Bisnode predicts the winner of the world cup 2018 will be...

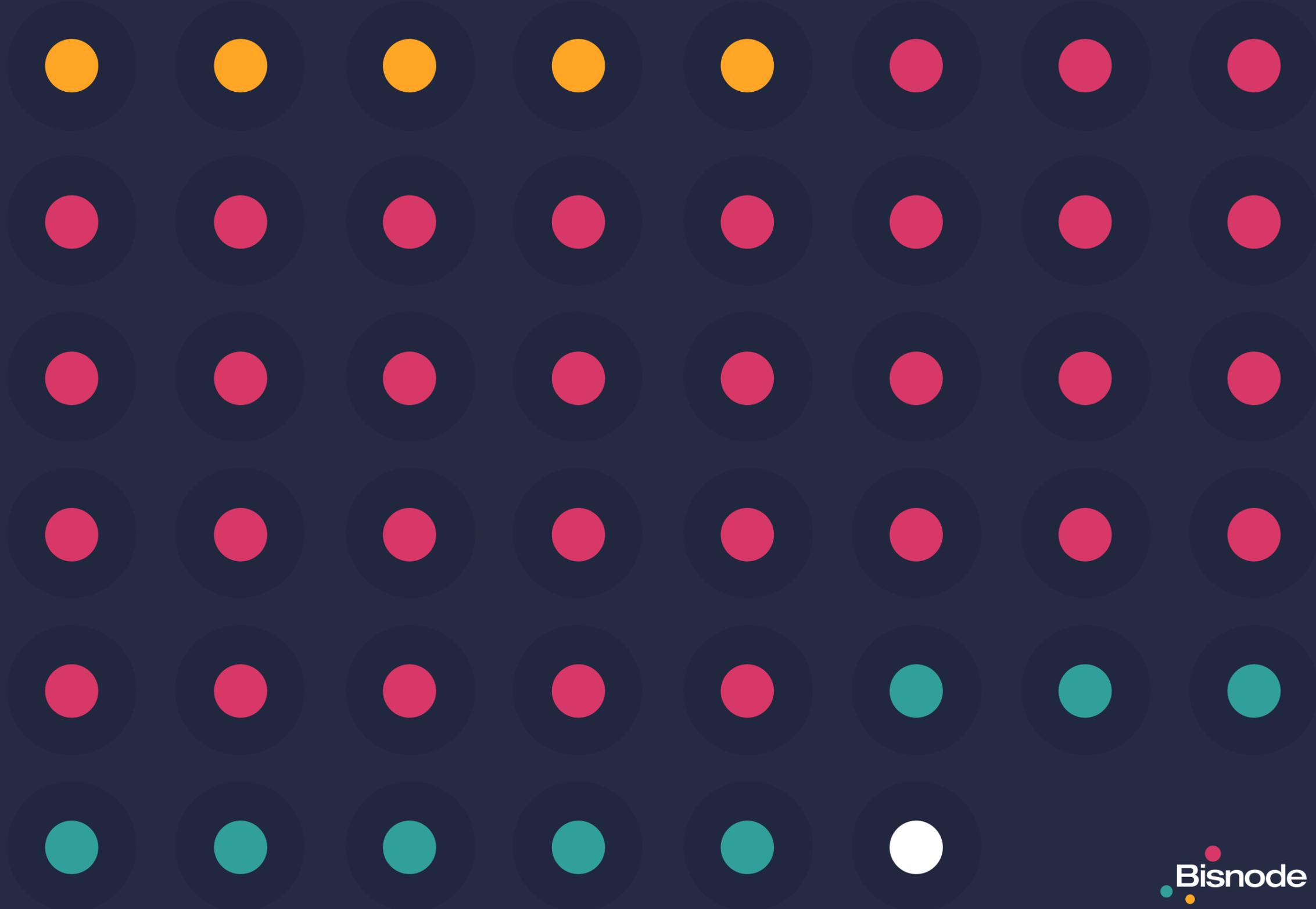Bisnode

The challenge

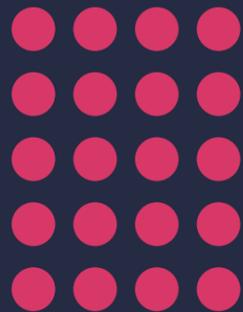**5 confederations**
32 countries
8 groups
1 winner

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METHODOLOGY
Predicting football results with machine learning

We used machine learning, the subfield of computer science that "gives computers the ability to learn without being explicitly programmed". Evolved from the study of pattern recognition and computational learning theory in artificial intelligence, machine learning uses algorithms that can learn from and make predictions based on data.

