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Companies should consider going beyond and investing in R&D localization in Turkey; they will be surprised by the potential

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Dogan Taskent, board member of the Swiss Chamber of Commerce in Turkey, highlights Turkeyâ??s successful response to the COVID-19 pandemic, how the local R&D ecosystem collaborated, often for free, to develop vaccines and treatments, one of which is currently in phase III clinical trials. In addition, Taskent analyzes the Turkish industryâ??s capabilities in biosimilars, and how it is providing â??world classâ?• quality pharmaceuticals at a reduced price.

Can you begin by commenting on your background, experience in the healthcare sector and involvement with the Swiss Chamber of Commerce in Turkey?

My background is in electrical engineering. I studied for ten years in Switzerland, high school and university at the ETH Zurich. After that, I spent few years doing my post-graduate studies at the Massachusetts Institute of Technology (MIT) and later at New York University (NYU). I conducted R&D at Bell laboratories in New Jersey.

After coming back to Turkey, I spent some time in corporate finance, learning the financial side of the business. I realized that startups were the best pathway to develop new technology. I visited 60 universities, their technology parks and technology transfer offices in the country, helped them enhance the capacity of their tech transfer offices, worked on 2,500 startup and academic projects and gave classes on technology development.

My involvement with the Swiss Chamber of Commerce was due to my educational experience in the country; a way to give back to the Swiss community in Turkey. I was president of the chamber from 2012 to 2016, helping companies with legal issues and advising them on regulation. The organization supported Swiss companies in Turkey, but we wanted to turn it around to help Turkish companies as well; after all, Switzerland is number one in the global competitiveness index and the global innovation index.

We worked to do technology transfer from Switzerland to Turkey in industries where Swiss know-how was number one such as medical devices and pharmaceuticals. Although the Swiss pharma ecosystem is often a pioneer in pharmaceuticals, it failed to lead the way in COVID-19-related treatments. It is one of the most innovative and richest countries, with great universities and research capabilities, but fell short during one of the most important health crises in modern history. Switzerland must regain its entrepreneurial and flexible approach.

How do you compare Switzerlandâ??s missed opportunity in the pandemic with Turkeyâ??s development of treatments and vaccines?

Compared to similar countries, what Turkey has accomplished so far in the pandemic is amazing. They did an analysis of the situation and, understanding their capabilities, selected a few medicines to fight COVID-19, running that protocol rigorously. They chose favipiravir and hydroxychloroquine, which later proved not to be the most effective treatment, but favipiravirâ??s clinical trials showed favourable results, similar to remdisivir in the US but even better for coughing and antiviral activities.

Turkey was also fast to establish testing procedures so that anyone with symptoms could go and have a PCR test for free. In addition, social distancing and masking rules were systematically applied; there was a brief shortage of masks, but it was resolved fast.

A clear protocol was put in place right away whereas some other countries implemented a wait-and-see approach. The Turkish approach was giving antiviral drugs to lower the virus concentration early on, so people did not end up in the hospital or went to the hospital with less severe symptoms. Healthcare practitioners were given a reasonable amount of freedom to help patients with the available information they had.

Can you elaborate on the collaboration between the public and private sectors in Turkey during the pandemic?

The collaboration was highly critical. Something to highlight is the fact that, while vaccine R&D can cost hundreds of millions of dollars globally, Turkey began each project with just US 200,000. It was a miracle. TUBITAK (Turkeyâ??s Scientific And Technological Research Council) supported 18 projects, half of them vaccines and the rest drugs for COVID-19 patients, and each cost approximately that amount of money.

They were able to accomplish that because academicians did not charge a dime for their work on those projects, students supported the effort, universities opened their laboratories. The ecosystem had a national emergency approach. Researchers used the funds to buy material to begin the R&D process, but that was it, they did not receive extra compensation beyond their normal university salary and worked day and night.

