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An Australian 'Smart State' Serves Up Lessons for a Knowledge Economy

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Fifteen years ago, the Australian state of Queensland was famous more for its beaches than for its brain power. Fellow Australians thought of Queenslanders as miners, farmers, or surfers, not as professors or scientists.

When Queensland announced in 1998 that it was planning to become a "Smart State," or a knowledge economy, locals quipped that the government had used the word "smart" only because Queenslanders couldn't spell "intelligent."

But since then, the number of scientists in Queensland has more than doubled, to 18,100. Spending on research and development has also increased twofold, to more than $4-billion. The state's universities are studded with 36 new research institutes that are hiring talent and turning basic science into products, patents, and drugs. And a $354-million Translational Research Institute, to be finished in September, will have two university partners and the ability to manufacture drugs, a capacity that had previously been missing in Australia, forcing clinical trials overseas.

Along the path of the 14-year drive to become a Smart State, Queensland's university officials, scientists, and nascent philanthropists have learned some lessons that might benefit other governments interested in nurturing knowledge economies. Indeed, Charles (Chuck) Feeney, the philanthropist who has masterminded some of the multilayered deals at the center of the Smart State effort, recently made a record $350-million donation to Cornell University's effort to build a science-and-technology-focused graduate school on Roosevelt Island. South Carolina has a similar effort to create a Smart State and has paired up with the Australians.

Australia has its own special challenges, though, given its distance from other research and manufacturing. "We're a small country on the edge of a large part of the world," says Ian O'Connor, vice

chancellor of Griffith University. "Our costs will always be significant." And Queensland's universities will now have to scramble for money to operate their buildings and pay for scientists' salaries under a new state government whose loyalty to the Smart State has yet to be tested.

Planning for Post-Coal

Queensland's Smart State effort started at the top. Peter Beattie, the former Queensland premier who helped spark the Smart State, said that his thinking about it began before he was in power. "As I traveled the world looking for ideas," he says in an e-mail, "it became clear that any future governmental economic strategies could not ignore innovation and knowledge, which would be a major driver of future economic growth."

Just as oil-rich countries such as the United Arab Emirates were planning for a post-oil future, coal-rich Queensland needed to develop intellectual resources, Mr. Beattie said. As he looked around in Queensland, the state had good, if somewhat underappreciated, universities, and academic leaders who were eager to work with the government.

Two of Mr. Beattie's key allies in his early efforts were Mr. Feeney, an Irish-American philanthropist who made his money from duty-free stores, and a Scottish medical researcher, Ian Frazer.

Mr. Feeney visited Queensland at the request of his longtime friend, the Australian tennis player Ken Fletcher, who was born in Queensland's capital, Brisbane. During his visit, Mr. Feeney, already a philanthropist with an interest in medicine, met academic leaders he came to respect and saw medical-research institutes that were strong but needed more investment to create laboratories with the potential for long-term payoffs. "In Queensland, he found an enthusiastic and committed group of scientists, educators, and government leaders who shared this vision," writes Christopher G. Oechsli, president of Mr. Feeney's Atlantic Philanthropies, in a statement.

Mr. Feeney became a regular visitor to Brisbane and began to apply the strategies that had made him successful elsewhere. He grasps the principles of levers, his admirers say, which can amplify force both in moving rocks and in giving away money. One of the Smart State buildings now under construction, the Translational Research Institute, is an instructive example of using leverage in fund raising. The Institute has its roots in the years before the global recession, when Dr. Frazer, a scientist who moved to Brisbane in 1985 to work at the University of Queensland, was developing a vaccine that has prevented cervical cancer in women around the world and won

international acclaim. Dr. Frazer says he was desperate for new laboratory space and went to Mr. Beattie, who in 2006, the year Mr. Frazer was named "Australian of the Year," offered $100-million in state money.

But by January 2009, with the global financial crisis still raging, construction had not begun. Five major medical-research buildings in Australia were looking for money. Atlantic Philanthropies decided to focus on three Brisbane projects, including the Translational Research Institute. Together, the three projects needed $205-million to finish. "A number of parties went to Chuck Feeney for the same thing," says Clare Pullar, pro vice chancellor for advancement at the University of Queensland, a partner in the proposal to create the institute. "And he said, 'Why don't you play together?'"

The Atlantic Philanthropies' executive in Australia approached the federal government to discuss an unusual arrangement. If the government would provide half of the $205-million, then Atlantic would give the other half. But, Atlantic said, the three projects had to be included in a package, and all three had to raise all of their money by December 31, 2009. University of Queensland officials say it was the first time in Australia that the tactic of tying together projects before approaching the federal government had been tried.