We used data mining, a particular analysis technique that focuses on detecting patterns and trends in data, to feed the predictive model and rank the teams.

*See the following page for a full explanation

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Methodology in detail

Bisnode Group Analytics joined forces with local analytics teams to use data science and machine learning capabilities to predict which national team will win this year's big football competition. By leveraging all historical data about national team games over the past 4 years, we have developed a model that estimates the probability of a win, draw or loss, as well as goal difference for any future game between the national teams involved in the competition.

Our first objective was to develop a model able to predict the result of a single game, based on the teams' characteristics. The second objective was to determine the most likely scenario for the competition and other derived statistics by running large-scale simulations, considering the specifics of the tournament.

This first model was based on historical data regarding type of tournament, the location of the game, the score, etc. Team ratings were fed into an advanced machine learning model using a technique known as eXtreme Gradient Boosting to calculate probable outcomes for each game.

Using this predictive model, we ran simulations for the actual games that will take place. By generating millions of simulations, we derived probabilistic information associated to any team reaching any stage of the tournament. Our approach not only allowed us to estimate the probability of a team reaching a certain stage, but it also provided the most likely scenario for the entire tournament, as well as the overall chance for each team to lift the cup.

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Probability of each team winning the tournament (%)

16.37	15.87	10.50	7.51	6.69	6.42	4.54	4.36
1. Brazil	2. Germany	3. Spain	4. Portugal	5. Argentina	6. France	7. England	8. Belgium

4.31	2.80	2.51	2.10	2.05	1.91	1.84	1.58
9. Colombia	10. Uruguay	11. Peru	12. Croatia	13. Switzerland	14. Mexico	15. Poland	16. Iceland

1.11	1.34	1.10	1.01	0.73	0.65	0.49	0.31
18. Sweden	17. Russia	19. Iran	20. Denmark	21. Costa Rica	22. Senegal	23. Serbia	24. Australia

0.36	0.30	0.27	0.26	0.21	0.16	0.13	0.12
25. Japan	26. South Korea	27. Nigeria	28. Panama	29. Egypt	30. Morocco	31. Tunisia	32. Saudi Arabia

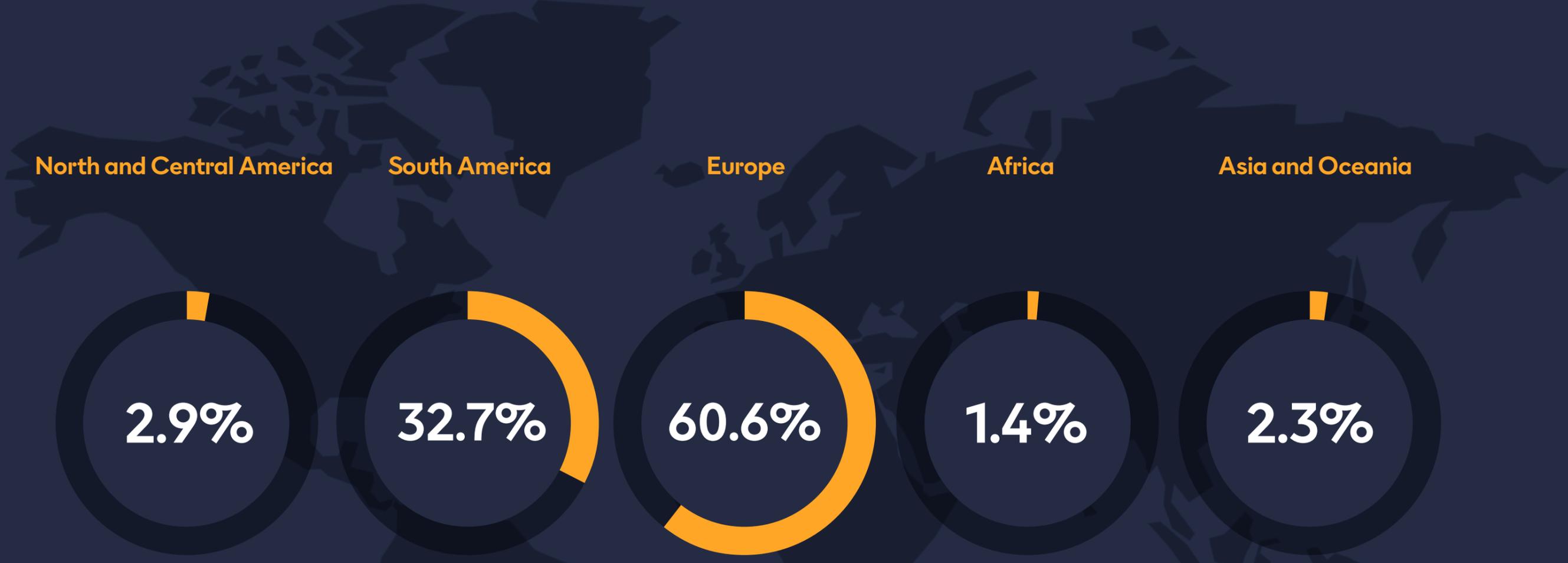There is a 50% chance that the winner will come from the top 4 teams in our ranking and an 80% chance that it will come from the top 10.

