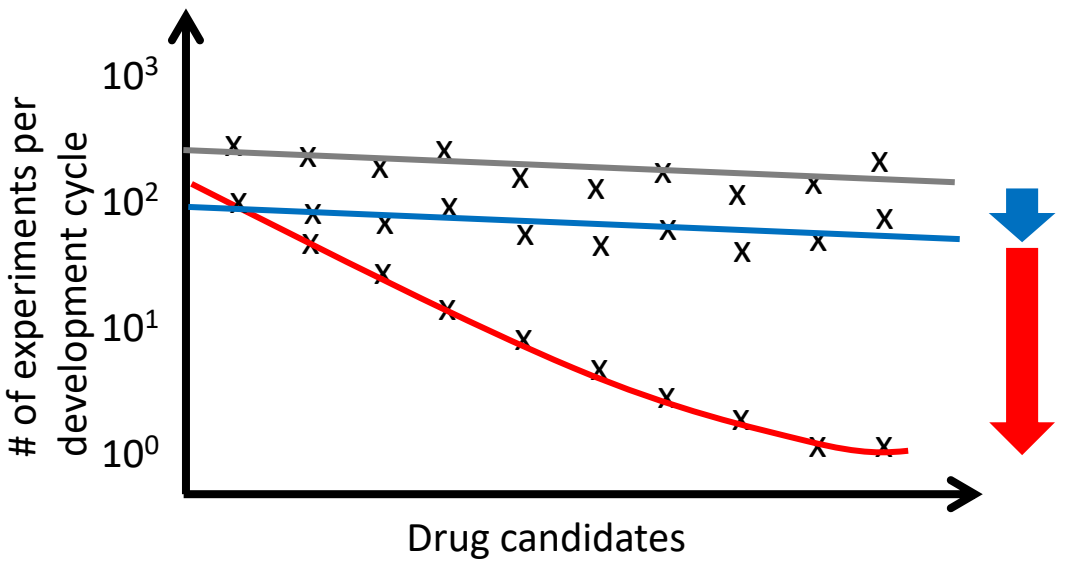
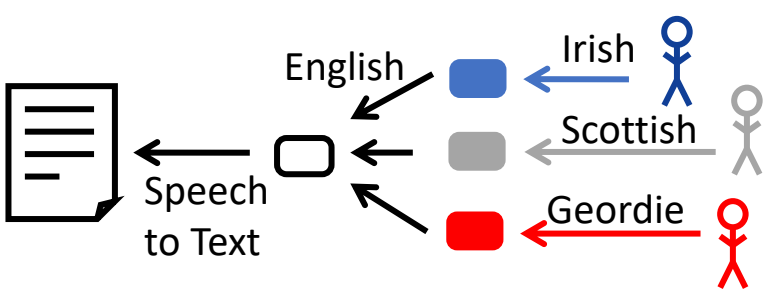
Knowledge transfer by a novel embedding method
Cell-line transversal upstream bioprocess data analysis & modeling

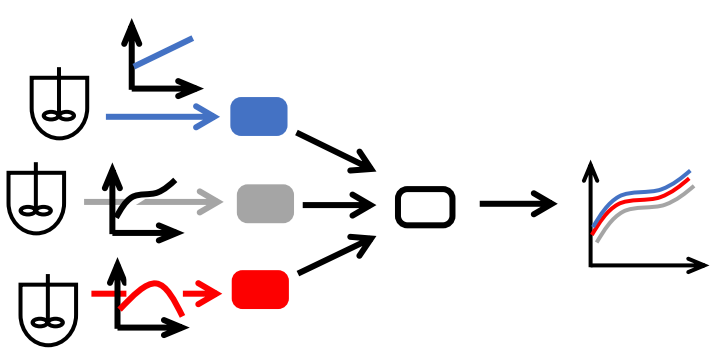
C. Hutter, M. von Stosch, N. Cruz Bournazou, M. Sokolov, A. Butté - *DataHow AG*



Without knowledge transfer de novo development of the process for every drug. With knowledge transfer accelerated development become possible.

