Are Turkish Start-ups the Next Big Thing?

A short study on the development of the Turkish start-up ecosystem and its output

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I. The rationale for producing this report

As representatives of the Holland Innovation Network and the Netherlands Foreign Investment Agency we are the ears and eyes for developments in innovation, technology and science in Turkey and for its relevance for The Netherlands. We see a lot of interesting start-ups emerging in Turkey that are interested in doing business outside of Turkey. Turkish start-ups are actively aimed towards the United States for their international ambitions, especially towards Silicon Valley. Although The Netherlands positions itself as the start-up hub for Europe with its StartupDelta initiative, the Netherlands is not very well known to Turkish start and scale ups. We deem it necessary to inform our Dutch key stakeholders about the developments in the Turkish start-up ecosystem. At the same time, we think it would be a good idea to inform Turkish stakeholders in detail about the Dutch StartupDelta initiative. Why go to the US when you can meet the excellent start up support in the Netherlands.

This report is divided into two parts. One part aims to inform the Dutch stakeholders and one to inform the Turkish stakeholders.

In order to achieve a more focussed report, we have only looked at developed and high tech start-ups. Those start-ups that have been able to turn their bright ideas into viable business models. Therefore, we will use the term 'start-up' as stated in the Parliamentary Papers II, 2014-2015 32637, nr. 186 meaning a company with an innovative idea, which creates a scalable and repeatable product or service, produced by means of new technology.

The next section gives a general country overview and the governmental policies regarding Turkey's start-ups ecosystem. This will be followed by a more thorough section discussing the key players and events in the Turkish ecosystem. Foreign investments in Turkey and the activity of Turkish start-ups in foreign countries is the topic for the following section and this research will conclude with a look at possible opportunities for collaboration and organization of joint activities.

This report has been set up as a result of the many interviews with some of the key players in the Turkish start-up ecosystem. Therefore, we would like to express our appreciation towards Serkan Unsal from Startups Watch, Cem Ener from BUBA, Esranur Kaygin from Sankonline, Deniz Tuncalp from ITU teknokent and Murat Karademir and Ahmet Utku Yavuz from Garaj for their contribution to this report.

II. What is happening in the Turkish start up scene?

The Turkish start-up scene is fairly young, but promising in the field of technology. Whereas in the beginning there was only a handful of start-ups focusing on e-commerce (largely clones from Western start-ups_), now nearly a decade later, start-ups work in various sectors, ranging from health to smart mobility to fintech¹.

Turkey is strategically placed between key markets in Europe, Russia, Central Asia and the Middle East. Its population is young and well educated. More than half of the country's population (78 million people) is using the internet, ranking Turkey as the 5th largest Internet audience in Europe.

Furthermore, Turkey's mobile users are the most active consumers in the world for ecommerce, mobile banking and QR code scanning. However, the current start-up ecosystem is relatively under-developed compared to the G20 average. Turkey still has a long way to go to create the ultimate entrepreneurial society. The ecosystem for entrepreneurs is relatively under-developed, but there are multiple initiatives aimed to improve Turkey. The private sector is taking a bigger role, with established entrepreneurs willing to act as role models and contributing to accelerator programs in order for the next start up break through. However, the biggest setback for entrepreneurs seems to be the lack of funding, according to the EY G20 Entrepreneurship Barometer 2013. ²

Intervention from the government could solve this by further developing the early-stage funding market because of the limited experience and number of high-growth start-ups looking for a way to take their business to another level, or because of the limited trust on the part of private investors. The soft loans and compulsory company contributions of the Technology Development Foundation of Turkey (TTGV)16 is an example that has provided important benefits to Turkey's R&D capacity through the 'multiplier effect' by promoting

¹ https://techcrunch.com/2016/03/07/startup-turkey-in-its-8th-year-reveals-a-vibrant-turkish-startup-ecosystem/

² The EY G20 Entrepreneurship Barometer 2013 Turkey http://www.ey.com/Publication/vwLUAssets/EY-G20-country-report-2013-Turkey/\$FILE/EY-G20-country-report-2013-Turkey.pdf

an increased contribution of public funds to Research & Development expenses in the private sector.³

When looking at the 2016 Venture Capital & Private Equity Country Attractiveness Index annual report of the IESE Business School, Turkey is ranked at no. 33 out of 125 with an average score of 67.2. Compared to Eastern Europe, Turkey seems in a better position, not only in terms of Economic activity, but also with respect to the depth of the capital market and the taxation. ⁴

Governmental Policies and important contributors to the scene

Fortunately, The Turkish government and other public institutions are aware of the importance of start-ups and have taken initiatives to improve funding opportunities. Some examples are:

- TEPAV, the Economic Policy Research Foundation of Turkey, is a think tank focussing on relevant economic topics which is, for example, collaborating with the United States' Entrepreneurship Program for a platform bringing together Turkish entrepreneurs with the American entrepreneurs and funders. The Young Entrepreneurs Board of the Union of Chambers and Commodity Exchanges of Turkey (TOBB) has played an active role in designing the new initiatives of the Turkish government. Together with many public institutions, the Turkish government has done a good job in setting up the framework for the Turkish Startup ecosystem as we know it.
- The Turkish Ministry of Science, Industry and Technology shows their support by funding \$55,000 in seed capital for entrepreneurs through the "Techno-Entrepreneurship Grant Program." The government body TUBITAK, the Scientific and Technological Research Council of Turkey gives entrepreneurs grants and subsidies for their research and development. With the 1507 program, TUBITAK subsidizes up to 75 percent of the R&D costs of technology start-ups. Venture Capitals are supported by the 1514 program, which contributes up to 20 percent of the capital that is raised by new venture capital funds that have a minimum fund size of 20 million TL. The government also has a fund for the funds program of up

³ Accenture G20 YEA Young Entrepreneurs Alliance summit Turkey 2015 : https://www.accenture.com/us-en/insight-b20-digital-collaboration

⁴ The Venture Capital and Private Equity Country Attractiveness Index :http://blog.iese.edu/vcpeindex/turkey/

to 500 million TL to help existing and new venture capital funds and angel investors with additional investment capital. Technology Transfer offices are also supported by the government with the 1513 program.⁵ The 1512 program, which grants subsidies to entrepreneurs with innovative technological ideas, has also been a popular programme and around 70% of the start-ups that applied were honoured in 2015.⁶

• 'Endeavor' is another big contributor to the start-up ecosystem in Turkey. This non-profit organisation serves as the local arm of the widely known Endeavor organization, supporting entrepreneurs in different sectors of the economy. Through a selection process, start-ups all over the country can get access to its wide network of both national and international business leaders to help their growth. The Endeavor Catalyst program has raised up to 5 million dollars in investments in start-ups that are run by Endeavor entrepreneurs.