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Number of countries per confederation

North and Central America	South America	Europe	Africa	Asia and Oceania
9.4%	15.6%	43.8%	15.6%	15.6%
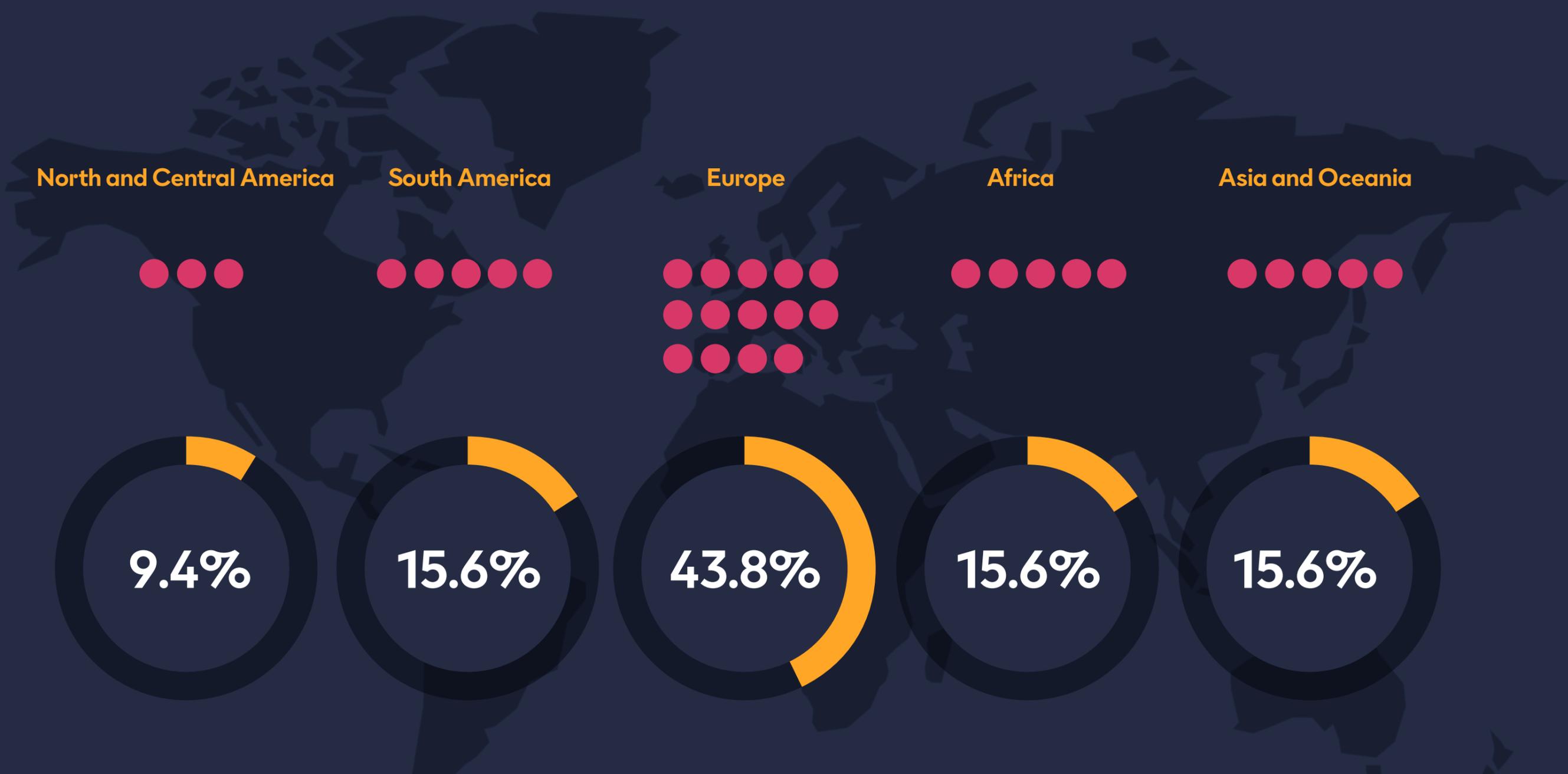
The European football confederation is contributing
more teams than any other

