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World Of Future:
Internet of Things

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WORLD OF FUTURE: INTERNET OF THINGS

The internet is increasingly becoming a part of our life everyday life, now enabling things to talk. Internet of Things (IoT) which provides integration of things to daily life via connecting them with one another and with their environments, got a more ambitious position already with the solutions it offers and its promises for the future. In this text we discussed the unknowns and the subjects of curiosity of IoT which is alleged to be the world of the future that every firm tries to integrate into its R&D's foundation.

What is IoT?

The IoT which defined by a British technology pioneer Kevin Ashton for the first time, basically refers to the ability to connect any object that comes to mind with one another, with people or larger systems via internet, and to send and receive data through these systems. The term translated to Turkish as 'Nesnelerin Interneti'.

What are the application areas for IoT?

Although IoT mentioned as "future technology", this technology already has become a part of our life with connection of computers, tablets, mobile phones, watches or TVs to internet.
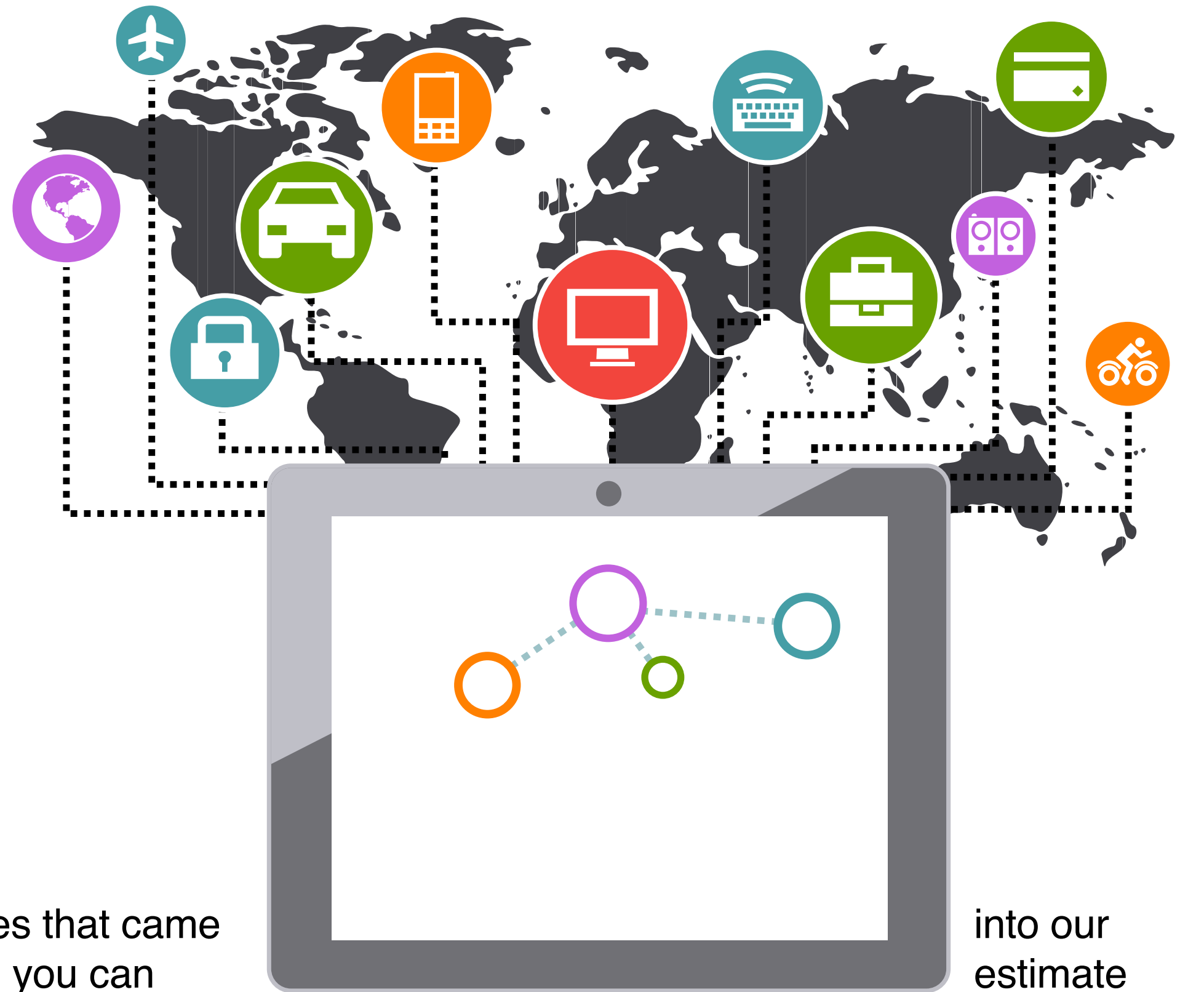
IoT technology can be applied to diverse array of fields. "Lights-Out Factories", smart home systems, smart city and environment applications which uses machinery that connect with one another to reduce necessity of labor force and human interference are assumed to be the most used areas of IoT technology.

