IPL PLAYER AUCTIONS, A BETTER WAY

Dear Sir/Madam,

I am a researcher who does research on game theory, economics and computer science. One of my expertise is in auction design. Some of the recent work we have done on a new auction format is particularly applicable to the IPL player auctions. We show that a simple change in the auction format can bring many benefits to all the parties involved. I have outlined why this change is needed in the current auction format and how this change is better.

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In this document we propose a **simple** new auction format for IPL Player auctions that brings in better transparency, fairness and ease of bidding for teams. We give a detailed comparison of the current and the new format.

The current format: A certain player is chosen and the teams bid against each other repeatedly until the bidding stops and no team wants to outbid the highest bidder. The highest bidding team gets the player to be part of their team. The winning bid amount is the player's salary. After this, the process is repeated with another player. The order in which the players are chosen could be predetermined or picked randomly.

The new format, *draft auctions:* The auction still happens in rounds but there is no designated player in any round. In each round the teams still bid against each other as before and the highest bidder is the ``winner'' of that round. What do they "win"? They win the right to pick any (remaining) player into the team, or the right to ``draft'' a player. The salary of the player they pick is the winning bid in that round. *That's it.* There is no pre-determined order of the players, instead the teams pick the order themselves! In fact, the winning team could be allowed to pick any number of players, paying the winning bid for each player. This would make for faster clearing and reduce the time taken for the auction. It could also allow the teams to have better strategies, such as targeting certain combinations of players.

Note that the newly introduced "right to match" card could still be implemented in this format.

We give below a comparison between the current auction and the newly proposed draft auction.

Current Auction	**Draft Auction**
Here are the undesirable aspects of the current format: 1. The order in which players are auctioned maybe unfair to teams. 2. The order in which players are auctioned is definitely unfair to players. 3. The current format is too complicated to bid and execute even simple strategies for the teams. We further elaborate on each of the issues below. **Unfairness to teams:** In the last IPL Auction there were allegations that the order of the players was fixed to favour some teams over the others. How is this possible? It happens because players that are auctioned later typically fetch lower bids since teams would have already exhausted their kitty. This	The draft auction has the following desirable properties: 1. There is no unfairness due to the ordering of players from the perspective of either the players or the teams. 2. There are simple strategies for teams to implement preferences as mentioned above. 3. Overall the auction leads to a more efficient allocation of players to teams. **Fairness:** Since there is no predetermined ordering of the players, there is no unfairness to either the teams or the players. All the players are on an equal footing, and all the teams are on an equal footing as well. There is complete transparency.

favours the team in a situation when the players they want come towards the end of the auction. Can we avoid this situation? Can we bring complete transparency to the auction where it is absolutely clear that no team is favoured? **Unfairness to players:** The same issue affects the players too. Since players who come later in the auction get lower bids, they end up under-valued and get lower salaries. This causes a systemic bias too, for example in the 2011 auction typically batsmen were auctioned ahead of bowlers. This definitely caused an imbalance in the salaries of batsmen vs. bowlers. Batsmen probably would get higher salaries anyway, but this just tilted the balance even more in favor of batsmen. Even if the order of the players was picked randomly, there could still be unfairness. The only difference would be that the unfairness would now be a result of luck rather than by design.	In a recent research paper, we show that this format leads to an exponentially better allocation of players to teams. The details of this statement are technical, but in a nutshell we consider the ``social welfare'' of the auction, which is the nett value generated to all the concerned parties (all teams and all players) as a result of the allocation of players to teams. We show that when comparing the welfare at an ``equilibrium'' of an auction to an optimal allocation, the draft auction could be exponentially better than the current format. (See paper at http://arxiv.org/pdf/1311.2820.pdf for full details).
Complicated bidding strategies: Even simple strategies maybe hard to execute for teams in the current format. For example, suppose a team prefers player A, and if it could not get player A for a reasonable price, it would like to go for player B. However, it turns out that player B is on auction first. Now what should the team do? Should it go for player B or not? It does not know what the competition for player A is going to be. Here's an example from IPL Auction 2011. The hypothesis is that RCB prefers Ross Taylor to T Dilshan, since Taylor had been with RCB and had been very popular due to his performances, especially in the CLT. But T Dilshan is on auction first and RCB wins him for $650K. Ross Taylor comes later and RCB bids for him up to $1 million but eventually loses him. Now the question is, would RCB have preferred Ross Taylor at $1 million (or a slightly higher price perhaps) if they hadn't already spent $650K on Dilshan? If the answer is yes, then RCB got shortchanged because of the order of these two	**Simple Bidding strategies:** Consider the same example, of a team preferring player A, and on not getting player A at a reasonable price, wishing to go for player B. In the draft auction, the strategy for this is very easy: as long as player A remains in the pool, bid according to player A, if not bid according to player B.

players. Such instances lead to inefficiencies in the allocation of players to teams. Even random ordering of players does not rule out such instances. Further, it creates uncertainties which make it very difficult for the teams to plan their strategies in advance. The teams are required to be "quick on the foot" which may not always be possible. **Time taken for the auction could be very long** With over 200 capped players and God knows how many uncapped players, it is going to take a very long time for the Player auctions to happen. Maybe a few days, even.	The auction is completely non-random and there is no uncertainty due to randomness. This makes planning in advance easier for the teams. **Time taken would be significantly reduced** The ability to pick multiple players in one round could significantly reduce the time. Another easy way to reduce the time taken is as follows: after the highest bidder has won, go to the second highest bidder and see if that team still wants to bid that amount (given the player(s) taken by the highest bidder in that round). If so, then the next round can be started from there. If the second highest bidder no longer wants to bid that amount, go to the third highest bidder and so on. This way you don't have to start at the bottom for each round. So bidding will finish faster.

Overall, the theory suggests that the new auction is a WIN-WIN proposition! All concerned parties should be better off.

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He is interested in what he calls Automated Economics, which studies the question of how technology can be used to improve the efficiency of economic systems. His other interest is in Algorithms: he is interested in designing algorithms that are faster, simpler, work online or in a distributed fashion, for some of the basic combinatorial optimization problems.

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