



ZEF method

Introduction

What is ZEF-method and why to use it?

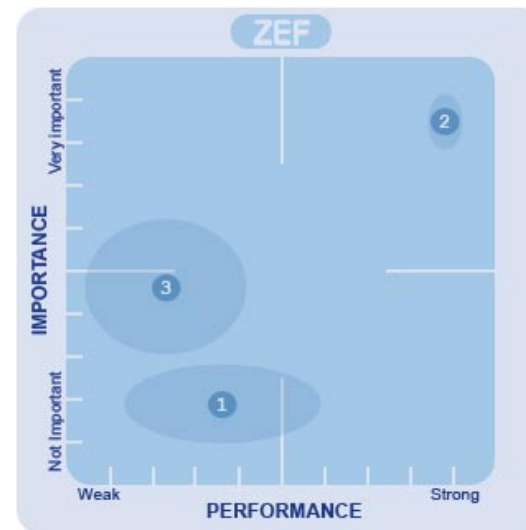
ZEF-method is a way to process survey results from absolute into normalized results. The combination of letters ZEF stands for Z-scored Electronic Feedback. As the name indicates, the ZEF-method is based on z-scoring, which is used in processing the survey results. Z-scores are standardized deviations from their means and they always have a mean of 0 and a standard deviation of 1. The standardized e.g. normalized values provide a way of comparing results without opinion distortion. The report tables below illustrate the difference between absolute and normalized results.

The number illustrates the average score and the bluish grey area the deviation.

Absolute result

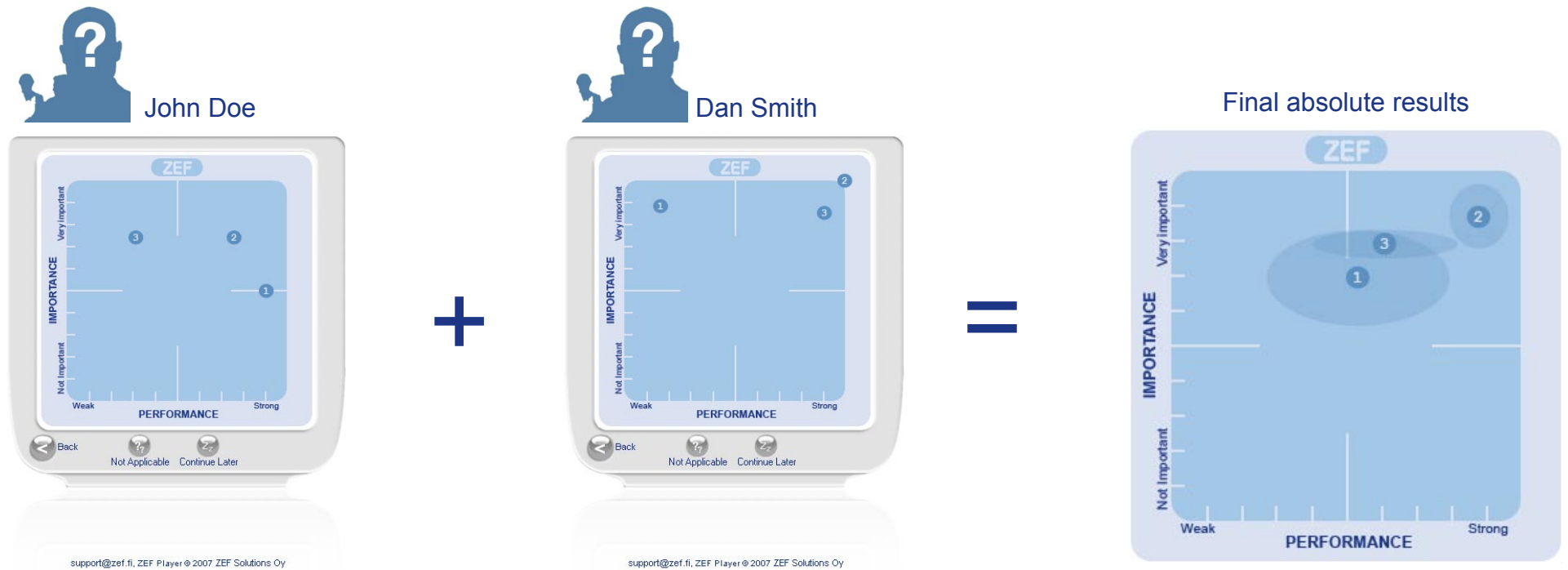


Normalized result



Absolute results

In absolute result table the average response scores are reported according to exact responses.

