FOSTERING INNOVATION AND ENTREPRENEURSHIP: THE TAU MODEL

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Despite being one of the youngest research institutions in Israel, at 60 years old, Tel Aviv University is the biggest, with 30,000 students. Almost half of the student body is at the master's or doctoral level. It is the most comprehensive institution of higher education in Israel, with 9 faculties spanning the humanities, arts and sciences, and 125 schools and departments.

Most of the fields that are taught at Nazarbayev University – such as law, economics, medicine, public policy and engineering – are also strong areas at Tel Aviv University. Our graduates and faculty members play leading roles across Israeli society and beyond. They are Supreme Court Justices, cabinet ministers, political leaders, CEOs of top companies, health system managers, educators, famous film and theater directors and much more.

In terms of rankings, I think the two most significant ones for this occasion are as follows. First, Tel Aviv University was recently ranked as a top 100 World Innovation University, and number 1 in Israel. Second, Tel Aviv University ranks 9th in the world for producing successful start-up founders. We are the only school among the top 10 outside of the United States. In other words, our graduates are leading in the entrepreneurship arena right up there with Stanford and MIT.

Over the past five years, TAU produced 250 founders of startups, each of which attracted an average of $1.7 million in venture capital investments. One of these companies, whose co-founder studied economics and philosophy at Tel Aviv University, was sold for over $1 billion to Google.

Now, Tel Aviv University is not a wealthy private university. We do not throw billions of dollars at our R&D. Rather, we are a public, state-funded, highly regulated institution. Let me give you some figures for other recognized innovation universities: Stanford and Harvard spend $800–900 million on research per year. The University of Michigan, which, like us, is a public university, spends $1.3 billion. By stark contrast, Tel Aviv University spends only $160 million annually on research.

So how do we do it? How do we cultivate a spirit of innovation that translates into patents, viable technologies and businesses? I believe innovation-building requires at least 6 core ingredients, and these can be adapted and replicated across different kinds of organizations.

Attracting & nurturing the best people

First and foremost, for innovation to thrive, you need dynamic, intelligent and ambitious people. Now, a key and persisting obstacle in Israel, Kazakhstan and many other countries around the world, is brain drain. Some our best minds leave for North America and Europe, which poses a grave threat to the sustainability of our ecosystem.

How do we go about addressing this, of stemming the steady outflow? The answer is simple – through sustained efforts to bring back and attract star researchers. At Tel Aviv University, our young faculty recruitment program has brought back Israelis from the best

universities in the world like Harvard, MIT and Oxford, with a special emphasis on young researchers in interdisciplinary and emerging fields. This is a costly enterprise – each new lab can cost millions of dollars – but we give it top priority because we are only as great as our people. We are also competing for the best master's and doctoral students, and the only way to do that is with attractive financial incentives such as generous fellowships and attractive student housing.

Fortunately, Tel Aviv University is located in the city of Tel Aviv, which ranks among the top 5 cities in the world for innovation. It's an exciting city, a hip place to work and study, and a magnet for bright and talented young people.

Freedom & Chutzpah

The second critical ingredient is freedom – freedom to think, to question, to test the boundaries of current knowledge. I do not know whether there is a Kazakh equivalent to "chutzpah," but in Hebrew, this term means the quality of audacity, of not accepting "no" for an answer. Chutzpah and freedom go hand-in-hand. In the context of research innovation, what does having chutzpah, of being audacious, mean? After all, pursuing fresh knowledge is the goal of all academic research.

So I think that the added value of Israel, and especially Tel Aviv University, is our tremendous openness toward daring, even crazy, combinations of ideas; and our readiness to break down the walls that separate between fields and disciplines. To encourage interdisciplinary collaboration, we even physically throw people together in one space – chemists, biologists, engineers, computer scientists – to spark the exchange of ideas and collaborative projects. At our nano-center, for instance, we have 70 groups from two dozen departments working together.

You could even say that Tel Aviv University is one big startup – shoestring funding, lots of enthusiasm, long hours and big, world-changing ideas. I think that at a top institution like Nazarbayev University, this idea could especially resonate.

Bridging academia & industry

So we need the best minds, and we need to set their imagination free. But we need a third critical ingredient too. This is robust academic-industrial relations. We need to facilitate a flow of information between academia, business, government and other spheres. When it comes to collaboration between universities and industry, Israel ranks 7th in the world. Compare this with the United States, which ranks 3rd, and with Kazakhstan, which ranks 85th.

Tel Aviv University has partnered for years with top Israeli and multinational companies such as Teva, Israel Aircraft Industries, Intel, Microsoft and Google. These companies set up labs on our campus, give our students scholarships and internships, recruit our graduates, commission major research projects, and, sometimes, license our technologies for commercial development and startups. Our partner companies keep us focused and up-to-date on industry needs, and we keep them abreast of "The Next Big Thing."

At Nazarbayev University, you know well the importance of combining theory with practice. Universities can create the framework for theoreticians and practitioners to meet, exchange knowledge, and learn from each other for the benefit of society.

Diversity

A fourth important element for fostering entrepreneurship and innovation is diversity, which I will touch on briefly. I think that Kazakhstan is no different than Israel: Many bright and ambitious young people are not entering the knowledge workforce because of a lack of opportunity. At Tel Aviv University, we believe passionately in equality of opportunity, not just because it is moral, but because it is smart. Ensuring that the most talented students are given the opportunity to pursue quality higher education – regardless of their ethnicity, religion or socioeconomic background – is not just a matter of social justice, but of competitive survival.

R&D and training

A fifth condition is what I call "innovating the innovation process". Along with shaping a knowledge hub that connects researchers, industry and the greater community, Tel Aviv University is also in the unique position of being able to step back and study the innovation and entrepreneurship cycle itself. We have an internationally reputed business school that researches and publishes extensively on technology management. In fact, we just received a $50 million private donation a couple of weeks ago to transform the business school into a global force for innovation and venture management.

All of our theoretical and practical knowledge is passed on to our students, and not just in business studies. We recently expanded our courses in innovation and entrepreneurship to include students from engineering, exact sciences, life sciences and the rest of the campus. These days, we are opening a campus-wide entrepreneurship center, a one-stop shop, that will serve everyone – faculty, students, alumni and the public – with courses, mentoring, accelerator funding and business planning. That new center will incorporate existing and new accelerators and incubators in smart transportation, bioengineering, brain studies and more.

International collaboration

Finally, and this is one of the reasons I came to speak with you, academia can and should promote international exchange and cooperation. Huge universal challenges such as pollution, food security and cyber-threats require international exchange and collaboration to be solved. To put this more concretely: If R&D is to have maximum impact, universities must have strong links to other participants in the global innovation chain.

I am pleased to announce that Tel Aviv University has four cooperation agreements in the pipeline with Kazakhstani universities. Moreover, at Tel Aviv University we have outstanding international degree programs that could be of great interest to you here, including MA programs in conflict resolution, trauma studies, security & diplomacy and political communications. These programs are taught entirely in English. Altogether about 1,500 international students from 60 countries attend long and short programs at Tel Aviv University each year, and we would love to see more Kazakhstani students among them.

Encouraging such exchange can also enable us – the universities – to have a dramatic impact on strengthening friendships between countries. I see vast potential in what

Kazakhstan and Israel can do for one another in fields of mutual interest, and I believe that, together, we can drive scientific, technological and economic growth.

To conclude, these six ingredients I described – bright minds, intellectual freedom, academia-industry synergy, diversity, entrepreneurship training, and a global outlook – these are key for staying competitive in the innovation arena, and are not only applicable in the academic setting, but also in the corporate and government spheres.