**Group Assignment Report: Maximizing Profits with A/B Testing Simulation on Wharton Interactive**

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**Objective:** To maximize profits through A/B testing simulation on Wharton Interactive by making informed decisions at the right time during different periods.

**Methodology:**

1. **Experiment Setup**:
   * Identify variables of interest: Price, Image, Tagline, Call to Action, Features.
   * Create experiments for each variable across different audience types: USA Desktop, USA Mobile, International Desktop, International Mobile.
   * This results in 20 experiments for period 1 (5 variables x 4 audiences).
2. **Analysis and Decision Making**:
   * After running period 1 experiments, analyze A/B testing results for each experiment.
   * If the option with the highest conversion rate is statistically significant (p-value between 0.01 and 0.05) compared to all baselines, lock in this option for subsequent periods.
   * If the option with the lowest conversion rate is statistically significant, allocate minimal traffic (5-10%) to this option and focus on higher conversion rate options.
   * Use graphs to understand the performance of each option, considering traffic and conversion rates.
   * Make decisions early to ensure consistent good results and profits. Avoid wrong decisions that may lead to lower profits and percentages.

**Learnings:**

1. **Audience Preferences**: The same option for a variable may not work for all audiences. For example, Pink may be preferred by USA Desktop users, while Gold may be favored by USA Mobile users.
2. **Statistical Significance**: Do not lock in decisions until the p-value is significant (0.01 to 0.05).
3. **Graph Analysis**: Understanding traffic and conversion rates through graphs is essential. High conversion rates with low traffic can be significant.
4. **Traffic Allocation**: Avoid aggressive changes in traffic allocation without understanding the performance of options over time. Refer to lift over baseline and conversion rates.
5. **Informed Decisions**: Always make informed decisions based on data, avoiding random choices.
6. **Practice**: Practice is crucial in simulations. More practice leads to better understanding and improved decision-making.

By following these methodologies and learnings, we aim to maximize profits and achieve consistently good results in the A/B testing simulation on Wharton Interactive.