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I wanted to provide an heterogeneous perspective but then I saw waves of opportunities being suggested and I took notes about the other side of some of the problems that were discussed. Climate, energy, food security, water are all problems but there are also waves of opportunities for new economic developments based on the technologies you are trying to create to handle these problems.

Those are basically areas where the UAE, for example, already has strategies that involve the education and reserve systems. I would like to add my preferred ones, which are the most technological, digital finance, AI and large language models, and quantum technology. I am moving and watching over time and maybe in a progressive way, but these three areas are also areas where many countries in the region, and the UAE first, already have strategies for development. That is not just scientific development but also economic development because all these opportunities are challenges to the ecosystems of innovation, new companies and new products. Therefore, in a way these problems also create opportunities and especially for the younger generations, so we have to invest in their capabilities.

The question is what the difference is because at the beginning, we were discussing that we have already had some waves of opportunities in the world, including the Internet for example. The original opportunities, the original technologies were mostly global but these days, all the waves I mentioned tend to be regional instead. The reason for that is that there is a perimeter of control, you think of LLMs, AI or quantum technology, they are all being developed on a regional basis. There is this notion of perimeter and even the IP is no longer accessible, which used to be a global market and when you needed an IP you would buy it, buy a company somewhere to get the IP. This is no longer that easy because the IP is regionalized and there is this notion of digital sovereignty and digital control. The different regions have different ways of handling these waves of opportunity and, of course, this corresponds to different governments and different roles of universities, which is my interest of course. However, I see this differentiation taking over in the different regions and of course, I am particularly invested in this region and what innovation opportunities we will be able to catch in this region and turn them into economic developments.

First, we have the opportunities because in this region we have now started to build an infrastructure of universities, research centers, and staff who have been trained in a number of countries, and there has been a big effort in that direction in the UAE but also Saudi Arabia. This has created an infrastructure that was not there before. I remember when I first arrived in this country there were very limited numbers of research universities and now you have easily

10 to 20 in the UAE that are at the top of the rankings, which means that the infrastructure is there. Second, there is the notion of creating a critical mass of people, locals and expats alike, who are capable of then moving out, as well as the notion of investment.

I have talked about the opportunities but there is also the problem of the risk, the risk is that in these waves of opportunities, there is also large-scale investment. If you look at the level of investment that has been taking place in areas where there is a very high-risk, like quantum, look at the figures for China on quantum technology, a big effort is being made with a very high probability that some of it will be useless. However, these big regions can and will afford it for a number of political reasons that you know much better than I do. The risk is whether we will be able to run all these different races at the same time, so I am not so much worried about the after of oil and gas, I am worried whether we will choose the right priorities where we can actually deliver for the region. That is not only in terms of the individuals, because I believe we can do that, but also in terms of the change in the ecosystem.

When it comes to the role of the universities, I know that our chairman is interested and an expert in this area, so they can have a role. Their product is not just people; it is also the ecosystem you can create around them in terms of innovation initiatives.

I will stop here. I think that these problems have another side, and that is the opportunity if we can grab it.

**Adil Alzarooni, CEO of Al Zarooni Emirates Investments and Al Bidayer Holding,
Founder of Citizens School**

Thank you very much, Professor.