

driving arizona's

GLOBAL ECONOMY

By Barry Broome



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INTRODUCTION

arizona's economic development community and state leadership are shifting the paradigm for the state's economic development strategy. Critical investments in science and technology, new programs to create high-wage, innovation-based jobs, and support for policy that increases competitiveness are at the heart of the changes taking place. Competitiveness consists of a number of elements, one of which is the international performance of a region. The Arizona Global Network (AGN) is a statewide effort designed to increase Arizona's international economic performance by attracting foreign direct invest-

mentⁱ (FDI) in key industries. This article examines the AGN, its role in driving the state's international competitiveness, and the changing landscape of economic development in Arizona.

COMPETITIVENESS

Competitiveness has emerged as a central topic among Arizona's economic development community. How are we competitive? How are we not competitive? How do we become more competitive? The process of examining and understanding competitive strengths and weaknesses brings to light the gaps in a region's economy and creates the opportunity for economic developers to design targeted programs that address those gaps.

The competitiveness of a market lies in the junction of a number of factors. Those that result directly from local policy make up the foundation of a region's economy, including health and education, safety, infrastructure, and fiscal and environmental policy. They shape both productivity and the quality of the inputs feeding the economy. Program-driven factors are a step beyond the foundation, and in effect, measure the quality of the economy's output. These include technological sophistication and innovation, and capacity to successfully launch new businesses.

A final aspect of a region's economic performance is its international presence and connectivity. This could be considered both an input, in terms of foreign-born population and international investment, as well as an output, in terms of exports, jobs, and other measures of production.

True international cities are magnets for world-class talent and innovation. They experience a flux

A STATEWIDE PARTNERSHIP TO INCREASE FOREIGN DIRECT INVESTMENT

The Arizona Global Network (AGN) is a statewide program designed to attract foreign direct investment into Arizona. It is an important component within a body of new programs and investments to create high-wage innovation-based jobs and increase the competitiveness of the state's economy.

of diverse people and ideas, creating synergies that generate art, cultural diversity, and commerce. Whereas some cities are natural hubs for international trade and investment, such as port cities like Tokyo, Hong Kong or New York, the international role of other cities is subtler and requires more effort to build. However, an increasing reality is that globalization – travel, instant access to information, economic integration across borders – is erasing the barrier of geographic distance and reducing location premium. Developing a world-class regional economy now hinges on talent, strategy, and cooperation.

ARIZONA GLOBAL NETWORK

In this push to become a world-class, globally competitive region, Arizona has undertaken an aggressive international program. The Arizona Global Network (AGN) is an unprecedented grassroots effort aligning a wide array of interests statewide behind increasing Arizona's international economic competitiveness. The initiative emerged over time as interest grew around the state's international economic performance. Previously, there was diverse international expertise scattered around the state, however, experts had never convened around the topic of FDI to develop a concerted strategy.

In 2005, the concept of the AGN was created. Observing the strong correlation between annual exports and capital investment stock of foreign-owned affiliates among the 50 states in any given year, Arizona economic developers identified FDI as a relative gap in the market, and thus an important programmatic focus. The questions then became, given this priority, who do we engage, how do we engage them and how do we execute against our goal?

It was fairly intuitive that AGN needed to be a statewide program. While over 60 percent of the state's population and 70 percent of economic activity is concentrated in the metro Phoenix area, important industry clusters are centered outside of Greater Phoenix, such as optics in Tucson and medical devices in Flagstaff. Other areas of the state like Yuma and Prescott have strong competencies in natural resource and sustainability-related industries.

A statewide approach brings the best and the brightest to the table, both urban and rural, and



Arizona Museum Capitol Building, Phoenix, Arizona

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widens the pool of resources and assets we have to offer to potential foreign investors. With that in mind, the AGN Executive Committee was formed to include the Greater Phoenix Economic Council (GPEC), Tucson Regional Economic Opportunities (TREO), Greater Flagstaff Economic Council (GFEC), Greater Yuma Economic Development Corporation (GYEDC), and the Arizona Department of Commerce (ADOC), effectively representing the whole state's regional economic development agencies. In addition to the Executive Committee, the International Economic Developers Team (IEDT) convenes on a regular basis to help guide the development and implementation of the program and involves public- and private-sector partners, university representatives, and a number of other stakeholders.