The Turkish Technology Development Foundation (TTGV) was established in 1991 as part of a World Bank loan agreement and it is probably the most impressive, since it supported technological innovation activities in Turkey by providing 300 million dollars to 950 (largely R&D) projects, carried out by 800 companies. TTGV has also contributed to the establishment of the investment firms 'Is Girisim' and TURKVEN in 2000 which have both made combined investments of over 3.5 billion dollars since then. This has laid the ground work for Turkish venture capital. ⁷

 Furthermore, the governmental institution KOSGEB has the 'Entrepreneur Support Program' aiming at developing and disseminating the entrepreneurship as the basic factor for solving the economic development and employment issue and establishing successful and sustainable enterprises.

 $^{^{5}\} https://www.tubitak.gov.tr/tr/destekler/girisimcilik/ulusal-destek-programlari$

 $^{^6}http://girisimfabrikasi.com/bigg/?utm_content=buffer55c56\&utm_medium=social\&utm_source=twitter.com\&utm_campaign=buffer$

⁷ http://www.worldstartupwiki.org/page/Turkey-Startup-Ecosystem

Summary

Both the public and private sector seem well aware of the importance of the development of the Turkish Start-up ecosystem. This can be seen by the many subsidies and contributions to the entrepreneurs. However, there are still some concerns when it comes to the government approach. The biggest issue that comes up in discussions on governmental support for start-ups during the interviews (with, for example, the angel network BUBA), is the lack of evaluation after gaining the grants. To get a grant as a start-up is considered relatively easy and afterwards there is little or no evaluation. This results in many grants, but actually no follow-up on what is done with the money afterwards or the contribution that it has made. These grants would serve a better purpose when there is an evaluation process, since it will motivate start-ups more in succeeding in their businesses. When the procedures before and after gaining the grant become stricter, the quality of the start-ups will also increase.

Both on the level of the increasing amount of start-ups in Turkey, as well as the joint efforts of various players to develop a number of start-up ecosystems around Istanbul, Ankara and Izmir, it is clear that there is a serious effort to help the development of start-ups. However, because of this, there is a lack of available funding, which prevents startups from realizing their growth potential. Moreover, the ecosystem currently is transforming itself from a previous focus on mainly e-commerce towards more diversified sectors where the focus is on technological development.

All in all, Turkey does have the right ingredients, with a young and educated workforce and a supporting government, creating an atmosphere where this young ecosystem can easily and quickly mature into a true Start-up hub.

Turkish Startup Ecosystem VIB2, May 2, 2016

Accelerators



Deal Rooms

Government

Tissed

Early Stage

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ventures

YT VENTURE PARTNERS

Pre-Seed / Seed

inventures HUB

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DFFSKW CAPILL PARTNESS

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INVENTRAM

Tech Accelerator Funds

nvestor Analytics

Media







Startup Startup Istanbul Turkey





**. Netaş Wesley Clover Fund Management Only VCs having local offices in Turkey are listed. Only technology blogs with English support are listed.

Feel free to ask for updates : support@startups.watch

Super Angels are not included.

Key actors in the Turkish Startup Ecosystem. Provided by: Startups Watch

III. The Turkish Ecosystem: So who are the big players in Turkey?

To get a clear picture of the Turkish Ecosystem, the previous picture is a map provided by Startups Watch, a monitoring and tracking service which analyses the Turkish ecosystem. Here all the big players in the Turkish eco-system can be seen. This ecosystem has been gaining popularity in the last two years. In the first half of 2015, the number of investment rounds increased by 50 percent, while the amount of total early-stage investment grew by more than 200 percent.⁸

Relatively big exits

In 2014, Pozitron (acquired by Monitise for 100 million U.S. dollars) and Markafoni (acquired by Naspers for 200 million U.S. dollars) were the biggest exits in the Turkish scene.

GREENCOAT

This start-up is able to produce green arias both indoor and outdoor without soil with minimum resources such as water and maintenance for a low cost. Providing Biodiversity, reducing air pollution, fighting global warming.

More info: http://www.greencoat.com.tr/

In the first half of 2015, the largest acquisition place in the digital food ordering space: 'Delivery Hero' bought Yemeksepeti for 589 million U.S dollars. And there is still more to come; transactions such as Hepsiburada (minority acquisition by Abraaj Group), Arvento (majority acquisition by Investcorp) and Mekanist (acquired by

HEMODYN

Hemodyn is a Turkish start up providing a virtual surgery platform and CFD analysis reports based on the modified cardiovascular geometry.

The start-up has been founded be a researcher from Koç University, who received a grant from the European Research Council for developing the underlying research that ultimately led to the founding of Hemodyn.

More info:

http://www.hemodyn.org/en

KUANTAG

Quantag develops fiber optic based fluorescence sensors that can be used to detect very low concentrations of quantum dots. Sensitive detection of quantum dots is highly desired in various applications ranging from security to biotechnology. The company currently focuses on digital tagging of fluids with quantum dots and real-time detection of these tags with ultra-sensitive sensors.

More info:

nttp://kuantag.com/en/about/

⁸ http://tech.eu/features/5580/facts-figures-turkey-startup-ecosystem-h1-2015/

Zomato) lifted the spirits of Turkish entrepreneurs and investors still further. Yemeksepeti and Hepsiburada are the first-generation internet start-ups of Turkey and there are several more gearing up for similar exits, motivated by the high exit numbers.

INGENIOUS

Winner of Intel Challenge
Turkey 2013, Ingenious Smart
Home is a plug and play smart
home system which improves
its user's life quality by giving
them an enhanced user
experience and also
optimizing the energy
consumption. This developing
tech company is located in
Istanbul, Turkey. Research &
Development is run in the
Istanbul office, whereas
operations are held from Den
Haaq, Netherlands.

