Packing Rate Metric

Packing: The Essentials

- Packing was invented by former Bayer Leverkeusen teammates Stefan Reinartz and Jens Hegeler.
- It is a system that assigns numerical values to effective moments of play.
- The more players that are taken out by a pass or dribble, the higher the score.
- The total number of opponents out-played by a team is called the Packing Rate.
- Real Madrid's Toni Kroos was the most successful 'Packer' at the Euros, taking out an average of 82 opponents per game.
- It was first used as an on-screen metric during the Euros by German broadcaster ARD.
- The software is being developed by Cologne-based company IMPECT.

Positive Notes:

- "The correlation between getting the ball past opponents and winning is between 0.3 and 0.4," Reinarzt explained, "with one being a 100 percent correlation. If you then drill down into the numbers of defenders that were taken out, the correlation rises to 0.6, which is statistically very significant." (1)
- Out of 51 games at France 2016, 34 were won by teams with higher Packing numbers for getting past defenders. Fourteen of the remaining 17 games were drawn, and only three games were lost by those who got beyond defenders more often than their opponents. (1)
- packing represents a great jump forward. I'm looking forward to finding out if they have plans to back test the metric and prove a long-term correlation between sending defenders packing and winning a game. (2)
- Its popularity comes predominantly down to its intuitiveness. Where more complicated metrics can alienate in their codification and complicated statistical methods, this is a fairly comprehensible way of coding something in football terms. That has value, especially when it comes to selling to football people.(3)

- But Impect metrics can totally tell you who played "better" and "should" have won or not lost, which could be huge on many levels.(4)
- Keppler said: "There will always be scouts to do the final checks but the data really helps with pre-selection." (5)

Negative Notes:

- Like other analytical tools, Packing will never fully supplant traditional scouting and non-quantitative analysis. (1)
- For Euro 2016 data that I kindly received a sample of, I found around 70% of the variation in 'average outplayed opponents', effectively the mean amount of times a player 'takes out' other players per 90, could be explained in a linear regression model with only forward passes and successful dribbles per 90 as inputs. These aren't complicated or unintuitive metrics, rough proxies for 'verticality', and yet they can explain a significant portion of the Packing numbers. That isn't great.(3)
- Another version of Packing looks only at the amount of defenders taken out by players. Using another regression model with only passes and dribbles in the box per 90, 50% of the variation in these player values can be explained. Again, these are really simple metrics explaining a lot of what is meant to be unique insight.
- With event data, it is sometimes forgotten that although something is not explicitly measured, this doesn't mean that it is totally ignored. When players are passing forwards or successfully dribbling, they are implicitly taking players out of the game. Another example is that although Opta shot data doesn't include defensive pressure, there is an implicit relationship between how close you are to the goal and the likely amount of pressure you face to take a shot; caveats, like whether or not an attack is a counter attack, also carry implicit connotations about the amount of pressure faced.
- Any metric being marketed as a one-hit solution to football analytics is going to be a disappointment, as they can't really exist in a game this complicated. (3)
- While the sample size Impect has analysed so far proves that their system is more accurate than anything we've seen before, it still can't predict outcomes – it's descriptive, rather than predictive.(4)
- It may be better than the old stats, but a backward pass can be very valuable. Think of the striker that bounces the ball back to an incoming midfielder. Where it comes to general field play the theory is correct, but

when it gets to creating chances it is still very imperfect. Because a ball doesn't have to be past a defender for that defender to be beaten, as in the case of a successful bounce pass. (4 comments)

References:

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