NNBI

Transforming Clinical Data in Practical Solutions

Abstract

Development of mathematical algorithms that allow doctors to know what will happen to patients and incorporate this knowledge into an application/software to predict diseases.

NNBi

Co-funded by the
Erasmus+ Programme
of the European Union

Introduction

The medical industry has faced a great number of obstacles to admit the revolution Industry 4.0 is. Digitalization, among other elements of Industry 4.0 is transforming healthcare and consequently, fostering the emergence of companies with innovative digital solutions, but there is still a very long way to run to maintain competitiveness in health companies. The implementation of computerized medical records began in Spain in the late 1990s, but the industry had to wait until early 2014 to have the first clinical center to reach level 7 of the Society of Health Information and Management Systems (HIMMS) 1 . Nonetheless many health organizations, institutions and centers are still working and storing all their information in paper. NNBi develops mathematical algorithms using Artificial Intelligence to improve doctor's predictions about important illnesses but fases, of course, important obstacles and challenges to get and organize all this information to put it to good use.

Challenges

Although some changes have been put to motion in the medical industry the main obstacle is, as it usually happens, lack of information about all the benefits Industry 4.0 can bring, but the industry faces a great deal of other issues that need to be solved. On the one hand, it has been revealed that obtaining and collecting the data for its organization and for its reasonable compilation in one system is one of the hardest things to accomplish. Hospitals and clinics have been collecting information for a long time, but this information has been written down in many different ways and of course it is documented on paper, so the data is not clear and for quite some time has been a nebula.

"

We need to standardize formats and make the sector aware of the benefits of digitization…

All this indicators: sex, age, height, weight, blood pressure, allergies, food restrictions… and hundreds of variables have been mixed up and collected in different formats. For all the above there is enough evidence to admit that around 80% of the job before the industry explores other elements of Industry 4.0 is digitalization of the information.

▶ Transforming clinical data in practical solutions

On the other hand sanitary professionals are reluctant to adopt technologies in their everyday life. This sector is divided into different categories and these categories respond, in many ways, to the number of years of expertise of its professionals. There is a great difficulty here but paradoxically is not developing the mathematical algorithm that will predict, in a very precise way, great number of diseases. The challenge is helping professionals understand the benefits and improvements for them and their patients, technology can bring. This sector is divided into different categories and these categories respond, in many ways, to the number of years of expertise of its professionals.

How will you solve the problem?

Continuing their own business roadmap, NNBi is betting on its own methodology and product. NNBI has developed their own easy- to -use data collection platform and they assist in the complete data collection process, from the design to the necessary pre-processing for the correct analysis. In addition, they carry out the monitoring, analysis and interpretation of the data generated. They develop their own mathematical algorithms that allow to make the most of the knowledge generated and incorporate this knowledge into an application / software to guarantee its applicability. Through machine learning they develop personalized medicine and create predictive models by learning from previously studied patients, helping the specialist to anticipate different situations. With Big Data the platform integrates gigantic and varied amounts of information achieving a more effective, personalized, participatory, predictive, preventive, and population medicine and by mathematical modeling and simulation technique (creation of virtual patients) they predict the pharmacokinetics and pharmacodynamics demand for each type of patient.

References

- Reference 1 https://www2.deloitte.com/es/es/pages/operations/articles/digitalizacion-sector-salud.html

- Reference 2 https://nnbi.es/productos/

- Reference 3 http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1024-94352008000500