Carroll County

Technology Development Feasibility Study

Prepared by

The Jacob
france
Institute

Lipman Frizzell & Mitchell LLC
REAL ESTATE CONSULTANTS

December 2003

Carroll County

Technology Development Feasibility Study

Prepared by

Rich Clinch
Matthew Kachura
The Jacob France Institute
University of Baltimore

Joe Cronyn
Lipman Frizzell & Mitchell

Martin Vitiello
Whitman Requardt and Associates

Marsha Schachtel
Institute for Policy Studies
Johns Hopkins University

December 2003

Carroll County Technology Business Development Strategic Plan

Executive Summary

Mission: To achieve widely shared prosperity for Carroll County citizens by accelerating the development and adoption of innovations by its entrepreneurs and businesses

Principles for building technology-based economies:

Partnerships and collaboration
Long-term perspective
Sufficient scale
Entrepreneurial program design and
   implementation
Industry- and market-driven

Focused on individuals and firms
Investments that leverage other
   investments
Extensive use of intermediaries
Designed-in accountability

Building blocks of a technology-based economy:

1. Intellectual infrastructure
2. Networks*
3. Educated and continuously learning
   citizens*
4. High quality of life*
5. Entrepreneurial culture*

6. Physical infrastructure*
7. Risk capital
8. Leadership, government,
   collaboration*
9. Image
10. Technology business base

local government has substantial influence

Strategic approach:

Many of the required elements of a technology-based economy are located outside the County elsewhere in the Baltimore Region and the Baltimore-Washington corridor, so the strategy calls for strong linkages to bring their benefits home to Carroll County. Other elements, particularly quality of life, education, and infrastructure, must be provided by the County itself if it is to capture a share of the region and state's technology growth.

    Intellectual infrastructure: Carroll County's focus should be on making the region's research and development strengths available to the County's companies, entrepreneurs, and citizens, and on rapidly diffusing knowledge, even if it is not generated in the County. Linkages between Carroll County firms and institutions that are developing or using high technology and regional research universities and/or federal laboratories can be developed and/or strengthened.

    Also looking to build on existing strengths, the County can nurture entrepreneurship by research faculty who live in Carroll County and work in universities, federal laboratories, or corporate research and development facilities elsewhere in the region. The County should also seize every opportunity to stimulate and celebrate innovation.

Externally, the County can seek to attract more pillar technology firms with global reach (leaders in their industry). These companies provide capital, management talent, technical resources, and business partners for young growing technology companies and generate spin-offs when entrepreneurial employees leave to start their own ventures. K&L Microwave has proven to be this kind of pillar for the Salisbury, Maryland area, which has no research universities. The only technology generator in the region, K&L was able to make the transition from a defense contractor to a diversified supplier to the telecommunications industry with the help of a University of Maryland researcher. Several former K&L employees have started their own telecommunications businesses in the Salisbury area.

Carroll County can also be on the alert for opportunities to attract the research arms of existing institutions. Natural places to start include institutions related to gerontology and agriculture-related research. EMA Copper Ridge's dementia and aging partnership with the Johns Hopkins Neuropsychiatry and Memory Group is an example.

Networks: Carroll County needs a deep and rich assortment of networks. No single network can meet all needs. The National Council on Entrepreneurship suggests the following steps: map the territory, including regional context; identify common needs; sketch the plan; identify and approach leaders; launch pilot efforts and expect some to fail; reach out to businesses (peer to peer is best); build ties among networks (network the networks); seed, then sustain and replicate successes; let the pot boil; tell the story; and let go.

Strong ties for County companies with specialized support service providers need to be built, and service providers attracted if gaps in services are discovered. Networks that link suppliers and customers, and collaborators who can fill gaps in company capabilities, are needed. Ideally these will include parties from outside as well as inside the County. Networks can also be used to aggregate demand from third party suppliers (of utility or insurance services, for example) or to forge a County-related identity (among out-bound commuters for example).

Ties to existing regional and statewide networks must be strengthened, most importantly with the Maryland Technology Council and the Greater Baltimore Technology Council.

Educated and continuously learning citizens: Education is one of the key elements of the technology plan over which the County has substantial control. Local policies and investment will determine whether Carroll County is successful in sharing in regional technology growth.

Carroll County's first priority is to retain the knowledge workers already resident in the County, whether they are commuting or working locally. Quality of life efforts are critical for this effort.