Operationally, the Executive Committee and other participating communities are linked in a virtual network to facilitate the exchange of information. The AGN utilizes contracted representatives abroad as a mechanism for lead generation, a best practice used by some of the top programs in the country. In addition, the AGN has built a broad web of contacts so as to best accommodate the needs of potential investors. Those contacts include business service providers that specialize in assisting international clients such as accountants, lawyers, and banks. In addition to being service providers, these contacts can also serve as avenues for lead generation based upon their regular contact with foreign clients. All of this is overseen by the AGN's executive director who serves as a central point of contact for the entire network.

The AGN is designed to integrate smoothly into the day-to-day operations of local economic development groups. Leads generated by foreign contractors are distributed to communities statewide, in effect adding an extra conduit for deal flow. In addition, the AGN is a resource for communities in that it is a forum for information sharing, connecting partners, and developing further sources of FDI leads.

The AGN is a unique initiative for Arizona. While diverse interests have aligned behind certain initiatives in the past, seldom has there been a sole economic development program that brings statewide partners together as AGN is currently doing.

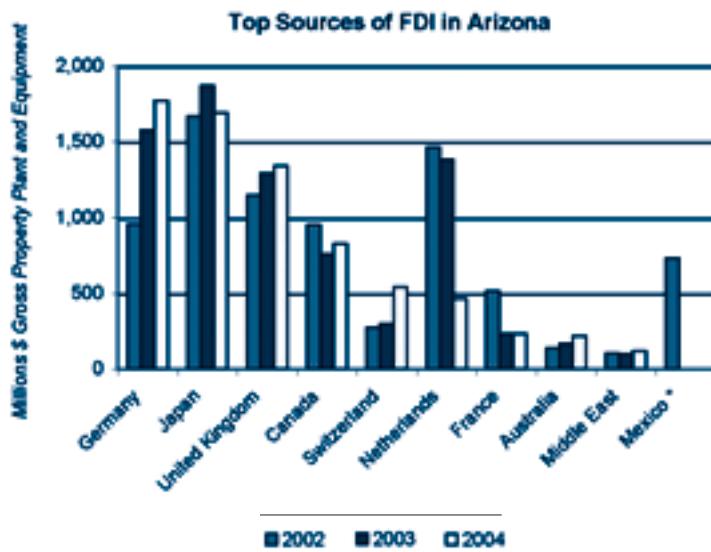
The importance of engaging partners with specific expertise and knowledge of their local markets cannot be overstated. FDI can be difficult to track



IBM Local Headquarters, Tucson, Arizona

on the local level, especially in large metro areas where inventories of foreign-owned businesses tend to be piecemeal and incomplete. Furthermore, the role of the AGN in the economic development strategies for different regions around the state will look very different from one community to another, especially among rural and urban communities. Local knowledge is necessary to best leverage the program in support of local strategic initiatives. That said, the program can be and is being implemented statewide as a supplement to existing economic development efforts. Communities from all corners of the state are expressing interest and enthusiasm toward international attraction, recognizing the benefits such a strategy has to offer.

An international attraction program has a number of impacts on a region's economy. It is an excellent opportunity to attract small technology firms in search of entrance into the U.S. market or collaborative relationships with public or private research institutions. AGN targets emerging technologies that share links to Arizona's most competitive industries. FDI attraction is also a way of in-sourcing jobs that tend to be high-wage on average – U.S. foreign-owned subsidiaries pay a mean annual wage of \$63,428, 32 percent higher than the mean annual wage among U.S.-based companies.ⁱⁱ Given the identified need for increased international attraction efforts and the opportunity for high-wage jobs in high-tech industries, AGN is a force for driving competitiveness and quality growth in Arizona.



* Zero values indicate data not available for country in given year

Source: Bureau of Economic Analysis, Gross Property, Plant, & Equipment of Affiliates, 2002 - 2004

ARIZONA'S INTERNATIONAL PERFORMANCE

Arizona has a history of strong international economic performance, primarily relating to trade. The state is well suited to export activities, especially with Mexico due to a shared border and close cultural and economic ties. Mexico is Arizona's top export market, representing around a third of exports in any given year (\$4.7 billion in 2005). Canada and Malaysia follow with \$1.6 billion and \$778.6 million respectively.

Arizona's leading industry clusters drive the state's exports. For example, the number one and two exports, computers and electronic products and transportation equipment, are fueled by the large semiconductor and aerospace industry clusters located primarily in the Phoenix and Tucson metro areas. A number of major employers anchor these clusters, including Intel, Freescale Semiconductor, and Microchip Technologies (semiconductors); Raytheon, Honeywell, Boeing, and Bombardier (aerospace); and IBM and Texas Instruments (IT).

