This is an excerpt from *Hockey Abstract 2014*, which is available for purchase on Amazon as an excellent way to learn more, and to support the authors.

The analysis of the season's opening player usage charts that appears in the book has been replaced with player usage charts updated after the March 2nd NHL trade deadline.

These charts are being distributed **free of charge**, and please send any reports of otherwise to Rob Vollman, at vollman@hockeyabstract.com

Player Usage Charts

Player usage charts are unquestionably one of the most popular innovations coming out of the world of hockey analytics today, and why not? At a single glance they provide most of the context required to put a player's performance in the appropriate context.

While they're useful at the individual level to sort out the influence playing conditions can have on someone's numbers, they're even more handy at the team level. It can quickly established who is going to be tasked with taking on the top opponents, who is going to form the key scoring line, and who is on the checking line together with how effectively the team will likely match up in each situation.

Before we get into the nuts and bolts of player usage charts, here are a few updates for those already familiar with the tool and who plan to skip ahead

First of all, these charts are for the 2014–15 season using the roster as they stood in mid-July *and after the NHL trade deadline*. It also includes all restricted free agents and those under contract but playing abroad. It will not include unsigned unrestricted free agents nor any transactions that occurred in late July or beyond.

While last year's book included five seasons worth of data, these charts will include only the last three. That will not only make them more consistent with the rest of this book but will also avoid including data that is simply too old to be relevant. And while there are several available tools that can provide player usage data on a single-season basis, remember how unreliable information can be in such small doses. Three years is really the minimum number of seasons required to start forming an opinion about a player's usage and/or effectiveness in this context, especially since one of them was only 48 games.

This season, defencemen are denoted in italics to make it easier to distinguish them from forwards. While forwards can often be assigned shifts based on the zone in which a play is about to start, most defencemen normally have a fairly even balance, and are instead assigned shifts primarily to match up against certain opponents. That's why there's usually a bigger spread in quality of competition for defencemen than there is for zone starts.

Other things to be on the lookout for include:

- Players who are anywhere near the minimal cut-off (20 games), which is a very small sample size.
- Anyone whose usage has changed considerably over the past three years, including both young players who are getting tougher jobs (e.g., T.J. Brodie and Cam Fowler) or older players who don't really carry the tough minutes anymore.
- Those who played most of the previous three seasons on a team with either very different zone start percentages or a much different possession-based standard.
- Also remember that the circles are relative to one's teammates, so be mindful of who everyone is being compared against. A shaded circle on the Blackhawks is more

difficult to achieve than the same-sized one of the Sabres.
- The scale is different from team to team so that they're easier to read, be very mindful of that.
- To avoid getting too crowded, only the players of the highest significance are included. This will very occasionally leave out some enforcers and depth players.
- Question the value of players that are assigned the tough minutes but have huge white bubbles. Just because someone plays the tough minutes doesn't mean that he should!
- As always, look for players with unusually out-of-place circles, such as shutdown players with nicely shaded circles, or sheltered players with white ones.

Now that the veteran readers are all set, let's take a look back at what player usage charts actually are and where they came from.

Background

When introducing player usage charts to someone new, the Vancouver Canucks are the most common example,. After all, who hasn't wondered how the Sedin twins went from being point-a-game players in their mid-20s to Art Ross, Hart Memorial, and Ted Lindsay award winners in their older age, and then right back down again upon coach Alain Vigneault's departure? Especially since Vigneault's arrival in New York coincided with Mats Zuccarello's point explosion!

That's when a look at Vancouver's player usage chart has always come in handy. Even at a quick glance, it's easy to see how the Sedin twins, and their linemate Alex Burrows, start the great majority of their shifts in the offensive zone and against secondary opponents. That leaves a player like Ryan Kesler to take on the top-line opponents, like Jonathan Toews and Sidney Crosby, and players like Manny Malhotra to handle the pucks dropped in the defensive zone.

It should be absolutely no surprise that the Sedin’s scoring totals would absolutely flourish under such conditions, and that Burrows could go from someone who scored 52 points in his first 206 games to someone who scored 51 in his first season alongside them. Unfortunately, the fun was over when Vigneault left town, forcing Vancouver's top line to start carrying more weight. Their scoring predictably dropped, with Burrows reverting back to his old pace with just 15 points in 49 games.

How exactly do player usage charts work? Ideally, they are easy to understand with very minimal explanation, but it never hurts to have the following details readily available.

The horizontal axis features the player's **offensive zone start percentage**, which is the percentage of all shifts he started in that zone. It's important to remember that the perhaps poorly-named statistic does not include shifts that started in the neutral zone, nor on-the-fly changes. Think of it more as a representation of whether a player is used primarily for his offensive or defensive talents.

The advantage of an offensive zone start is obvious. Starting in the offensive zone means that

subsequently winning a face-off generally leads directly to a shot on goal, whereas in the defensive zone, it would need to be carried out and the offensive zone gained before a shot could even be attempted. As such, each offensive zone start has been calculated to be worth an extra 0.8 shots in a player's shot-based plus/minus (0.4 shots for and the 0.4 that goes against the opponents).

On the vertical axis, you'll find the player's **quality of competition**, which is the average plus/minus of one's opponents over 60 minutes, except that it is based on attempted shots (Corsi) instead of goals. This plus/minus is also measured relative to the team's other players, giving each team roughly the same number of players over zero as there are under. Those who face the top lines will be at the top of the chart, while those with the easier task of facing mostly depth lines will be at the bottom.

Other methods of measuring the average quality of one's competition do exist, but they rarely differ significantly. We can use goals or shots, for example, and there's also a growing trend to use the average ice time of one's opponents, instead of their average shot-based or goal-based plus-minus, as innovated by Eric Tulsky of *Broad Street Hockey*. That approach tends to favour the competition of those on the top scoring lines instead of the league's top defensive players.

Finally, there are those big circles around each player's name. This is a representation of how well the team did with that player on the ice, in terms of possession. A big, shaded circle means the team does very well, while a white one means they're frequently getting stuck in their own zone, and/or playing without the puck. These circles are calculated using a proxy based on the attempted shot differential (per minute) when that player is on the ice relative to when he's not. That means that there should be roughly the same number of shaded bubbles as white bubbles. A player on a great team would have to be even better than his teammates in order to earn a shaded bubble, while a player on a far weaker team would at least have a lower bar to climb over.

What does it all mean? A team's top shutdown players are at the top of the chart, angling towards the left, while its top scoring line is on the far right, angling down towards the middle. The latter will consequently have shaded circles far larger than the former, whose may even be white.

The checking line is on the left side, generally hovering around the horizon, and tend to have big white circles. That's partly because of their defensive zone usage, but also because they would probably be on one of the top lines instead if they were more complete players. Those below that line are generally depth players, such as enforcers, rookies, and AHL call-ups.

In the end, these charts put all the other statistics into the proper context. Whether they're basic stats, like goals, assists and plus/minus, or of the more non-traditional shot-based variety. Statistics can be highly misleading unless you understand the situations in which a player was typically used. That's the ultimate beauty of player usage charts.

Personally, I've been really excited about player usage charts ever since I first introduced

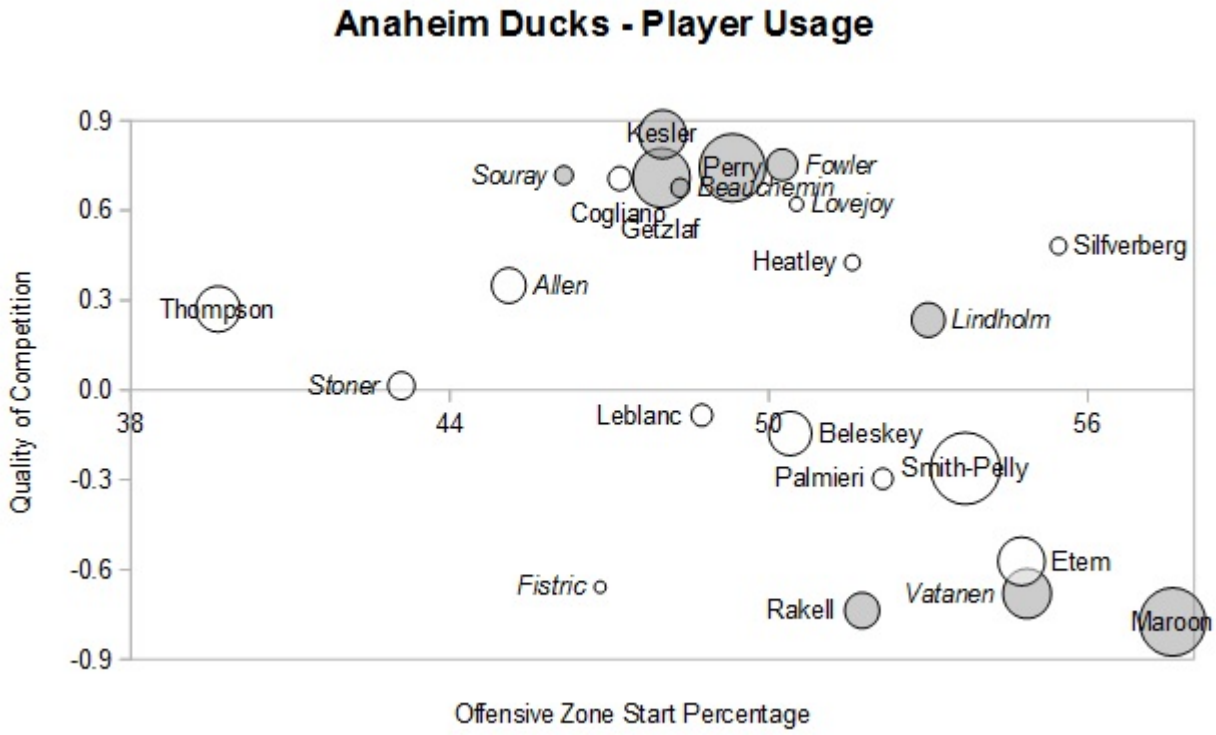
them on Arctic Ice Hockey[1] back in the 2011 off-season. I was impressed with how quickly they caught on, both within the analytic community (including its grouchier members), but also among mainstream media and even NHL front offices.

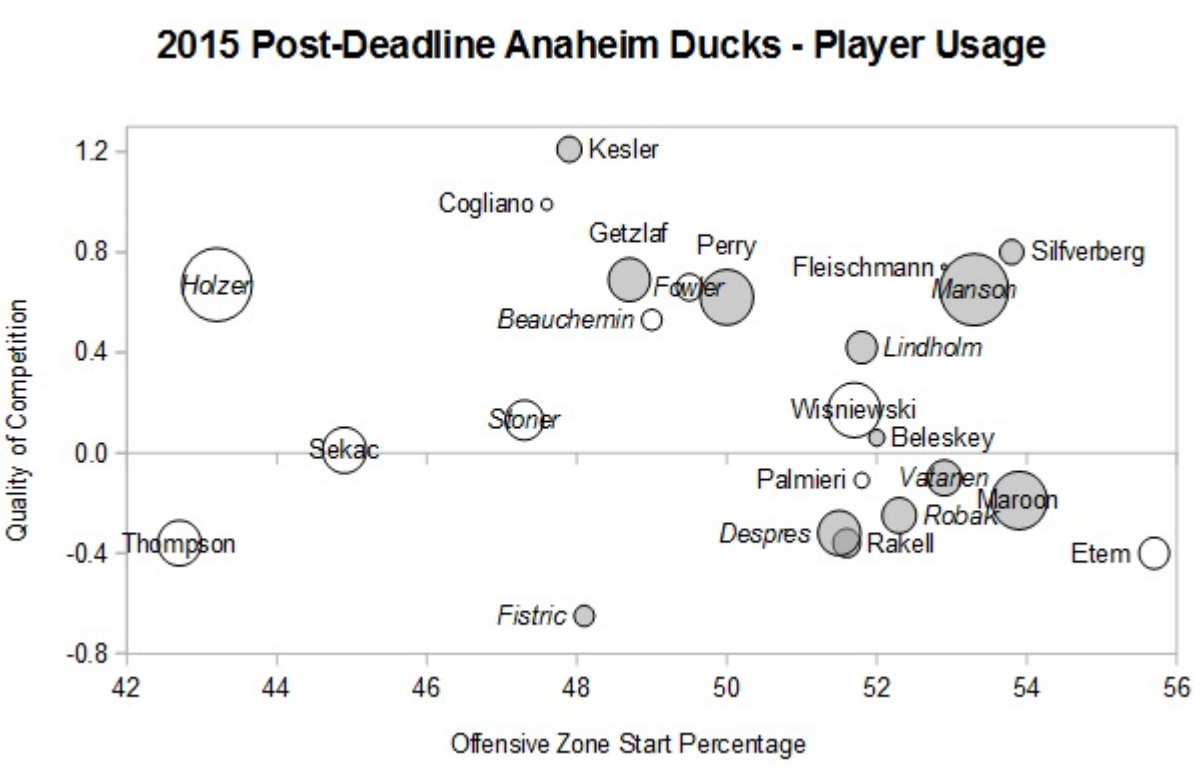
Even after three years, they're constantly being refined and developed, and being used by a wider audience. I already know of three tools that allow everyone to build their own charts online, including Robb Tufts' customizable tool on my own *Hockey Abstract* website[2], a classic version on Greg Sinclair's *Ninja Greg* website[3], and most recently on *Extra Skater*[4], one of the best analytic websites since *Behind the Net* (where all of my forthcoming data comes from).

And that's about all there is to know about player usage charts!

1 Rob Vollman, “Winnipeg OZQoC Graphs”, *Arctic Ice Hockey*, Web, June 20, 2011, http://www.arcticicehockey.com/2011/6/20/2233834/winnipeg-ozqoc-graphs.
2 Robb Tufts, “Player Usage Charts”, *Hockey Abstract*, Web, http://www.hockeyabstract.com.
3 Greg Sinclair, “Player Usage Charts”, *Super Shot Search*, Web, http://somekindofninja.com/nhl/usage.php.
4 Darryl Metcalf, Extra Skater, Web, http://www.extraskater.com.

Anaheim Ducks





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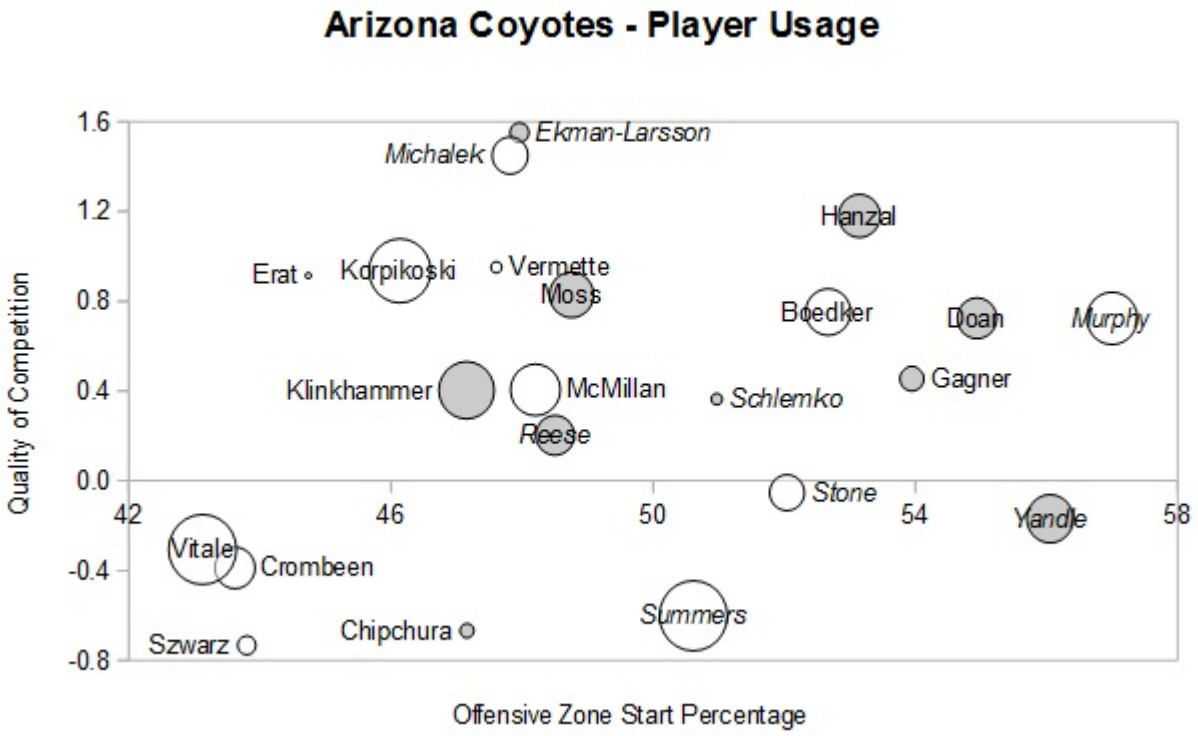

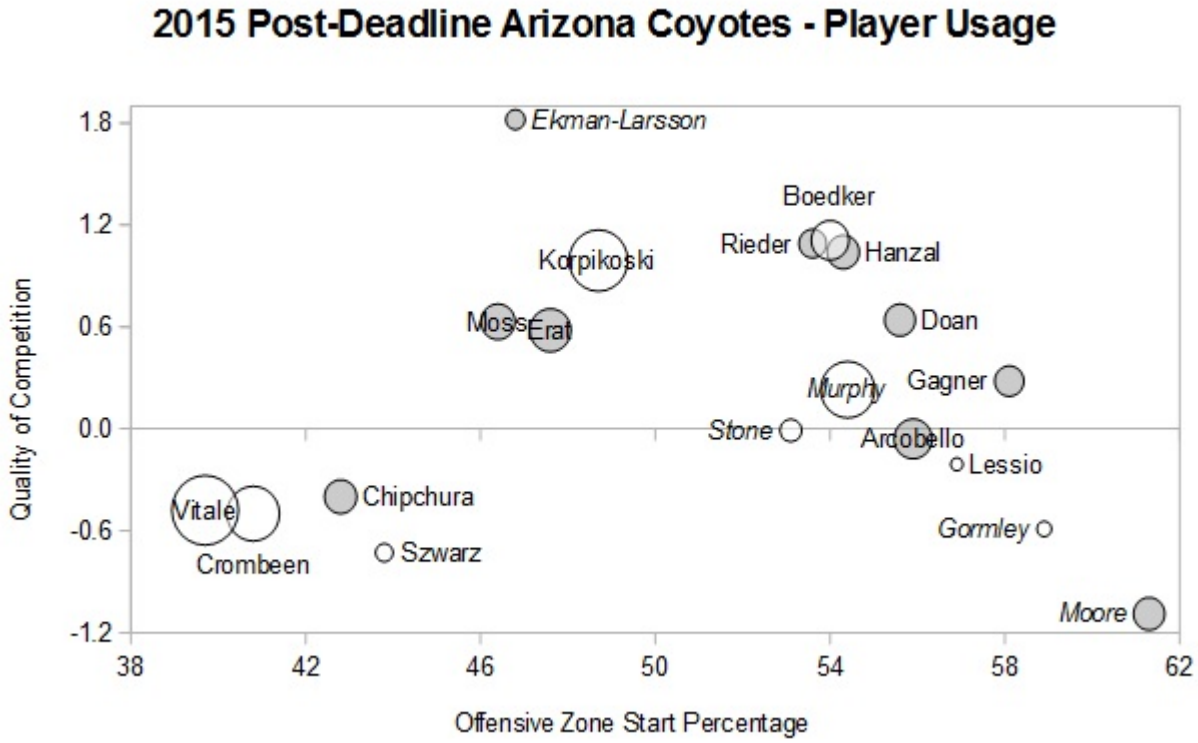

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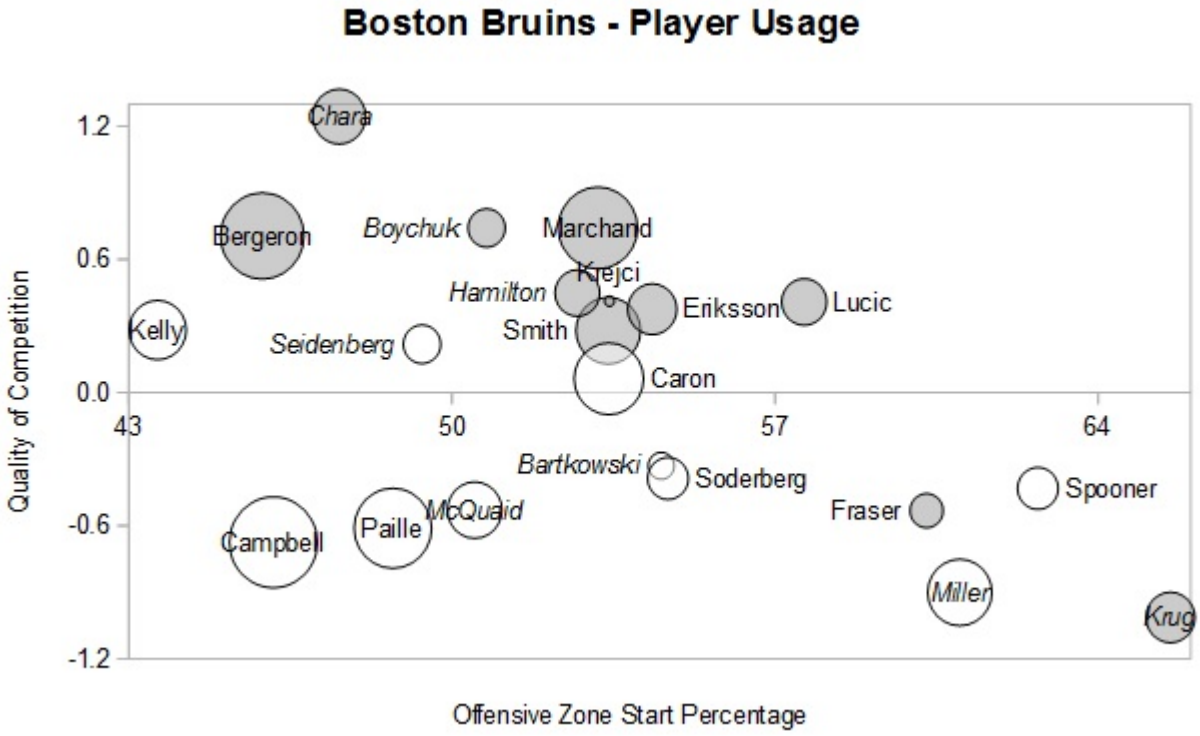

