 131,047 | 2,558,046 | 9,205 | Test A converted 16% better than Test B | 0.0041 vs 0.0037 |
| 6 June-10 June 2014 | 41,165,893 | 172,633 | 2,677,531 | 10,220 | Test A converted 10% better than Test B | 0.0039 vs 0.0032 |
| 11 June- 15 June 2014 | 41,220,345 | 168,821 | 2,673,723 | 9717 | Test A converted 13% better than Test B | 0.0045 vs 0.0039 |
| 16 June-20 June 2014 | 40,263,481 | 157,009 | 2,621,171 | 8603 | Test A converted 19% better than Test B | 0.0057 vs 0.0030 |
| 21 June- 25 June 2014 | 41,350,703 | 156,256 | 2,684,785 | 8542 | Test A converted 19% better than Test B | 0.0039 vs  0.003 |
| 26 June- 30 June 2014 | 41,125,529 | 165,900 | 2,710,120 | 9744 | Test A converted 12% better than Test B | 0.0039 vs  0.0035 |

The Install per Impression Conversion rate has been computed as shown above. The readings are taken for every 5 days in the month of June 2014 for Vungle A and Vungle B. (A) is superior clearly from the online AB test. The sample size may have had an impact on the result.

1. Using excel, compute a “paired t-test” for (A) vs. (B) related to eRPM. Use days as the sample size. State any assumptions.

Ans. 

1. What would you advise re: the new data science algorithm (B)?

Ans. We would encourage moving ahead with algorithm A.

On isolating the information for the A/B testing, A's execution showed signs of improvement with information in each partition rather than B.

The reason for the paired t-test is to decide if there is measurable proof that the mean difference between observed pairs for a specific result is not the same as zero.

Assuming the significance level to be 1%, we should dismiss the hypothesis that the mean eRPM values for both the calculations are comparative. While, assuming we set the significance level to 5%, the speculation that they are comparable cannot be rejected.