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The probability of the winning team emerging from each confederation is as follows:

North and Central America

2.9%

South America

32.7%

Europe

60.6%

Africa

1.4%

Asia and Oceania

2.3%

The probability of a team that isn't European or South American winning the competition is less than 7%. This is no surprise as each of the 20 competitions played to date have been won by a team from one of these two regions (11 victories for Europe, 9 for South America).

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8 groups

A	B	C	D	E	F	G	H
Uruguay	Spain	France	Argentina	Brazil	Germany*	England	Colombia
Russia	Portugal	Peru	Croatia*	Switzerland*	Mexico	Belgium*	Poland*
Egypt	Iran	Denmark*	Iceland	Costa Rica	Sweden*	Panama	Senegal
Saudi Arabia	Morocco	Australia	Nigeria	Serbia*	South Korea	Tunisia	Japan

*More info on the next page

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Bisnode operates in multiple European countries and 8 of those countries will take part in the competition. Germany represents our best chance of victory, followed by Belgium and Croatia.
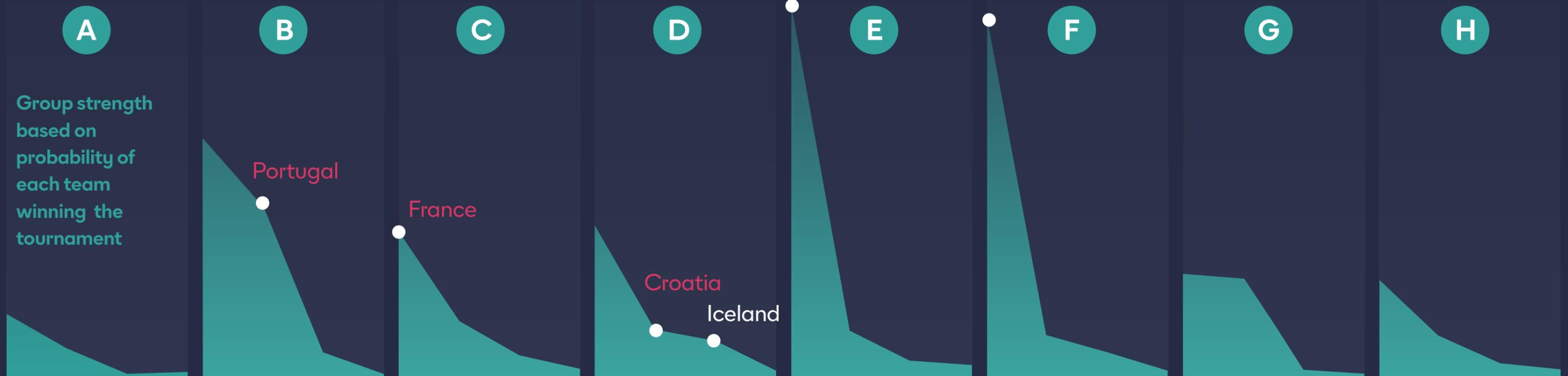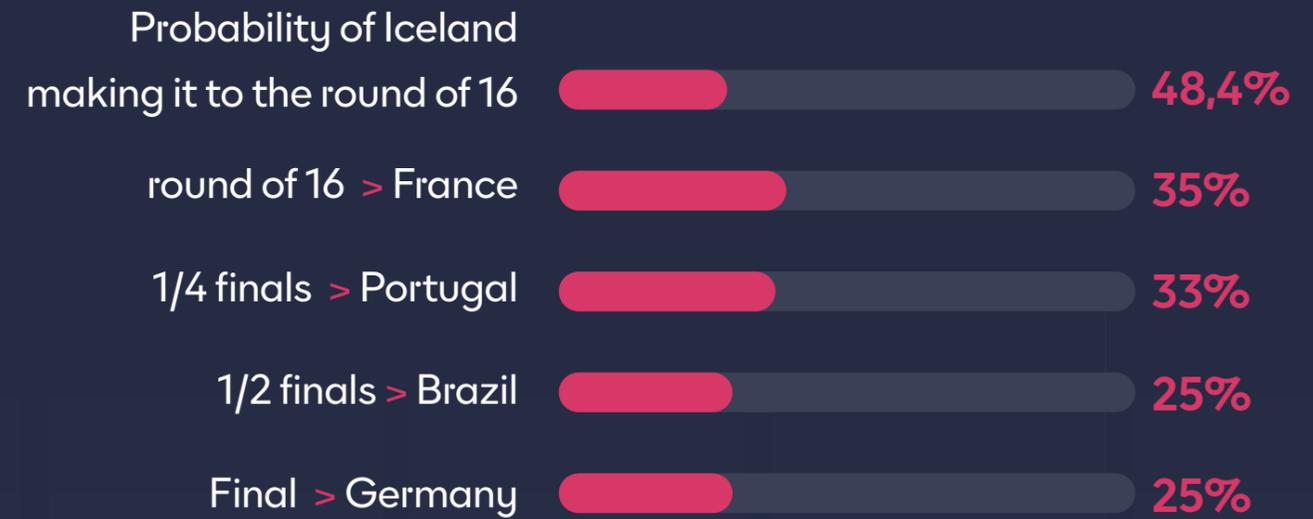
30%