The government responded by saying that each project had to be considered on "its own merits." Eventually, the three grant-seeking organizations, including the Translational Research Institute, filed new applications.

In May of 2009, the federal government announced grants for the three projects totaling $170-million, or $67.5-million more than Atlantic had suggested. Atlantic kept its pledge of $102.5-million, which it calls "the largest set of grants made by a philanthropic foundation for higher education and medical research in Australia's history."

Dr. Frazer says the institute will house 650 scientists. It will be organized to make it easy for clinicians to spend some of their time in laboratories and for laboratory-based scientists to meet patients and hear about problems that need solving, such as treating head-and-neck cancers that are resistant to chemotherapy. Dr. Frazer says his public profile as a researcher who made an award-winning cancer vaccine made it easy for him to get audiences with top politicians and argue for the institute.

As for the Atlantic Philanthropies, its activism and willingness to go shoulder-to-shoulder in visits to the government made it a key

participant in the Smart State. Atlantic says it has contributed to 10 medical-research and technology buildings in Queensland and four other buildings under construction. Arun Sharma, deputy vice chancellor for research and commercialization at Queensland University of Technology, calls the philanthropy an "extremely important part of Queensland's journey.

"In some ways," he says, "it has been the glue that has gotten the governments to co-invest and the universities to partner."

New Business Models

Although universities have pumped out plenty of drugs and patents with Smart State support, Mr. Sharma says that he wants to do more than commercialize individual research ideas. Universities should find new business models that might transform broad sectors of the Queensland economy, he says.

Queensland University of Technology, for instance, is trying to help Queensland's sugar-cane industry. When sugar cane is crushed to extract syrup, a fibrous mass is left over. Using the pulp to create biofuel and other useful products could increase the sugar-cane industry's profitability. So the university is managing a new $10-million pilot plant where researchers can experiment with sugar-cane byproducts. If the researchers come up with an efficient process to create a product, says Mr. Sharma, they will "put that case to the farmers."

Now that Queensland campuses are bristling with research institutes, the challenge is to sustain them. At the University of Queensland, Ms. Pullar chairs a one-year-old committee to coordinate fund raising with executive deans and directors of the university's research institutes. The group is deciding on themes that will attract donors. The philanthropy world, she says, has become "donor-centric," with donors seeking focused social impact. If someone wants to cure a certain kind of cancer, for instance, Ms. Pullar doesn't want that person to have to navigate three institutes, the university, and a hospital to make an effective gift. "You don't walk away with a happy donor," she says.

She believes that donors in Australia, where fund raising is less developed than in the United States and Britain, are thinking more strategically than they were in the past. "People are understanding that philanthropy is not just nibbling around the edges," she says. "When it is clever enough and big enough, it can make substantial and sudden changes."

The Smart State strategists have long ago moved from a "bricks" theme to a "brains" theme, and recruiting talent continues to

dominate many leaders' thoughts. "The key to recruitment is to have four or five really top people," says Perry Bartlett, director of the Queensland Brain Institute. "If you build a beautiful building, but don't have any good people in it, forget it."

Ms. Pullar is trying to show donors that their natural inclination to support financially struggling students might be switched, at times, to support struggling young scholars. A program the university has started helps donors support endowed chairs by pairing university money with donor money so that professors can be hired right away, before the donor's contributions have fully paid for the endowment.

The Smart State effort has survived many changes in legislators, but it is about to get a more serious test. Mr. Beattie, who led Queensland from 1998 to 2007 and was never defeated in an election before he resigned, says the Smart State became "core government business" that had bipartisan support. To build that support, he has kept track of its achievements. By his count, the Smart State has resulted in 330 products for sale and 23 drugs in clinical development.

His Labor Party successor, Anna Bligh, continued to back the Smart State. She came to the United States to cheer on Queensland researchers attending a biotechnology convention in Washington last year. At a reception at the National Geographic Society, she told the Queenslanders that despite the government's need to pay for cleanup after a severe flood in January and a cyclone that followed, she was "defiantly determined not to be knocked off course" in supporting research. But in landslide elections last month, Ms. Bligh and many of her Labor Party colleagues were pushed out of office. The real test of broad public support for the Smart State has begun. Academic leaders worry not just about what the new government will do, but about the signals it will send.

"The best researchers are very mobile," says Deborah Terry, vice chancellor of the University of Queensland. "If the state walks away from the Smart State strategy, we could lose those researchers very quickly."

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