As mentioned before, there is a strong statistical correlation between exports and FDI among the 50 states in any given year. In other words, states that export more tend to attract more FDI and vice-versa. While this relation is complicated by the fact that both exports and FDI are also correlated with state population and gross state product, it can still be illustrative to examine the data points.

Certain states clearly out-perform and under-perform in FDI based upon the value of their exports. Arizona's position is telling of the state's past economic development priorities. Export promotion has seen strong support on both the state and local levels with programs to encourage and educate businesses on how to export. FDI promotion, on the other hand, has only received limited

attention from economic developers and political leadership.

Research has been a major component of developing and implementing the AGN. Gaining a deeper understanding of the state's current FDI performance revealed that Arizona has seen consistent significant levels of FDI from five countries – Germany, Japan, the United Kingdom, Canada, and the Netherlands, or in general, Western Europe and East Asia (see graph). Though emerging markets such as India and China represent considerable potential, the reality is that prospect mining in markets with a proven record in the state is likely to yield a higher return on investment and thus is a top priority. Using this knowledge, the next step was to identify industry links between Arizona and these established investing countries. The AGN and its partners compiled research on foreign markets that share existing and potential links with Arizona's core industries. Those studies zeroed in on Western Europe, East Asia, and Canada as strategic locations for attraction efforts given industry concentration and regional knowledge assets.

INDUSTRY FOCUS

Based upon the research carried out, the AGN targets markets that share Arizona's core industry competencies – aerospace, next-generation electronics, life sciences, sustainability industries, and information and communications technology.

Aerospace is one of the longest established industry clusters in the state. Most aerospace employment is focused within the Phoenix and Tucson metro areas. Tucson in particular has an especially high concentration of aerospace employment – the city is headquarters to

Raytheon's missile systems division, employing over 11,000 individuals, making it the city's largest employer. Honeywell is located in both Phoenix and Tucson with over 10,000 employees between the two metros.



Unmanned Aerial Vehicle testing on Yuma Proving Ground, Yuma, Arizona.

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Apache Longbow Helicopter manufactured by Boeing, Mesa, Arizona.

\$11 million service and maintenance center at Williams Gateway Airport in Mesa, in the southeast valley of the Phoenix metro region.

Life sciences is a rapidly growing industry in Arizona. Four years after launching the Arizona Bioscience Roadmap, a strategic plan to advance biosciences in Arizona, the state has seen impressive progress, including 10,700 new jobs, a 30 percent increase in research grants, and 33 new bioscience-related businesses.ⁱⁱⁱ Arizona's bioscience industry is characterized by its collaborative spirit and that collaboration is already leading to success.

TGen (Translational Genomics Research Institute), working in partnership with the Muscular Dystrophy Association headquartered in Tucson, recently discovered around 50 genetic abnormalities associated with Lou Gehrig's disease. Covance, a leading drug development company, recently located a new \$100 million 50-acre research site in Chandler.

Leaders in the bioscience industry recognize Arizona as one of the fastest-growing biotech hot spots in the nation. This is a result of an aggressive, collaborative, statewide effort and commitment to the vision set out by the state's Roadmap.

Next-generation electronics, especially semiconductor design and manufacture, is a core compe-

tency in Arizona. The Greater Phoenix metro region in particular has a high concentration of semiconductor manufacturers, including Intel, as well as other semiconductor manufacturers mentioned earlier.

Tucson, often referred to as the "Optics Valley," has distinguished itself as home to one of the world's top optics clusters. The University of Arizona's College of Optical Science is at the root of the city's excellence in the industry. Tucson's optics industry has an active relationship with Canadian optics leaders and numerous other international ties.

Arizona's infamously sunny climate makes it an ideal region for the development of photovoltaic technologies (solar power). The state has a strong sustainability cluster, including solar energy technology, hydrology, ecology, and agriculture. Arizona State University's Global Institute of Sustainability is involved in cutting edge research on urban ecology and other sustainability issues and has partnerships in China to assist as they confront the challenges of rapid industrialization.



Texas Instruments Local Headquarters, Tucson, Arizona

By specifically targeting these industries, the AGN aims to bring the greatest possible benefit to the state by strengthening local clusters, attracting capital investment, and adding high-wage jobs to the economy. More importantly, however, is that these industries offer the greatest value propositions to potential investors.