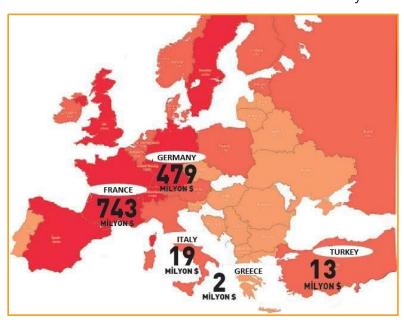
More info:

http://www.ingenious.io/

PROMINENT ACQUISITIONS IN TURKEY

- -Yemeksepeti \$589M
- -Gittigidiyor \$217.5M
- -Markafoni \$200M+
- -Pozitron \$100M
- -SadeceHosting \$47.5M
- -Mikro-Ödeme -\$34M
- -Mackolik \$30M +
- JoyGarne \$30M

According to the Startups Watch report, in the third quarter of 2016, a total of 17 initiatives in Turkey were invested. The total of investments made by Turkish entrepreneurs has hereby reached 13 million U.S dollars. Despite the coup attempt in Turkey, investments in technology initiatives did not stop. When compared to the previous quarter, the amount of investment made, increased by 47 percent in the third guarter. Again, according to the third guarter report of 2015, the increase was 19 percent. The most popular business areas investments were financial technology, real estate, software services and marketplace applications. When compared with European countries, it is apparent that Turkey heads South Eastern Europe countries. However, when leading European countries such as Britain, Germany and France are included in the comparison, the amount of investment remains very low.9 total



Investments made in Start-ups third quarter of 2016

ENIGMA

This startup developed a key vital analysis: ones blood can be measured easily, and cost minute changes in glucose, vitals in the near future. helping people stay engaged with their health.

More info:

http://eniqma.bio/#research

⁹ http://www.sabah.com.tr/yazarlar/sirt/2016/11/25/yatirimci-geri-adim-atmadi

PERIODIC TABLE OF TECH IN TURKEY

erview of the key players in tech investing and wow in Turkey

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". Netas Wesley Clover Fund Management
Only VCs with activity in 2010-2015 are listed
Feel free to ask for updates : support@startups.watch

An overview of the key players in tech investing and M&A in Turkey, provided by Startups Watch

Angel Investors and Networks

Funding is not the only thing that entrepreneurs need in order to be successful. A good start-up will also need mentorship, expertise, skills-sets and a network, which angel investors can provide. Interestingly, Turkey offers high tax incentives to business angels. It is no surprise that Turkey has a large amount of business angels (as seen on page 11), most of them situated in Istanbul. Turkey is the only country in the world, which has a deal room in its stock exchange Private Market by Borsa Istanbul, an innovative digital platform where business angels and technological start-ups come together.¹⁰

BUBA is one of the leading angel networks in Istanbul, founded by the Bogazici University Alumni Association in March 2014. It supports the realization of successful business plans by bringing together investors and entrepreneurs. Educational activities take place regularly and it creates an environment where ideas and experiences can be exchanged. ¹¹

NANODEV

NanoDev is a start-up dedicated to design and manufacture high-end automated opto-electronic instruments that are embedded with high-tech know-how. They develop both software and hardware components in-house.

NanoDev has reached a product portfolio including a multi-functional SPR Imager System, a compact Handheld SPR Reader, a Fluorescence Optical Microscope and a Desktop Photolithography Instrument. On-going researches are focused on design and manufacturing of a Laser Scanning Confocal Attachment and a Visible Spectroscopic Ellipsometer.

More info: http://www.nanodev.com.tr/e n/about-us/

BIC Angel Investments invests in a range of projects from e-commerce to mobile applications and social or location based services. BIC targets projects in the early and seed stage and investments range from \$50,000 to \$150,000. Galata Business Angels is another popular meeting point for start-ups and business angels in Istanbul, and includes a network of over 50 investors and 500 entrepreneurs. It holds regular meetups for investors and angels and provides investor training programs. Galata Business Angels tends to focus more or less on start-ups in the e-commerce, mobile apps, fintech sectors and on clones of popular ventures.

 $^{^{10}\,}http://www.borsaistanbul.com/en/news/2014/11/17/borsa-istanbul-s-private-market-launched$

¹¹ http://www.buba.com.tr/buba-hakkinda

Aslanoba Capital is another big player in the ecosystem worth mentioning, since it is responsible for the early stage technology investments of Hasan Aslanoba, the leading angel investor in Turkey. Their main focus is on sectors such as marketplaces, e-commerce, mobile, classifieds, content, and SaaS.¹²

Angel investors and business angel networks were the most active in the first half of 2015. The reason for the increase in activity is partly due to the accreditation program of the Turkish government since 2013, enabling angel investors to make use of significant tax incentives.¹³

MAXWELL

Maxwell Innovations is developing high-performance VTOL (vertical take-off & landing) specialized in the industrial applications under demanding conditions. The experienced team aims to serve industrial inspection services with their unmanned air vehicle and payload systems.

More into: http://maxwellinnovations.com/

Venture Capital

Where there are successful local entrepreneurs, the absence of venture capital is unthinkable. After a number of

EA TEKNOLOJI

The major activity fields of E-A Teknoloji, which started with funding from Turkish Ministry of Science, Industry, and Technology, are optics, nanotechnology and biotechnology. E-A Teknoloji realizes high-technology projects using scientific approaches, and brings fast, cost-effective, and professional solutions to technological problems

More info: http://www.eateknoloji.com/i ndexen.html

successful companies from Turkey's first wave of
Internet entrepreneurship began to appear, investors
started to fund Turkish start-ups. International
investors such as Abraaj from the Middle East (investor
in Hepsiburada), General Atlantic from the UK (investor
in Yemeksepeti), Naspers from South Africa (investor in
Markafoni), Kleiner Perkins and Tiger Global from the
US (investors in Trendyol) have all supported the
Turkish Internet entrepreneurs.

¹² http://magazine.startus.cc/go-to-the-city-of-ambitious-entrepreneurs-istanbul/

¹³ http://tech.eu/features/5580/facts-figures-turkey-startup-ecosystem-h1-2015/

As a result, multiple investors with local teams are on the lookout for the next breakout stories. These include Earlybird, which has a \$150 million fund, of which over half is dedicated to Turkey, Revo Capital, (which is investing from its current \$38 million fund. 212. with a \$30 million fund Turkey), 3TS and Hummingbird. dedicated to Together with the already invested \$60 million, that is more than \$200 million of local capital dedicated to back up Turkish entrepreneurs. This is a huge amount and shows that Turkey's venture capital market is rapidly growing, keeping in mind that none of this capital was on the market as recently as 2010. 14 The venture capitals Diffusion Capital Partners (DCP) and ACT are both well known in Turkey and focus primarily on innovative technology start-ups. DCP is the first technologytransfer and seed-stage venture capital fund investing exclusively in technology and IP intensive projects.15

SENSOBRIGHT

High sensitive tactile sensing for robot technologies which can be used as human like tactile sensing talented artificial skin for robotics and devices. It is designed with components which are common easy to provide and suitable for the development of common use in areas such as: Robots and robot technology used in the manufacture, medical applications, operation, chemical, logistics, distribution, mine clearance, bomb destruction, hazardous waste.

