"I-BiDaaS Application to the Financial Sector" Workshop

Dr. Ramon Martin de Pozuelo, CaixaBank

During the Experimentation phase of the I-BiDaaS project, the virtual workshop "I-BiDaaS Application to the Financial Sector" was successfully organized on 22nd June 2020, under the coordination of Dr. Ramon Martín de Pozuelo, Project Manager at Security Innovation and Transformation team of CaixaBank. The workshop's participants were mostly professionals in the Big Data, data science, and related domains employed at CaixaBank or collaborating with the banking entity. There were more than thirty (30) virtual attendants representing three (3) different departments of CaixaBank as well as six (6) other entities that work in the financial sector. The workshop aimed to showcase the potential usage of the I-BiDaaS Solution and its tools and technologies in real-world scenarios and use cases from the banking sector.

The workshop included several presentations. Dr. Dusan Jakovetic, I-BiDaaS Scientific & Technical Manager, started with an overview presentation of the I-BiDaaS project, including the motivation behind I-BiDaaS, the project's vision, and its applicability to different sectors.

Then, a presentation of the requirements in the financial/banking sector relevant to I-BiDaaS was held by Dr. Ramon Martin de Pozuelo, explaining the current challenges in the banking sector with regards to Big Data analytics and the need of more agile but secure and data privacy-preserving infrastructure relying on the cloud.

Dr. Dusan Jakovetic followed with a more in-depth presentation of the I-BiDaaS architecture and its core technologies, with an emphasis on how it successfully addresses the banking sector requirements.

After that, Dr. Ramon Martin de Pozuelo continued the presentation, specifying the three different use cases in which CaixaBank has been working in the project with the rest of the I-BiDaaS partners. The use cases were presented in chronological order as they were deployed in the platform and were the following:

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- ***Analysis of relationships through IP addresses***

The first objective for CaixaBank through its participation in I-BiDaaS (and through this use case) was to validate the usage of synthetic data and the usage of external platforms for big data analytics. It was deployed in the context of identifying relationships between customers that use the same IP address while they connect to online banking. CaixaBank stores information about its customers and the operations they perform (bank transfer, checking accounts, etc.) using channels such as mobile apps or online banking. The results of this experiment were presented, validating the usage of synthetic data for specific situations, especially in the deployment of fast and agile proofs of concept of new tools and methodologies. It was also proved to be an interesting approach for testing the performance of new IT and big data analytics solutions without the need of totally integrating them into the banking infrastructure, which indeed generally leads to more prolonged and arduous internal processes.

- ***Advanced Analysis of bank transfer payment in financial terminal***

The second use case in which CaixaBank focused its efforts on detecting the differences between reliable transfers and possible fraudulent cases performed at bank offices, mainly when the transfer is processed outside the regular working hours of the office. Therefore, the goal of this experiment was to test the efficiency of the I-BiDaaS solution in the context of anomaly detection in bank transfers from employees' workstations. In this case, to detect anomalies, the generation of real but non-sensitive data was needed. The process of collecting all the data related to the bank transfers (customers, employees, bank office, etc.) and generating non-sensitive tokenized data from the real data was explained, giving some guidelines to consider for performing big data analytics outside the premises of the bank, but securely.

- ***Enhance control of customers to online banking***

Finally, the last use case about how to analyse mobile-to-mobile bank transfers ordered through online banking (web and application) was presented. This use case focuses on the assessment that the controls applied to authenticate a user are applied adequately (e.g., second-factor authentication) according to PSD2 regulation and depending on the context of the bank transfer. It is another example of how to perform secure big data analytics on the cloud, outside the bank's infrastructure, by applying I-BiDaaS pre-encoded clustering algorithms. This provided a clear example of the self-service solution that I-BiDaaS offers, showcasing how experts and non-expert end-users can speed up or enhance the tasks performed by data scientists.