Why everyone is talking about IoT?

If you come to think about the innovations and changes that came into our lives with the connection of mobile phones to internet, you can estimate the capabilities and benefits of IoT technology with its spread to all things. Cars connected with one another and with traffic control stations, smart homes where all devices synchronized with each other and with the host, and smart factories where all machines cognizant of each other are just a few of the application area of the IoT. In 2020 approximately 50 billion devices will be connected with one another, which is a small indication of how well IoT technology will surround our lives and expectations.

Systems that contain multiple devices within themselves require labor force and human interference most of the times for progress. Many benefits are expected from reduction of necessity of labor force and human interference in every step. With devices being cognizant of each other, energy and time loss will be reduced, errors and blockages will be minimized and even lives can be saved. The reduction of the time spent and application of the most efficient choice will also result in significant reduction in the costs. For instance a smart car with all the traffic information of the city which chooses the most convenient way would save energy, reduce environmental pollution and eventually reduce the cost. Similarly when an heart attack or any health problem occurs, a watch, necklace or shoe that measure blood pressure, pulse, body temperature and stress level constantly can inform an hospital or a doctor immediately and an ambulance can be directed to the location right away.

Besides all these advantages, is there any risk or downside of IoT?

Besides all advantages and conveniences provided by IoT technology, it is inevitable to have some problems when there is a defect in the system. As the most expected problem, increased automation which reduces human control in the system and unforeseen errors/blockages can be shown. Again a reduction in the necessity of labor force due to integration of the machines into the system can also be seen as a problem.

One of the biggest concerns about IoT technology is confidentiality and security of data. First of all it might be necessary to obtain consent from the users to process or use the data of existing users in the sytems. In such case, the method to obtain consent from users and scope of the consent might cause some serious problems.

Likewise, the size of the generated data would be unpredictable as the result of connection of numerous devices with one another. The emergence of valuable and meaningful data source by processing and analysing these data may cause some troubles. Considering that data is the gold value of oncoming era, unauthorized access to this meaningful data source or misuse can cause some unpredictable problems. For instance, a thief who ''hacks'' a smart home system can easily detect when the host is not at home or if an individual's personal information like smoking status, cardiac rhythm or blood pressure are exposed to some insurance company that individualwho wants to have health insurance might be obligated to pay more premium or employers who detects unhealthy employees might fire them. However, despite its potential adverse effects, the advantages and conveniences provided by IoT technology cannot be denied.

Interview with CEO of Evreka Umutcan Duman

We made an interview about the position and potential future of IoT with Umutcan Duman, Co-founder and CEO of Evreka which is green friendly company using IoT technology in order to creating smart cities.

1.There are a lot of definitions about Internet of Things (IoT). How would you describe IoT?

IoT term can be translated as "internet of the things/objects". From my perspective, IoT should be as a service presented from end to end. This, starts when one end of the system gains the ability to internet data transmission and import with sensors and communication technologies. This chain continues as data processing, turning into outputs "job orders" and it results with feedback mechanism which occurs with follow up and reporting of this job.

In summary, IoT concept in my opinion, is a concept that connects all objects to internet and make our lives easier and make solutions that are sustainable.

2.In which sector we will see IoT more in the upcoming years?

In my opinion the most important ones will be industry and production processes. In the course of time,smart cities will gradually use the IoT as well.
I think IoT will especially level up as smart city practices touch the citizens lives. The reason for this order is that while industry likes to see the direct financial affects, city administrations are far from this perspective.

3.Do you think IoT will change our lives?

IoT will definitely change our rutins, and it has already started to change. Simply, waste collection processes started to be controlled and followed by IoT. As Evreka, we follow up the waste containers' fullness,warmness and location

datas with the sensors we placed into the containers. With processing these data we optimize the routs of the waste collection vehicles and we offer a specialised follow up system. We see that the municipalities that already uses our system, don't know how they managed their waste collection system before Evreka. They state that they couldn't do without our IoT based EvrekaCore project regarding waste collection process.

With practises like this, faster services with higher qualities will be on table. This means people will be able to have much more time for themselves.

4.Does IoT has a future in Turkey?

IoT has a future everywhere. As we cannot spend an hour without internet now, the situations where objects cannot connect to the internet will shock us in the future. In my opinion it is not that far away. In 5-7 years we will be experiencing these emotions.