More info:

 $\frac{http://sensobright.com/aboutus.h}{tml}$

Some of the acceleration and incubation programs

E-Tohum is probably the most popular accelerator in Turkey. Founded in 2008, it screens several hundred applicants, selecting forty to pitch to investors. Those investors identify the fifteen that eventually move on to E-Tohum's accelerator program. E-Tohum invests in those companies that show exceptional promise. "Our aim is to help these (Turkish) entrepreneurs grow fast," says founder Burak Buyukdemir. E-tohum mainly focuses on fields such as e-commerce, mobile apps and other internet based start-ups and therefore it is much less attractive for the technological innovative start-ups. The two biggest events

 $^{^{14}\} https://techcrunch.com/2016/03/07/startup-turkey-in-its-8th-year-reveals-a-vibrant-turkish-startup-ecosystem/$

¹⁵ http://www.dcp.vc/

concerning start-ups in Turkey, Start-up Turkey and Start-up Istanbul are both organized by E-tohum.¹⁶

The Founder Institute is Silicon Valley-based and opened its doors to Istanbul. According to its website, it is "an early-stage and global launch network that helps entrepreneurs create meaningful and enduring technology companies." The Koç University Incubation Center runs incubation and pre-incubation programs for start-ups who are just starting and those who are ready to go into the market. It offers an office in the center of Istanbul on the Koç University Şişli campus.

Start-Up Factory or Girişim Fabrikası is an accelerator housed at a privately run University on Istanbul's Asian side. Supported by the Turkish mobile giant Turkcell, it supports start-ups in the product launch stage and helps them survive the "Death Valley", i.e. help start-ups to overcome the period between reliance on funding and starting to generate sufficient revenue.

CY VISION

CY Vision is a high-tech startup developing glasses like device with an enhanced 3D display technology. This device projects 3D images onto the pupils, enables viewing comfort without being limited due to missing depth cues and is also suitable for wearable Augmented Reality (AR) and 3D Diplays. CY vision has licensed 7 patents from Inventram, with one of them already registered in the USA.

More info:
http://www.inventram.com/e
n/investmentportfolio/127/newgeneration-super-multi-viewdisplay-system

Inventram, a subsidiary of Turkey's largest conglomerate Koc Holding, Koc University and Japanese Mitsui Co., is a technology accelerator company founded in 2010. Their aim is to commercialize disruptive technologies with the focus on nine hi-tech technology fields, such as biotechnology, nanotechnology and big data. Inventram works with both academic researchers as well as entrepreneurs and commercializes its project by patents investment, equity investment or technology commercialization. The start-ups in their portfolio are highly innovative and technology based.¹⁸

ITU Cekirdek is a pre-incubator/accelerator by Istanbul Technical University, a natural hub for talented entrepreneurs in different fields. It offers one of the most comprehensive support programs, including services like seed investment, co-working space, mentorship,

 $^{^{16}}$ http://www.forbes.com/sites/elmirabayrasli/2012/09/19/turkish-entrepreneurial-ecosystem-more-than-just-start-ups/#310927d54852

¹⁷ http://fi.co/s/istanbul

¹⁸ http://www.inventram.com/en/content/2/company-profile

competitions, networking events and opportunities and a host of other services and trainings that might just be what local talents need to launch their ideas. Based at the ITU Ari Teknokent, it is one of the few accelerators that truly supports start-ups every step of the way, from pre-seed to late growth stage. Here you will find many technical start-ups with innovative ideas. The start-up Pao, which was selected by the Startupbootcamp High Tech XL accelerator program, has its origins in ITU Cekirdek. ITU Cekirdek was voted the 18th best University Business Incubator in 2015 by UBI Global²⁰

YFYI, ATOM and Teknojump are several pre-incubation and acceleration programs at the techno park of the Middle East Technical University (METU). This techno park has several programs and support start-ups of every stage and size. The YFYI is one of Turkey's largest technology-based entrepreneurship programs and Teknojump is an accelerator program mostly known for its international business focus, helping start-ups move to Silicon Valley. The METU techno park is again a good example of a Turkish brewing place for innovative companies²¹.

Both ITU Arikent as well as METU have developed an extensive network in the USA in order to assist Turkish start-ups in developing activities in the USA.

Techno parks

The development of techno parks attached to major universities in Turkey was rolled out as an initiative by the Ministry of Industry and Trade in 2001. Since then the aim of techno parks has been to develop technology and software and carry out R&D by utilizing the facilities of a university or a high-tech institute or R&D center. The number of companies doing R&D in the active techno parks has reached 4176, presently employing around 41.000 people. The number of patents received nationally and internationally by companies in these techno park zones, is known as 640. According to the Turkish law no. 4691, companies located in techno parks have miscellaneous tax benefits. ²²

The techno parks in Turkey, forty-seven in total that are active, are the following:

¹⁹ http://www.itucekirdek.com/en/about-seed/about-us

²⁰ http://ubi-global.com/research/ranking/rankings-2015/#globalubi2015

²¹ http://odtuteknokent.com.tr/en

²² http://odtuteknokent.com.tr/en/information/technoparks-in-turkey

ODTU Teknokent	Malatya Teknokent	Gaziantep Teknopark
Bilkent Cyberpark	Sanliurfa Teknokent	Ankara Universitesi Teknokent
Yildiz Teknopark	Canakkale Teknopark	PAU Teknokent
ITU ari teknokent	Kahramanmaras Teknokent	Istanbul Teknokent
Samsun Teknopark	Finans Teknopark	Marmara Teknokent
Hacettepe Teknokent	Ege Universitesi Teknopark	Cumhuriyet Teknokent
Teknopark Istanbul	Izmir Bilimpark	Firat Teknokent
Teknopark Izmir	Ostim Teknopark	Mersin Technoscope
ATAP	Teknopark Ankrara	Trakya Teknopark
Antalya Teknokent	Trabzon Teknokent	Tokat Teknopark
Gazi Teknopark	Yuzuncu Yil Universitesi	KOU Teknopark
	Teknokent	
Ulutek	Bilisim Vadisi	Depark
Konya Teknokent	Erzurum Ata Teknokent	Goller Bolgesi Teknokent
Erciyes Teknopark	GOSB Teknokent	Sakarya Teknokent
Bogazici Teknopark	Namik Kemal Universitesi	Dicle Teknokent
	Teknopark	
Bolu Teknokent	Duzce Teknopark	