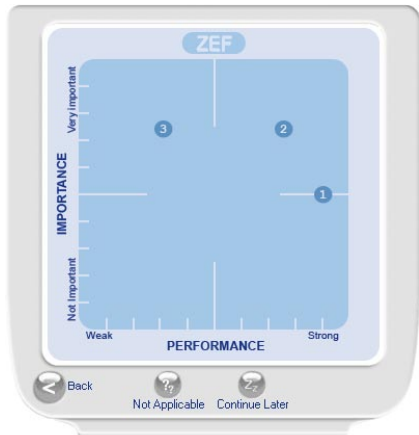


Normalized results

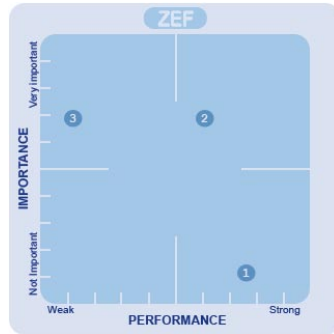


John Doe

John's normalized answers



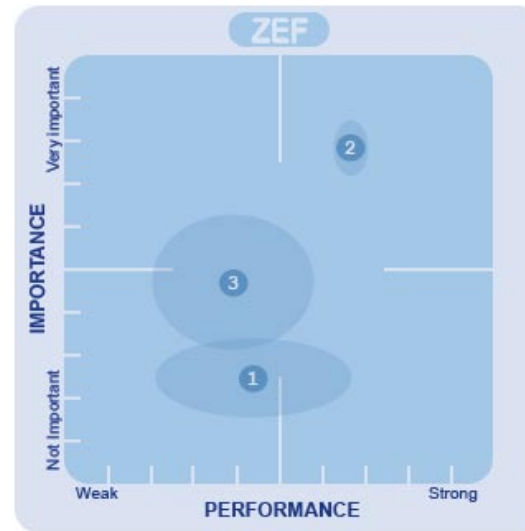
1.



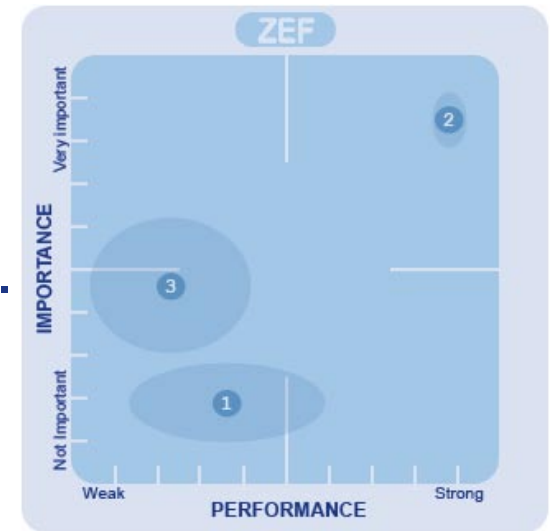
Average points for John and Dan's normalized answers

Final normalized result

2.

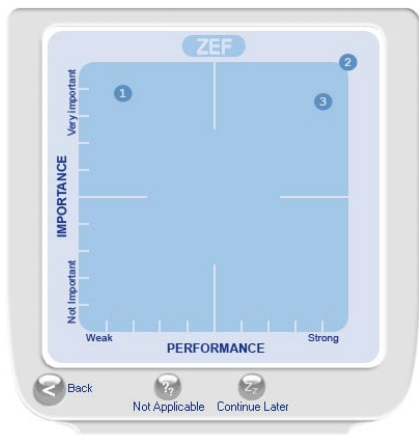


3.

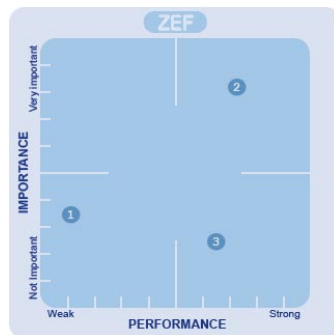


Dan Smith

Dan's normalized answers



1.



