Mapping the DNA of San Diego

By Mary Lindenstein Walshok, Ph.D.

Mary Walshok is Associate Vice Chancellor for Public Programs at the University of California, San Diego, a professor of sociology, and is currently leading a research team studying new economy issues.

More and more regions across the United States and around the globe are noticing the incredible economic transformation of San Diego through the growth of innovative science based companies. In these challenging economic times, many also are trying to understand our "recipe" for success. Less than two decades ago San Diego was moving towards 13% unemployment, losing its few national companies, navigating a major banking and real estate crisis and failing in its efforts to attract global companies and high profile research consortia. This was occurring despite our splendid physical environment, the terrific "sunshine factor" and our then affordable housing costs. In a little more than fifteen years this region has come to be identified as one of the most "creative" in America (R. Florida), as a leading center of innovation and entrepreneurship (Brookings & Red Herring) and as a "must be" place for any life sciences startup or global life science company. The statistics speak for themselves. Today, San Diego's economy includes:

$861 million annually in basic research funding (unclassified)
$1.1 billion annually in venture investment
499 life sciences companies
339 IT companies
1,253 software and computer services companies
520 other science & technology companies

With minimal public investment, San Diego has transformed its economic base and become an international leader in starting and growing globally traded science based companies. How come?

There is no simple "recipe" for our success. Our research on San Diego is revealing that there are certain critical components, or ingredients, which are essential. However, it's how they are combined and "spiced up" that may be the more critical element of this success. The essential ingredients are of three types: a) a high concentration of diverse forms of talent and intellectual capital, b) the deliberate growth of new economy financial, management, business resources and competencies, and c) a highly flexible technological workforce. The "mix" and the "spice" are in the reinvigorated culture, social networks and attitudes of a community which until recently was described as the "cul de sac" of California.

What is distinctive about the "new economy" is not specific technologies so much as it is what drives economic growth and how it is organized. David Audretsch at Indiana University argues that the speed of technological change and expanding global markets and competitors have resulted in innovation, rather than scalability, being the driver of economic growth. Innovation depends on new ideas and research breakthroughs, speedy knowledge transfer, sizeable infusions of cash and global marketing and management know-how -- all mobilized to transform "breakthroughs" into products, businesses, high wage jobs and wealth. This dynamic, of necessity a "face to face" process, is described by Audretsch as an "entrepreneurial economy" in contrast to the more deliberative, linear, risk minimizing "managed economy." AnnaLee Saxenian at UC Berkeley describes the difference between new economy processes and old economy processes as the difference between a "rain forest" and a "plantation." The one supports dense, diverse, overlapping species, the other supports well planned, single species growth.

San Diego is a thriving rainforest. It is densely populated with diverse scientific research and intellectual capital. It thus is ripe for converging and unexpected breakthroughs as well as targeted research outputs. It has developed an incredibly well networked, highly sociable and trusting capital, management and business services community with competencies appropriate to the opportunistic, fast paced, and globally linked resources essential to continuous "deal flows." It is also a community which has addressed the new and unique workplace skills needed to support entrepreneurial startups and high growth science based companies.

Very few regions today have a critical mass of each of these elements of innovation -- rich and diverse intellectual capital; entrepreneurial skills, venture capital and business know-how; and education and training focused on new and emerging industries. Even more importantly, very few communities have the social "mix" and cultural "spice" that comes out of San Diego's extraordinary array of overlapping networks, cross professional organizations and interdisciplinary initiatives.

UCSD, Salk Institute, The Scripps Research Institute, The Burnham Institute, SAIC, the San Diego Supercomputer Center, and General Atomics scientists and engineers interact and collaborate regularly. Starting with the founding of UCSD CONNECT in 1985 and reinforced by the establishment of BIOCOM/san diego, the Software Industry Council and the Telecom Council in the 1990s, San Diego has multiple forums / contexts within which diverse professionals (i.e. science, law, finance, marketing) meet, learn and build collegial relationships. San Diego's higher education institutions produce degreed scientists and engineers capable of moving into emerging industries, and UCSD Extension in particular provides timely post baccalaureate education in technical competencies such as CDMA, graphic communications, drug development, medicinal chemistry and clinical trials management codesigned and taught by traditional faculty and industry leaders.

Thus it is the mix, not just the ingredients, which make San Diego's DNA unique and especially suitable for innovation in science based fields such as high-tech and biotech. The enthusiasm with which institutions, which in other places are isolated from one another (i.e. universities, business services, civic, entrepreneurs and regional developers), collaborate and individuals, such as research physicists and biologists, R&D company leaders, attorneys and business services interact is the real "spice." It is a community of mutual respect, shared aspirations and high trust.

Our success can be found in the combination of creativity, competence and congeniality -- the DNA -- of our region.