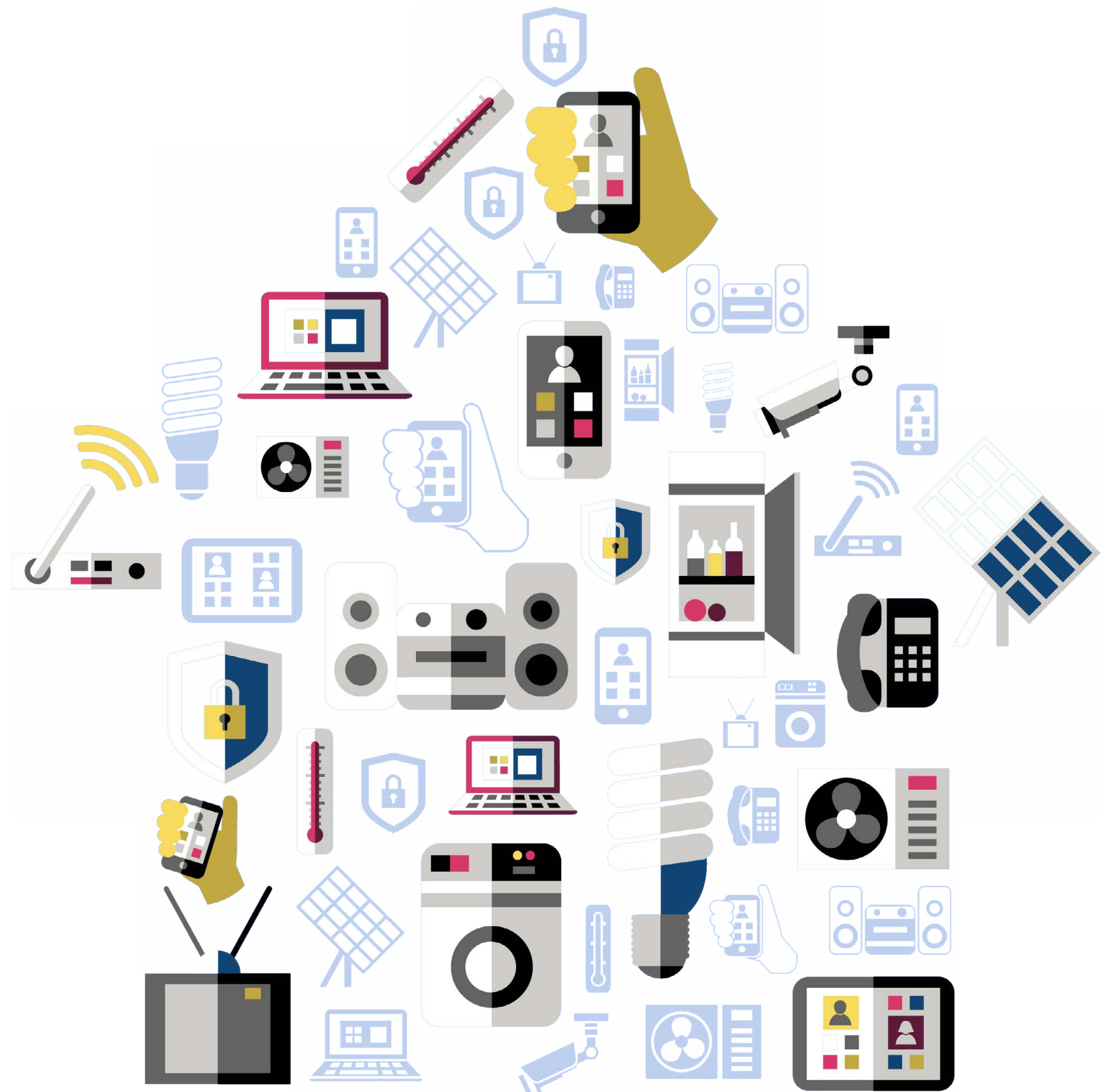## 5.Do you think companies catching the IoT technology will benefit companies or users more?

In fact we are talking about something that will effect everyone. The companies that have users that are happy will be happy and benefit everyone. Hence I predict that this situation will continue in a positive circle.

6.Who do you see as sector leaders in the world and Turkey?