The automatic calculating process is done in three steps:

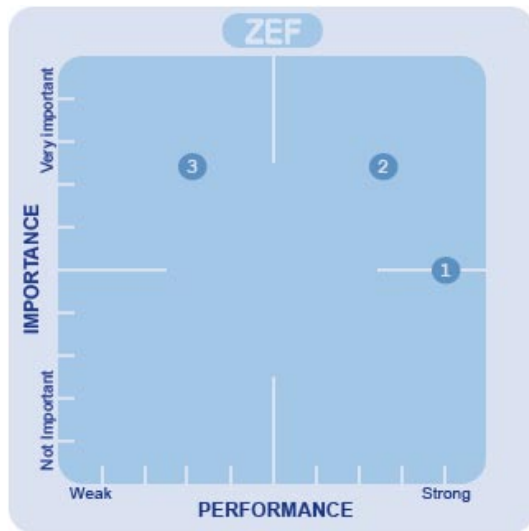
1. All the separate answers for each individual evaluator are normalized by using the z-scoring.
2. The average points for the normalized answers are calculated.
3. The average points are normalized by using the z-scoring.

Learn more about the three steps of the calculating process on the following pages.

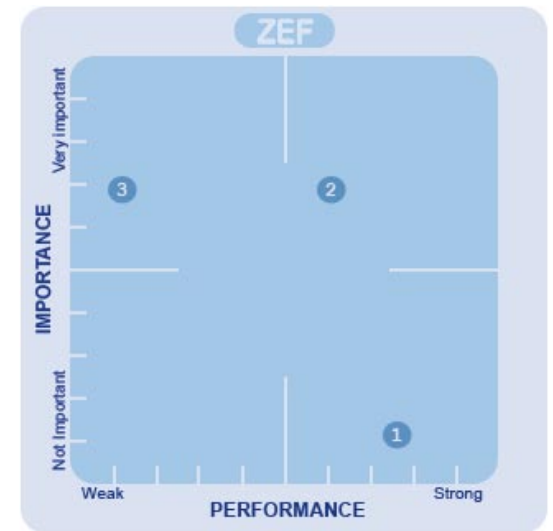
Step one

You can see our example evaluator John Doe's answers on left. On the right there are John's normalized answers. The tables in the middle illustrate the z-scoring process, which is done for all the separate answers for each individual evaluator.

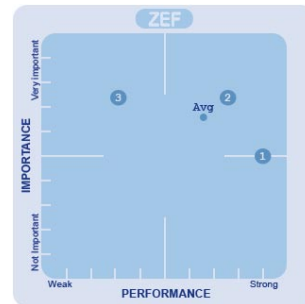
Here are John's answers.



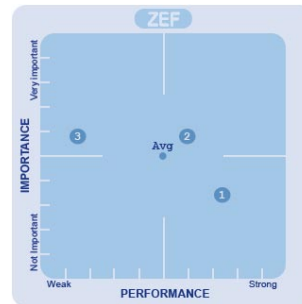
Here are John's z-scored answers.



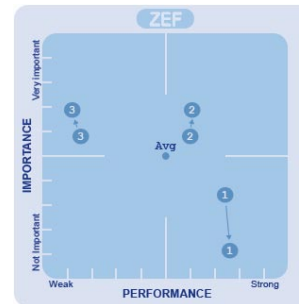
1.



2.



3.