According to our calculations, there is a 30% chance that a Bisnode country will win the competition.

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Can Iceland exceed expectations again?

To win the competition, Iceland would have to complete a succession of unlikely achievements.

Together with Panama, Iceland will be one of two countries playing in the competition for the first time. Iceland also claims the distinction of being the smallest country (in terms of population, aprox. 334,000) ever to qualify. Iceland will, however, have a hard time getting out of the group stage. Iceland will most likely compete with Croatia for second place, while Argentina should win the group. We estimate the probability of Iceland making it to the round of 16 at 48.4%, compared with 52.2% for Croatia.

Probability of Iceland making it to the round of 16	**48,4%**
round of 16 > France	**35%**
1/4 finals > Portugal	**33%**
1/2 finals > Brazil	**25%**
Final > Germany	**25%**

A   B   C   D   E   F   G   H

Group strength based on probability of each team winning the tournament

Portugal

France

Brazil

Germany

Croatia

Iceland

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Probability of each team making it to the knock-out stage

A
Uruguay	71,38	
Russia	60,24	
Egypt	36,43	
Saudi Arabia	31,93	

B
Spain	73,91	
Portugal	67,47	
Iran	37,8	
Morocco	20,8	

C
France	70,95	
Peru	55,92	
Denmark	41,44	
Australia	31,67	

D
Argentina	71,02	
Croatia	52,27	
Iceland	48,47	
Nigeria	28,22	

E
Brazil	83,73	
Switzerland	49,74	
Costa Rica	35,32	
Serbia	31,19	

F
Germany	82,3	
Mexico	49,98	
Sweden	41,09	
South Korea	26,61	

G
England	69,84	
Belgium	69,29	
Panama	33,04	
Tunisia	27,81	

H
Colombia	69,83	
Poland	55,82	
Senegal	40,83	
Japan	33,5	

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round of 16

Uruguay	Croatia	Mexico	Poland	Russia	Peru	Switzerland	Colombia
Portugal	France	Brazil	England	Spain	Argentina	Germany	Belgium

1/4 finals

Portugal	France	Brazil	England	Spain	Argentina	Germany	Belgium

1/2 finals

Portugal	Brazil	Spain	Germany

Final

Brazil	Germany

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BRAZIL

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