Both METU and ITU Universities have impressive techno parks worth mentioning with fully developed incubation/acceleration programs. When comparing the two, METU appears to have slightly more technology start-ups while sectors like defence are more popular due to METU's location in Ankara, where the government is based. ITU Ari teknokent in Istanbul is slightly more commercially oriented and surprisingly is not funded by the government, which also explains the market mentality and approach. When looking for high-tech start-ups, these two techno parks can be considered the places-to-be, because of their comprehensive support programs for various start-ups at different stages of growth. The techno parks of METU and ITU are well organized, mature organizations with a certain amount of international experience.

Networking Organization: Garaj

Garaj is a young organization that provides networking events, start-up driven courses and connects the ecosystem. Their aim is to fill the gap between universities, start-ups and the market and provide interaction between the key players. The network is gathered by global and valuable crowdfunded events and is generally aware of the needs of the Turkish ecosystem; mentoring, transparency and collaboration. Although the organization is at an

early stage, the start-up mindset of the founders and the awareness of the Turkish startup scene makes it a promising player in the start-up ecosystem.²³

Events

Considering the large amount of Start-ups and the young population, there are few events happening in Turkey to fulfil their demands. The three largest events are Startup Istanbul, Startup Turkey and the Webrazzi event. Startup Istanbul is a leading annual start-up event in Eurasia organized by E-tohum, which takes place in Istanbul every October and brings together leading start-ups, business angels, VCs and executives from Asia and Europe. Startup Turkey is an annual event that is also organized by E-tohum. For 3 days, 700 people stay in a high quality hotel in sunny Antalya. This event is made for the networking of start-ups, internet companies, business angels and venture capitalists from the Middle East, Europe and the US. Webrazzi is the most central online source of tech startup news from the region. Every year Webrazzi holds Webrazzi Summit, one of Turkey's most influential internet conferences, and Webrazzi Arena, an entrepreneurship contest that happens during the summit. Webrazzi events page is a go-to source of what is happening in Turkey and the region in terms of large events, conferences and many important happenings.24

On closer inspection, although these events receive some attention, not every start-up in Turkey benefits from it. The events are quite costly and mostly attract key players in the fields of internet, e-commerce, mobile apps etc. For the innovative technology start-ups, these events are not worth visiting. Here it is clear that Turkey is in desperate need of events to connect the technology start-ups with the right key players in their field. This gap can be easily filled, when all the right players are in place

Summary

As this section shows, the Turkish ecosystem has a lot of promising key players and excellent examples of notable start-ups. Turkey does have a few points that should be worked upon, as previously mentioned i.e. the start-ups, but also angel networks, VC's, accelerators and techno parks. From the experience of BUBA, the angel network has the biggest issues with the non-transparency culture in the Turkish start-up environment.

²³ Garaj.co

²⁴ http://maqazine.startus.cc/qo-to-the-city-of-ambitious-entrepreneurs-istanbul/

There appears to be a lack of information transfer, resulting in the non-clarity of the Turkish start-up ecosystem. Therefore, it becomes difficult for both investors and entrepreneurs to understand the situation. The ecosystem is unclear and to date, Start-up Watch seems to be the only service monitoring the ecosystem. However, this is a private company and access to their data is only available through membership and a fee. There is no governmental institution that could help with gaining access to information. This results in difficulties for the angel networks when trying to match investors and the start-ups.

When speaking to venture capitals such as Sankonline, it appears that there are difficulties in finding capital for start-ups. Investors are usually careful and hesitant because the ecosystem is fairly young and they ask for a high percentage of company ownership, which does not align with the wishes of the start-ups. This is one of the reasons that many Turkish start-ups look for investors in foreign countries.

The lack of information and difficulty in gaining access to information concerning the ecosystem makes it difficult for the key players in Turkey to connect. Investment numbers are often incorrect and the calculation of the worth of a start-up seems difficult to check. The Turkish start-up ecosystem has not yet matured but between all the players (incubators, accelerators, techno parks and so on), there are a few fully developed organizations worth attention, such as Inventram and the two well-known techno parks ITU Ari Teknokent and METU teknokent. The ecosystem interlinks are insufficient and there is a clear lack of events for the technology start-ups.