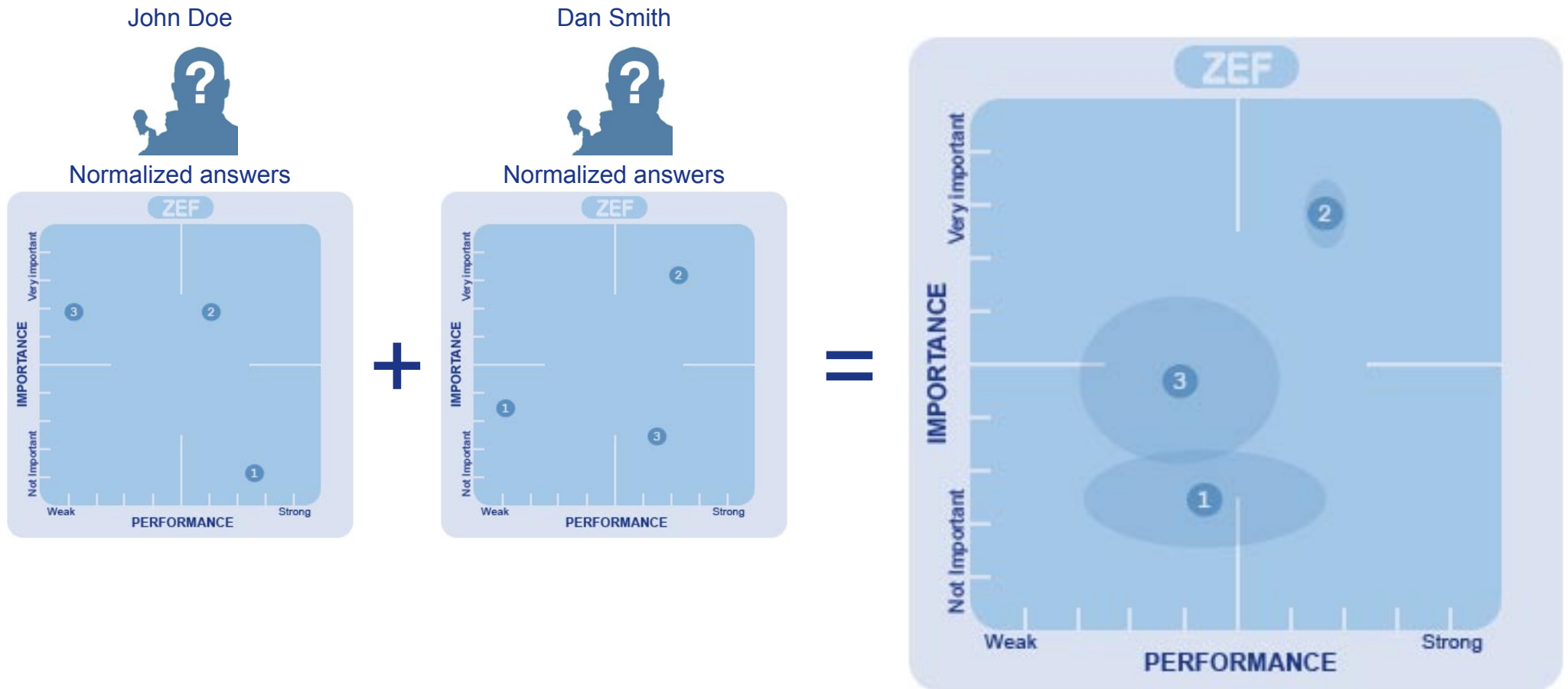


What is done in z-scoring process?

1. The average points for the answers are calculated
2. The average is placed in the middle of the table, i.e. the distribution is centered so that the mean value is 0.
3. The values are spread out on the table, i.e. the distribution is normalized.