Secondly, the County will be continuing to develop knowledge workers with adaptable skills by educating (at the K-12 level and community college) a robust pipeline of new workers. Retaining the graduates by making sure they are aware of employment opportunities should also be given high priority. Similarly, reclaiming unskilled, disabled, and out-of-the-workforce citizens for jobs in the knowledge economy will expand the available workforce, serve the goal of widely shared prosperity, and not incidentally reduce public expenditures associated with dependency.

Carroll County is already enjoying great success in attracting knowledge workers. Economic development marketing should support continuation and amplification of this trend. Redoubled efforts are required to take advantage of these workforce resources by linking employers with potential employees who are being educated, trained, changing jobs, moving to or are currently commuting out of the County.

Because of the pace of change, the job of workforce preparation is never complete. A wide array of opportunities for continued learning throughout the community is needed; including skills upgrade training for incumbent employees of County firms.

High quality of life: Quality of life is another of the key elements of the technology plan over which the County has substantial control. Local policies and investment will determine whether Carroll County is successful in sharing in regional technology growth.

The most important quality of life steps the County can take are to stay the course and set the bar ever higher. Continued investment in educational excellence at all levels – children, college students, and adults, environmental quality, recreation and leisure, and public safety is critical. Community leaders throughout the County can help to promote an environment of welcome, diversity, and tolerance.

Building on the success of Main Street initiatives in Carroll County's towns will help protect one of the County's primary assets – real small town life instead of the poor attempts at recreating it that are being tried by developers elsewhere in suburbia. Tourism marketing can help reinforce the idea that the County offers a high quality environment to visit that, by extension, would make a great place to live.

Of immediate concern is the transportation infrastructure, which has failed to keep up with rapid suburbanization, and threatens to throttle the new economic potential of the County. See "physical infrastructure." Government is also catching up with rapid population growth and generally receives high marks for responsiveness. However there is growing consensus that the County needs better planning and growth management. These issues are also explored more fully in physical infrastructure.

Entrepreneurial culture: Entrepreneurial culture is a key element of the technology plan that is both regional and one over which the community has substantial control. Local attitudes and actions will determine whether Carroll County is successful in sharing in regional technology growth.

Government cannot lead or dominate efforts to support entrepreneurs, which must be led by each community's entrepreneurs themselves. The National Council on Entrepreneurship recommends avoiding "programitis," but focusing formal efforts on creating an ecosystem that assures that entrepreneurs have access to the support they need as they grow and their needs change. Government can also support formal and informal networks of entrepreneurs.

Of primary importance is the need for the community to send powerful and consistent signals of support for entrepreneurship, whether it is in school, among retirees, farmers, "lone eagle" software writers living happily on five acres and commuting from bedroom to home office down the hall, Main Street restaurateurs, or real commuters eager to give up life on the road.

Physical infrastructure: Physical infrastructure is one of the key elements of the technology plan over which the County has substantial control. Local policies and investment will determine whether Carroll County is successful in sharing in regional technology growth.

The County needs to geographically focus its technology identity. After careful evaluation of opportunities, it was concluded that two types of areas make most sense: locations in the natural path of growth from technology hubs in Montgomery and Baltimore Counties and locations where land availability opportunities make a compelling case.

Land use plans and regulations need to be reviewed and revised to achieve greater predictability and to produce high quality business campuses that will draw technology firms in addition to other high end users. High priority should be given to planning of and investment in transportation infrastructure improvements and planned extension of water and sewer service outward from existing service in selected towns.

Consideration of a technology-intensive incubator should be postponed, but small new technology businesses need places to grow and access to "virtual" incubation services through networks.

Limited or lack of access to high-speed (200 kilobits/second+ in both directions) telecommunications service is threatening the County's business and high-end residential growth. Local companies are already establishing computer centers outside the County. Working with Verizon and Adelphia or pursuing competitive options, the County needs to find ways to improve access to and quality of service.

Risk capital: Carroll County cannot be expected to develop a full range of sources of risk capital, but should instead become very adept at linking County technology companies to statewide and regional sources of capital to finance the development or adoption of new technology. Support services that help companies become "financing ready" are an important part of the equation. See "networks."

The County's own scarce financing resources can be targeted to innovative firms and those that contribute to the quality of life in the County's towns.