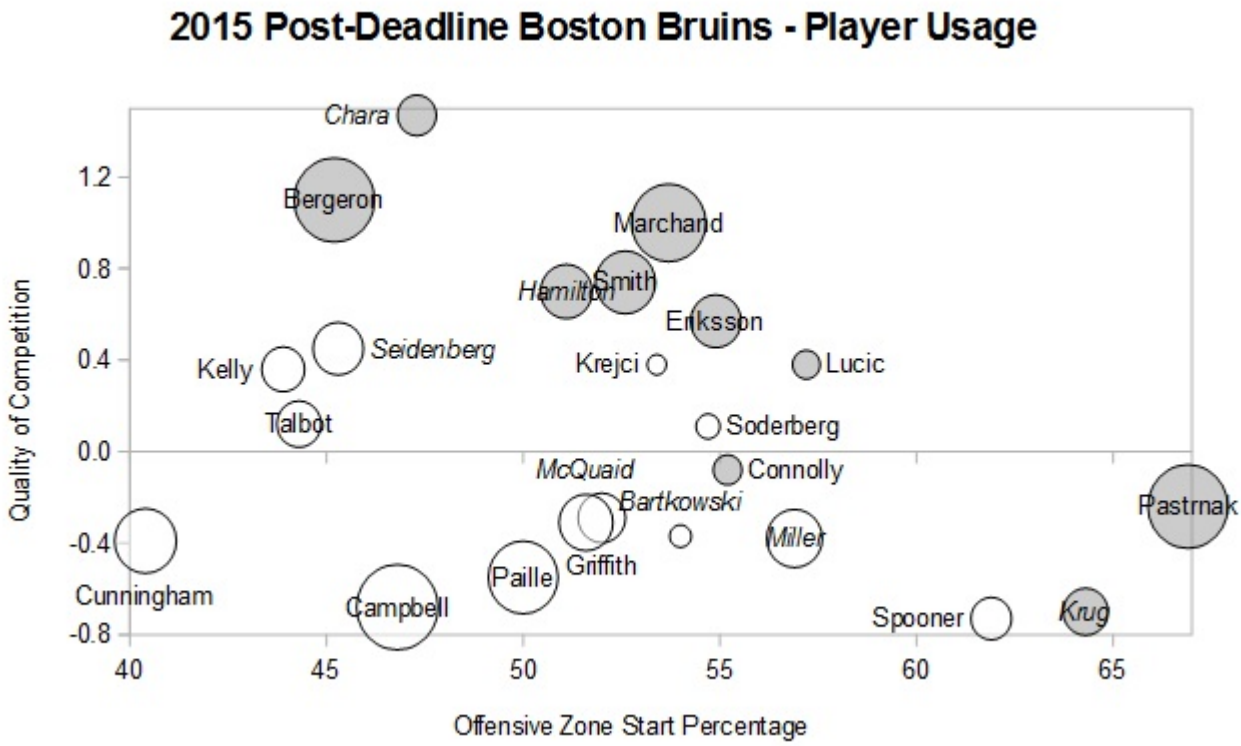

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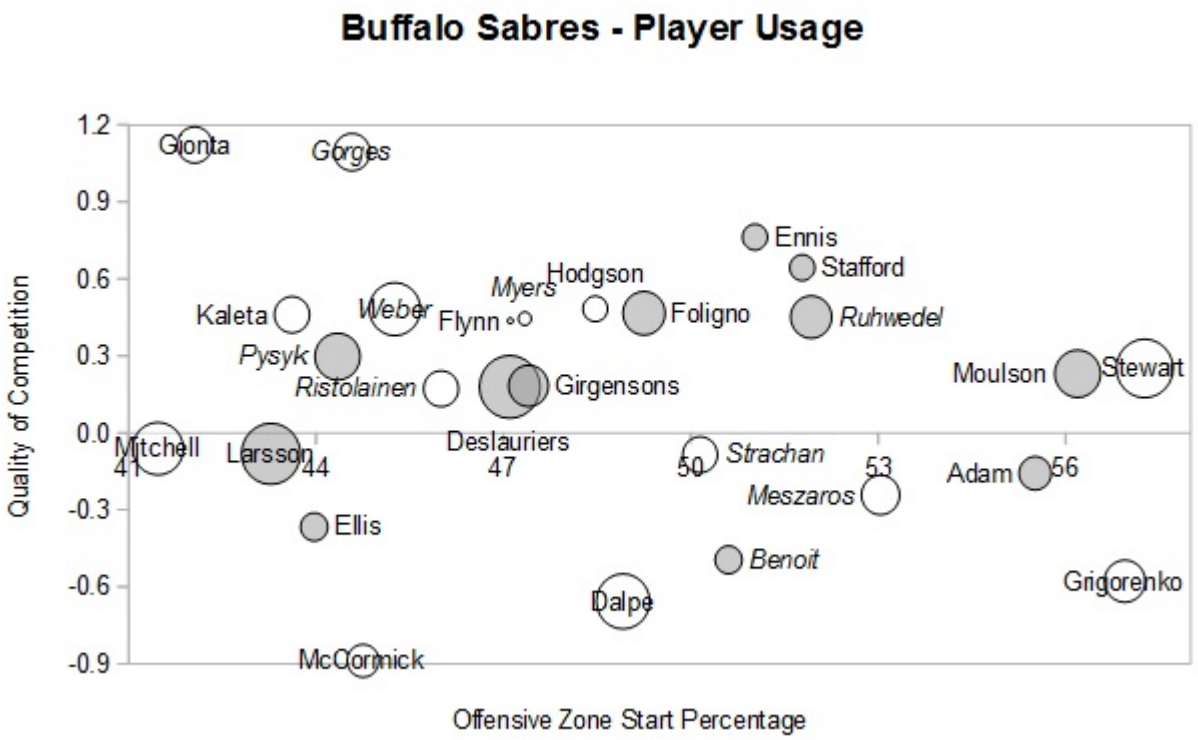

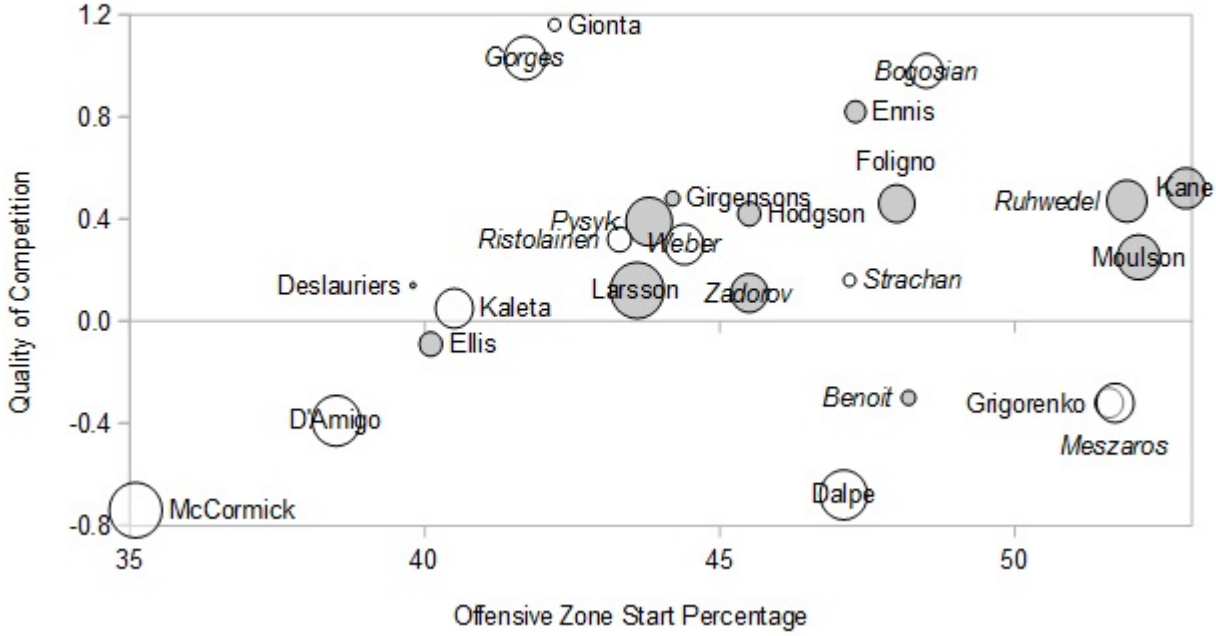

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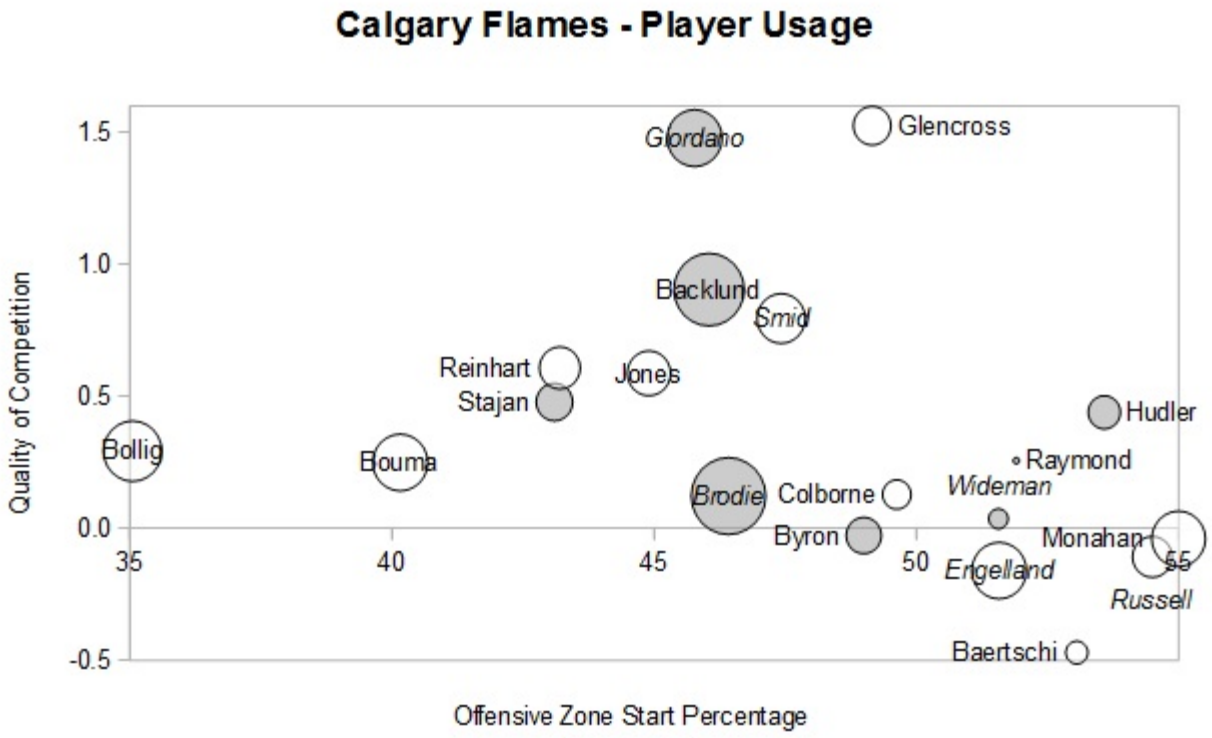

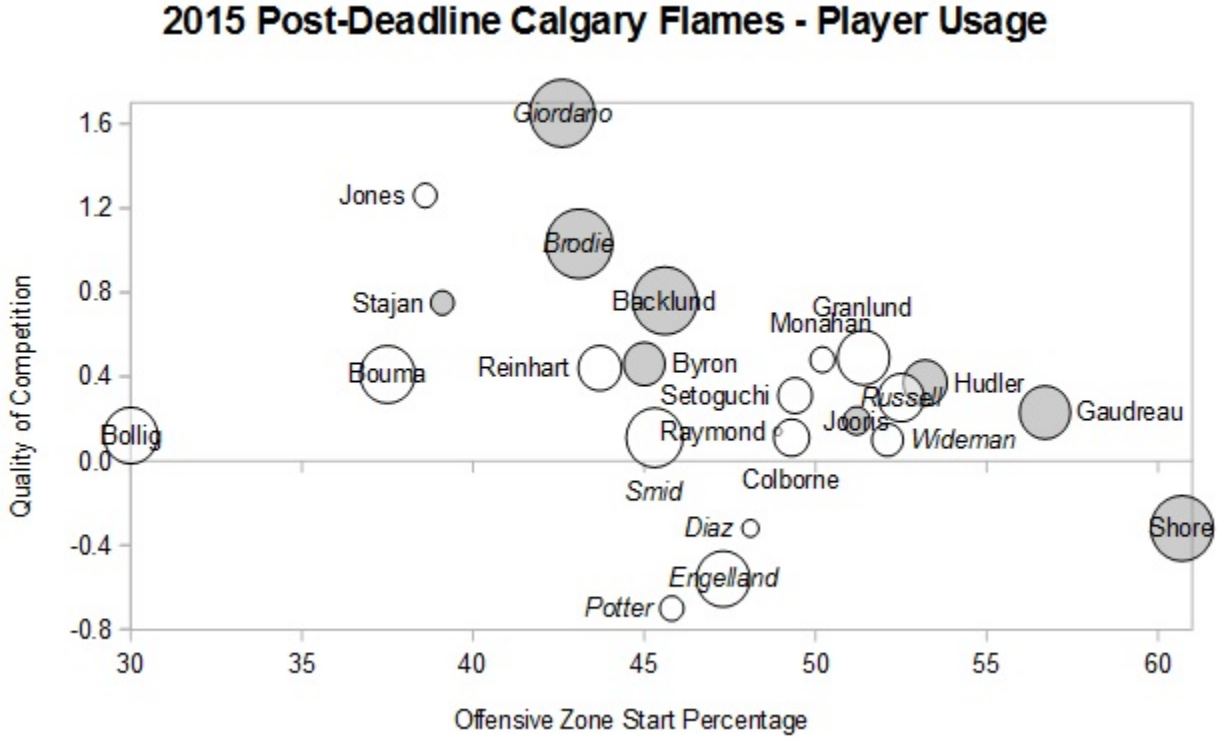

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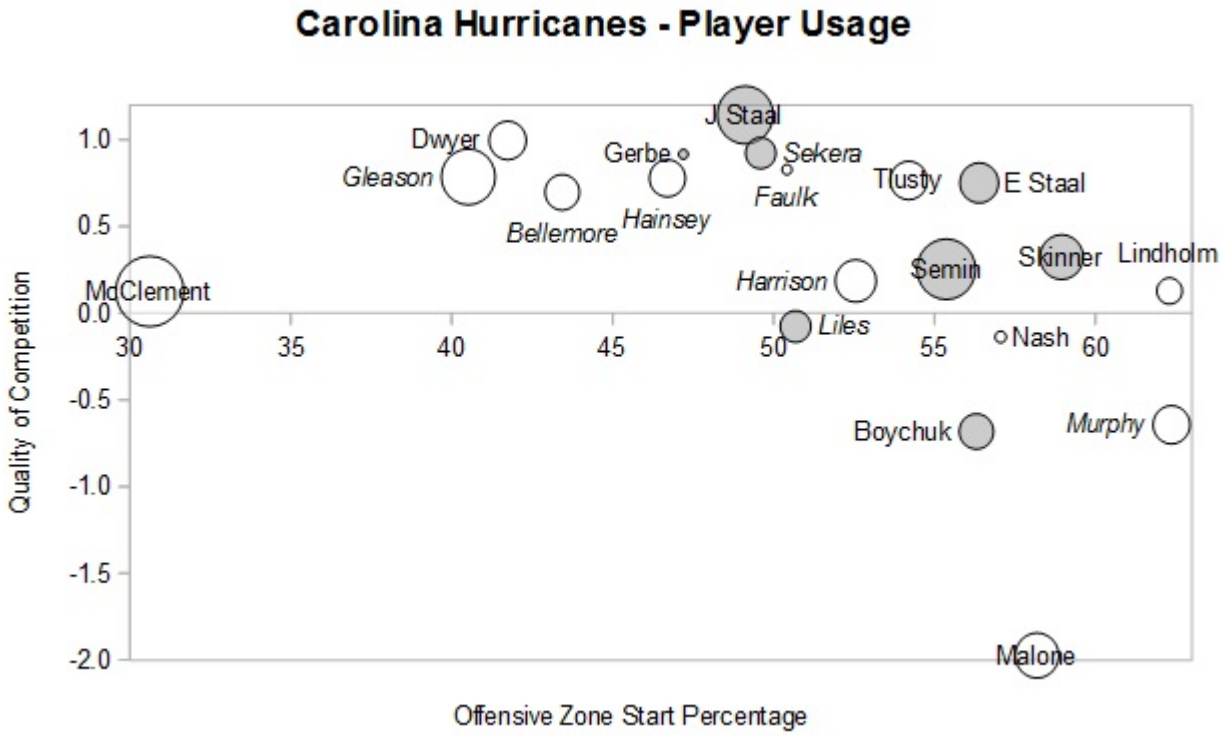

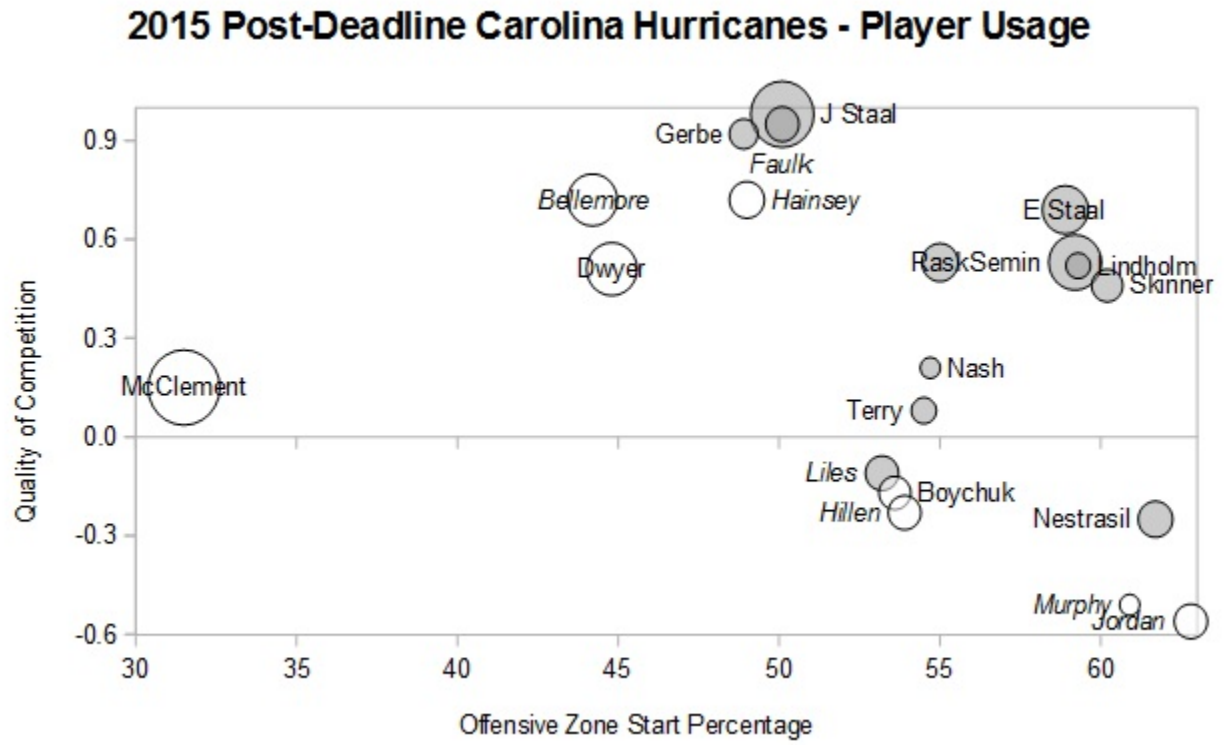

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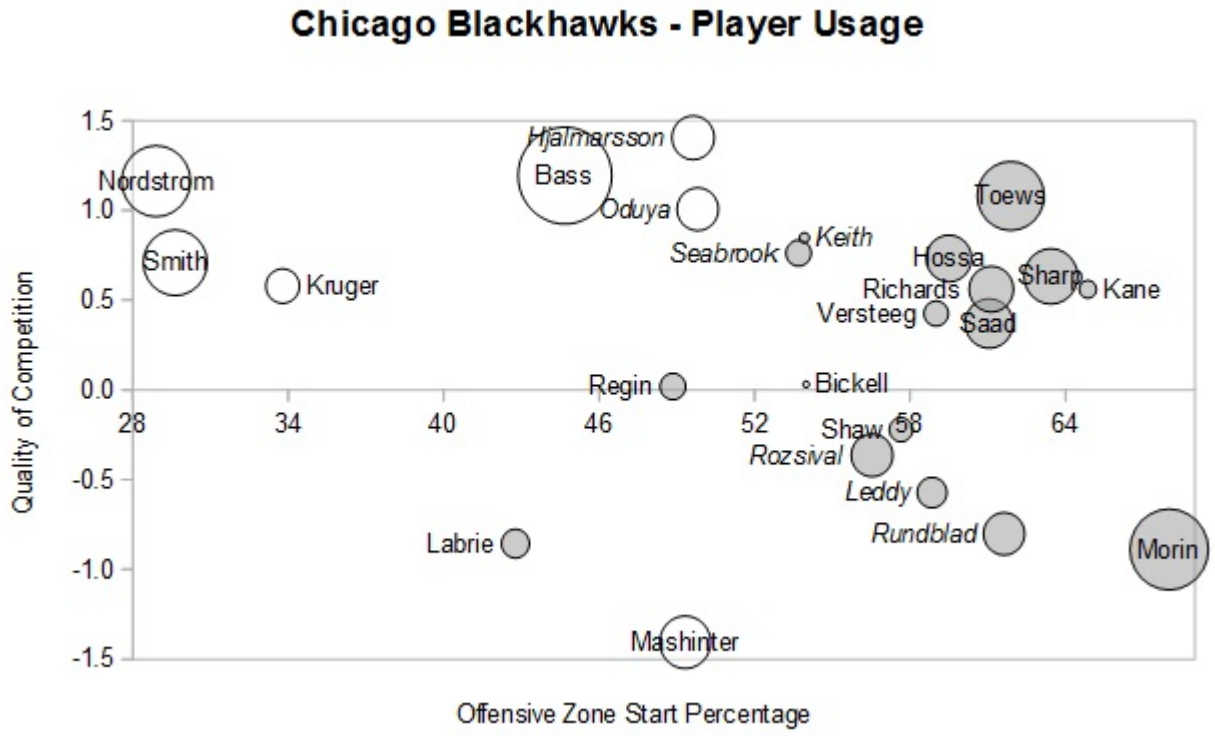