Step two

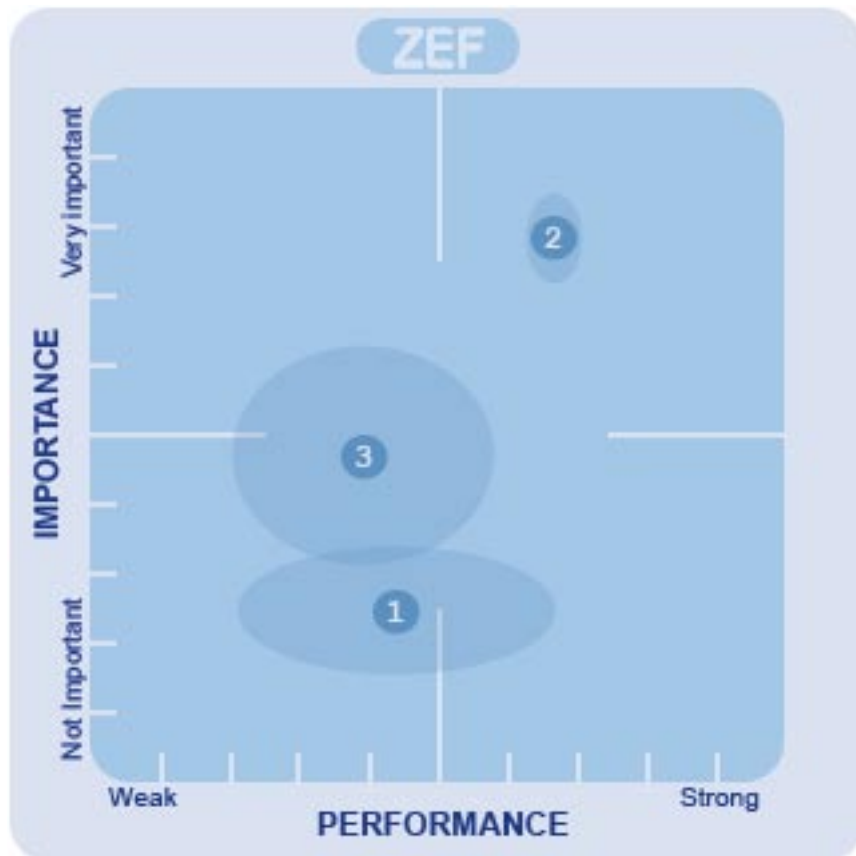
After step one we only have z-scored i.e. normalized answers for each individual evaluator. In step two we will calculate average points from these normalized answers. The bluish grey area shows the deviation after summing up the answers.



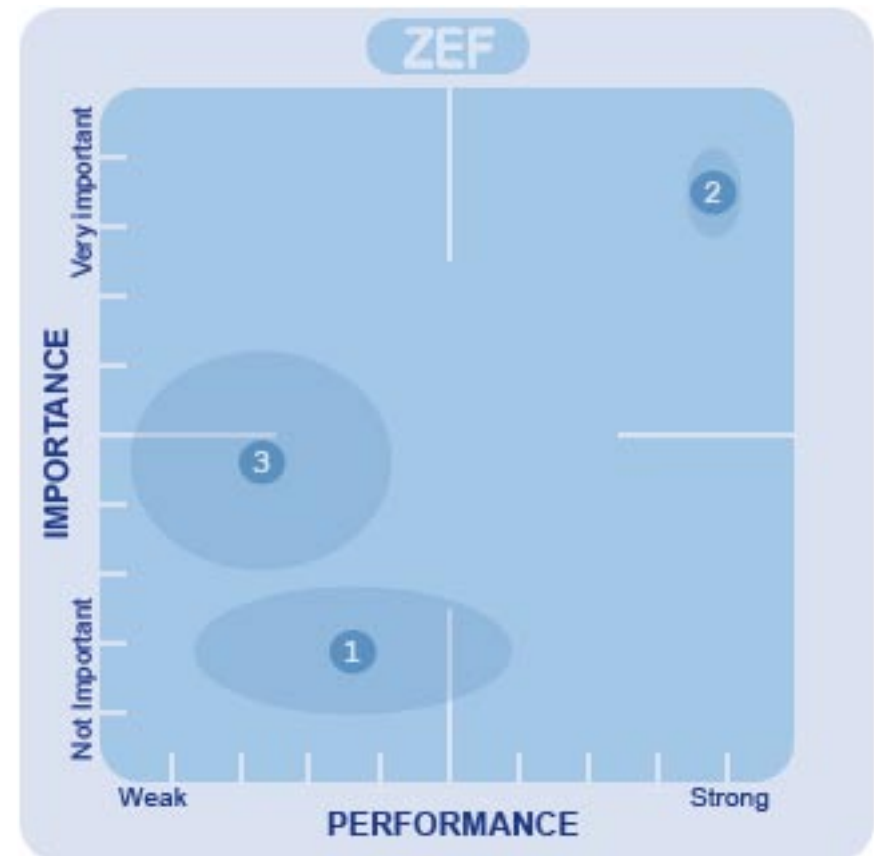
Step three

In step three the total average points calculated in step two are processed with z-scoring. The deviation doesn't change under this step.

Here are the total normalized average points as calculated in step two.



Here are the final normalized results after z-scoring.



What happens in z-scoring process?

1. The average points for the answers are calculated.
2. The average is placed in the middle of the table, i.e. the distribution is centered so that the mean value is 0.
3. The values are spread out the table, i.e. the distribution is normalized.