NEW ECONOMIC DEVELOPMENT LANDSCAPE

AGN is a closely integrated piece of Arizona's new economic development landscape. During her first term in office, Governor Janet Napolitano invested over \$1 billion in science and technology around the state. Her dedication to building a knowledge-based economy is revolutionizing the state's public higher education institutions, business

climate, and overall economic strategy. She established the Governor's Council on Innovation and Technology (GCIT) to develop and advocate programs and policies that foster innovation, creation, and entrepreneurial expansion of technology-based companies throughout the state. GCIT helped pass legislation establishing the Angel Investor's Tax Credit, which provides tax incentives for investment in start-up companies.

Science Foundation Arizona, another program launched under the Napolitano administration, is modeled after Science Foundation Ireland, a program that played a critical role in turning around Ireland's economy and spurring the rapid growth of its high tech industries. Science Foundation Arizona's mission is to attract world-class talent to Arizona to support industry, research, and education. The AGN will be a key player in fulfilling the mission of the Science Foundation by forging new international relationships and attracting innovative high technology companies to the state from around the globe.

The state's public universities have also been making impressive achievements. The Bio-design Institute, housed within Arizona State University's Macro Technology Works, is on the cutting edge of biotechnology research. ASU's Flexible Display Center is a collaborative venture among ASU, government, and private industry to develop flexible display technologies with applications ranging from defense to consumer electronics. Google recently located operations near ASU's campus to capture some of the synergies taking place.

The University of Arizona's Bio5 is another bio leader bringing together specialists in five fields – agriculture, medicine, pharmacy, basic science, and engineering – to conduct collaborative research to solve complex problems. The University of Arizona and Arizona State University have teamed together to launch the University of Arizona College of Medicine-Phoenix located in Downtown Phoenix. As well, they collaborate in forming research partnerships with the private sector. Collaboration is a distinguishing

characteristic of Arizona's knowledge-based economy and undoubtedly a driver of its success.

If the progress currently being made is any indicator, the best is yet to come for Arizona. Many of the programs mentioned here are still in their infancy. Hard work is being done from the local to the state levels to foster talent, attract employers that support an innovation-based economy, and realize foundational improvements that increase the state's competitiveness.



Flagstaff Air Park, Flagstaff, Arizona.

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CHALLENGES AND OUTLOOK

The development of the AGN has not come without considerable challenges, the greatest of which is garnering political support for the program. In the context of job outsourcing and offshoring trends on the national level, there is an undercurrent of opposition to investing money into attracting foreign companies. More specific to Arizona, however, is the difficulty of pushing economic development initiatives forward in a market that is independently growing at a dizzying rate.

The explosive population and employment growth of the last decade has been a mixed blessing. While there is a consensus among the economic development community that programs to attract high-wage jobs to the state are necessary to ensure the long-term sustainability of the economy, law-

makers do not fully appreciate the urgency of doing so.

Arizona recently overtook Nevada as the fastest-growing state in the nation in terms of population and Greater Phoenix ranked as the fastest-growing MSA with over 1.5 million people both proportionally as well as in terms of net job growth.^{iv} Taking this growth for granted, however, is running a serious risk. In order for high growth rates to be sustainable, the growth needs to be anchored by quality jobs that don't cost the state money in terms of housing, healthcare, and other subsidies. Implementing effective programs can take a number of years. If you wait until a serious slow-down hits, it's already too late.

The difficulties presented by rapid growth are inevitable, but while transition can be a time of challenge, more than anything, it is a time of opportunity. As one can see, Arizona's economy is building strong momentum. The AGN is evidence of the economic development community's leadership in

leveraging the momentum of this transition period for the state in order to shift the paradigm. Gradually, the state is building an integrated, multi-faceted economic development strategy that promises to push Arizona to the forefront of competitiveness as one of the most desirable places to live and do business. 

ENDNOTES

- i Foreign direct investment (FDI) is an investment by a foreign firm in an enterprise in a country other than the one in which it is based. The investment must be such that the foreign-parent has control of the investee in order for it to be considered FDI. Direct investment refers to investment in operations (facilities, equipment, property) as opposed to investment in stocks.
- ii Organization for International Investment, <http://www.ofii.org/az.htm>
- iii Nolan, Kate. "Bioscience effort off to a big start". *The Arizona Republic*. December 13, 2006.
- iv U.S. Census Bureau, U.S. Bureau of Labor Statistics

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