School of Media Studies

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**GAME THEORY – PROGRAMMING ANSWERS** \*

Should KAAA Switch to Early Prime?

 KAAA-TV, a CBS affiliate in a top-25 market in the Pacific time zone, was considering switching its current network prime time (8:00-11:00 p.m.) to an early prime time schedule (7:00-10:00 p.m.).  KAAA was number two in prime time and in late news ratings.

 KBBB-TV, the market's NBC affiliate, was number one in the prime time ratings, and because of NBC's strong 10:30-11:00 p.m. lead-ins, KBBB's late news was number one in the ratings and demos even though KAAA's news product and promotion approach were competitive.

KAAA's late fringe ranked number two in the ratings and demos.  KBBB's late fringe was number one, providing a robust lead-out for its late news.

KCCC-TV, the ABC affiliate, was number three in prime time and late news.  KCCC was a network-owned station and would not switch to early prime because the network wouldn't allow it.  The network thought a switch would have serious implications, as it might signal tacit approval of such a swap for other affiliates.  ABC believed such a wholesale switch to early prime by its Pacific time zone affiliates would hurt its ratings substantially.  KCCC's late fringe was also a weak number three.

KAAA and KBBB were both owned by large, powerful television station groups, which didn't mind risking their own networks' disapproval of a switch to early prime.

KAAA knew that KBBB was also considering a switch.  To help it make a decision about the switch to early prime, KAAA produced the following decision tree to lay out the various alternatives.

**DECISION TREE**

KBBB – No change

KAAA - Early prime

KBBB - Early prime

KAAA

KBBB – No change

KAAA - No change

KBBB – Early prime

Next, KAAA constructed a payoff matrix on which the possible alternatives were included from the decision tree.  KAAA assigned values based on ranks of 1,2,3,4 (ordinal numbers, with 4 being the best alternative for KAAA and 1 the worst) based on how desirable an alternative was for KAAA and based on its estimate of how KBBB would rank its alternatives.

**PAYOFF MATRIX**

3, 3

KBBB

Go

No Go

1. C.

Go

4, 2

KAAA

1. D.

2, 2

1, 4

No go

Keep in mind

The first number in a cell is KAAA’s rank-order outcome, the second number is KBBB’s rank order outcome. There are only four choices, so the numbers are 1-4, with 4 being the best outcome and 1 the worst outcome. Outcomes are evaluated based on potential revenue. The most revenue would come from an hour-long 10:00 PM local newscast (16 minutes of commercial time) versus network programming with approximately two minutes of commercial time for local stations. Be aware that sets in use drop way down at 11:00 PM, and that the 11:00 PM local newscasts are only a half-hour long. Assigning numbers is the most difficult decision, so you want to look forward to where you want to be and reason back to the best outcome that will get you to the desired future.

Explanation

 In Cell A, 4,2 indicates that if KAAA switched to early prime and KBBB also switched (Go, Go), both would gain more revenue from higher ratings for a 10:00-11:00 PM late news because of higher sets in use at 10:00 pm, thus higher ratings, thus more revenue.  But KBBB wouldn't gain as much as it would if KAAA switched and KBBB didn't (3,3 in Cell C).  The Cell A alternative is the most desirable for KAAA.

In Cell C, 3,3 indicates that if KAAA switched to early prime and KBBB didn't switch (Go, No Go), KAAA would gain more revenue for its 10:00-11:00 PM news than it currently receives, but not as much as it would if KBBB also switched (4,2 in Cell A) because KAAA's late news would be up against KBBB's strong 10:00-11:00 p.m. prime.  This alternative is the second best one for KAAA, so getting KBBB to switch if it can is in KAAA’s interest.

In Cell B, 1,4 indicates that if KAAA didn't switch to early prime and KBBB did (No Go, Go), KBBB's 10:00-11:00 PM news would get the jump on KAAA's late news, which would probably hurt KAAA's 11:00 p.m. news, and KBBB would increase its revenue substantially for its late news, which would be in prime time.  This alternative is the least desirable for KAAA (a 1) and is nest for KBBB (a 4). So, if KAAA makes a false announcement that it will not switch, KBBB almost certainly will switch to gain its most desirable outcome.

In Cell D, 2,2 indicates that if neither KAAA nor KBBB switches (No Go, No Go), the current situation remains the same.  If KAAA didn't switch and KBBB didn't switch, nothing changes, but neither KBBB nor KAAA would have taken advantage of an opportunity to increase revenues by switching because of a 10:00-11:00 PM late local news getting high ratings and, thus, high rates.

Strategies

By adding KAAA's numbers *across the rows*, with its Go numbers 4+3=7 (top row), it is obvious that switching is the best strategy because its No Go weights, 1+2=3 (bottom row), are much worse.  Also, it is slightly better for KAAA if KBBB also switches (Cell A, 4,2) than if it switched and KBBB didn't (Cell C, 3,3).

By adding KBBB's numbers *down the columns*, they are close with either decision: Go, Go, 4+2=6 (left column) and No Go, No Go, 3+2=5 (right column) with Go, Go slightly favored.

KAAA could publicly announce (false announcement) that it has considered switching to early prime but has decided not to because of network pressure (the TV newspaper columnists are sure to run the story).  By doing so, KAAA would hope that KBBB would switch to early prime to gain an obvious advantage (Cell B, 1,4).  KAAA might also try a trial balloon to see if KBBB bites and says it will switch if KAAA does. Therefore, KAAA will switch knowing KBBB will also switch.

If KAAA decides to use a false announcement, it must maintain absolute secrecy and then at the last possible moment switch to early prime to gain its maximum advantage (Cell A, 4,2).

Numbers in the Payoff Matrix

The numbers in a Payoff Matrix should be ordinal numbers (ranks) because using weighted numbers, a ten-point scale for example, is highly subjective.  In this Game Theory case you should try to estimate how the competition would rank the various alternatives based on their assessment of the revenue opportunities.  Using ranks (ordinal numbers) is straightforward and will give you sufficient answers.  Thorough knowledge of the competition and its response profile, competitive strategy profile, and the personality characteristics of its top decision maker are also important to understand.