**Card Collecting Games**

Within free-to-play (F2P) card collecting games (CCG), there is an emerging common mechanic: gacha-fuse-evolve (though sadly this terminology is not universal).

Obviously there are 3 components here:

- Gacha.  Short for "gachapon" an onomatopoeia for those gum ball machines at stores that spit out little plastic eggs with prizes inside.  The idea is that you're buying a random item (like a booster pack in a collectible card game, or a blindbox KidRobot figure ([http://www.kidrobot.com/collections/all/products/art-of-war-dunny-series#.VD\_o1S5dXR0)](http://www.kidrobot.com/collections/all/products/art-of-war-dunny-series#.VD_o1S5dXR0%29)).  The items inside typically have rarity levels (common, uncommon, rare, epic, legendary is most common, but there have been 3 - 8 rarities in various systems).  Players usually can spend in-game money for a standard gacha draw, or real money for draws with higher odds of rare items.

- Fuse.  You can "fuse" items into other ones to consume them and inherit their "xp" (experience) in most cases.  The idea being that you can level up one item by feeding it other, less-valuable items.  The amount of xp earned depends on a variety of things, usually including the level, rarity, and sometimes the "element" of the feeder card.   Here's a description for one big mobile game: <http://gamelytic.com/brave-frontier-best-leveling-fusion-and-evolution-guide/#fusion>.

- Evolve.  You can combine two identical items to make them into a stronger version of that item.  In some cases this can be done whenever, in others both items must be fully leveled up (through fusing).  In most cases there is a maximum evolve tier, and in some cases you can even have "recipes" of non-identical items that create a different evolved character.  This stuff starts to get pretty complex.  To see some of the craziness, check out Blood Brothers (<http://bloodbrothersgame.wikia.com/wiki/Evolution>) or Legends of the Cryptids (<http://legendofthecryptids.wikia.com/wiki/Enhance>).

If you want to get really fun, check out the competing strategies in Reign of Dragons (<http://reignofdragons.wikia.com/wiki/Card_Building>).  Do you think a 4-7 is sufficient, or is worth doing a 6-11?  The 8-15 seems inefficient compared to the 6-11, but a 4-7 saves you a ton of cards and fusion points.

There are complex systems here that all center around obtaining and upgrading your collectible items to become as powerful as possible.  Modeling that alone could get interesting, but then you ideally would want to look at it from a business perspective.  How much should packs cost?  What should the drop rates be?  How much will a player spend to get a top-tier collection?  How many rarity levels should you have?