At this point I have to be close to us, I mean close to start ups. I think sector leaders of IoT are startups and global leaders that move with these start ups. As everybody knows companies like Microsoft, GE, IBM, Intel, Vodafone makes big moves and investments in this area. All of them try to open arms to start ups by establishing platform infrastructure and start to win in big picture. In principle, start ups that take 0 to 1 in a good quality way and corporate companies take can take 1 to 100 and 100 will gain together.
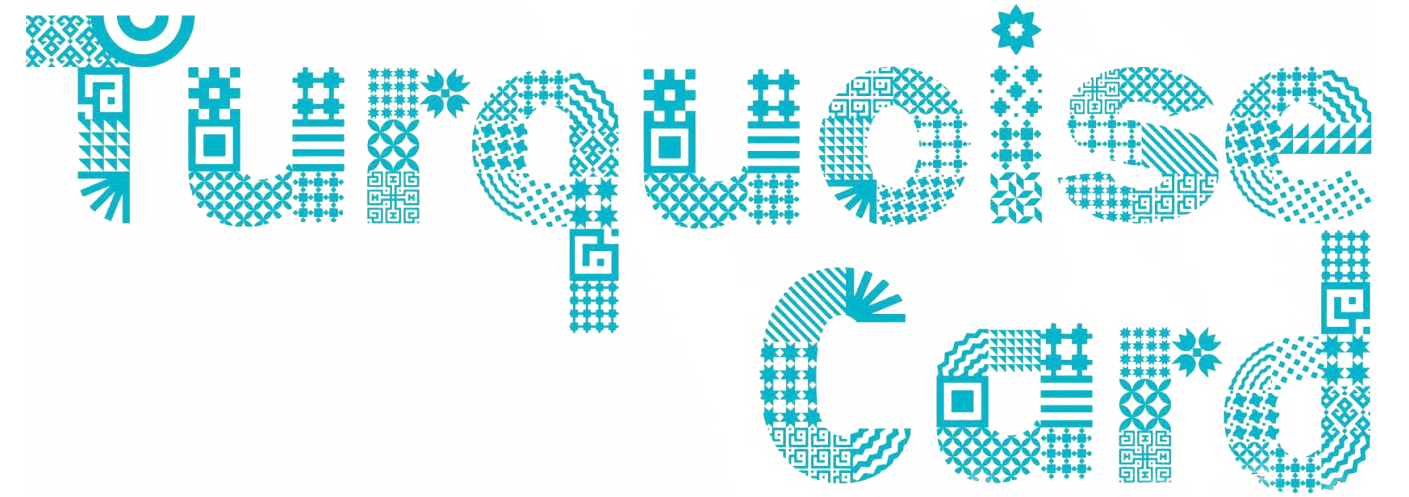
7.Beside from a lot of advantege of IoT,there are a lot of concerns about data safety and protection of privacy. Can a thief that hacks the smart air conditioner system can detect when the owner is not in the house and get in to the house?

In my opinion every system can get hacked. Hence I do not see these kind of approaches as conspiracy theories, in my opinion all of these situations can happen. I think the best thing to do is to clearly tell all positive and negative aspects of these systems. We can think of them as the side effects of the medicines, and we should use them as we know these and of course take the solid security measures as far as possible.

TURQUOISE CARD REGULATIONS

Turquoise Card Regulation (Regulation) was published in the Official Gazette dated 14 March 2017 and entered into effect as of that date. The regulation aims to set forth the procedures and principles of Turquoise Card's application and assesment process. As one may remember, the International Labor Force Law (Law), which is the foundation of the Regulation, came into effect on 13 August 2016.

WHO CAN APPLY FOR IT?

According to the Regulation, Turquoise card shall be given to the foreigners who has certain level of education, work experience, contribution to the science and technology; whose actions or investments benefit economy and employment of the country, who has a strategic position for benefits of the country at international level or who is successful on international level for research, culture, art or sports.

APPLICATION AND ASSESSMENT PROCESS OF TURQUOISE CARD

Turquoise card application can directly be made through Ministry of Labor and Social Security in Turkey and Turkish External Represantaives in foreigners' country or in the country they legally live in. The application can be made also by authorized intermediary.

The application will be evaluated with the point scoring system within the scope of criterias that are determined by the International Labor Force Head Office. In this system, criterias such as educational level, school, work experience, known languages, investments or level of employment will be taken into consideration. Detailed information can be found in the Regulation.

WHAT ARE THE RIGHTS AND OBLIGATIONS OF A TURQUISE CARD HOLDER?

In principle, Turquoise Card holders will exercise the rights that are provided by the indefinite work permit. Card holders will have the rights and obligations of a Turkish citizen except the ones exclusively requires to be a Turkish citizen. In addition, they will be exempt from compulsory military service, will not exercise the right to vote and be elected and right to be a public official.

The spouse and dependent child of the Turquoise Card holder will also be given a document which will substitute for residence permit.

Turquoise Card holder and his/her relatives will be able to acquire citizenship after the legal period stated by related regulations ends unless there is a situation that hinders the national security or public order.

The Turkish version of the Regulation can be found at the following link:
http://www.resmigazete.gov.tr/eskiler/2017/03/20170314-1.htm

Answers. Not theories.

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About our firm

Gokce Yaralı Attorney Partnership is an Istanbul-based law firm offering legal services across a broad range of practice areas including mergers and acquisitions, joint ventures, private equity and venture capital transactions, banking and finance, capital markets, insurance, technology, media, telecoms and internet, e-commerce, data protection, intellectual property, regulatory, real property, and commercial litigation. Please visit our web site at www.gokce.av.tr for further information on our legal staff and expertise.

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