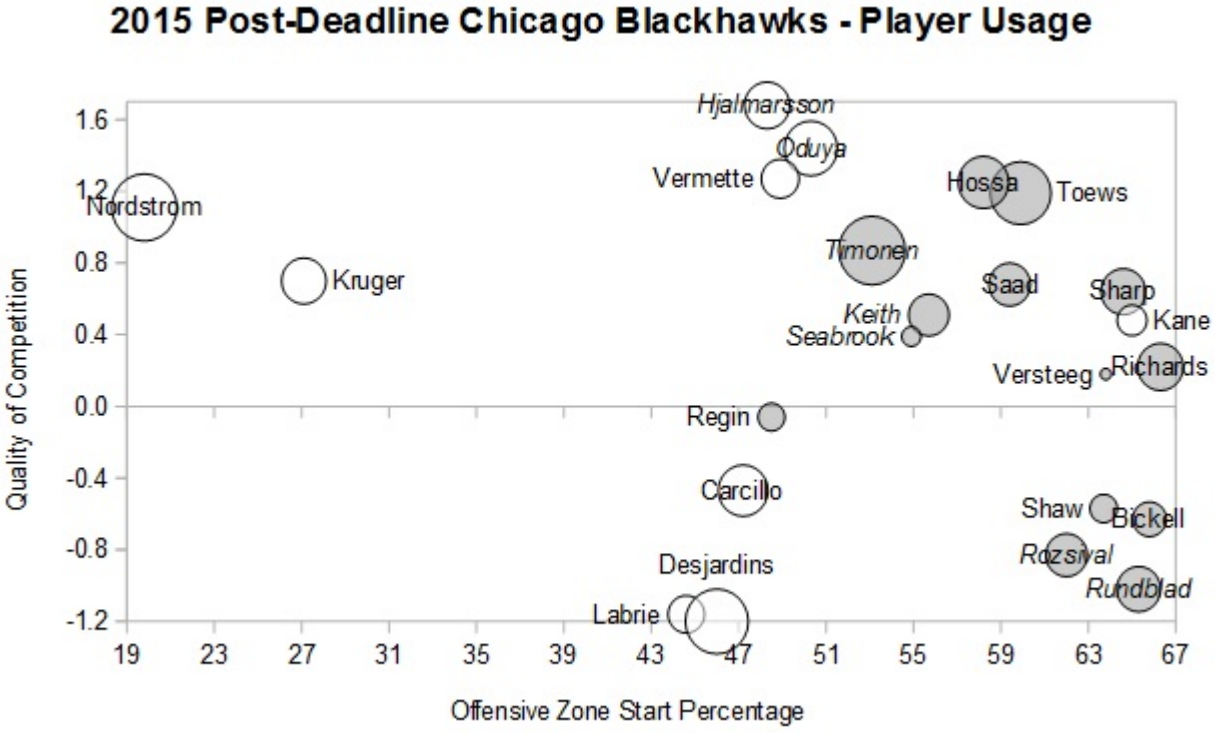

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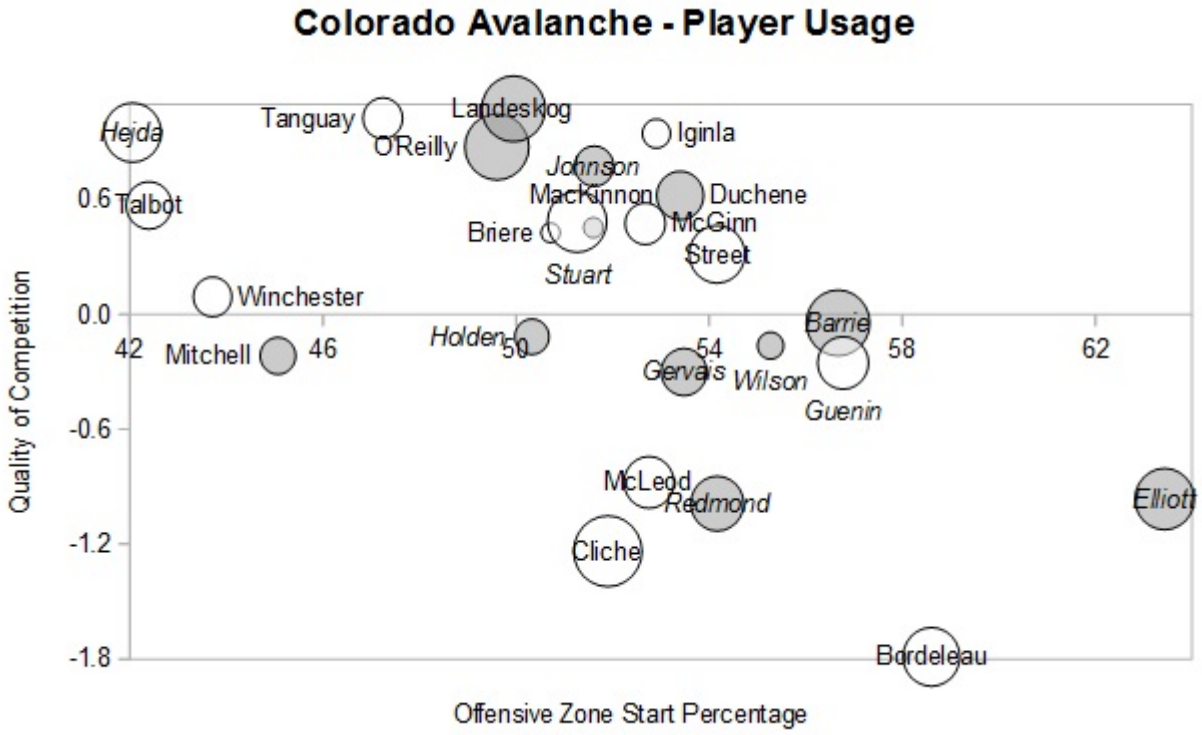

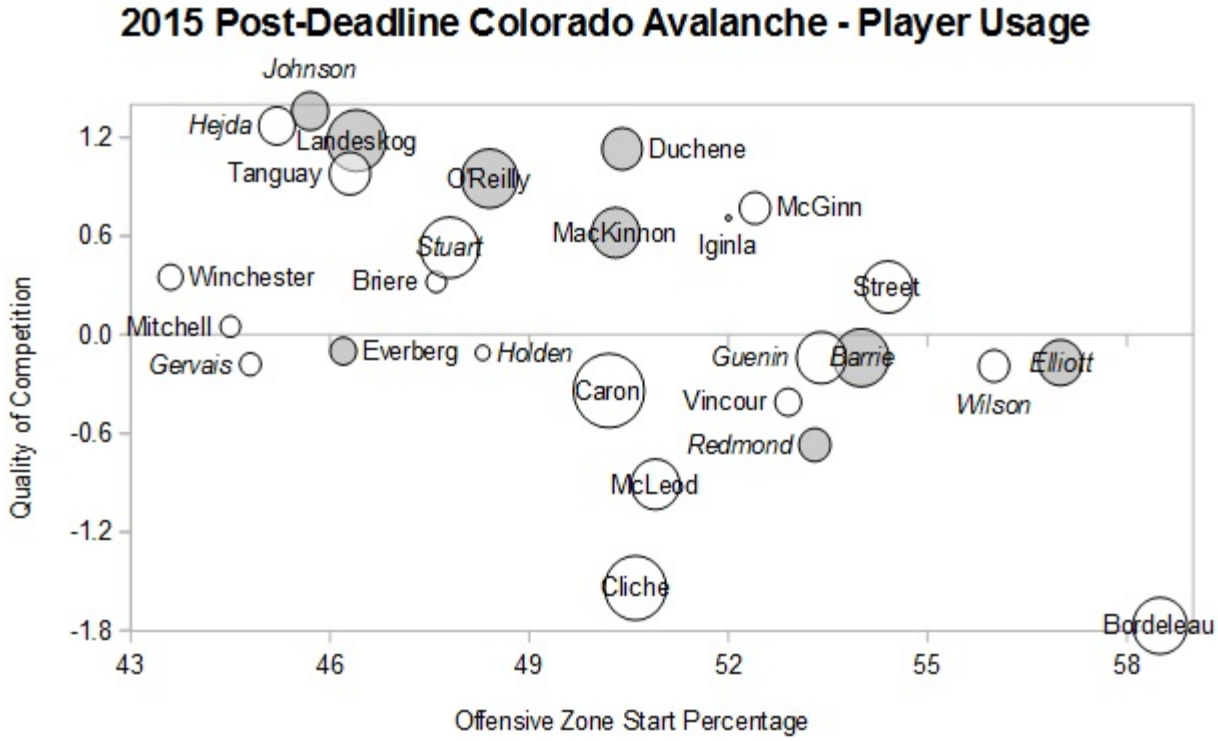

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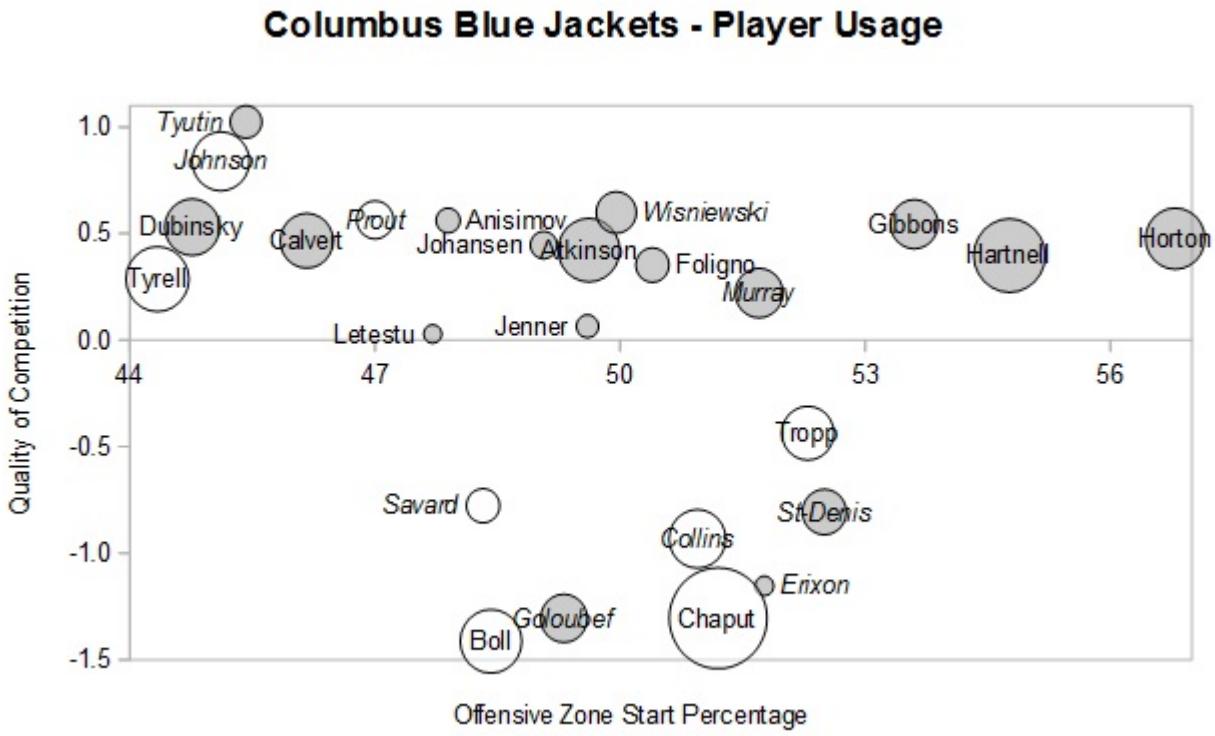

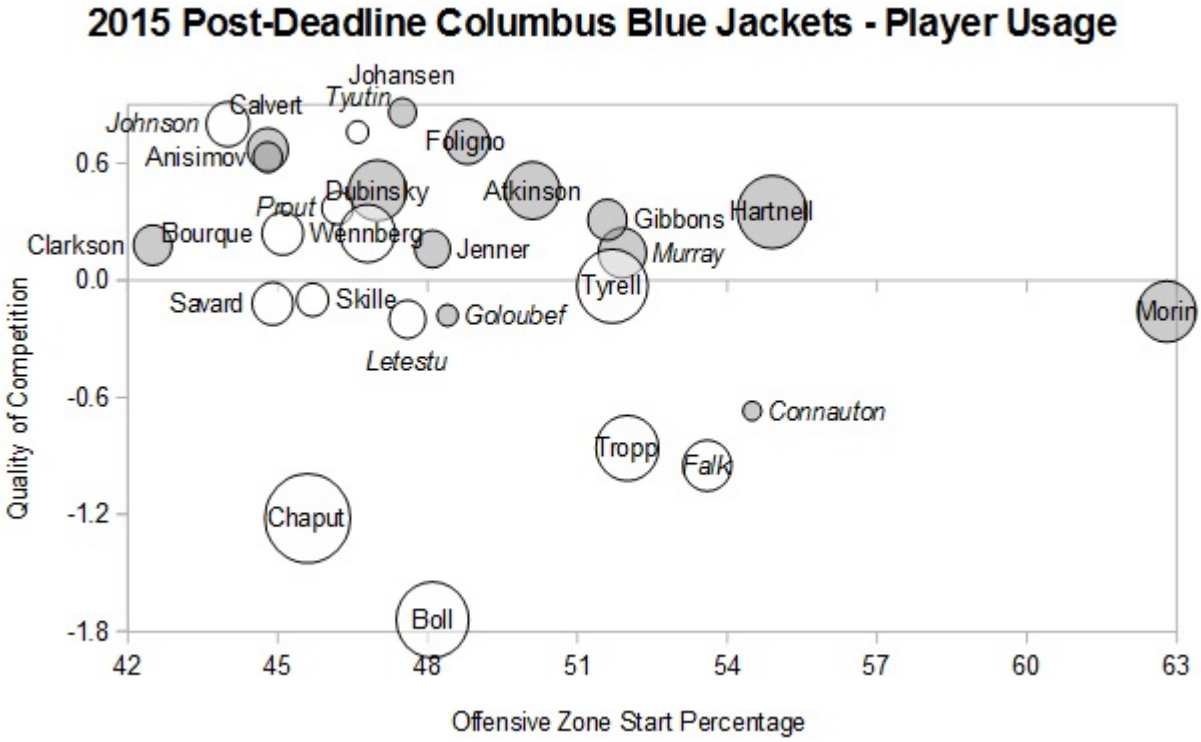

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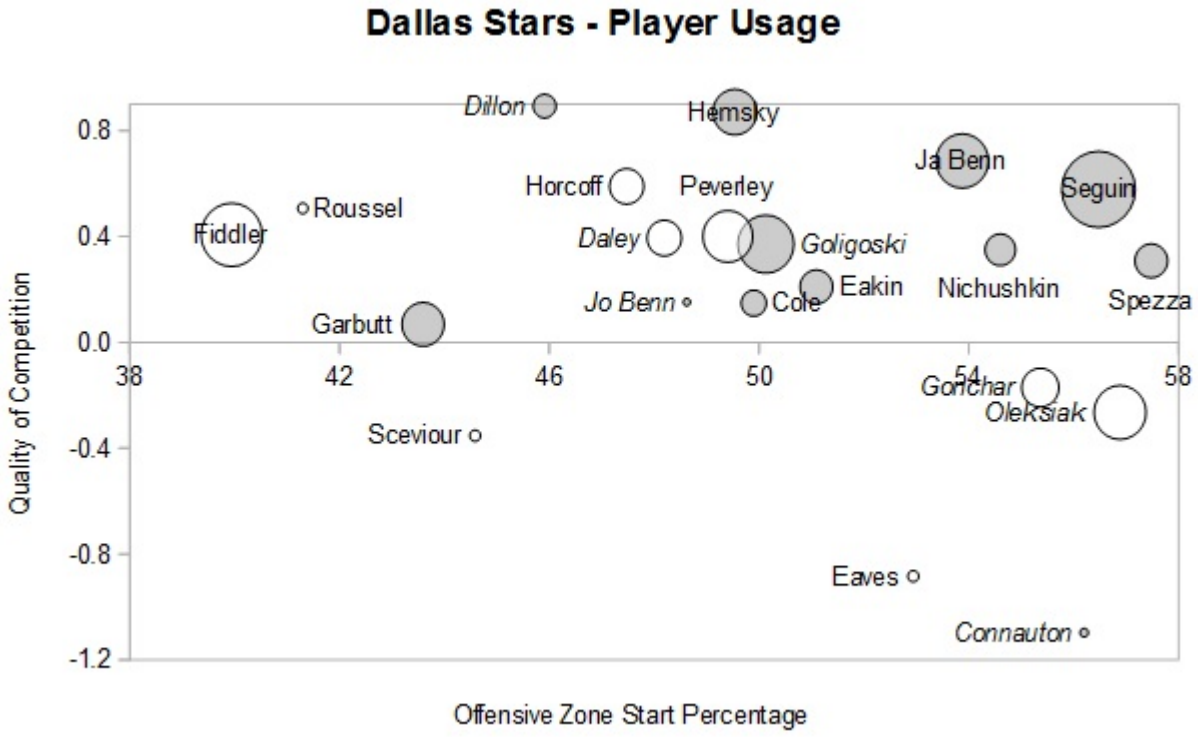

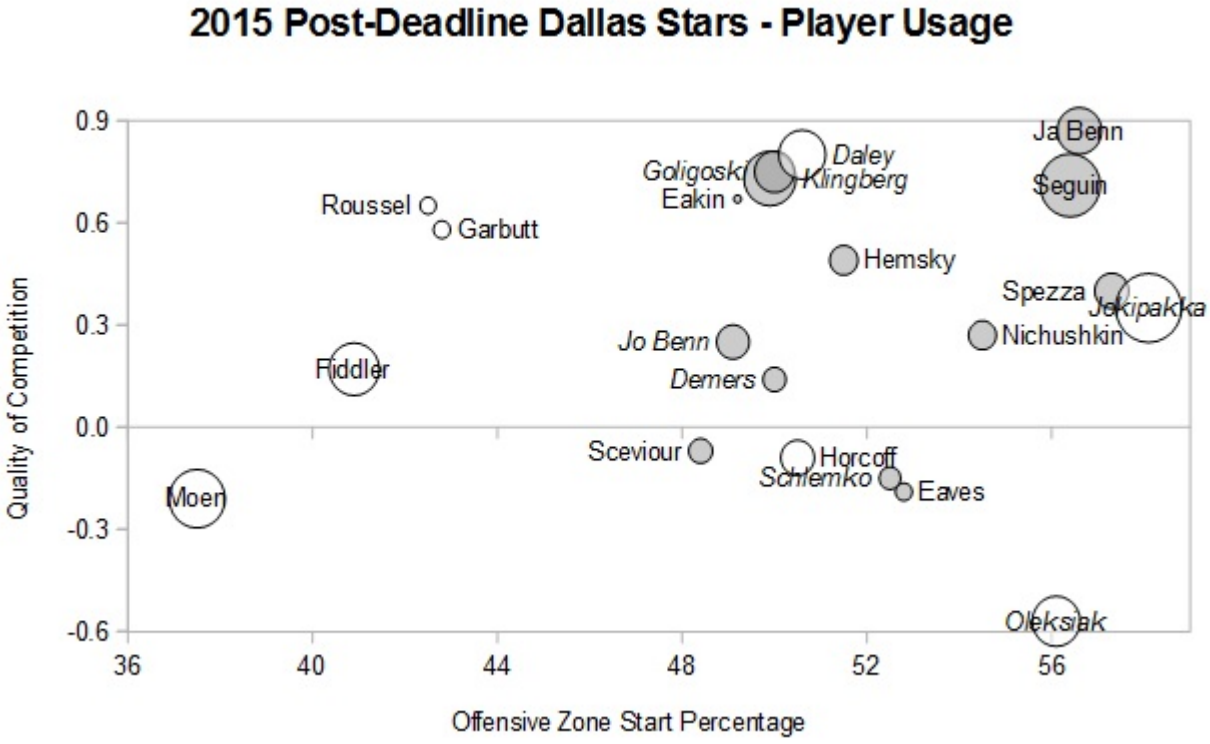

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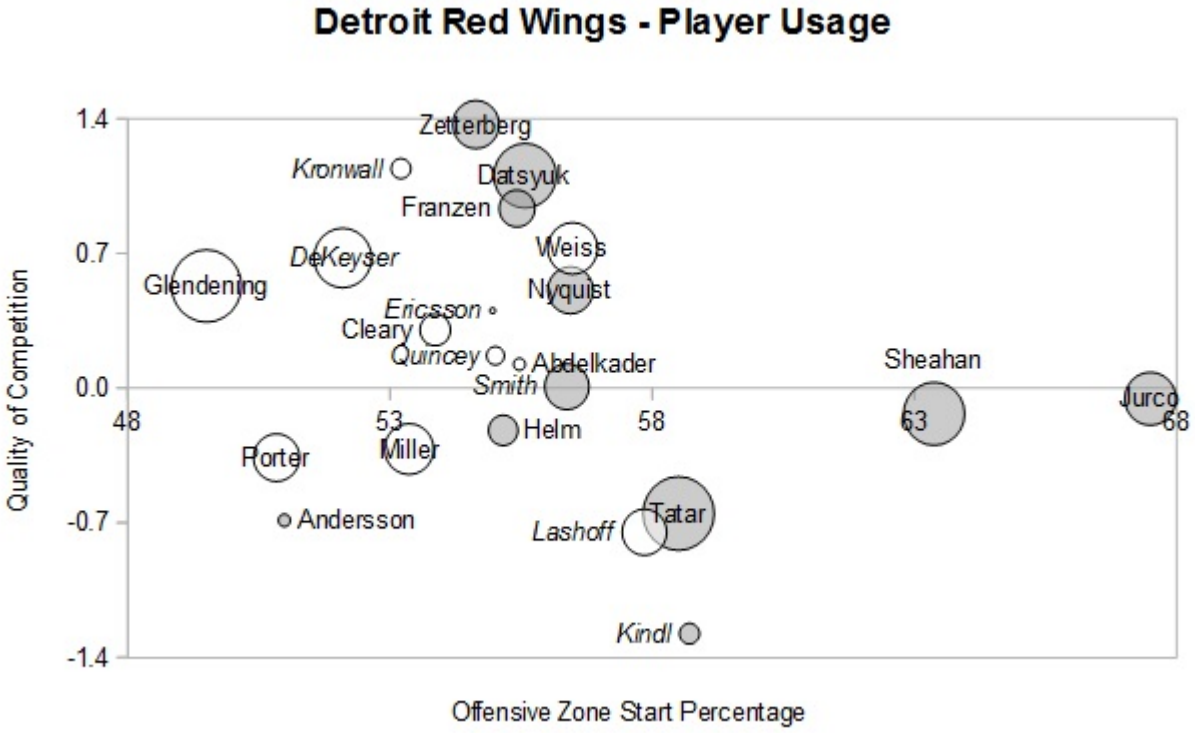