I categorize it as a miracle because they finished the R&D for five different vaccines with different technologies: inactive, vector-based, VLP, DNA and recombinant protein. After researchers finished the initial development, the Turkish private sector came in to follow up on the process â?? including companies like Nobel (VLP vaccine), a veterinarian vaccine producer (inactive vaccine), and Atabay (DNA vaccine and recombinant protein vaccine).

Companies opened their laboratories and GMP production facilities for zero dollars, saying that it was a national issue, hoping that it would work with, supporting each other with no purchase guarantees from the government.

As an emerging country, Turkey has to overcome many challenges and unexpected situations; it proved that people can come together for the greater good. Other countries were able to throw money at the problem, but that was not the case for us. Everyone is a captain in a lake, but not everyone is a captain in the ocean with heavy weather.

Clinical trials are an expensive endeavour. TUBITAK is ready to pay for phase I and II clinical trials, but phase III trials require substantial investment since they must take place in many countries. The Ministry of Health needs to be involved in phase III because no Turkish company can afford it and, since vaccines are mostly purchased by governments, they should participate.

The Ministry of Health is supporting phase III trials of one project right now, which is an inactive vaccine developed at Erciyes University. The other projects currently in phase II will need support from the MoH or development will be stopped.

Besides the recent news about progress in two of the Turkish-made COVID-19 vaccine candidates, the subject of local talent has been put in the spotlight after the success of the Turkish couple behind BioNTech. To what extent can that talent be appealing for Swiss companies and organizations?

Most of the Turkish students with the highest grades in university entrance exams go on to study medicine. Once they finish med school, they must work at government institutions which is key because most of the population is covered by the public healthcare system; they get good training because they can treat many patients.

Moreover, engineering schools are top-level and many postdocs go to the US and Europe to advance their academic careers, bringing their learnings back to Turkey at some point.

Switzerland of course has more grants, resources and a great history to conduct research, but if we can combine their financial means and their disciplined approach with Turkish R&D, we could see important technology development. I believe that Swiss-Turkish collaboration can benefit from the problem-solving Turkish approach and Swiss resources and discipline to create valuable solutions for the entire world, not only Western countries.

What can you tell us about the reputation of Turkish companies and Turkish-made pharmaceutical products in Switzerland?

The Turkish pharma industry is highly regulated and follows international GMP, ICH and PIC/S standards. That means that Turkish pharma manufacturing is world-class in terms of quality but less expensive. Nearshoring is another advantage since the country is close to Europe and the MENA

region.

In the startup domain, pharma companies would like to operate internationally but are lacking two things: investment and trademark. There is a big difference in perception between products made in Turkey and Switzerland. Turkish startups are eager to grow fast, so having Switzerland as an investment and technology commercialization platform could really help them to go global. Switzerland is a great partner in pharma.

How do evaluate the current drug pricing system in Turkey and the effects it has on investment and industry development?

If you want a social system that covers everyone and pays all the bills, you must keep the budget under control and that means lower prices. It is difficult for both local and international manufacturers, however, we must consider that the population is benefiting from good access and quality. The situation will not change anytime soon because the public budget is limited. We must come up with a different payment system, taking some of the weight off the government and ensure that people with higher income contribute more.

An alternative is supporting companies to become international so they can afford to sell cheaper at home and make a profit in the international markets, but you can only do this for generics. The country should also contemplate the possibility to support the development of innovative products, which is the best path to take a pharma company to the next level.

The issue is that margins on generics are significantly lower than originator drugs, which is normal. However at a certain level, this â??low price approachâ?? leaves no profit margin to local companies to invest in R&D. No R&D no new drug development, hence we are in a virtuous cycle. We can only break this with international collaboration or a national strategic new drug development fund.

How valid is Big Pharmaâ??s argument that high drug prices are justified because of how expensive new drug development is, particularly in biotechnology, where many of the recently approved products were first developed by startups who took the biggest risk?

Indeed, large pharma companies have been buying biotechnology startups or their assets after proof of concept is reached in phase I or phase II trials. However, it is important to underline that the ones taking most of the risk are venture capital firms, which are risk-taking institutions by definition, and they should take that role. Of course, they should also look at the skyrocketing prices that are eventually passed on to taxpayers and the general public.

