Statistics not used to Calculate Productivity Rating

There are a few statistics that could have been used in the PR calculation process that were not used. Let me explain my logic for not using them.

Plus/Minus

I mean, it is a popular statistic. It is easy to understand, and it does have a team-level element to it that is appealing.

I don't use plus/minus for two main reasons: it focuses on goals scored, and PR uses a player's goals and assists; it focuses on the successful culmination of scoring efforts, rather than on the earlier elements of scoring - shot attempts. Corsi is a shot-attempt measure and is used by PR.

In my mind, goals are big and important events that are not 100% associated with pure skill. Sometimes a goalie knocks the puck into his own net, and sometimes a goalie makes an unbelievable save. Plus/minus will reward the lucky team and penalize the unlucky team, while Corsi will reward the shooting team and penalize the defending team.

Shots

Shots taken is an incredibly popular statistic. Most of the time when you are watching a game on TV, you can see both the score and the shots taken. I've seen games in a few arenas, and shots taken are always visible on the scoreboard. About the only time you don't get timely shots taken information is when you listen to the game on a radio.

For me, shots taken is not as meaningful a statistic as Corsi. Shots taken only counts the shots taken by a specific player that hit the target. Corsi measures the shot attempts made by any player on either team, regardless the puck hits the target. If a defenseman takes a shot and it's blocked, no shot is recorded, but every player on the defenseman's team gets a plus for Corsi, while all the opponents get a minus for Corsi.

Corsi just does a better job of measuring a player's contribution to his team, especially with the team-relative-Corsi measurements I use.

Power Play Time

There are players who get the lion's share of a team's Power Play time. PR rewards players for their total time on ice (which obviously includes Power Play time-on-ice), and it also rewards players for their penalty-kill time (because defense).

The PR reward for players who get lots of Power Play time should come from their goal and assist statistics. If a player gets a lot of Power Play time and isn't scoring, why should he be rewarded for that?

Points

This is an easy one to explain. PR uses goals and assists, and points is goals plus assists.

Essentially, PR doesn't use points because PR already uses points!

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Face-Off Win Percentage

The single biggest problem with Face-Off Win Percentage (FOWP) is that it can be a meaningless statistic. Every year, there are players whose FOWP for the season is 100%. They rarely take more than two face-offs in the entire season.

Let's look at two players, both of whom played 80 games. One took 1,000 face-offs and won 450 of them, the other took 60 face-offs and won 33 of them. The first player's FOWP is 45%, the second player's is 55%. I guarantee you the first player does more for his team than the second player with regards to face-offs, but if I used FOWP the second player would have the higher score.

Let's look at another two players, who again played 80 games each. One's face-off record was 550-500, the other was 275-250. The FOWP for both players is 55%, and once more the first player did more for his team.

Finally, let's look at three other players. One won the only face-off he took (FOWP=100%), one lost the only face-off he took (FOWP=0%) and the third never took a face-off (on a technicality, FOWP=0%). If PR used FOWP, the first player would have the biggest reward possible, while the other two would have the smallest. PR uses counts, so all three of these players get essentially the same reward, because PR gives a small reward for a single face-off.

Zone Entries

STTB would love to use Zone Entry data. The only drawback is that there is no freely and publicly available Zone Entry data. If you can tell me where to find the Zone Entry data for Zenon Konopka and Ryan Reaves, I'll check it out!

Aggression

There is no statistic that measures aggression. There is also no statistic for speed, hockey intelligence, leadership or being a good guy to have in the locker room.

STTB can't use what doesn't exist.

Combined Data and Game Situation Data

I know how many face-offs Brady Tkachuk (to pick a random Senator) took. I know how many times he started a shift in each zone (offensive, neutral, defensive). I have no idea how many face-offs Tkachuk took in the defensive zone.

I know how much ice time Ryan Reaves had. I have no idea how much ice time he had late in a game when the score was close (but I would hazard to guess that it is close to zero).

My data source (NaturalStatTrick.com) does not include these breakdowns, and I almost certainly wouldn't use it for PR if it did. Certainly, playing late in the game when the score is close is a sign of worth in a player. If I had this data, it would only serve to make the highly rated players slightly more highly rated.