In summary, during the presentation of all use cases defined for the financial sector, it was indicated to the attendees how I-BiDaaS could be an agile self-service

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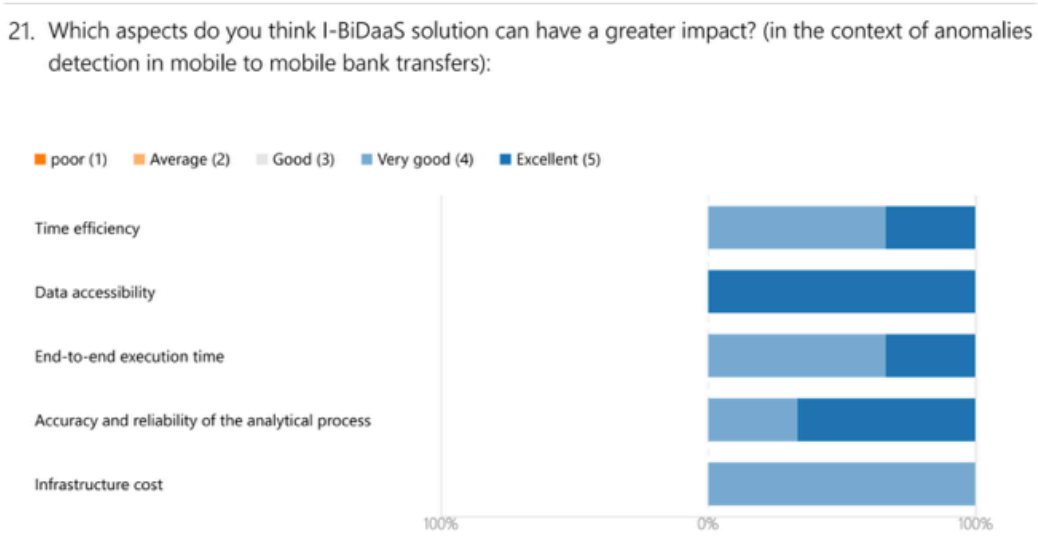
solution for big data analytics that they can easily adapt for developing algorithms with synthetic/tokenized data and for tool performance testing or proof-of-concepts' validation on the cloud. This way, they could benefit from bypassing CaixaBank's strict internal security and privacy validation procedures, while still proceeding with secure data analytics without sensitive data leakage concerns.

Finally, the workshop included a hands-on session led by Dr. Vassilis Chatzigiannakis, Technical Director of ITML. During this session, the participants had the opportunity to access the I-BiDaaS online platform and perform experiments in the self-service mode.

The workshop participants were impressed by the work performed by the I-BiDaaS Consortium. They stressed their interest in the final solution to be considered as a new tool in the big data analytics portfolio they are using inside CaixaBank. Moreover, CaixaBank's personnel responsible for the Big Data analytics tools were interested in the cost of the solution and the type of license the final solution will be commercialised, to compare it with the existing tools the bank is using. The external data scientists and attendees from consulting companies focused their attention on the self-service capabilities of the I-BiDaaS Solution and the cost of the data pre-processing required for secure data extraction to be able to work with the I-BiDaaS platform without the constraints of a large and complex infrastructure as CaixaBank's.

The attendees' feedback regarding the I-BiDaaS Solution was considered valuable for the Consolidation phase of the project. Thus, a detailed questionnaire designed explicitly for this workshop was shared. Part of the questionnaire results is presented in Figure 1 below.



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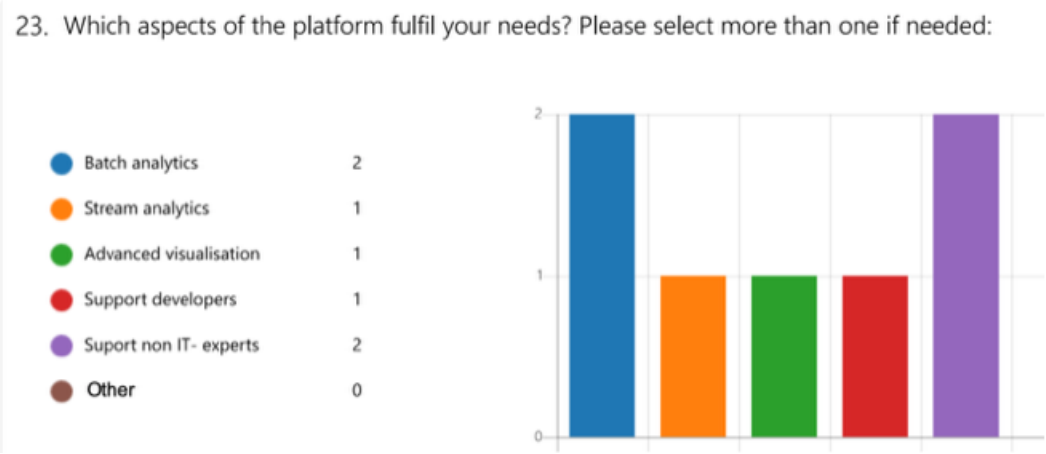

Figure 1: CaixaBank Workshop results

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