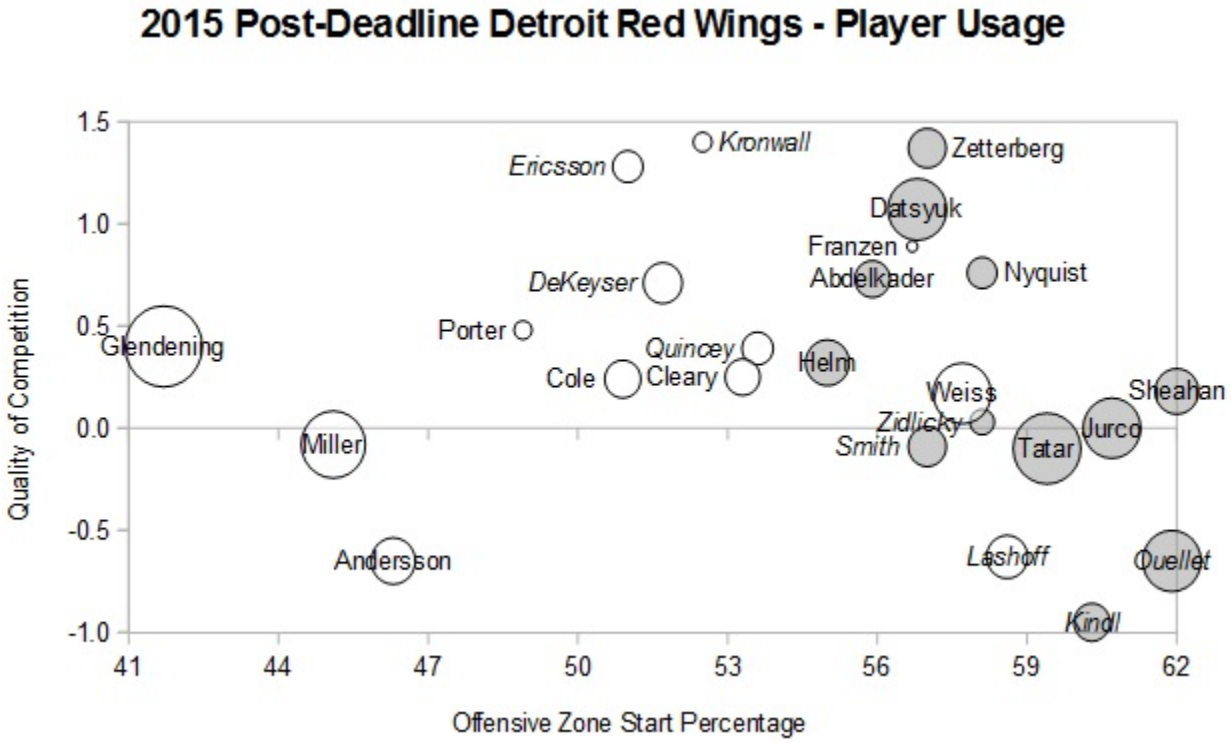

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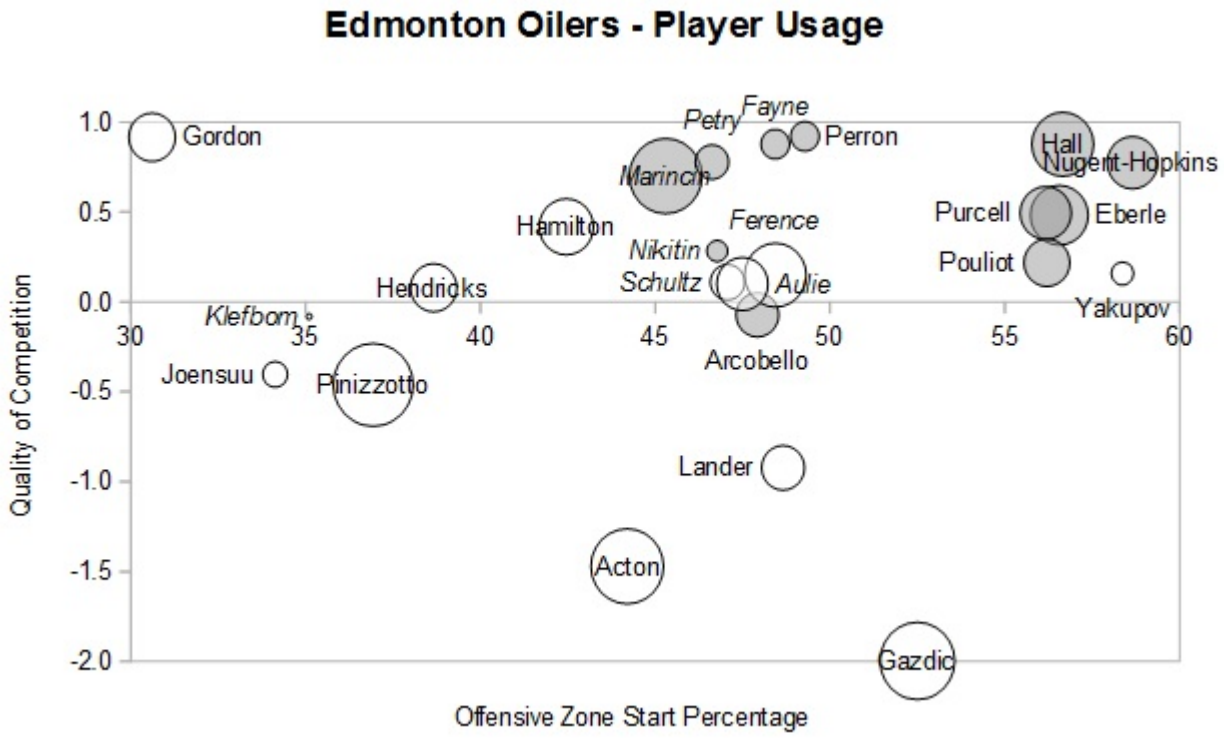

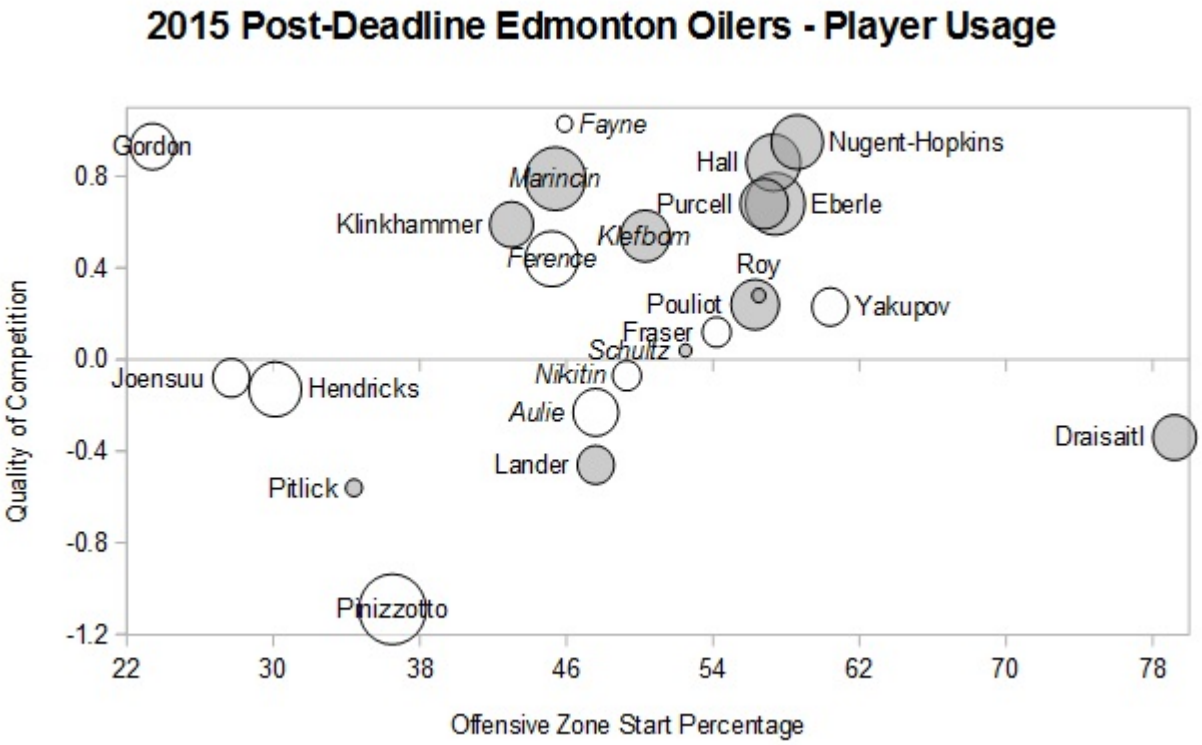

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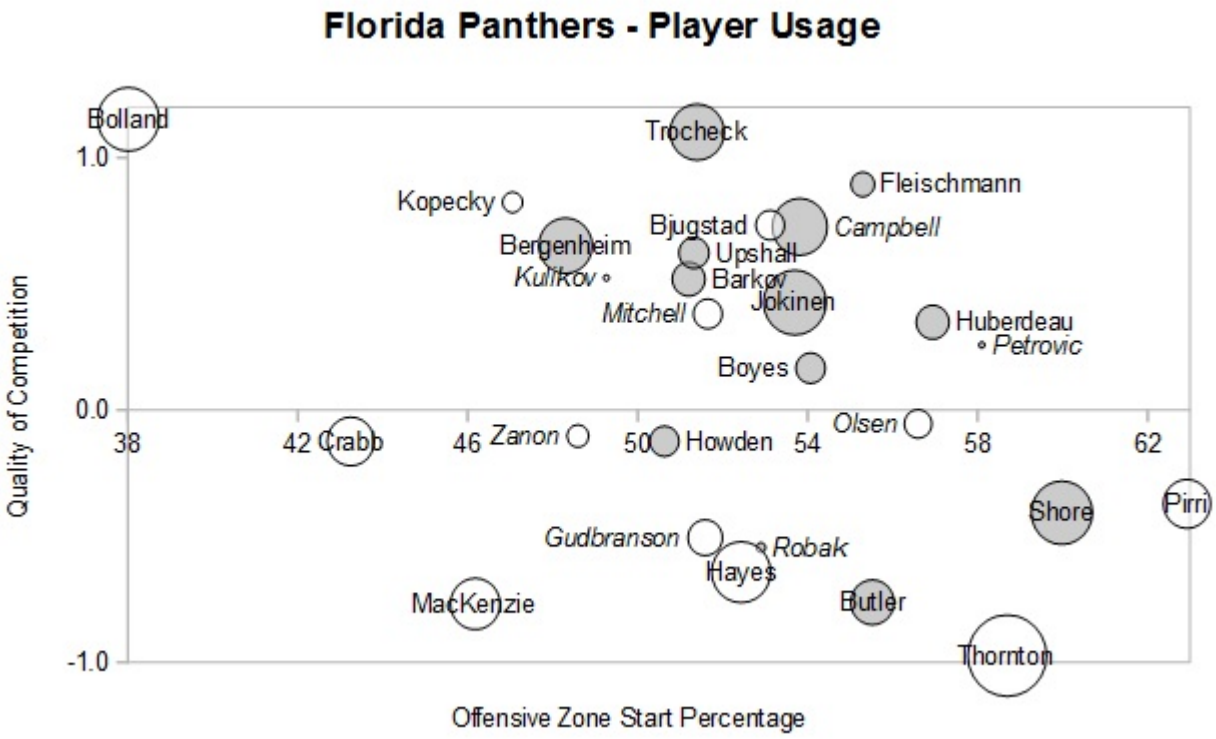

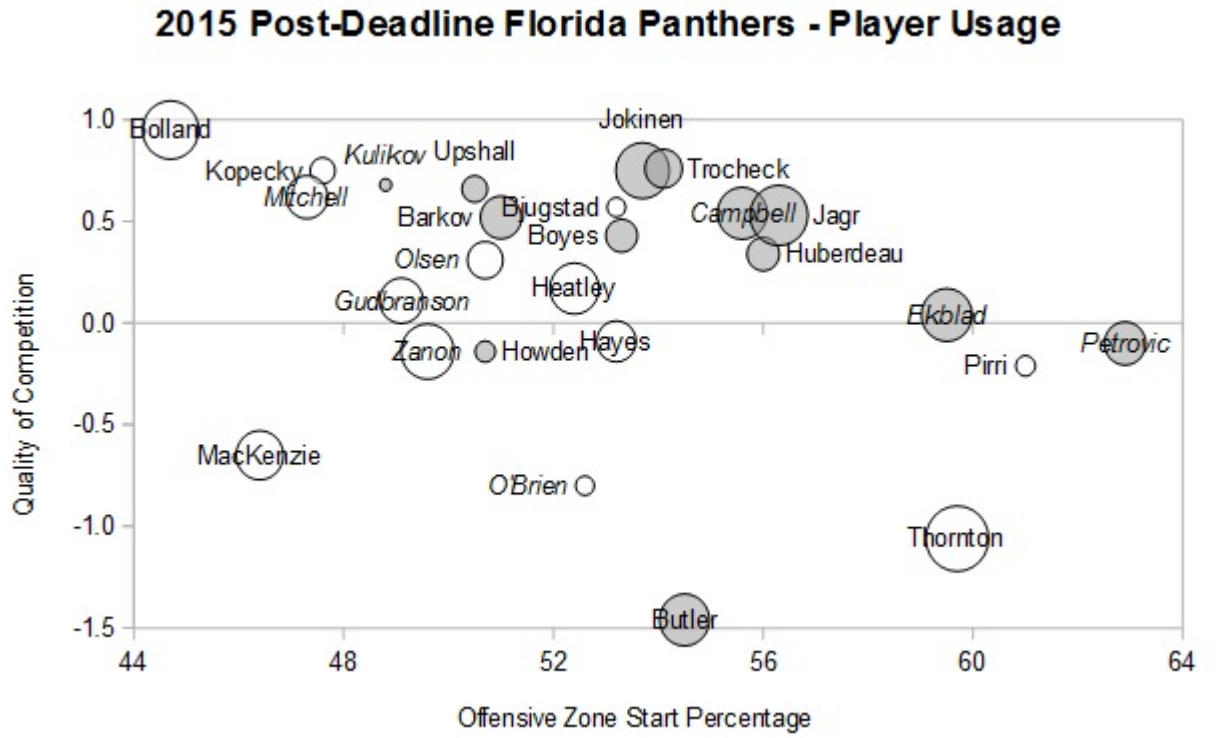

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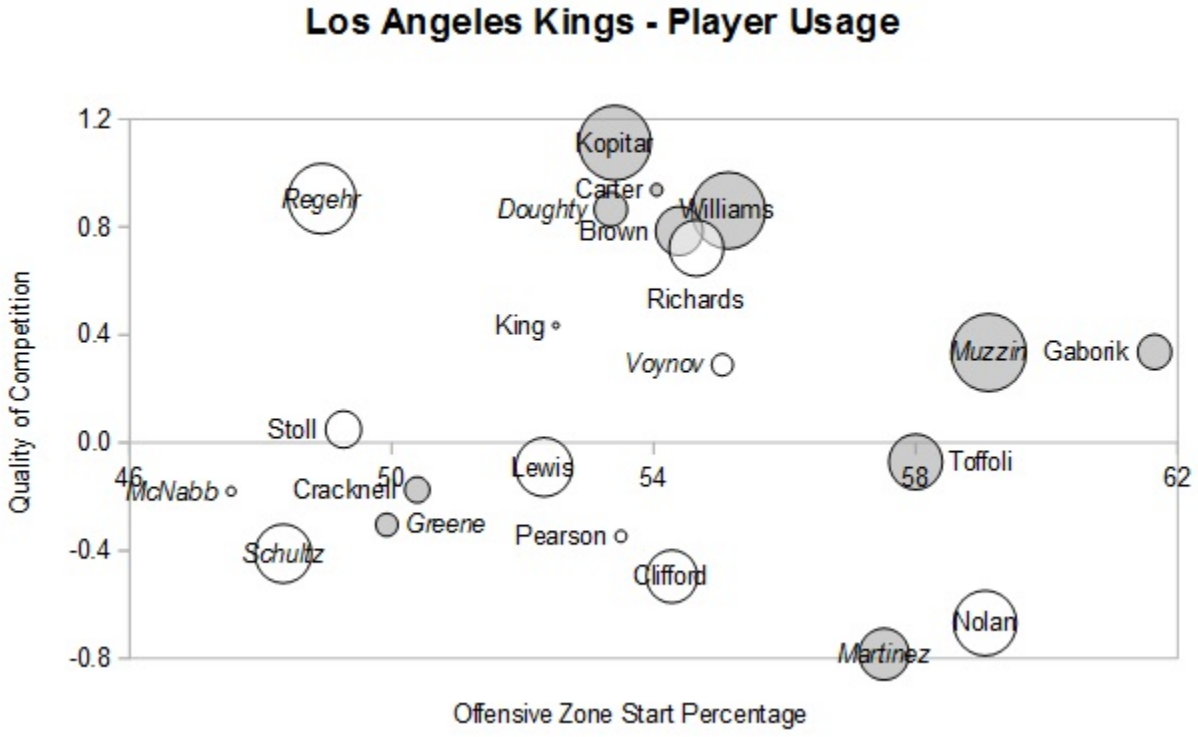