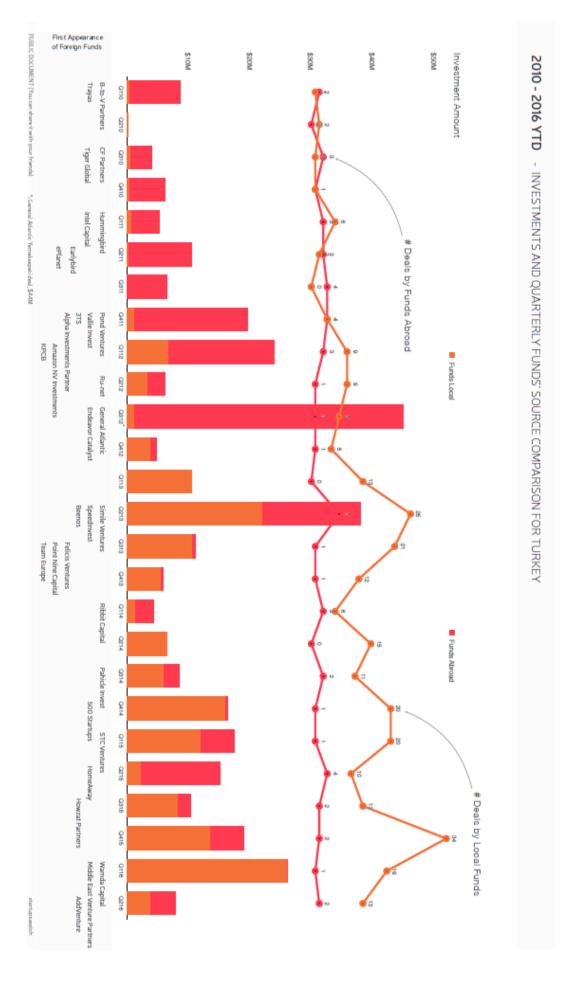
IV. Foreign Activity in Turkey

ank	Country	IEF 2016	startup net movement		
free	Switzerland	81.0	45%		
	Ireland	77.3	-6%		
	Estonia	77.2	47%		
	United Kingdom			76.4	179
	Denmark	75.3	18%		
	Lithuania	75.2	-67%		
	Netherlands			74.6	319
	Germany			74.4	119
	Luxembourg	73.9	-30%		
	Czech Republic	73.2	17%		
2	Finland	72.6	-29%		
	Sweden			72.0	99
	Austria			71.7	209
£	Norway	70.8	0%		
moderately free	Latvia	70.4	11%		
	Poland			69.3	119
	Cyprus	68.7	-50%		
	Spain	68.5	50%		
	Belgium	68.4	-19%		
	Malta	66.7	13%		
	Slovak Republic	66.6	-63%		
	Hungary	66.0	-25%		
	Bulgaria			65.9	139
	Romania	65.6	-6%		
	Portugal			65.1	39
	France	62.3	-42%		
	Turkey	62.1	-14%		
	Italy			61.2	-299
	Slovenia	60.6			
8	Croatia	59.1			
mostly unfree	Bosnia and Herze	58.6	0%		
	Greece	53.2	-71%		
	Russia	50.6	-67%		

Economic freedom scores compared with net migration of startups. Provided by: Startup Heatmap 2016. As it can be seen in the Table, 14% of the start-ups in Turkey are moving abroad.

Foreign Investments made in Turkey

The table below clearly shows the slow increase in foreign investments in Turkey for the past six years. Although Turkey is doing well enough considering its very young ecosystem, there are not enough foreign investments made, even though the amount of start-ups is quite high. Turkey is not yet on the radar of foreign investors. This can be an opportunity for the Dutch investors, since there are a lot of highly innovative start-ups willing to move abroad.



Comparison of the Local and Foreign Investments since 2010. Provided by: Startups Watch.

What foreign start-ups have to consider in Turkey

- Turkish regulatory framework and bureaucracy are known for being relatively slow and inefficient.
- Some recent political instability makes it difficult for start-ups to settle in Turkey. Currently business is too dependent on know-who instead of know-how and the government has a great say in business. Furthermore there are safety issues which should be considered, due to the recent terrorist attacks.
- Access to capital might be difficult as the VC scene is still immature. There are some
 complaints that local venture capitals have little technological background making it
 more difficult for tech start-ups to raise capital. Clones are common and some people
 in the ecosystem note the lack of original and innovative ideas, which can be
 considered as a downside for some and an opportunity for others.²⁵

Summary

Foreign activity in Turkey is quite low, which can be seen as an opportunity for the Netherlands, since there are a lot of interesting start-ups in the field of technology. The immature ecosystem makes the Turkish start-ups eager to set up their companies abroad. Silicon Valley appears to be the first preference for these start-ups and many accelerator programs are based on this preference. The Dutch ecosystem is not yet known to Turkish start-ups. This can be considered a true loss of opportunities, since Turkey is full of bright young entrepreneurs with innovative ideas waiting for a chance outside the country.

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²⁵ http://magazine.startus.cc/go-to-the-city-of-ambitious-entrepreneurs-istanbul/

V. Conclusion and what to do next

Both the Holland Innovation Network and the Netherlands Foreign Investment Agency encounter a lot of young Turkish start-ups with an interest in collaboration with Dutch institutions and questions concerning the Dutch ecosystem. We have frequently helped Turkish start-ups with a technological innovation make a match with possible partners in the Dutch sector. Because of the large number of Turkish start-ups that we have come across, there is a need for certain events where start-ups and investors of both ecosystems can come together.

Turkeys' start-up scene is quickly maturing, due to the young educated workforce and a supporting government eager to further develop the eco-system. In Istanbul and Ankara there are a lot of highly innovative technology start-ups, but unfortunately due to the lack of information and transparency many opportunities go unnoticed. The start-up sector will have to be interlinked with the help of e.g. more focussed events. The immature ecosystem makes the local investors unwilling to invest in technology start-ups - one of the main reasons that Turkish start-ups are in desperate need of foreign investors. The lack of capital is a very large problem for the technology start-ups and they are eager to go to foreign countries in order to survive.

There appears to be a lack of transparency, collaboration and mentoring in the Turkish ecosystem and only a few of the key players are aware of this and feed the start-ups' needs. With the help of Startup Delta we could organize low-profile but focused activities in collaboration with the most mature Turkish players, such as the two techno parks ITU ARI teknokent and METU teknokent, the technology accelerator Inventram and the promising network organization Garaj. These key players could give us access to the most interesting Turkish high-tech start-ups, which can be connected to the Netherlands. The Turkish and Dutch ecosystems could come together during annually organised events. Both ITU Ari teknokent and METU teknokent have the right location, since it is the most popular address for the most innovative start-ups. Up to now, Startup Delta has not been involved with events organized in Turkey, but since there are a great number of opportunities, this could be different in the future.

Since there is a lack of events specifically focussing on the technology start-ups in Turkey, the Holland Innovation Network and the Netherlands Foreign Investment Agency would

therefore advise the organisation of four events a year, two in the Netherlands and two at the ITU and METU techno parks, to bring the sectors closer together. Each event should focus on a specific sector, e.g. health tech, to make the events more focussed. There is a very good opportunity for collaboration between Start-up Delta and key players of the Turkish ecosystem, since most Dutch organisations do not have the level of expertise of some Turkish start-ups. These organisations seem happily surprised by Turkish knowledge and the Turkish start-ups are also impressed by the Dutch ecosystem on close inspection.

Nowadays, successful Turkish start-ups seem to focus on Silicon Valley and they are unaware of the excellent start-up climate in the Netherlands and unaware of Startup Delta. Ultimately, the Netherlands would provide the ideal address to take their start-ups to a higher international level. This would be an excellent opportunity to raise awareness of each other's presence and capabilities. This would also help increase the popularity of the Netherlands as a popular start-up hotspot. The aim is to help successful middle-to late growth high tech start-ups in Turkey settle in the Netherlands.

Opportunities offered to Turkish start-ups by the Netherlands



VI. The Netherlands as the perfect location for Turkish startups

In the earlier parts of this report, the Turkish start-up scene was explained in detail, with the main reasons for Turkish start-ups to move abroad. Lacks of information, funding, the absence of good mentoring programmes were mentioned as reasons for Turkish start-ups to move. In this part, the opportunities offered to start-ups by the Netherlands will be discussed.

