

$$1 + 1 \times 30\% + (1 \times 30\%) \times 30\% \\ = 1 + 0.3 + 0.9 + 0.27 \dots$$

& so on ...

this is a geometric series

$$\text{Sum} = a_1 \left[\frac{1}{1-r} \right]$$

$$a_1 = 1$$

$$r = 30\% \text{ or } 0.3$$

Sum = the # of times a guest will on average stay at your hotel

OTA Guests

$$\text{Avg. Total Stays} = 1 \left[\frac{1}{1-0.3} \right] = \underline{\underline{1.429 \text{ stays}}}$$

Direct Bookings

$$\text{Avg. Total Stays} = 1 \left[\frac{1}{1-0.6} \right] = \underline{\underline{2.5 \text{ stays}}}$$

Life Time Value: (LTV)

1 room night \$400

OTA Commission 20%

$$\text{OTA LTV} = \# \text{ of nights} \times [\text{room rate} - \text{commission}] \\ = 1.43 \times [\$400 - 20\%(\$400)] = \underline{\underline{\$457.6}}$$

$$\text{Direct LTV} = \# \text{ of nights} \times \text{room rate} \\ = 2.5 \times \$400 = \underline{\underline{\$1000}}$$