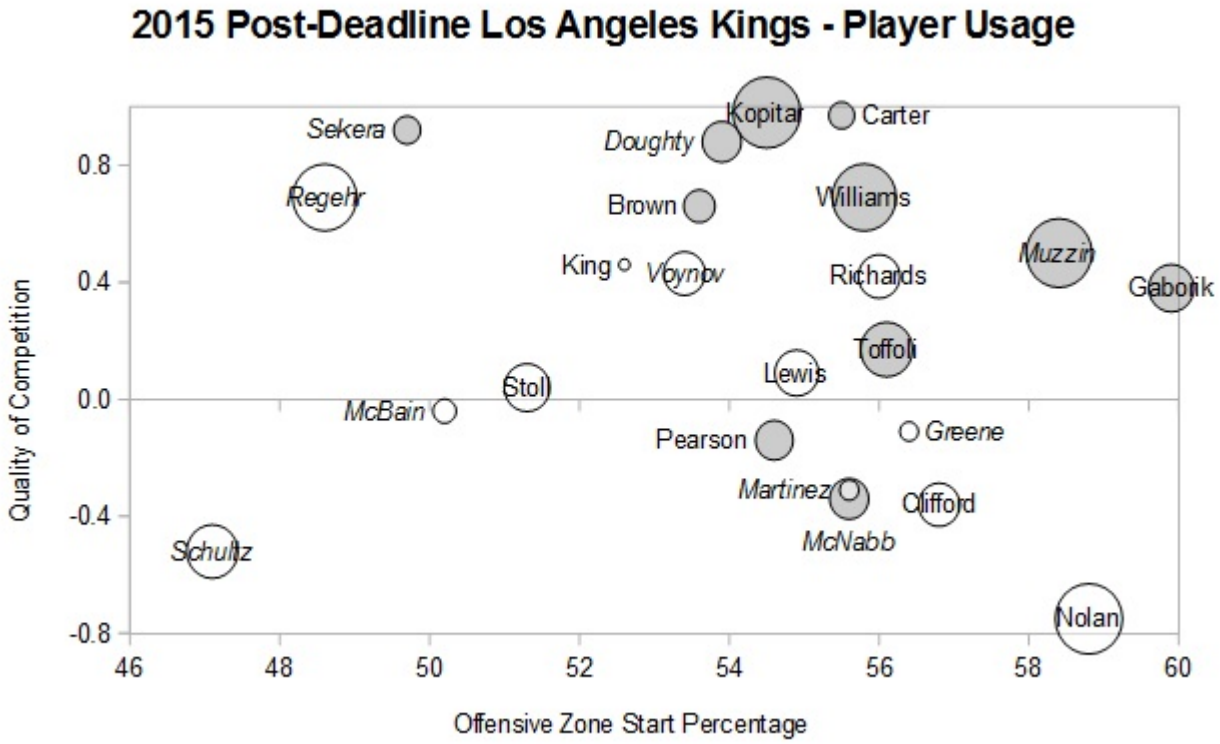

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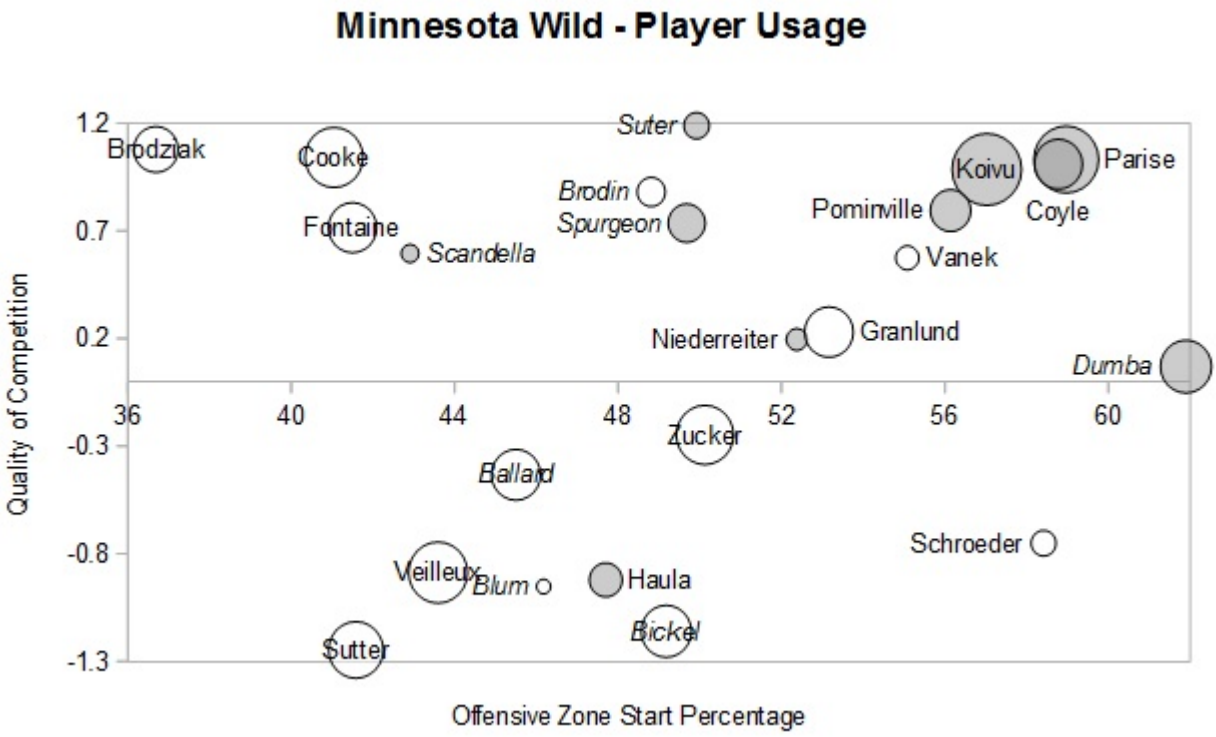
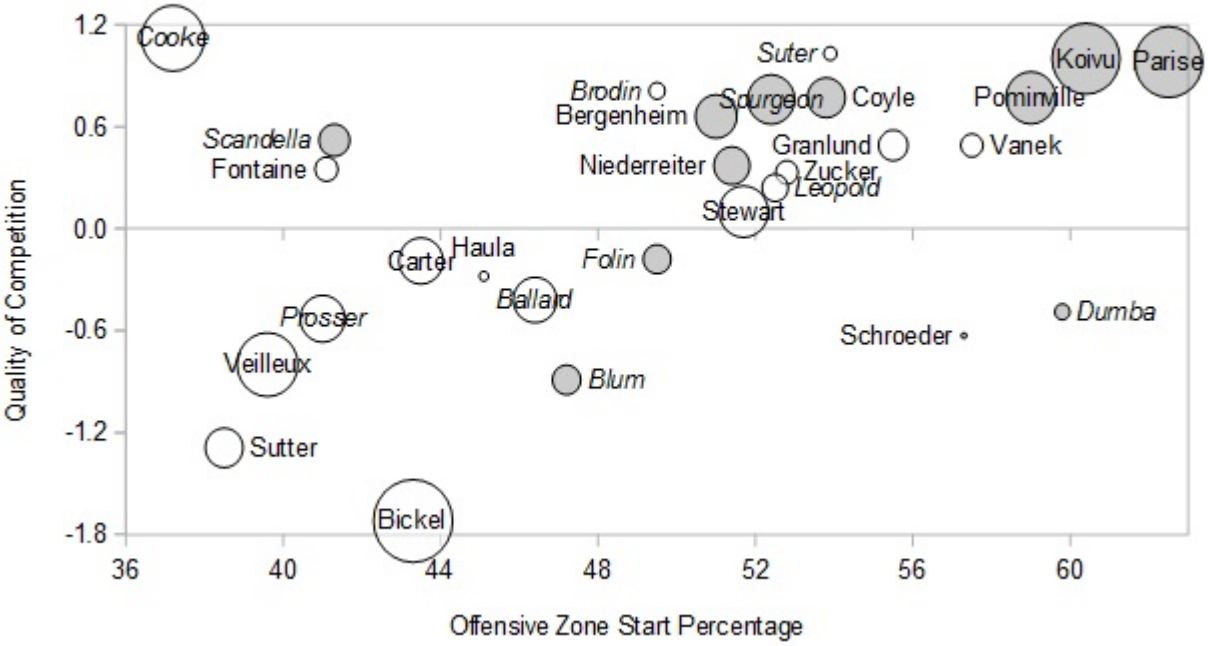
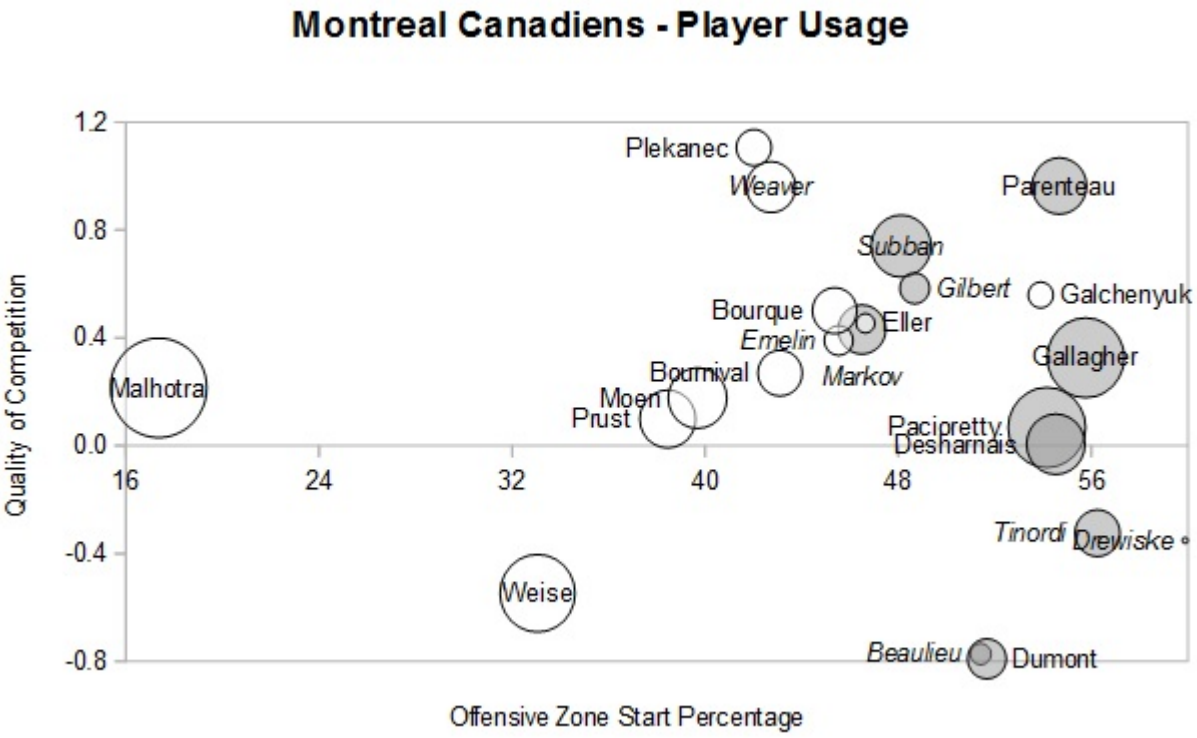
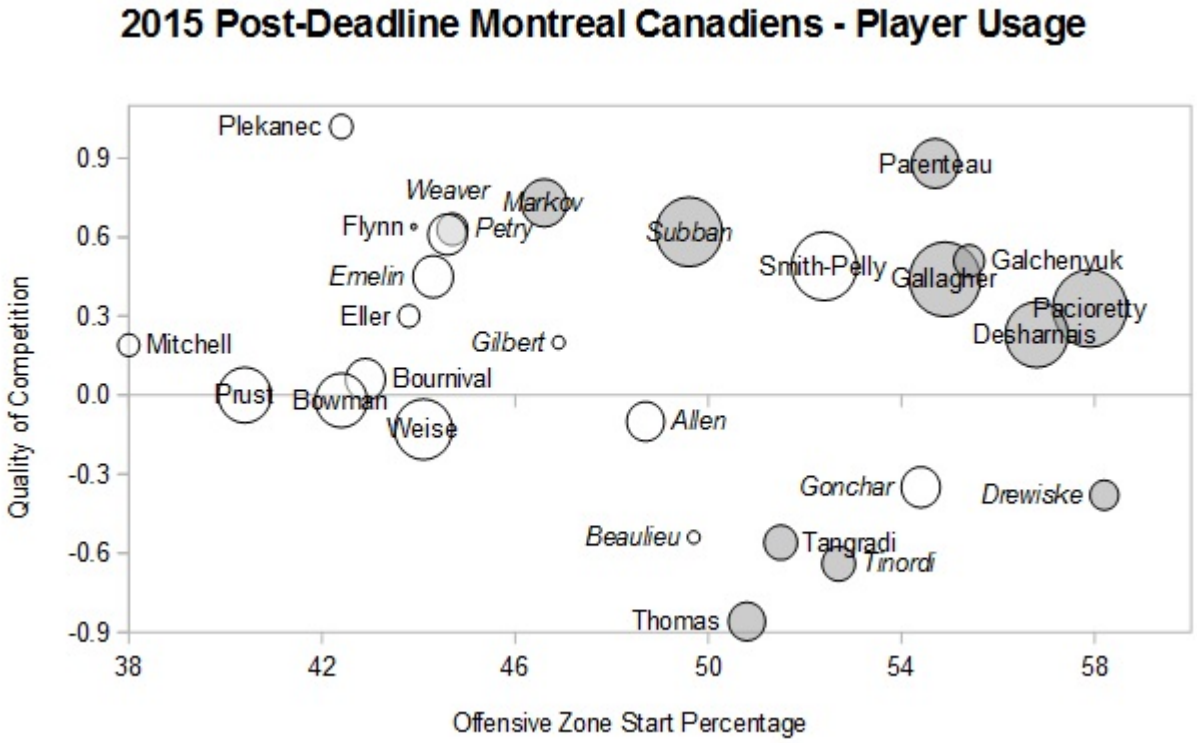




Montreal Canadiens





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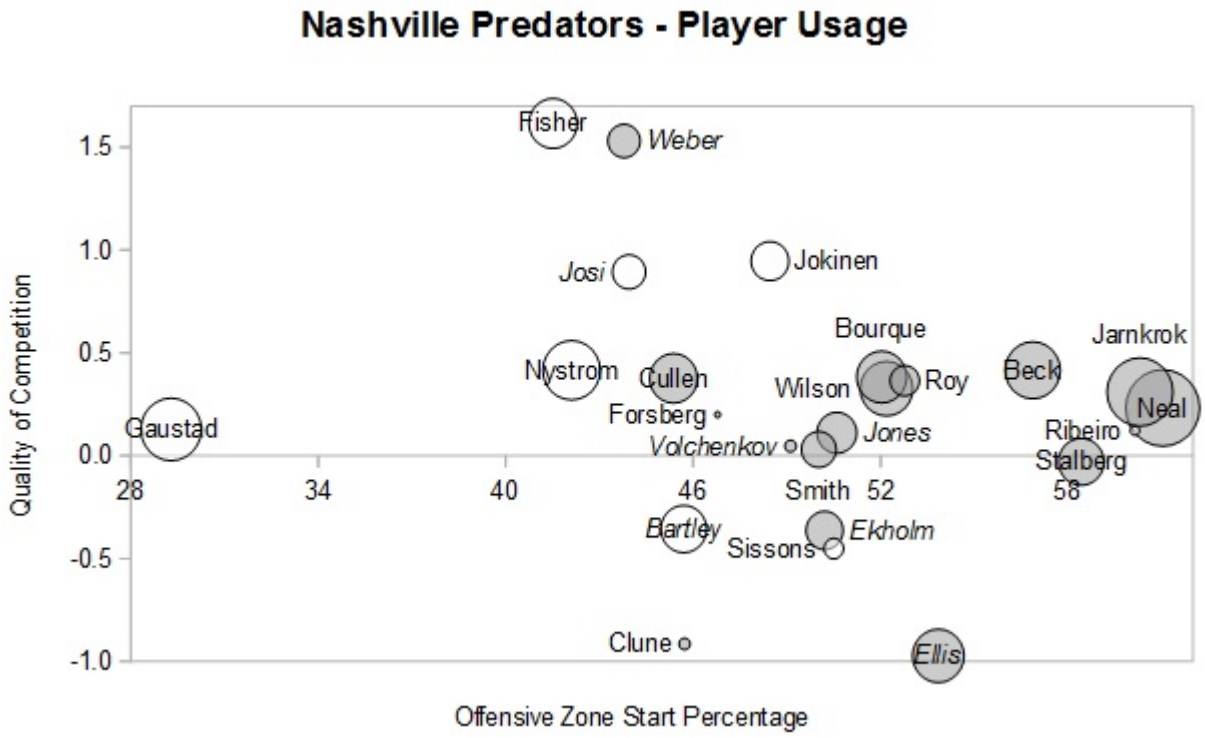

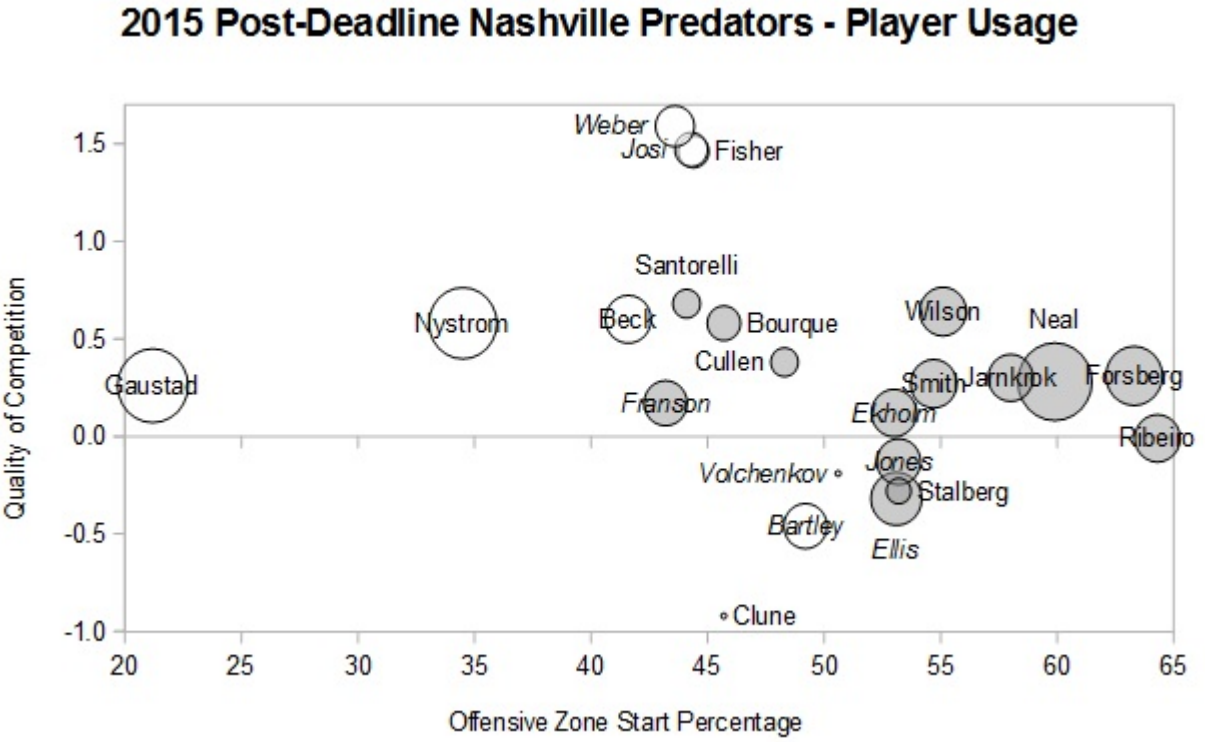

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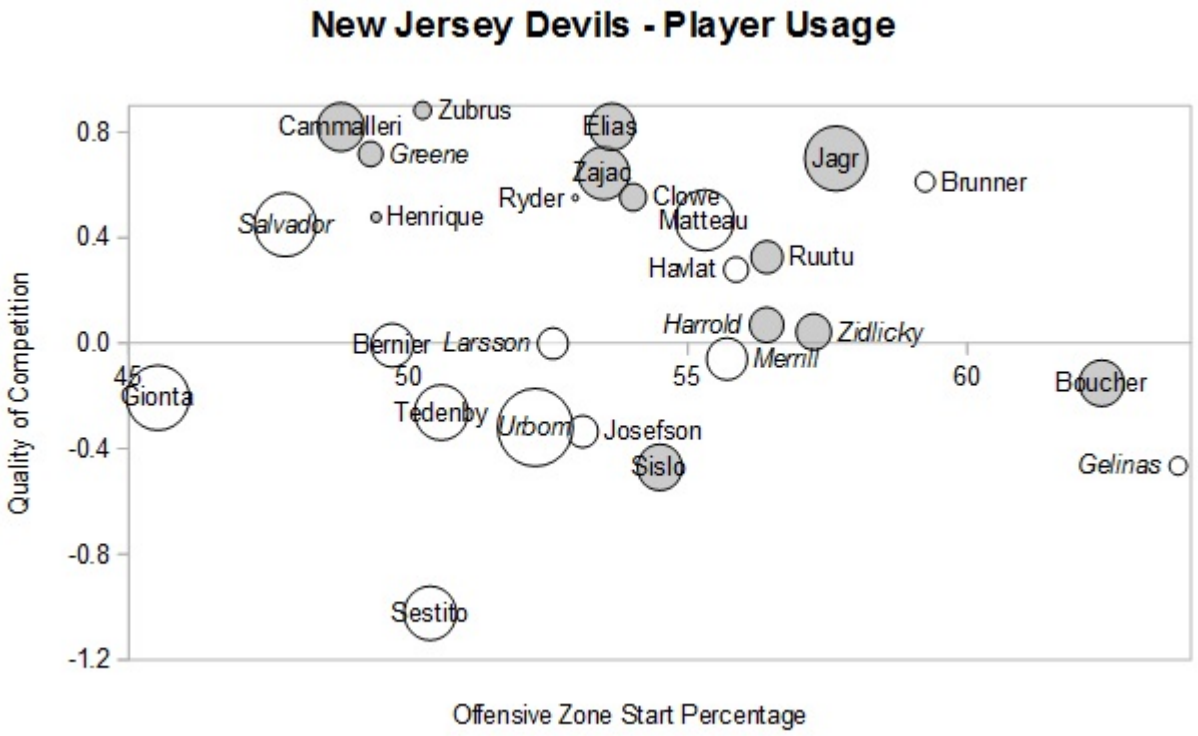

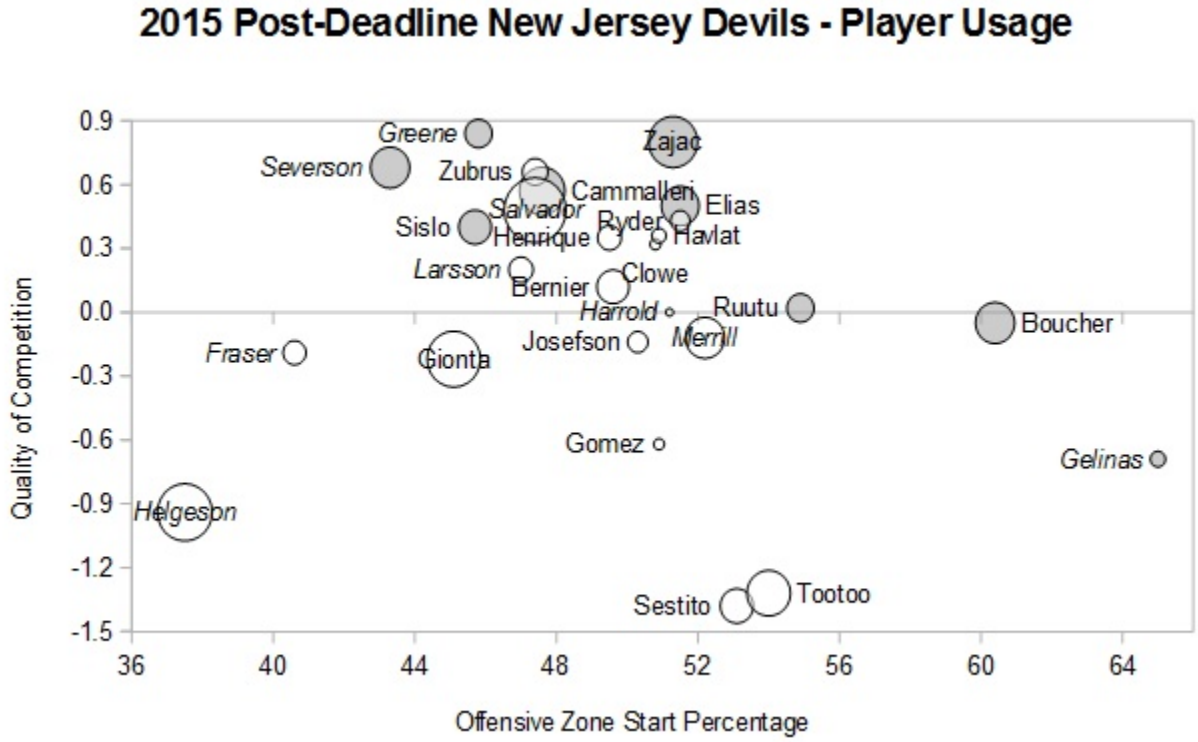

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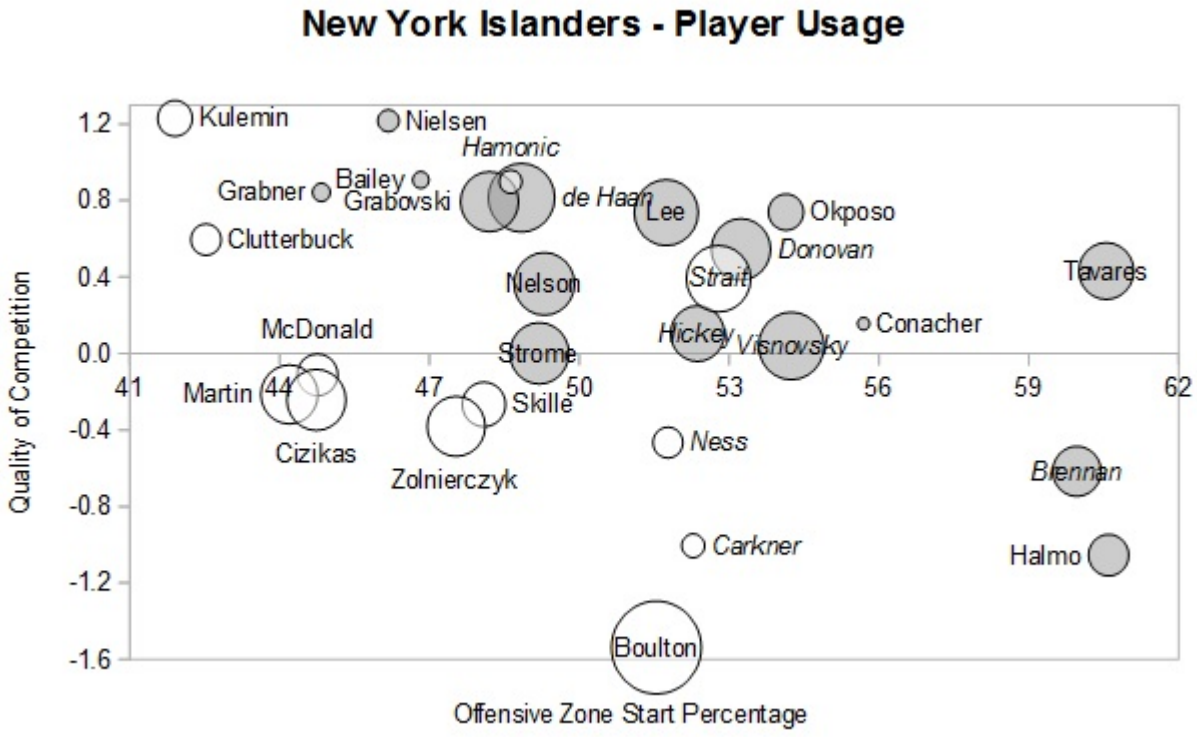

