NED University of Engineering and Technology

Final Year Project Showcase for Batch-2016

		Department of Software Engineering
1	**Project Idea**	The data marketplace is a platform where users advertise the data they possess. People who are interested in that data contact the seller, pay the amount for the particular data set and get access to that data. Our project implemented this process in a faster, secure and efficient way using IOTA tokens. The buying and selling transactions are performed using a cryptocurrency called IOTA. The time stamped data is also stored on the IOTA's tangle to ensure trust and immutability of Data. Access to the data set would be granted to the buyer as soon as the transaction is successfully completed.
2	**Process**	At first the owner of the sensor would have to sign up on the application and register the sensor on the platform. After that the owner can configure his/her microcontroller according to the specifications of the sensor to push data to the Tangle. For health-related data, the user would have to install the mobile application, create an account and just give the required permissions to the application to access health data. The buyer interested to buy any sensor's data stream would have to register on the platform and simply click buy on the sensor/health profile's data stream he/she is interested in. The platform would ask for IOTA seed to carry out the transaction and after some automated verification steps, the amount would be transferred to the owner of the sensor and data would be available to the buyer.
3	**Outcome**	The "Distributed Data Marketplace" aims to provide a proof of concept of what could be the future of the data marketplaces with the introduction of distributed systems in the picture. It shows how the giants in the field of data selling can be disrupted and the power and control can be divided among the common people. It does so by introducing a decentralized, timestamped and secure repository of data (IOTA's tangle) which can only be understood (decrypted) with appropriate keys. It also simplifies and speeds up the payment process to buy data using IOTA network's utility token, also called IOTA. The "Distributed Data Marketplace" also briefly touches on the idea of how the health data of people can be securely stored on the tangle to be accessed later for medical examinations and/or research purposes with the consent of the owner of the data. To be more accurate, only the owner himself/herself can give access to their data to other people for as long as the owner wants.

4	**Evidences (Theoretical Basis)**	Since IOTA is based on the concept of DAG distributed acyclic graph environment. Where the useability of this distributed environment increases with the increase in the number of users or you can say transactions activity. As oppose to classic blockchain. You can find its further evidences in the following article https://www.mdpi.com/1996-1073/12/18/3570/htm
5	**Competitive Advantage or Unique Selling Proposition** (Cost Reduction, Process improvement, Attainment of any SDG (Sustainable Development Goal), increase of market share or capturing new market or having superior performance over competitor. In summary, any striking aspect of the project which compels industry to invest in FYP or purchase it. Some detail description is required in terms of how, why when what. You can select one or more from following dropdown and delete rest of them)	
a	**Process Improvement which leads to superior product or cost reduction, efficiency improvement of whole process** (e.g. What is issue is current process and what improvement you suggests)	The "Distributed Data Marketplace" proposes an alternative and distributed approach for buying and selling data. Currently there are giant companies who capture different types of data from the environment using different sensors and then sell this data to the people interested in it. The "Distributed Data Marketplace" aims to disrupt this industry by empowering the common people to capture and sell data. It also briefly touches the idea of how the health data can be stored and sold or shared temporarily with the consent of the owner of the data.
b	**Attainment of any SDG** (e.g. How it is achieved and why it is necessary for the region)	Our first Sustainable development Goal was achieved with the successful run of the iota data marketplace with the sensor data and as well as the health earn app that counts user steps and sends it to the iota tangle. These two features are the main sustainability growth proofs that showed it can be a platform that we want to make.
c	**Expanding of Market share** (e.g. how it expand and what is problem with current market	Since, as all business, more people means more expansion. As soon as people starts uploading and sharing their data (e.g. health data, sensors, IOT devices). More companies would be interested and a trading activity will smoothly be initiated. Moreover, hospitals who saves patient records can easily rely on the iota distributed marketplace where users can store their health history and will be available any time.
d	**Capture new market** (e.g. Niche market or unaddressed segment)	Right now, there is no such data trading platform where a normal person can sell his/her own data easily. We all know the big tech giants but for a normal person it is not as easy. That is why a IOTA data market place could provide a simple platform even for a normal user to sell his/her health data to companies that are interested in it. And the data credibility is ensured through a distributed environment.
e	**Any Environmental Aspect** (e.g. carbon reduction, energy efficient etc.)	There is no direct or indirect environment hazard or effect as everything is completely online.

6	**Target Market** (Industries, Groups, Individuals, Families, Students, etc) Please provide some detail about user of the product, process or service	As mentioned earlier, our target market would be normal user, normal persons who have smartphones or IOT devices in their homes. They can use our platform to earn by just putting their data on the iota tangle and market. There is nothing they have to do more. And they will be paid in iota currency. Moreover, once this target market has been reached to a sufficient amount then our secondary target market would be the big research organization who can buy those data. And other AI learning and pattern firms that use such kind of data in bulk.
7	**Team Members** (Names & Roll No.)	• Ahmed Abdullah (SE-16067) • Abdul Haseeb (SE-16050) • Bilal Ahmad (SE-16048
8	**Supervisor Name**	Dr. Muhammad Mubashir Khan (mmkhan@neduet.edu.pk) mmkhan@cloud.neduet.edu.pk
9	**Video**	https://drive.google.com/file/d/1pnOQQUbsayU2ypfCJ7xq9WNcOuJxfS5G/view