Why the Netherlands?

The Netherlands is increasing in the ranking for start-ups. The Netherlands, renowned internationally for its open culture and emphasis on entrepreneurship and innovation, is home to a vibrant, collaborative start-up ecosystem and has much to offer start-ups, since it is increasing its efforts to facilitate a start-up friendly business climate.

In general, the Netherlands is seen as a competitive open economy, ranking number 1 in the European Union according to the Global Competitiveness Report by the World Economic Forum.

Holland's unrivalled digital infrastructure, highly educated, tech-savvy, English-speaking workforce and open corporate business culture provide an attractive and supportive test market for new businesses

Ranked No. 5 in the EU on the 2016 European Innovation Scorecard, the Netherlands is home to more than 10 leading innovation hubs, where start-ups benefit from world-class incubators and R&D facilities.

What solutions can the Netherlands offer? What can be provided which particularly meets the demands of Turkish start-ups?

Access to knowledge and facilities

The Netherlands is at Europe's leading edge for digital start-ups— if it is "what's next" it's happening in the Netherlands. Here are examples of some of our most highly regarded tech start-up cities for relocation.

The Netherlands as One Big Hub

The Netherlands is one big hub. Several major technology clusters as well as research centres are well-connected and reachable within 90 minutes.

Amsterdam, Utrecht

Amsterdam and Utrecht are the creative and entrepreneurial centers of the Netherlands. Both are young student cities that attract a lot of international talent. There are various universities and incubators stimulating a vibrant start-up community.

On the field of Fin Tech, Amsterdam is the place to be. The fact that Amsterdam is home to a lot of financial institutions makes them appealing for global Fin Tech start-ups. Furthermore, in the creative, mobile and sharing economy sectors there is also a lot to discover.

Utrecht provides a vibrant environment for leading innovations that improve health, quality of life in its Utrecht Science Park. While one of the focuses is on Life Sciences and Sustainability, you will also find here the Dutch Game Garden, the prime hub for game developers in the Netherlands.

The Hague, Delft, Rotterdam, Leiden

Cleantech, aerospace and cybersecurity are top industries in Rotterdam and The Haque.

The Hague Security Delta as the largest security cluster in Europe, is attracting an increasing number of international players. It represents a unique hub that connects startups with governments, international companies, research centers, studios, and thousands of creative entrepreneurs.

The incubator of the Delft University of Technology has created a multitude of high-tech spinoffs. TU Delft has been an international academic hub with a well-deserved reputation in Computer Science, Industrial Design, Biotechnology and those specialist engineering sectors, like Nano-, Space-, Materials- and Imaging Sciences.

While Rotterdam is known for its international port, it has also home to a vibrant international startup ecosystem specialising in medical and corporate entrepreneurship, and backed by the financial and medical reputation of Erasmus University and Erasmus University Medical Centre.

Leiden Bio Science Park, home to over 85 dedicated medical life sciences companies and institutions, is renowned developing innovative drugs, vaccines, diagnostics and platform technologies. The Bio Partner Centre Leiden offers starting bio-technology entrepreneurs great value facilities.

Eindhoven, Twente

Declared the "world's smartest region" of 2011 by the Intelligent Community Forum, Brain Port Eindhoven is home to High Tech Campus, an R&D hot spot for companies such as Philips and ASML. The campus is hosting a growing number of tech start-ups and plays a leading role in the development of Internet-based technologies.

Twente is renowned for Nano Technology, BioScience, High Tech Systems and Materials. Start-ups can take advantage of low rents for cleanrooms and an extensive community of researchers. MESA+, one of the largest Nano labs in the world, is located at the University of Twente. Especially with Germany's industrial technology belt being so close-by, Twente is offering a perfect launch-pad in the rest of Europe.

Arnhem, Nijmegen, Wageningen, Groningen

The region Arnhem/Nijmegen has quickly risen to international fame due to successes in Life Sciences and HealthTech, Energy, environmental Clean Tech and Biotech. Very close to Germany, the international market is just a few steps away.

Close to Arnhem, the world of Life Sciences, Biotech, Pharma, Medical Technology, medical information and communication technology opens up to start-ups.

Nijmegen is headquarters to Health Valley, a unique platform for start-ups, universities, care institutions, companies and governmental authorities to exchange information and work together.

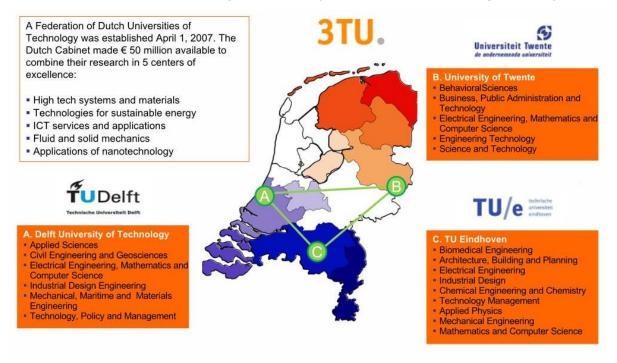
Wageningen is the *Hub2be* for startups working in Food, Agro and Bio-tech. Located in the center of Holland's Food Valley, Wageningen University Campus is a global leader in disrupting Food and Agriculture –both in research and applying that knowledge to new business. Groningen is a young dynamic university city in the North of the Netherlands. The city has led the way in start-ups tackling healthy ageing, smart-energy, ICT, new materials, gaming and water-tech.

Access to talent: World Class Educational system

What does the Netherland have to offer in terms of access to talent?

When it comes to availability of skilled labour, multilingualism and language skills, the Netherlands belongs to the top tier countries for international business. The Netherlands is home to 14 universities, 34 universities of professional education and a variety of specialised training facilities, making it one of the top 10 education systems in the world.

The Dutch higher education system—ranked No. 3 globally— is geared towards meeting the needs of today's businesses and keeping the economy competitive by graduating a steady stream of highly skilled workers. As a result, businesses in the Netherlands benefit from the assurance that labour is ready when they need it, for as long as they need it.



Map of the 3 Technical Universities in the Netherlands, source: NFIA

From the Delft University of Technology—a top 20 university for engineering and technology—University of Twente – to the Technical University of Eindhoven—considered the third most influential for scientific research in Europe—Netherlands institutions of higher learning are raising the bar on education.