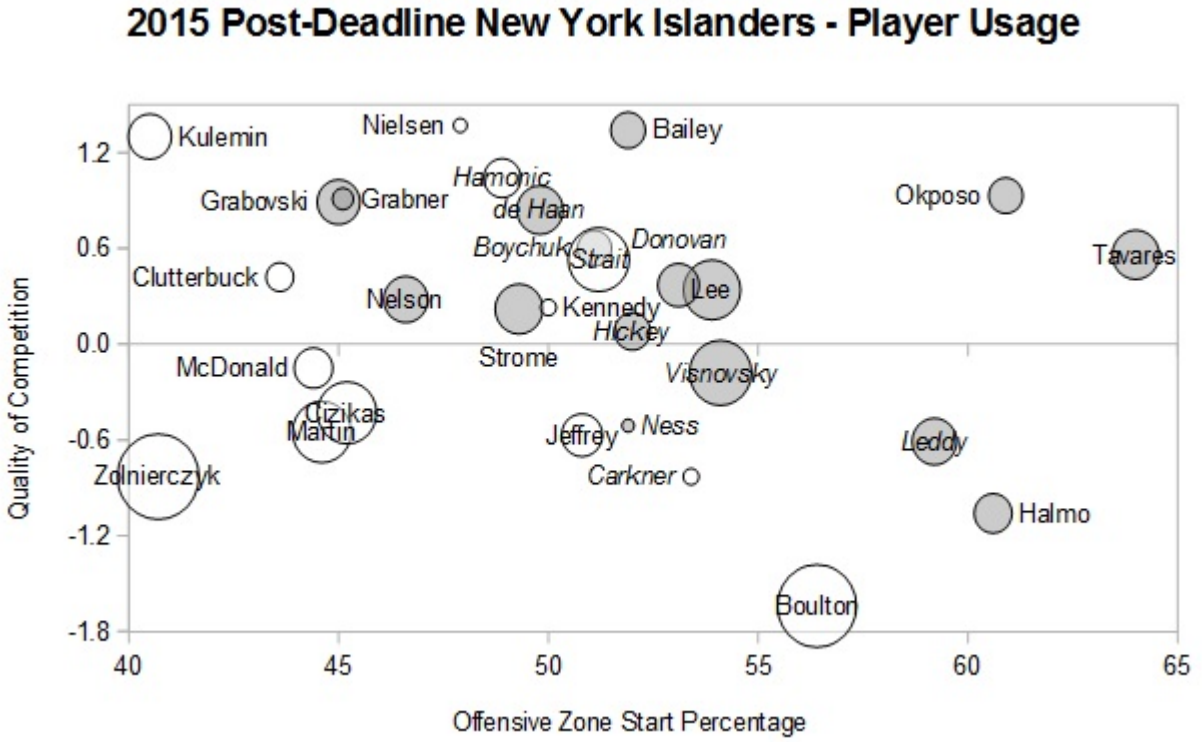

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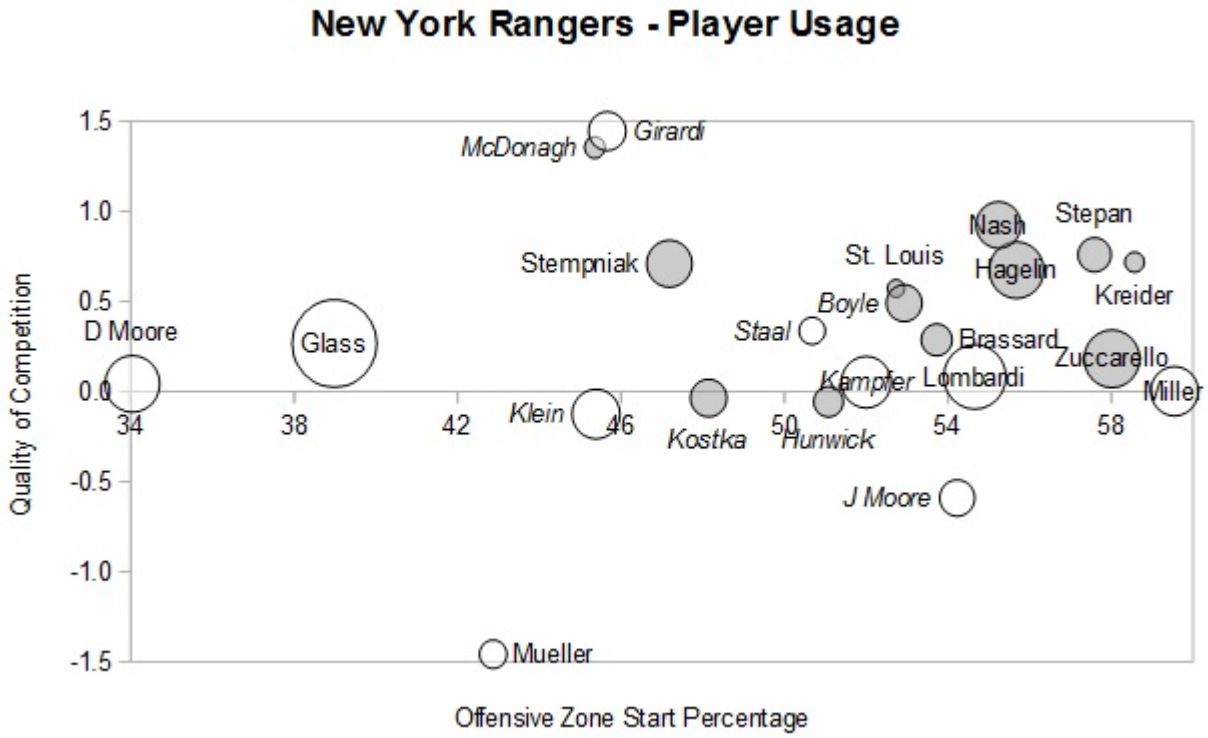
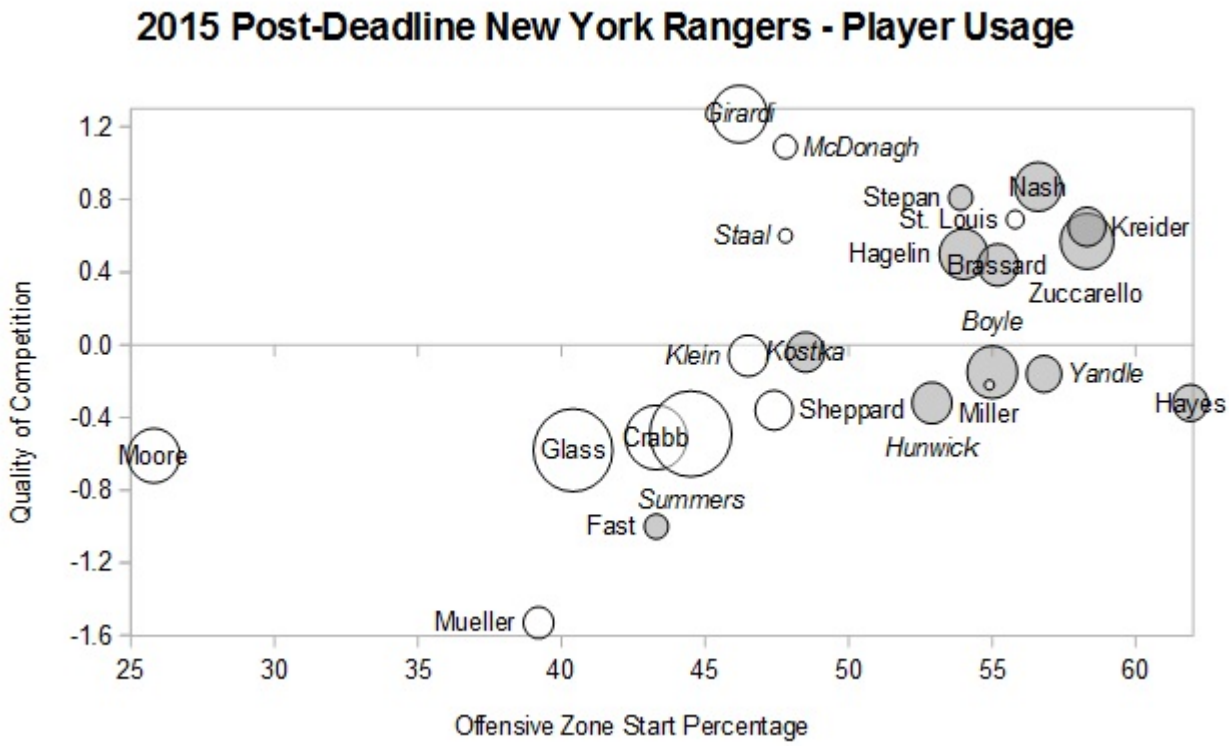
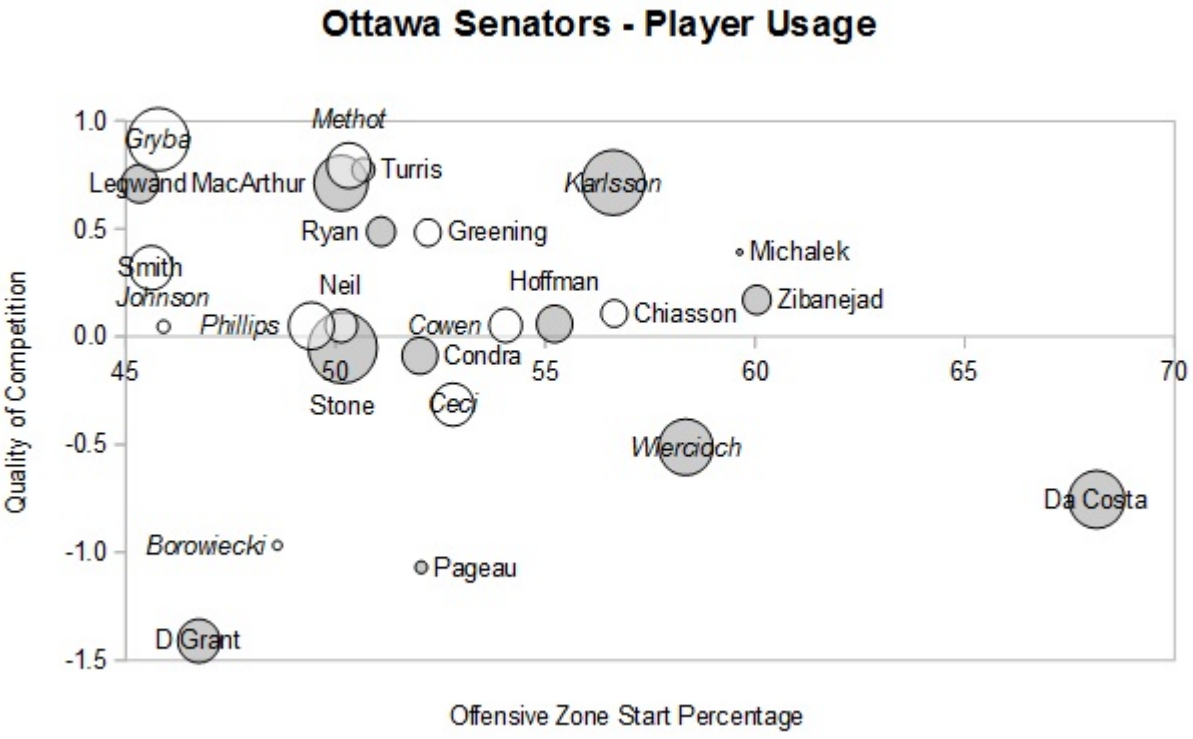
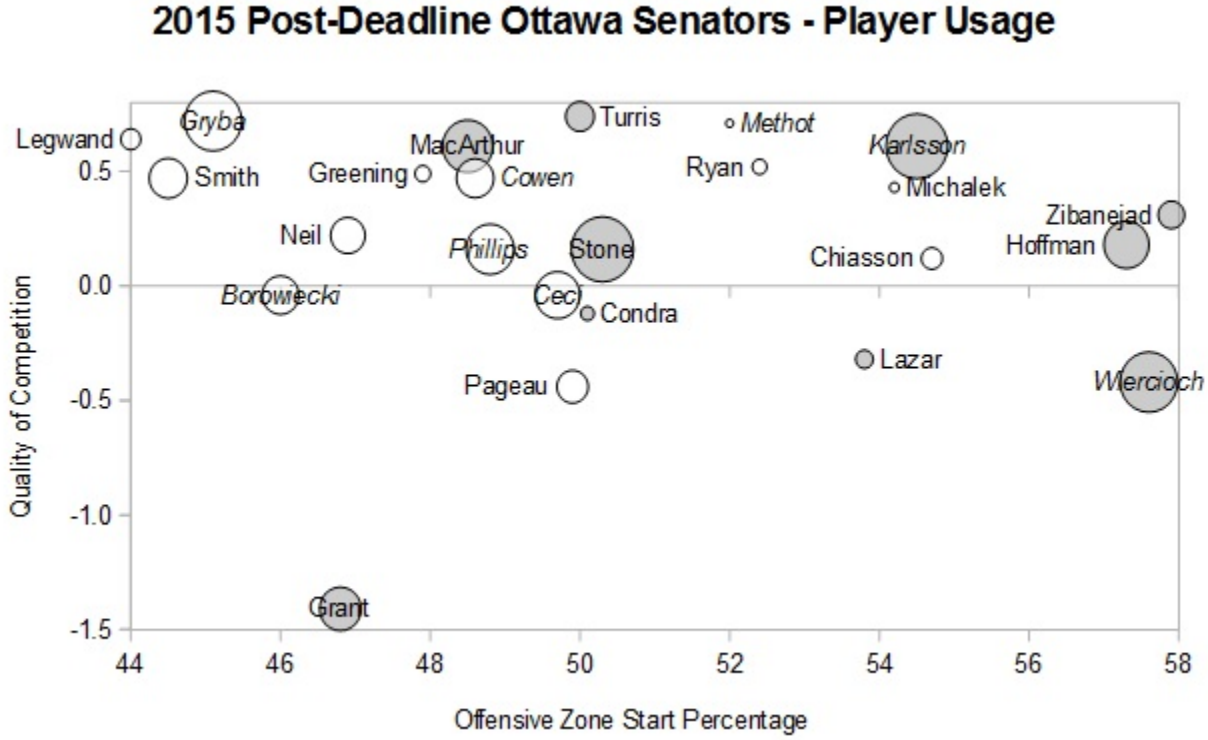


