

Knowledge-based economy: viable, possible and necessary ^[1]

Submitted on 19 January 2007 - 3:52pm

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By Luis E. Rodriguez Rivera Interim Executive Director of the Puerto Rico Science, Technology and Research Trust An analysis of countries with successful knowledge-based economies (biosciences, engineering, and information technology) brings us to the conclusion that this is a possible strategy for Puerto Rico, in tune with our industrial expertise and our human resources. And, more than possible, it is necessary, if the Island doesn't want to stay behind in the competition for the new jobs that this industry generates world-wide. Today is evident that economical progress is in the proper management of knowledge, in the commercialization of ideas. This is a global tendency and a strategy that generates wealth for the countries that adopt it, by bringing capital investment. Knowledge-based economy is nothing else than using the information and knowledge generated by scientific advances as an economical resource. Fortunately, trained minds that generate ideas and knowledge are an abundant resource in Puerto Rico. The Islands already has a growing biotechnology sector, one that really needs a good investment push, something that countries like Ireland, Singapore, Chile and Germany had in their moment. Puerto Rico has a workforce with the capabilities needed by the pharmaceutical industry present in the Island. Moreover, we can say that Puerto Rico is in a better position than other markets when they were starting in this market and that are now leaders in the industry, like Singapore. It is enough to say that currently, Puerto Rico has 40,000 direct jobs and 100,000 indirect jobs in the biosciences. Meanwhile, informatics and communications employs more than 12,000 people. On the other hand, biosciences products make up 28.6% of our national product and 72% of exports of the country. Every year, our universities graduate more than 9,000 science, engineering and technology professionals. Puerto Rico also has new projects that will facilitate

this strategy. Some examples are the Cancer Center affiliated to the University of Puerto Rico and MD Anderson of the University of Texas; the new Molecular Sciences building of the University of Puerto Rico in Rio Piedras; the Bioprocessing Training and Research Center of the UPR in Mayaguez and the collaboration between the Department of Education and the Industrial Development to award fellowships to teachers of the Department that wish to continue graduate studies in sciences and mathematics. We also have to highlight the research consortiums created to advance this sector, like INDUNIV (Industry and University). On the other hand, by creating jobs, the knowledge based economy multiplies the opportunities in several areas, including those that are unrelated to science. For example, pharmaceutical manufacturing will benefit from the synergy resulting from the combination of research and fabrication in the same place. In fact, manufacture should be an integral part of this initiative. We have to mention examples similar to Puerto Rico, like Singapore, an Asian archipelago of similar climate that has turned into Asia's biosciences activity center. Singapore's scientific park, the Biopolis, has generated collaborations between the Singaporean government agency for sciences, technology and research, the National University of Singapore, the university hospital and the scientific parks of the country, to train highly specialized research staff that can attend to the health need of the country and their objective of integrating to global economy. Also very interesting is the case of University Park in Massachusetts, closely related to the academic prestige of MIT. That Park attracts biotechnology companies that benefit from the MIT's infrastructure and the process developed there. In Puerto Rico this kind of agreement is only logical given our tradition of supporting quality higher education, and the excellence of the education provided by our institutions. With this initiative, we would go further to support our scientists. In both cases the investment in infrastructure was substantial. Research was supported substantially also. The economical benefits keep multiplying beyond the science and technology sector, thanks to the Government, the industry and the people's support, because they were able to identify a world of possibilities for a better future. Puerto Rico has the resources and the talent to take on projects of similar significance to the best in the world. We are at the right moment to take this strategy as a platform for our development. A knowledge-based economy for Puerto Rico is viable, possible and necessary.

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