The fact that the Netherlands works hard to facilitate entrepreneurship in education shows that it prioritises a young educated start-up scene.

Something which should also be taken into account is the number of skilled Dutch citizens of Turkish origin. The Netherlands is home to a large minority group of Turkish origin. Among the approximately 400.000 Turks in the Netherlands, there are lawyers, tax advisors, accountants as well as IT specialists and engineers of Turkish origin who are able to assist Turkish start-ups in their mother tongue.

The Netherlands welcomes tech talents from abroad

The Netherlands welcomes tech talents from abroad. For Turkish start-ups it is possible to obtain a one-year valid start-up visa. The so-called "start-up visa" affords ambitious entrepreneurs one year to launch an innovative business. A prerequisite is that this start-up must be guided by an experienced mentor based in the Netherlands. After one year, the start-up entrepreneur may have the duration of their residence permit extended on the basis of the Dutch government's self-employment scheme.²⁶

While Startup Delta has its own 'Orange Carpet', supporting start-ups with the process of obtaining a start-up visa, the Netherlands also puts lobbying efforts for a European start-up visa in place.

Accelerator programs

The Netherlands is home to some excellent opportunities for entrepreneurs seeking help for starting up. Turkish start-ups looking for mentoring can apply to some of Europe's well-known start-up accelerators. Rockstart and Startupbootcamp Amsterdam are mentoring young entrepreneurs to make their start- up successful, with over a hundred of teams already graduating from their programmes.

STARTUP DELTA'S ORANGE CARPET

The Orange Carpet for Start-ups, offered by Startup Delta helps startups with starting a business in the Netherlands, accelerating their business growth, obtaining permits and visas and financial matters. More info: see https://startupdelta.org/

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²⁶ For more information, please visit https://www.startupdelta.org/

The accelerators list includes names such as Founders Institute. Aimforthemoon, Lean Startup Machine, nReduce, StartupNext, VentureLab, Startup

Pirates, Accelerator Nederland and Investment Ready.

Access to Markets and Networks

Geographical location

The Netherlands is easily reachable for Turkish start-ups, with a 3-hour flight. There are over 10 flights daily going from Istanbul to Amsterdam alone, and even more when other airports such as Rotterdam-The Hague Airport and Eindhoven are taken into consideration.

EVENTS

There are also several events organised in cooperation with corporates for start-ups. With events such as COSTA, Corporate Launchpad and How To Get There summit, start-ups are brought into connection with customers.

Proximity to Clients & Customers



Proximity to Clients & Customers, Source: NFIA

Holland's location at Europe's front door provides the perfect springboard into the European market—with access to 95% of Europe's most lucrative consumer markets, all within a 24-hour reach of Amsterdam or Rotterdam.

Ranked No. 1 on DHL's Global Connectedness Index, the Netherlands has an international,

pro-business orientation that combined with its strategic location makes it the perfect place for global companies to reach millions of European customers and beyond. In fact, 50% of Dutch GDP is derived internationally.

Connectedness: Digital Gateway to Europe

The Netherlands is a frontier when it comes to broadband access. It ranks in the top 3 when it comes to the number of fixed broadband subscriptions per 100 inhabitants according to the OECD data from 2015.

With Europe's highest Internet speed and its secondhighest broadband penetration, the Netherlands is

MARMATEK

Marmatek is one example of Turkish scale-ups which have established in the Netherlands. Marmatek which is specialized in providing test and measurement solutions through designing equipment such as sensors, data acquisition hardware and software measurement systems is now moving into the BrainPort ecosystem in Eindhoven.

For more information see http://www.marmatek.com/

considered the Digital Gateway to Europe. Data hosts and start-ups alike have taken advantage of this network to leverage their business growth.

Additional to the attractive infrastructure is a highly multinational and multilingual workforce and a strong creative and graphic industry. An extremely well-connected community of founders, backers and VCs, combined with an accessible government and an open corporate business culture, have morphed Amsterdam into one of Europe's hottest start-up cities.

Access to Capital

Dutch start-ups usually manage to find funding for their operations. This year, some of the start-ups based in the Netherlands, such as Bluebee, Gadeta, Bux, Insisted, Robot Robots Company and Wrecker managed to get millions of euros funding.²⁷

²⁷ The list is merely indicative. See https://startupdelta.org/news/Dutch-startups-off-to-a-slow-start-in-2016-raising-69-million-in-Q1 for the full list

The Netherlands welcomes investors and VCs from abroad. The competitiveness of the economy along with a stable democracy, tax advantages and ideal location, makes the Netherlands attractive to investors in Dutch companies and start-ups.

Furthermore, The Dutch government offers tax incentives to promote corporate R&D and innovation, making the Netherlands one of the best values in Europe for start-ups.

Involvement of the NFIA – How can the NFIA help?

NFIA Turkey has helped many Turkish companies to establish themselves in the Netherlands, including some medium-sized scale-ups.

Although NFIA's involvement is little in the case of start-ups, its main role is to refer them to Start-up Delta, and our regional partners.

However, for start-ups who have survived the seed stage and are looking for international opportunities to grow, preferably in the scale up stage the NFIA can help those companies with establishing themselves in the Netherlands.

More coordination between Startup Delta and NFIA/Turkey is a necessary to investigate opportunities and events to create awareness of the excellent opportunities the Netherlands offers for start and – scale ups.

Furthermore, the NFIA's program includes an introduction to Turkish speaking solutions partners – such as accountants, lawyers and tax advisors. Another facility offered by the NFIA is the Orange Carpet Facility – not to be confused with Startup Delta's program – which makes the process of obtaining a visa easier.

Involvement of the Holland Innovation Network – How can the Holland Innovation Network help?

The Holland Innovation Network aims to improve collaboration in the field of research & development (R&D) as well as innovation between Dutch knowledge institutions and knowledge intensive companies and their Turkish counterparts. The Holland Innovation Network functions as:

- Liaison for international R&D cooperation, including multilateral cooperation in European framework programs such as Horizon 2020 and the EUREKA program.
- Trend watcher and scout regarding future technologies.
- Informant regarding trends and developments by means of publications and seminars.
 - Advisor for Turkish organizations that wish to engage in R&D collaboration with Dutch parties.

The Holland Innovation Network is familiar with both the Turkish and Dutch parties in the fields of innovation, technology and science. Therefore it is the ideal contact point when matching the start-ups with the proper institutions.

For more information, please contact:

Holland Innovation Network – Turkey Netherlands Foreign Investment Agency –

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