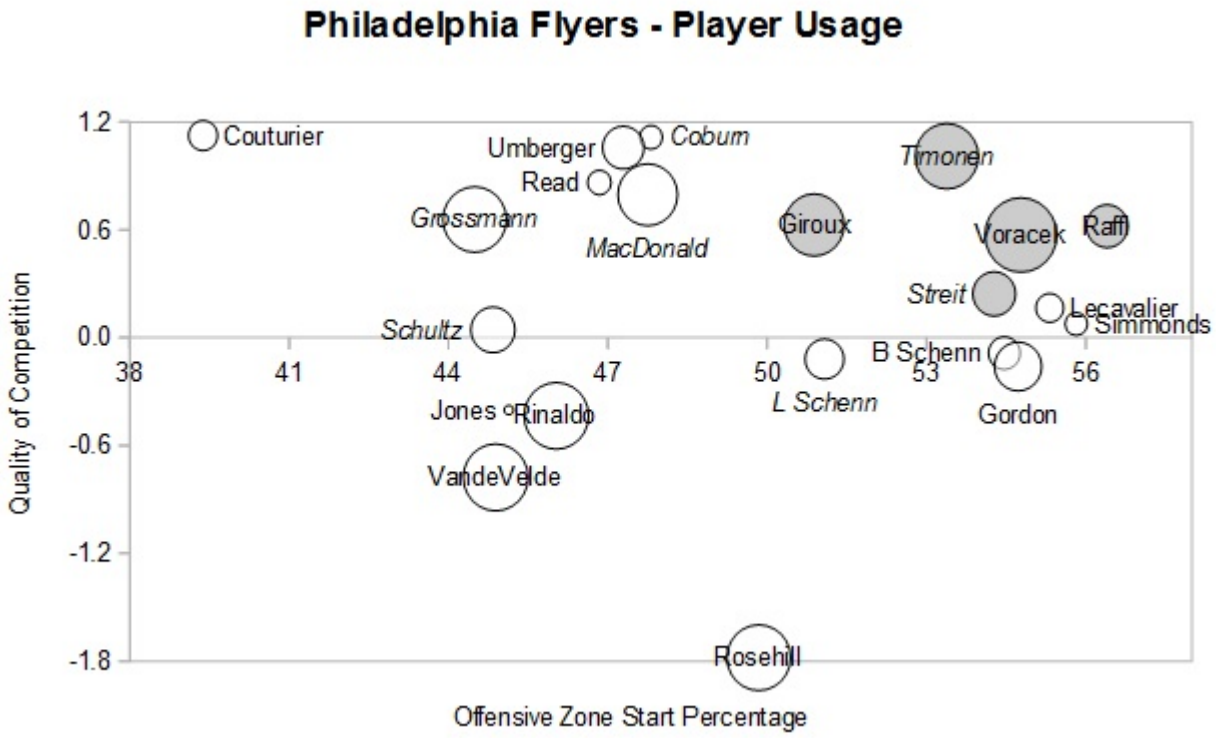


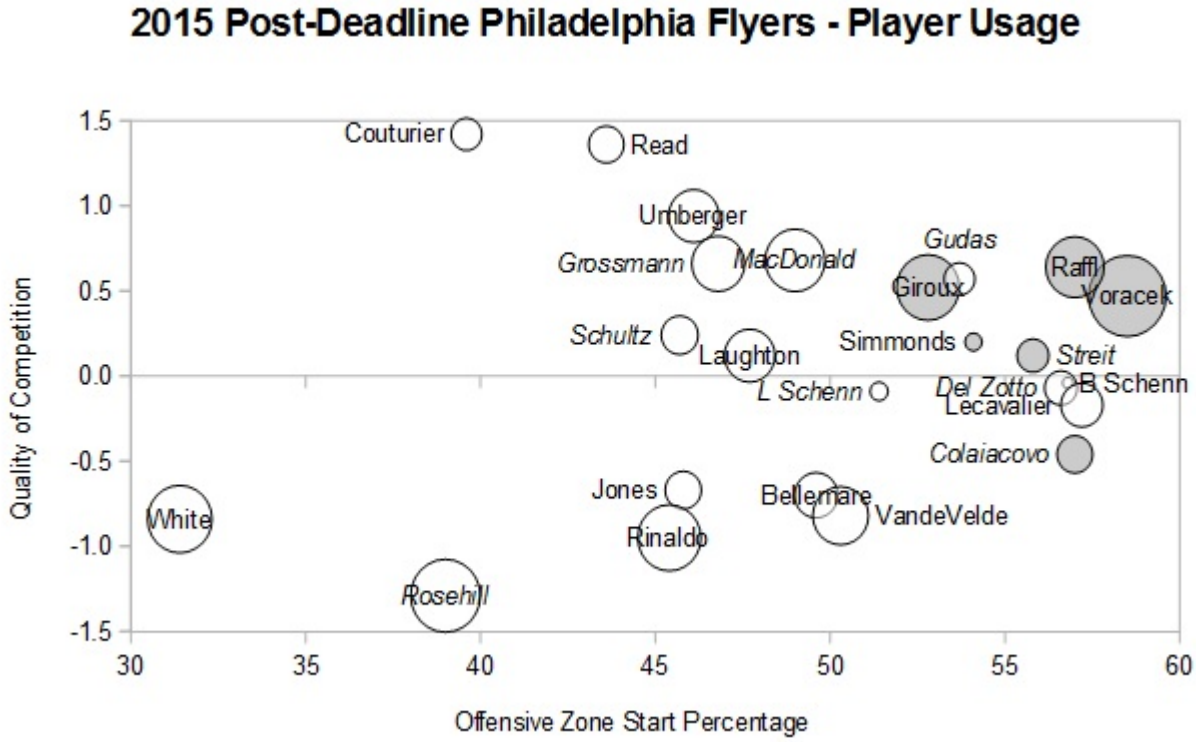
Ottawa Senators



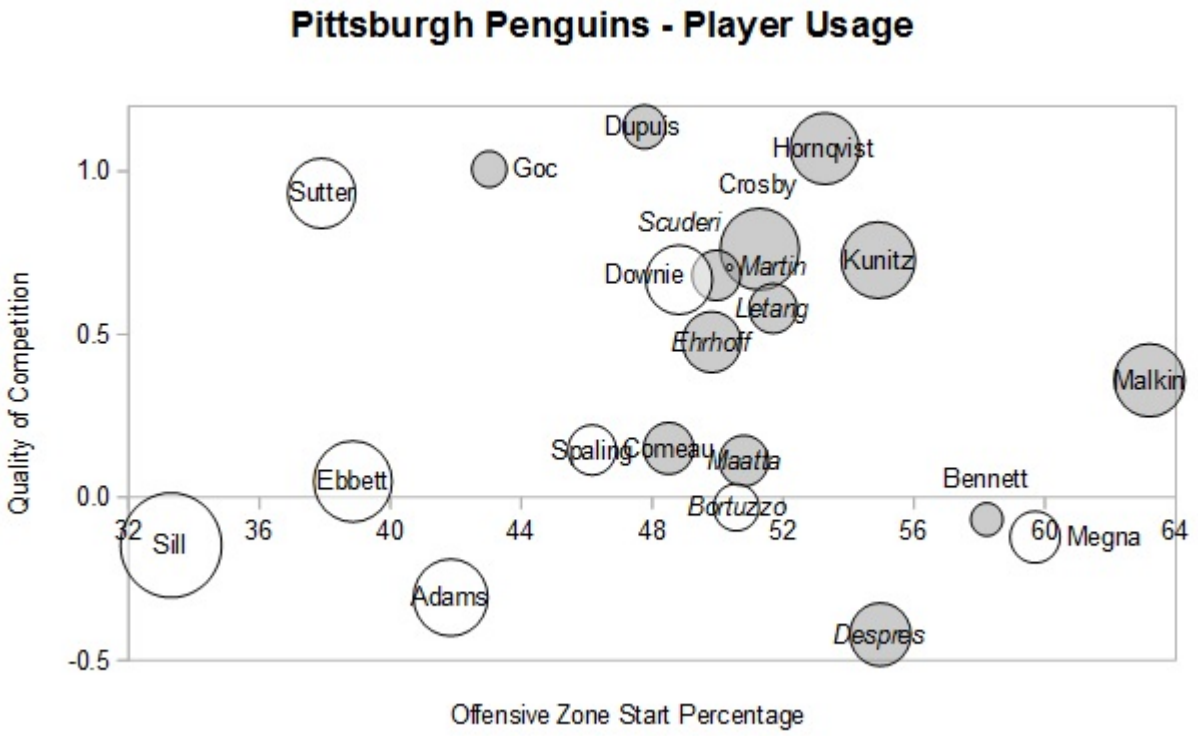


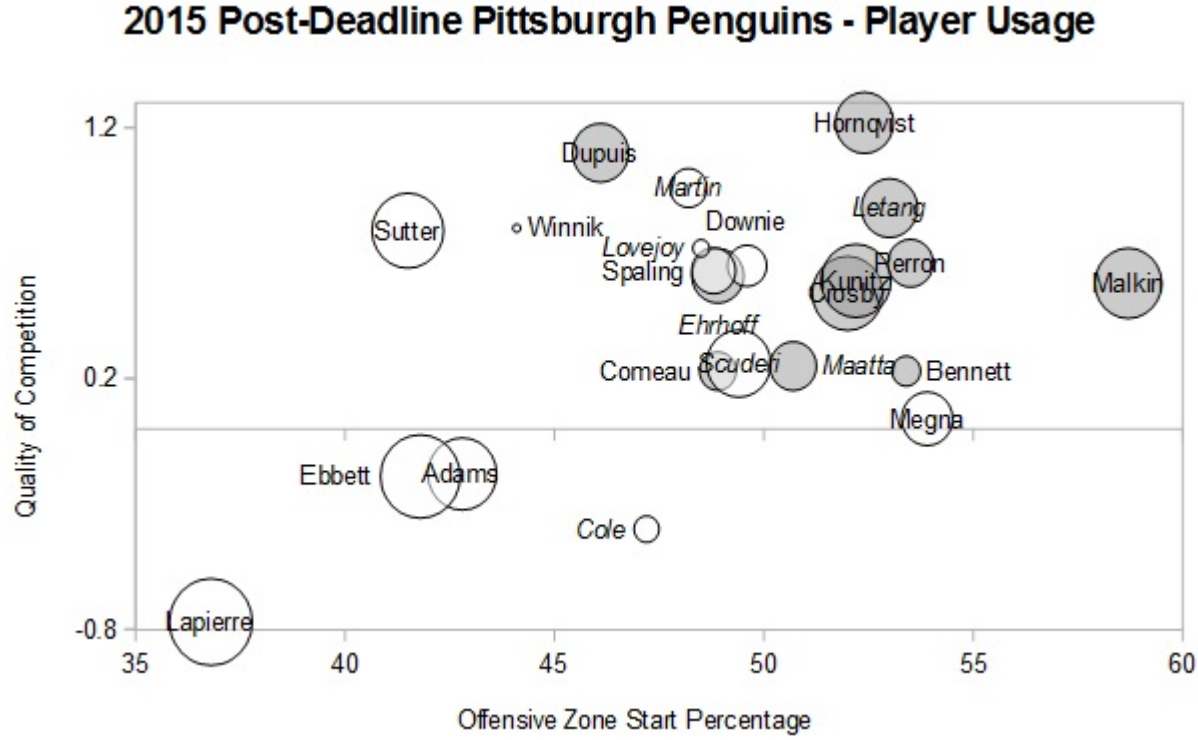
Philadelphia Flyers



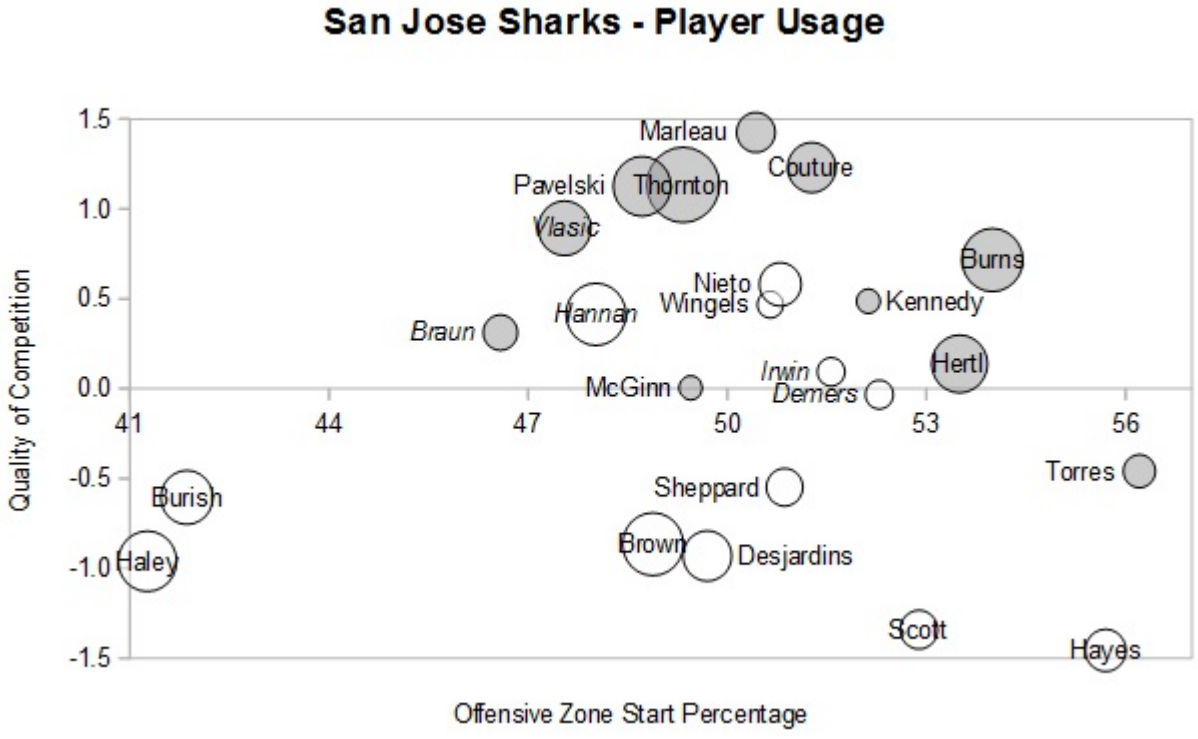


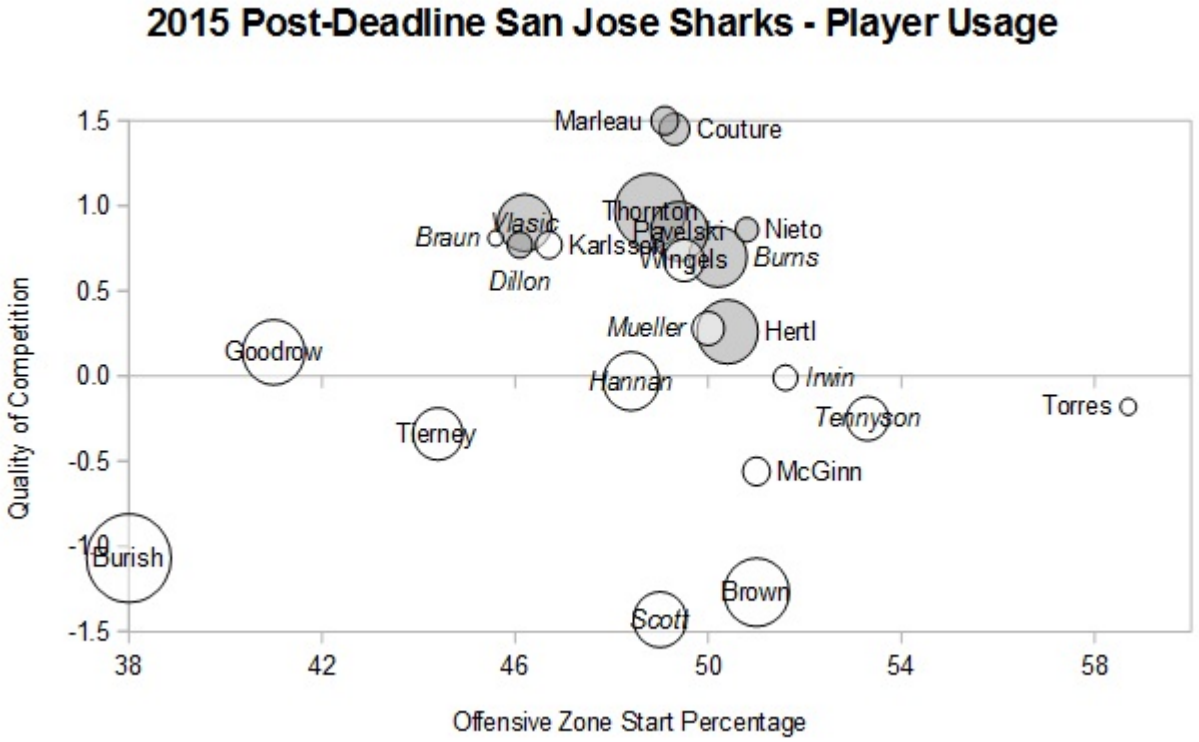
Pittsburgh Penguins



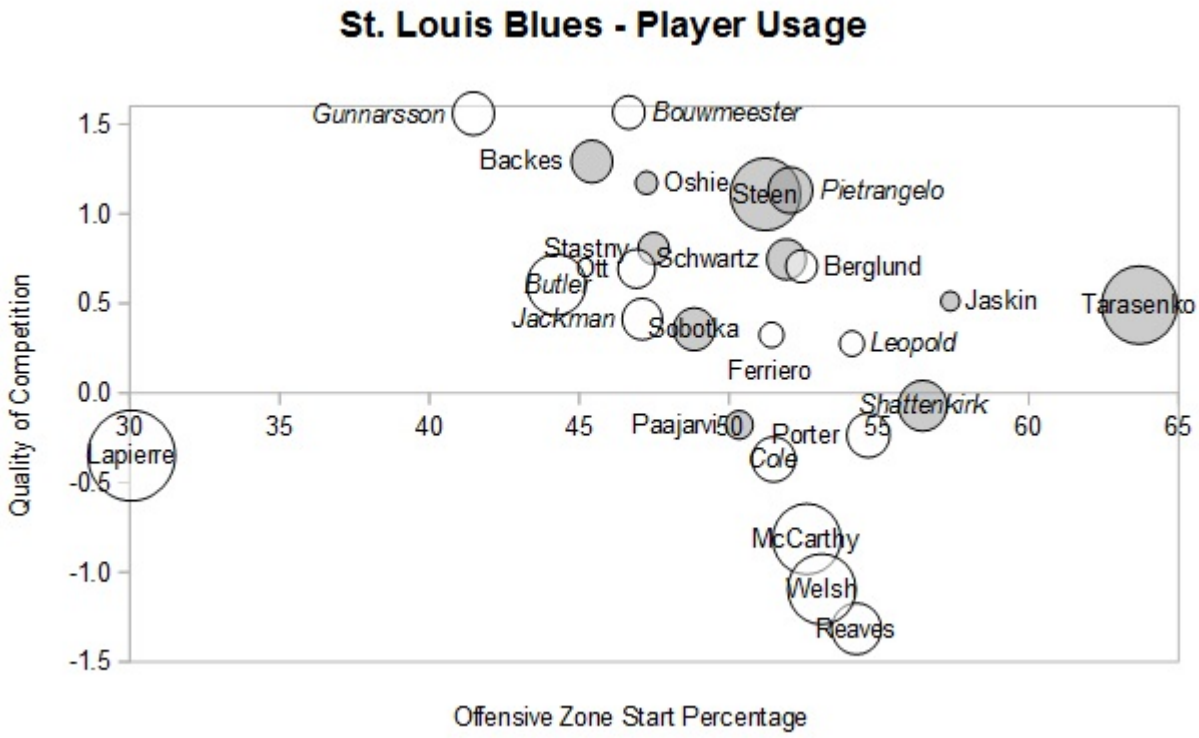


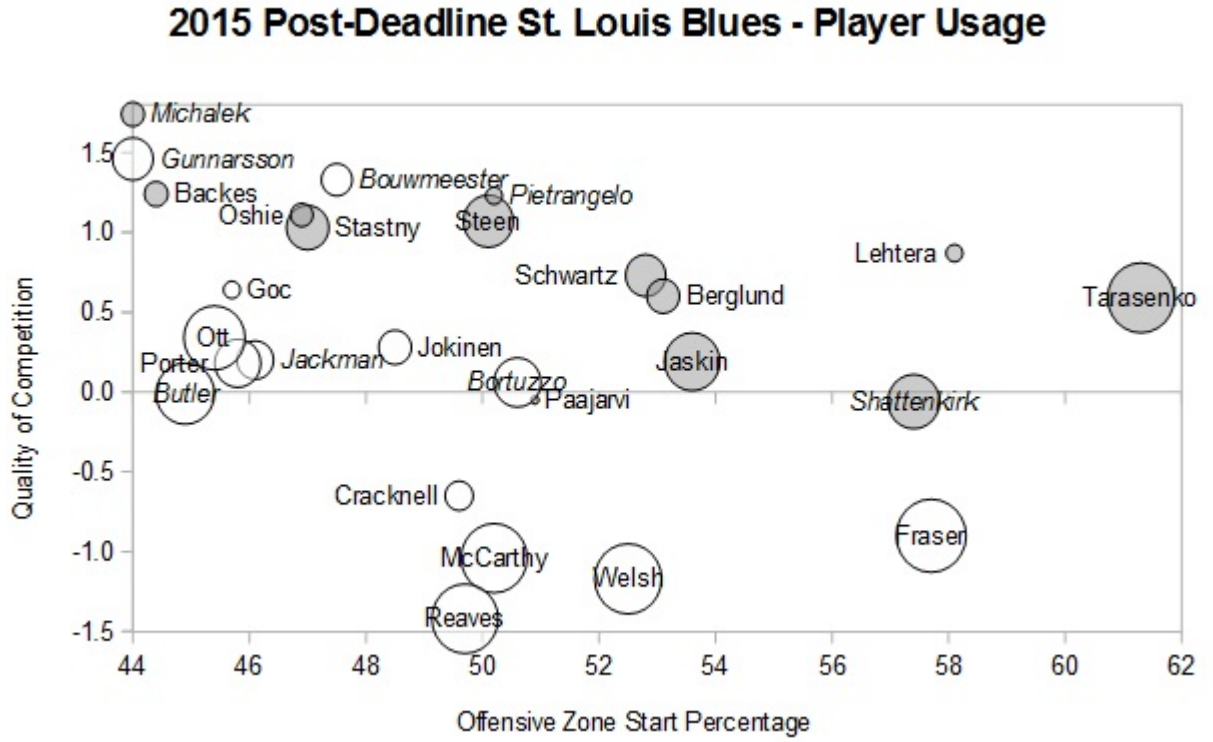
San Jose Sharks



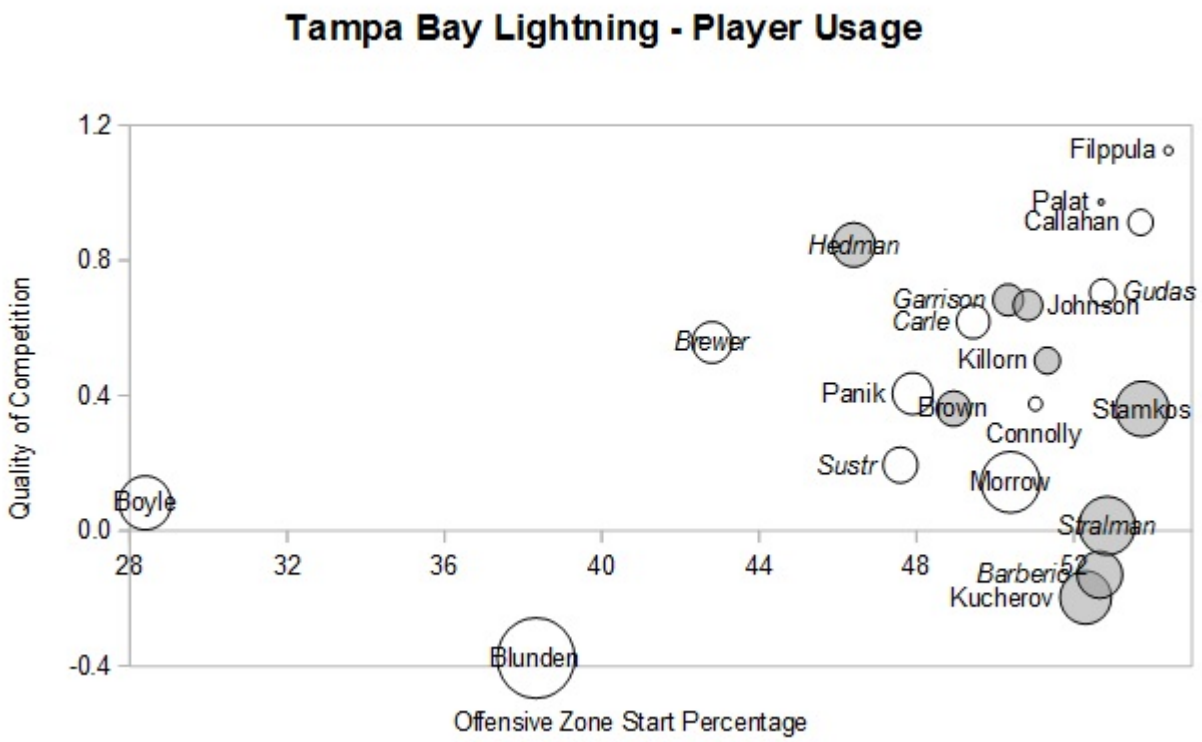


