

# *What can Puerto Rico do to enhance its economy?*<sup>1</sup>

White Paper  
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First, we need to understand what others (especially our major world competitors) have done. No need to re-invent the wheel, what we need is to understand how our wheel works, integrate best practices around the world and become more effective and efficient than others in developing new businesses and catalyzing investments... we can learn a lot from Ireland, Finland and Korea. We have what it takes, but we need leadership, real commitment and substantial support from all sectors to make this happen. Everyday that goes by the breach between us and our competitors widens. We cannot sit and watch this happen!

## *Understanding the "Irish Miracle"*

Ireland has experienced an extraordinary transformation in recent years. From a poor, largely agricultural country whose young people were leaving by the thousands each year to seek opportunities elsewhere, Ireland has become in the last two decades one of the most dynamic knowledge-based economies in Europe. Its GDP per capita has risen in 15 years from less than 60% of the EU average to slightly better than the EU average in 2002, overtaking its neighbor the United Kingdom. Its real growth rate has averaged 6.5% over the past decade, during which it created 4 times as many net jobs as the UK. It has become a high-technology powerhouse within Europe, and the largest exporter of software in the region.

How they did this? As in every case of dramatic and sustained economic growth, the reasons for Ireland's boom are complex. However, there is broad consensus that two factors in particular fueled Irish growth: **education and foreign direct investment**, the former being a precondition for the latter. Most analysts agree that Ireland's failure to invest significantly in education for its first 50 years of independence was a major cause of its economic backwardness during those years. Beginning in the 60s and increasingly in the 70s, however, successive Irish governments made a major commitment to expanding educational opportunities, by extending free secondary education to all (eliminating fees in secondary schools) and by an increased effort to upgrade tertiary and technical education.

## *Finland: From Forests to Phones*

The forests that cover extensive portions of Finland provided, until recently, the main source of its wealth. In the 1960s, wood, pulp and paper products accounted for over 60% of Finnish exports. Even in 1990, this sector still accounted for 40% of exports, slightly above the share of metal and machinery products at 31%. Yet the figures for 1990 also showed the beginning of a trend that would confirm itself dramatically in the 90s: the emergence of Finland as a major exporter of

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electronic and high-technology products. By 2000, this sector had grown to over 30% of exports, and Finland had become a world leader in the production of cellular telephones and related equipment.

How did Finland, a small country with limited natural resources other than its forests, become a leading competitor in the "new economy"? Two factors in particular seem to have played a vital role: a **sustained investment in research and development, to fuel innovation, and a coherent and forwardlooking response to economic crisis.** The foundations for Finnish success had been laid over several decades. A combination of social cohesion, a consistent and predictable policy environment, and a strong commitment to education, created the general enabling conditions. In addition, since the early 1980s, Finland had consistently increased investment in research and development (R&D), and had expanded public finance of business R&D in the late 80s and early 90s, at a time when OECD countries were dramatically reducing government R&D support. This increased support, focused on encouraging innovations that could be brought to market, was one of the crucial elements of Finland's creative response to the crisis it faced in the early 90s -- a crisis from which it rebounded dramatically.

### ***Korea: From Crisis to Opportunity***

Until a few years ago, Korea was considered one of the most remarkable economic success stories of the past half-century, lifting itself in 30 years from widespread poverty to global competitiveness. From 1966 to 1996, Korean per capita income grew by an average of 6.8% annually. When it joined the OECD in 1996, Korea had already achieved universal primary and secondary education enrollment and surpassed the OECD average in tertiary enrollment. Life expectancy has increased to 72 years, just below the OECD average. Yet in late 1997, the East Asia economic crisis hit Korea hard. GDP contracted by almost 6% in 1998, and unemployment rose to 8.5% in early 1999. While the crisis was short-lived and Korea enjoyed a dramatic recovery (the economy grew by 10.7% in 1999 and has continued strong growth since then), it brought to light fundamental questions about the sustainability of Korea's input-driven, government-led development model, and its heavy dependence on export of manufactured goods. Furthermore, it exposed several major weaknesses in the Korean economy and society that would make Korea much more vulnerable in the future, as regional competitors emerged and globalization progressed.

**What they did.** In response, Korea has recently embarked on a concerted effort to reform its economy and society to lay the groundwork for competing globally as a knowledge-based economy. The first area where substantial reform is required (and has begun) is in **the role of government in the economy and the economic and institutional regime for innovation and economic growth.** The Korean government has traditionally played a direct and active role in most sectors of the economy, in close cooperation with the large conglomerates that dominated it. While this strategy helped fuel Korea's earlier growth, it is particularly ill-adapted to the rapid change and flexibility that characterize a competitive knowledge-based economy. A weak financial sector, inflexible labor markets, and significant impediments to market exit (bankruptcy and industrial restructuring) and entry (new firm creation) deprive Korea of the ability to respond quickly to changing conditions and opportunities in the global economy.