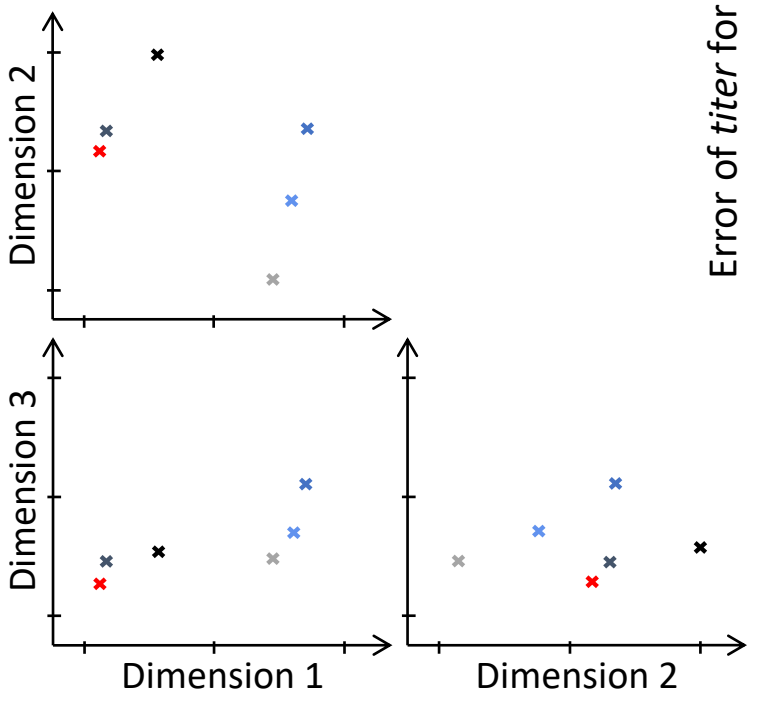
A vector embedding technology was adopted that was inspired by language processing.

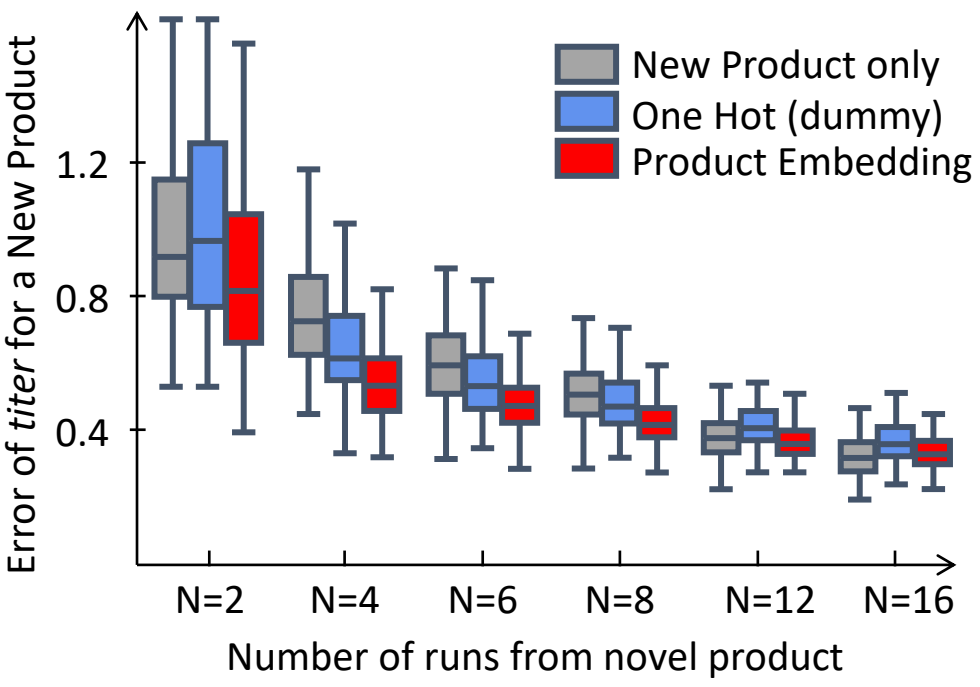




The developed embedding method allows to model & analyze processes of different product or cell-lines together.

Comparing performances of a method trained on novel runs (new product only) and the one-hot & embedding method with historical data of 5 products.





Analysis of the vector embeddings allows a quantitative assessment of the similarities of the process behaviours.

Conclusion: With embedding method fewer experiments are required for a new cell line/product to predict/understand its behaviour. Its vector embedding provides information about its similarities to ”historic cell-lines.