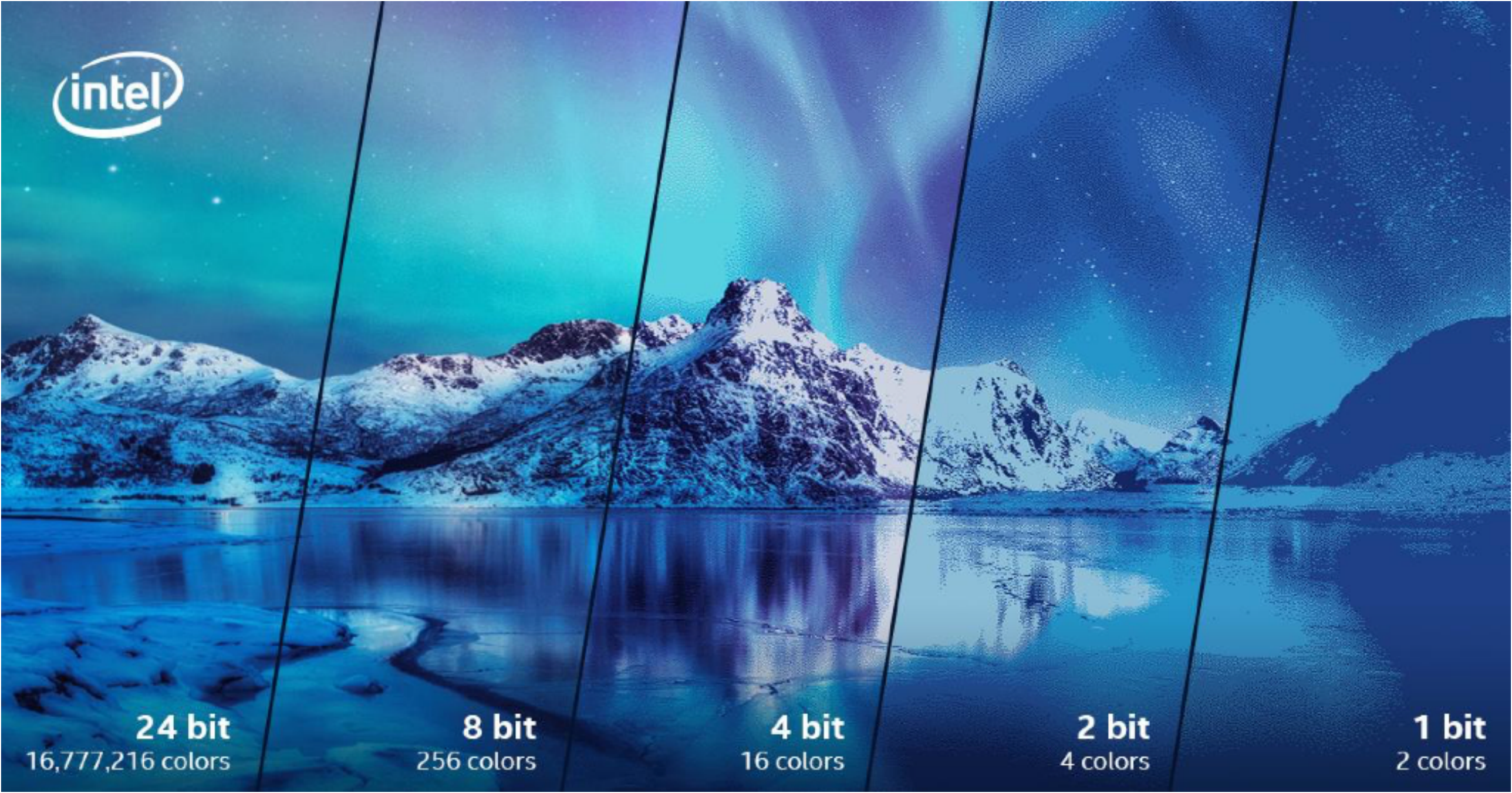
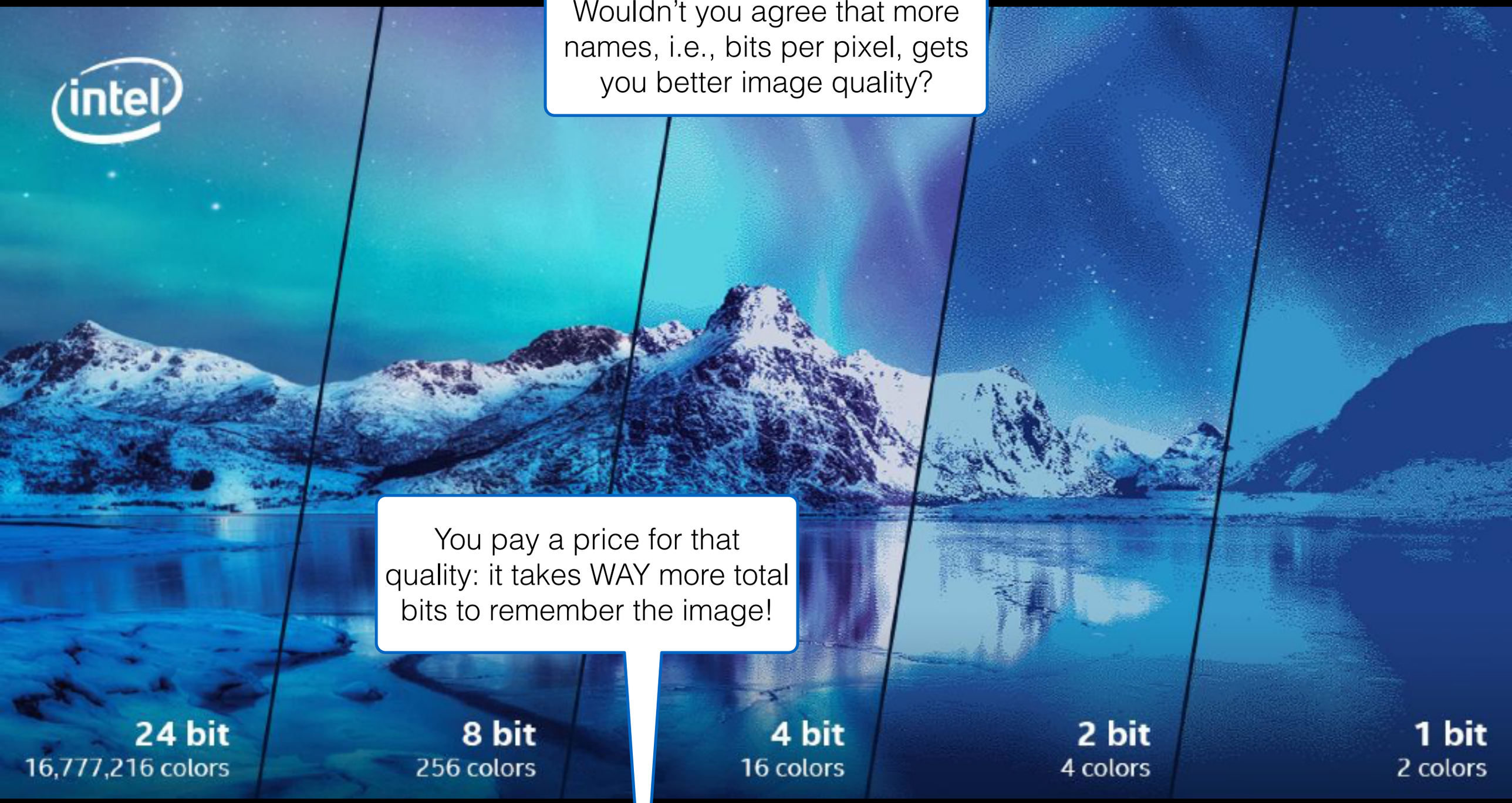

intel
24 bit
16,777,216 colors
8 bit
256 colors
4 bit
16 colors
2 bit
4 colors
1 bit
2 colors

Wouldn’t you agree that more names, i.e., bits per pixel, gets you better image quality?

You pay a price for that quality: it takes WAY more total bits to remember the image!

Here's another example:

Wouldn't you agree that more names, i.e., bits per pixel, gets you better image quality?



You pay a price for that quality: it takes WAY more total bits to remember the image!

For an image of 320 x 200 pixels = 64000 pixels at
24 bits per pixel = 1,536,000 bits to remember the image!

So with 24-bit names for pixels, we can have 2^{24}=16,777,216 different names, i.e., that many different colors.