**Education** is another area where traditional strengths hide new weaknesses. Intense and sustained investment (both public and private) in education has been one of the pillars of Korea's economic

development. Yet the Korean education system is inflexible, overregulated, and of uneven quality, with an overemphasis on formal schooling, quotas and testing. Adult learning opportunities are limited, and there is considerable gender inequity both in higher education and (resultantly) in the job market. Korea has begun to address the challenge of deregulating the education system, increasing autonomy for secondary and university education, permitting greater flexibility in curricula, and increasing quality. It is also beginning to address the urgent need to increase opportunities for life-long learning, and to strengthen ties with the international educational system.

Finally, **research and development** is another area where Korea has not been getting good value for its investment. Korea spends more on R&D, as a percentage of GDP, than most OECD countries. However, there are fundamental weaknesses in the Korean innovation system which the government has begun to address. Linkages among firms, research institutes, and universities are weak. Public investment in R&D is not sufficiently transparent or rooted in a clear economic rationale, and it is often duplicative of industry research. Ties with global research networks are weak. The government has recognized that the challenges and weaknesses brought to light by the crisis of the late 90s provide an opportunity for reform and revitalization of the Korean economy. On the basis of recommendations from the World Bank and the OECD, the Korean government has embarked on an ambitious strategy to address these weaknesses, make its economy more flexible, adaptive, and open, and claim its place as a leader in the global knowledge-based economy.

### ***What can Puerto Rico do? Priorities for Action***

Within the framework of a coherent and realistic national strategy for building a knowledge economy, there are several critical priorities for action that span the four "pillars" of national knowledge economy strategies:

1. **Creating an Appropriate Economic Incentive and Institutional regime:** continue to press forward aggressively with efforts to create the "enabling environment" for the knowledge economy. This includes:
  - a. Strengthening legal and regulatory frameworks for competition, entrepreneurship, firm restructuring, intellectual property, emergence of new markets in products and services, and openness to trade and foreign investment, so as to permit individuals and organizations to respond to changing opportunities and demands in flexible and innovative ways;
  - b. Strengthening financial systems, including capital markets, so that capital can flow to the most innovative and competitive sectors and firms;
  - c. Enabling greater labor market flexibility, so that innovative firms can attract the workers they need, and to permit restructuring of less competitive firms and sectors;
  - d. Creating an effective and financially sustainable social safety net to help workers make these transitions;
  - e. Enabling and encouraging the growth of small and medium enterprises, the source of much innovation and job creation;
  - f. Building effective and accountable government capacity to implement these policies in an efficient and fair manner, and rooting out corruption at all levels of government.
2. **Building the Human Capital of the Knowledge Economy:** recognize the urgent need to reform education systems and enable life-long learning. Priorities include:
  - a. Creating opportunities and incentives for private sector partnerships, investment and innovation in education;

- b. Promote science and technology, and diversity across the education pipeline
  - c. Promote quality, relevance of curricula and scholarly work, impact, and access for all, rather than micromanaging curricula, organizational design, and administration of educational institutions;
  - d. Flexibly integrating formal, vocational, adult and distance education and training to provide a greater range of opportunities for life-long learning, and creating policy and regulatory frameworks, including certification schemes, that make lifelong learning opportunities attractive and easy for individuals to pursue.
3. **Building a national information infrastructure and promoting access to and use of ICTs in government, the private sector and civil society:** Puerto Rico has given considerable attention to ICT issues in the past few years. Yet national ICT plans have not yet translated into substantial progress in integrating and innovation in ICT infrastructure, applications, services and products. We should to continue to move aggressively on:
- a. Fostering private sector investment in information infrastructure and services;
  - b. Developing IT infrastructure (Puerto Rico Grid) to support academic and corporate research as a tool to attract foreign investment
  - c. Creating flexible legal and regulatory regimes for new forms of economic and social activity and government service made possible by the spread of ICTs, most notably e-commerce and e-government;
  - d. Promoting broad and affordable public access, particularly among poor and rural populations, to ICTs, through a careful mix of government investments and incentives for private investment and innovation.
4. **Creating a strong and effective national innovation system and promoting research and development that brings innovations to market:** Puerto Rico has a strong scientific and technical capacity with access the US scientific network, which is one of the most attractive assets we have. Although some progress has been made in reforming our innovation system (both at the University level as well as with the R&D Trust Fund), much more aggressive efforts are needed in:
- a. Rationalizing and significantly increasing government funding for research and development, and making it more results-oriented;
  - b. Improving support for innovation and networking among small and medium enterprises (SMEs);
  - c. Encouraging greater interaction and cooperation among firms, universities, government and private research organizations, and greater contact with their foreign counterparts.