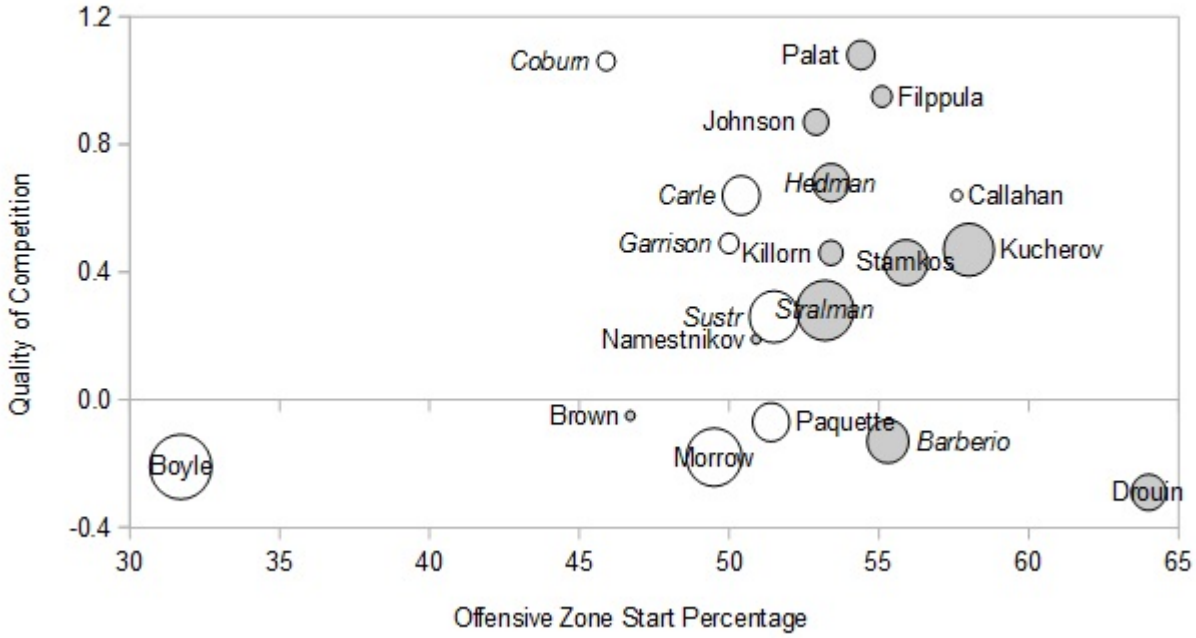
St. Louis Blues



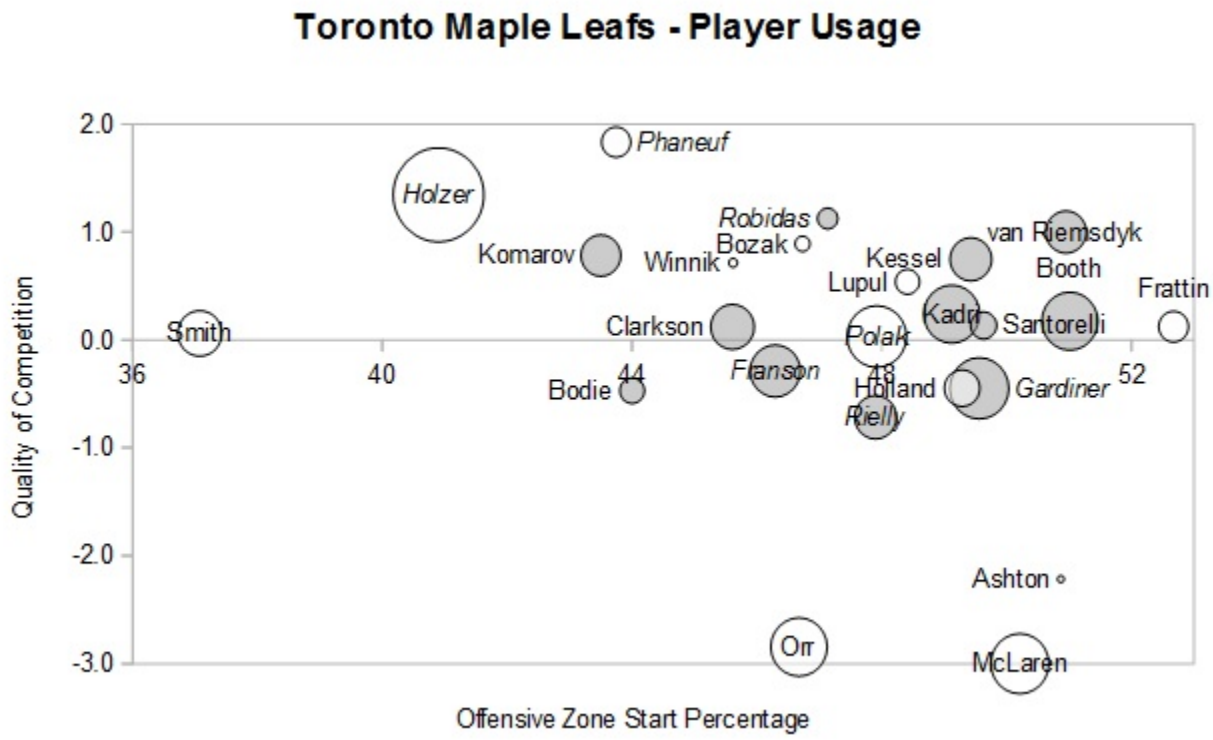


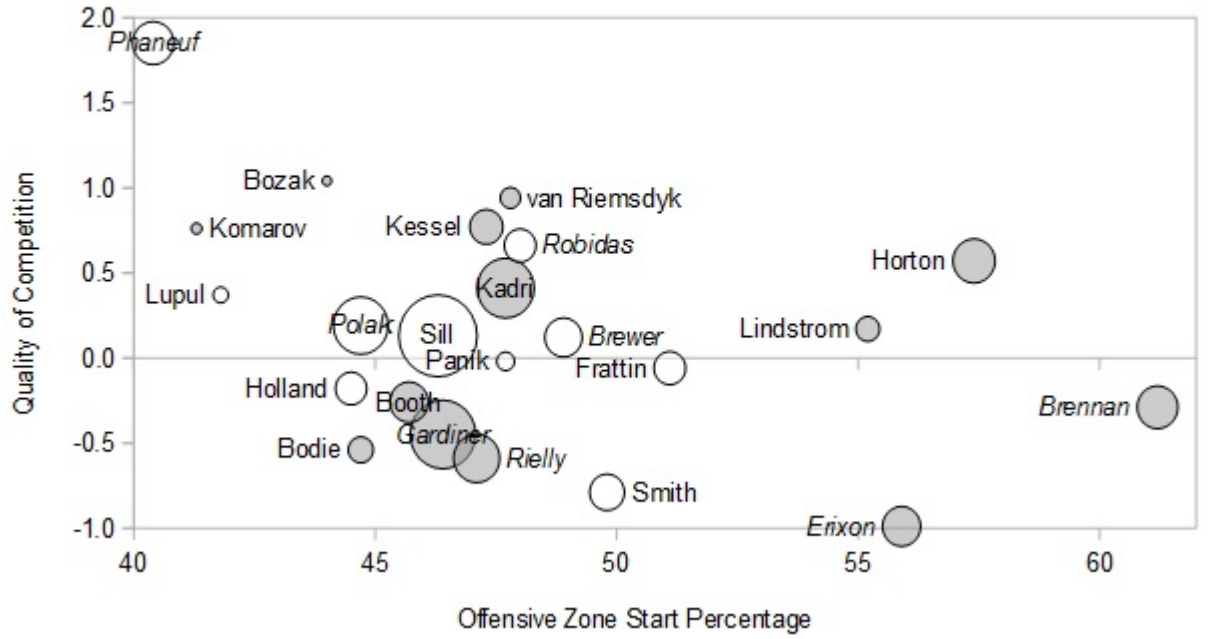
Tampa Bay Lightning



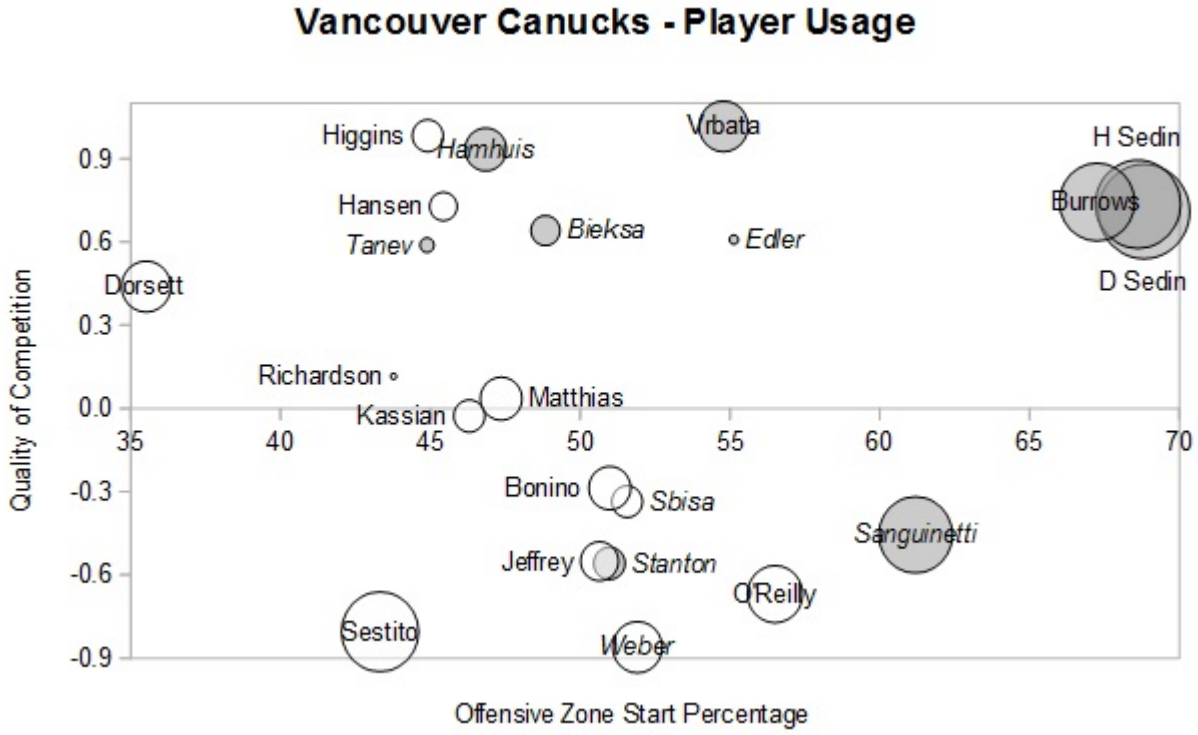


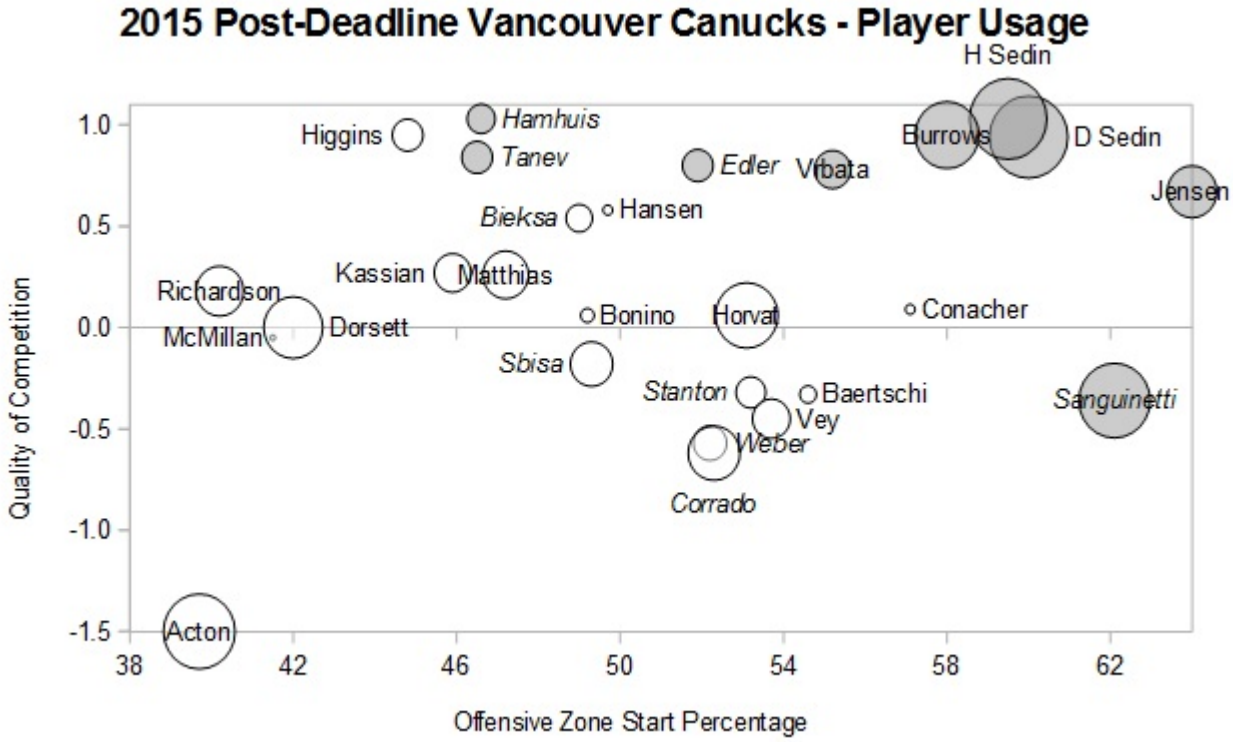
Toronto Maple Leafs



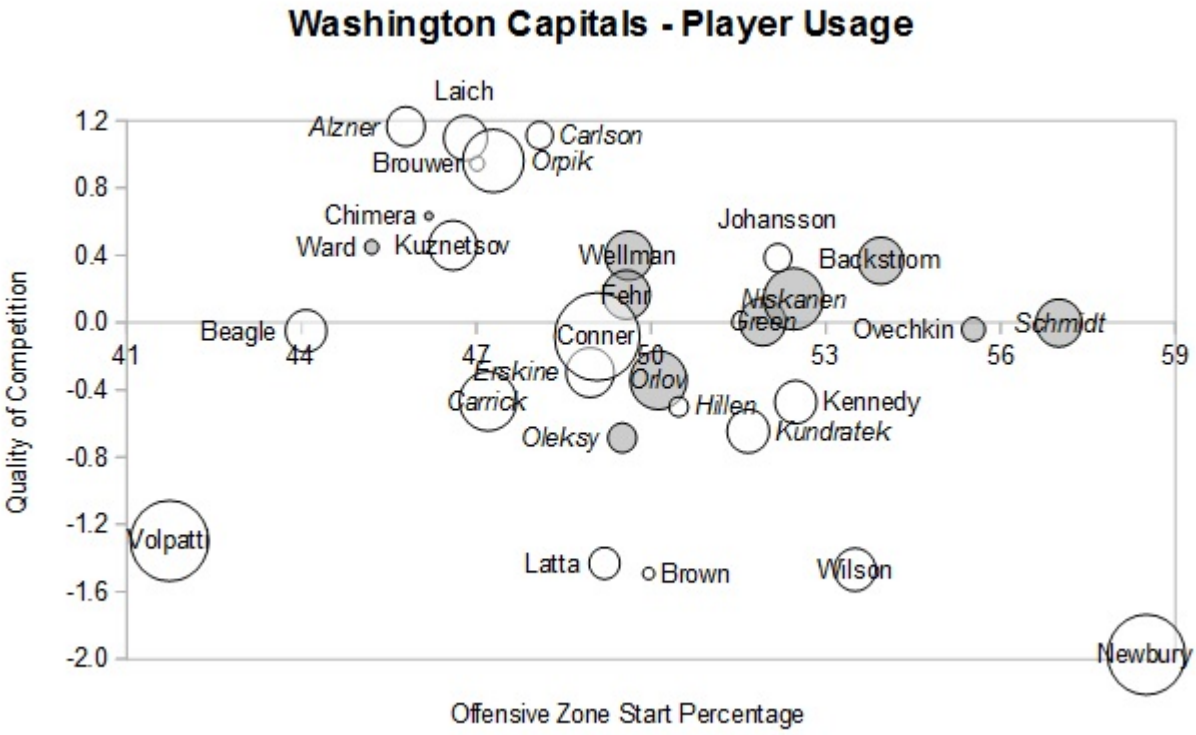


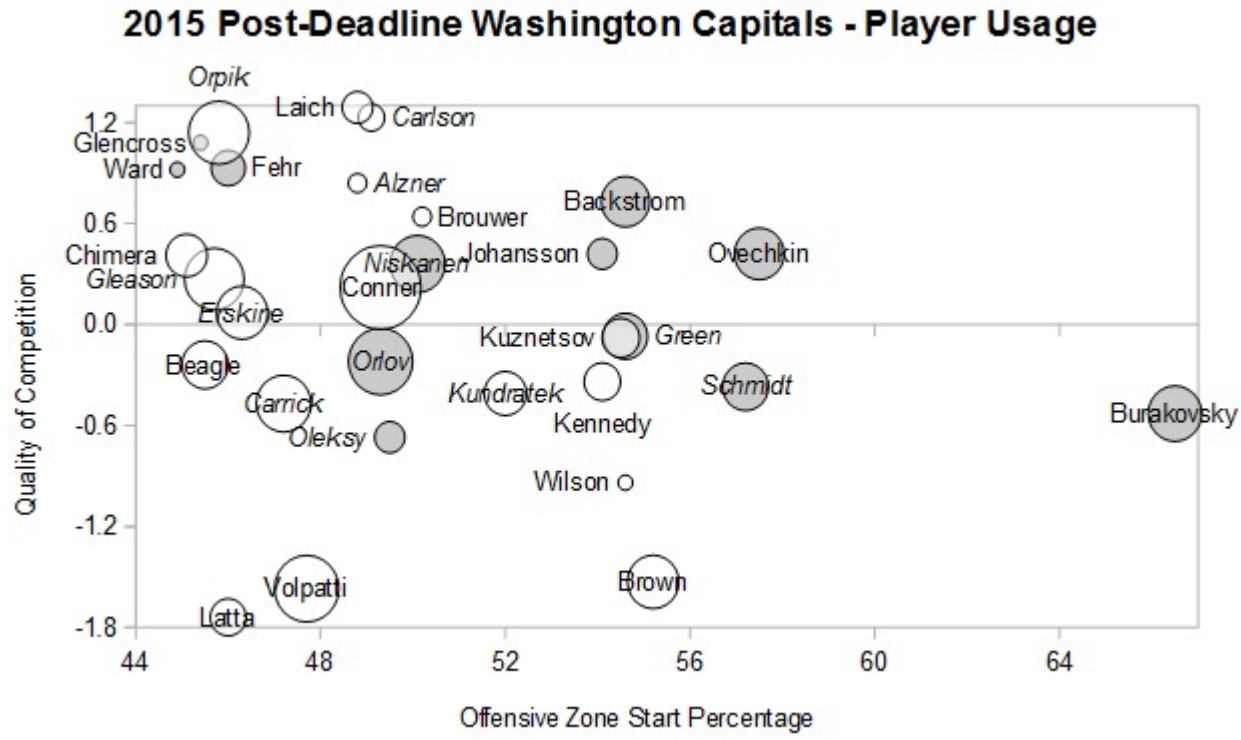
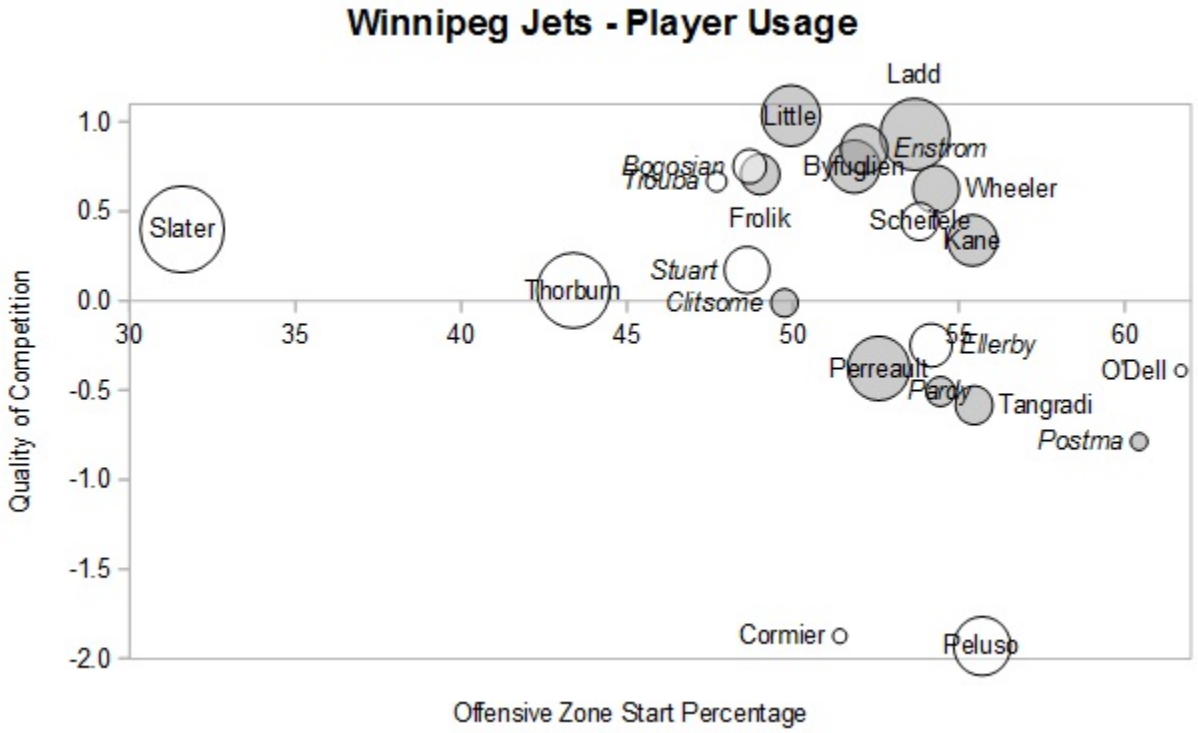
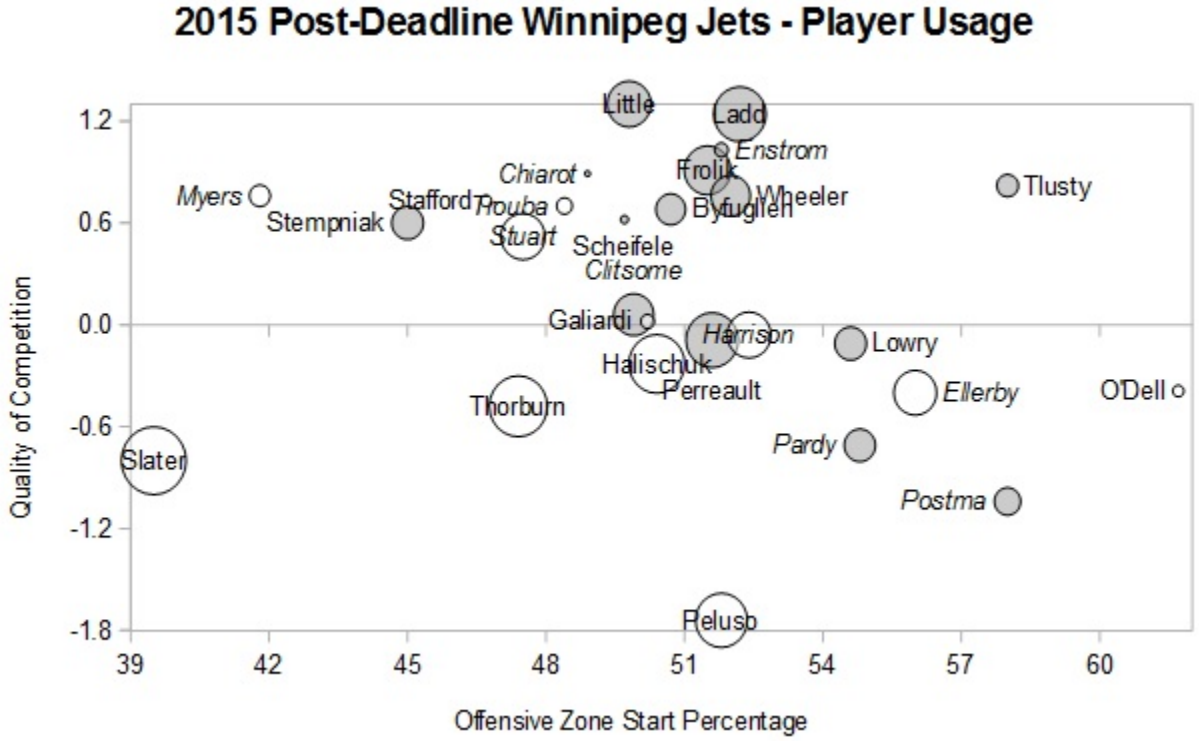
Vancouver Canucks





Washington Capitals





Winnipeg Jets