Unfortunately, pharmaceutical companies lost their aim, becoming publicly traded companies that are mostly concerned with high profitability. Pharmaâ??s primary role should be human health and not making huge profits. A balance should be introduced again because medicine is not a luxury.

Since you mentioned publicly traded pharma companies, it is noteworthy that only one of the top 20 pharmaceutical companies by revenue, Boehringer Ingelheim, is privately owned. But there are other examples of large pharma companies that are majority or completely owned by foundations such as Lundbeck or LEO Pharma. Could any of those models work in Turkey?

We do not have that foundation ownership model; Turkish companies are mostly family-run companies, a model that requires them to think about the long-term and sustainability. They have a responsibility to protect a name and legacy instead of only financial interests. It is a more stable and humane approach, not an excel-driven endeavour.

With your R&D director role for a Turkish company as a backdrop, what is your perspective on the innovation ecosystem in Turkey and what role can Swiss organizations and institutions play to improve it?

Turkey has great healthcare startups, great minds working inside them, but they do not have the know-how to operate in highly regulated markets. It would be good for them to have breathing space and the Swiss-Turkish connection can be the solution. For biotechs, having collaboration with Swiss companies is critical.

On that front, I would like to see international pharma companies in Turkey open more R&D centres. We currently have 35 pharma R&D centres and only 2-3 belong to multinationals. That fact is an indication that multinationals perceive Turkey mostly as a market where they can earn money.

R&D centres are the real prize, where talent is developed, innovation created, and know-how distributed. People that leave those centres can later go to Turkish companies to advance their careers or become entrepreneurs, sharing the knowledge with the local ecosystem.

Donâ??t you believe that it might be too big of an ask from Big Pharma general managers in Turkey when asking headquarters for investment in R&D which is often expensive?

TUBITAK can support the R&D itself, I do not see any problem there, also, companies can collaborate with universities. Letâ??s not forget that the budget needed to conduct R&D projects in Turkey is significantly lower than in other countries while the quality is the same.

Regarding the Turkish pricing system, companies should, and most of them do, understand that there are rich, less rich and poor countries, and the pricing should reflect that reality; money should be made in countries that can afford it.

Multinational companies operating in Turkey regularly speak about their contribution in two areas: clinical trials and startups. What some fail to mention is that they need to do clinical trials in order to sell the products in Turkey. Yes, clinical trials bring money to the country but they are also a double-edged sword because they experiment with human beings that may or may not benefit from them. They are a necessary step to ensure that patients receive safe and effective drugs, but ethical grey areas exist.

Regarding Big Pharmaâ??s support for startups in Turkey, speaking from my personal experience as someone that has dealt with 2,500 different startups in my career, I can say that it falls short of what one might expect. They sometimes help entrepreneurs go abroad to present their ideas to investors but it is not enough.

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Another big trend for Turkish manufacturers is the recent wave of investment in biosimilar production and capabilities. How do you assess local companiesâ?? potential to succeed in that area?

Academia does a great job doing research on biosimilars, developing analytical methods, developing upstream and downstream processes. The industryâ??s task is completing the development phase, conduct the clinical trials and large scale production. The industry has been working on that development phase for the last 5 years. As an industry, we are in the infancy phase. That also means they are great opportunities to build new systems.

There are only 25 biosimilar licenses granted by MoH in Turkey precisely because it is hard to pass biosimilar regulations. Notably, there is only one company that can be managed from cell bank to biosimilar finished dosage form; it is called Arven,

Ilko, Nobel, Atabay, Deva and Turgut are also very advanced in biosimilar development and will soon bring their products to the market. TÃ?BÄ°TAK Kamag 1007 support was a great accelerator for that. Currently, the critical issue is the scale-up know-how. We are still right at the beginning of that learning curve. While I serve as R&D chief for Atabay, I do not see Arven as a competitor but as a potential collaborator instead; we must do collaboration before the competition to build a rising tide that lifts all boats.

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