While the major sources of financing will be outside the County, Carroll County can take steps to develop local sources of risk capital by creating one or more angel networks.

Leadership, government, collaboration: An efficiently and effectively operated government that responds to the changing needs of a growing suburban County is the top leadership/collaboration priority. The County government's critical roles include: support for quality of life priorities and workforce development, and maintaining a stable, predictable financial environment, particularly with regard to taxes and regulation. Of particular importance is the collaboration within County government around technology priorities.

The County government also has an important role to play in developing leaders throughout the community, forging strong collaborations between the public and private sectors, and assuming a strong role in regional affairs. The power of strong leaders who relentlessly promote innovation and entrepreneurship cannot be overemphasized.

Image: Carroll County's marketing should be geared to people, entrepreneurs, and to firms. It is important to focus on internal targets to build self-image, modify attitudes toward risk and labor mobility among firms, and create awareness of the benefits of technology-based economic development. The residents and resident businesses must be equipped to be ambassadors for a changing Carroll County.

External marketing, because of its cost, should piggyback on state and regional marketing, but should allow the County to position itself as a welcoming, high quality of life, low-cost, tech-savvy, high quality labor, **nearby** alternative within a tech-rich region. The other elements within this strategy are aimed at making these claims justifiable.

The County needs to sell the technical capabilities of the now-commuting workforce once it is clear that it has developed an effective way of reaching this potential workforce. Whenever possible, the County should tell the stories of successful technology entrepreneurs.

Technology business base: Carroll County's first priority has always been and will continue to be its existing business base. Two types of efforts will pay off in an expanded technology business base: retention and support for growth of resident technology companies, and expansion of technology use by other non-technology companies.

Technology pillar companies, those that are leaders in their industry, make prime targets for both retention efforts and for attraction. For both retention and attraction, the County should target its areas of strength as evidenced by a strong business base today (indicating that the County has a strategic advantage for the industry), industries that are underrepresented in the County but strong in the region and/or state, and industries for which Carroll County has key locational advantages. Attention should also be paid to the support services needed for technology industry growth.

Once the telecommunications infrastructure can support it, the County can target for attraction the functional units that advanced information technology has allowed to be separately located from the central offices of large companies. The County can also take advantage of this trend by supporting local companies in their bids to develop strategic relationships with large firms that supplant functions that were formerly done in-house.

Recommended actions:
Most medium and long term items require action to begin now even though results may not be seen until the medium and longer term.

Short-term (0-9 months):

Finalize the strategic plan: Widen discussion of the plan, engage partners through task forces to further explore and lead the implementation of key elements of the plan, and closely monitor results and make mid-course corrections as necessary.

Expand the availability of well-served locations where new and expanding technology companies can thrive: 1) reduce uncertainty in the development process by addressing conditional uses, adequate facilities, and business campus zones issues, 2) conduct a telecommunications demand survey, 3) explore telecommunications service alternatives, and 4) maintain an inventory of small spaces available for start-up companies.

Celebrate technology, innovation, and entrepreneurship on the front page of all County communications (websites, brochures, mailings to citizens) and in speeches by elected and community leaders.

Grow existing tech companies and help other companies become more competitive by adopting new technology: 1) fully utilize the Technology Extension Service of the University of Maryland to improve productivity of businesses, and the Partnership for Workforce Quality at the Department of Business and Economic Development to help upgrade the skills of managers and workers; 2) initiate technology CEOs peer breakfasts; 3) develop and promote co-op and internship opportunities at high schools, colleges, and area universities, 4) promote technology management courses that help managers learn how to access new technology; and 5) get regular feedback from resident companies.

Incubate new companies all over Carroll County: Create a public/private person-to-person and electronic network that 1) identifies potential and early stage entrepreneurs, 2) links entrepreneurs to services, including mentors and funding, 3) links entrepreneurs to other entrepreneurs, 4) links entrepreneurs to the Carroll County and regional business communities, and 5) is accessible from all potential gateways (public and private) through which entrepreneurs might seek assistance. In effect, create a highly structured incubator without walls.

Retain and attract knowledge workers: Launch a network of human resources managers and collaborate on activities, including participation in university job fairs, quality of life monitoring and enhancement (including Main Street improvements), survey of south County higher education needs, and welcoming of new residents from other counties and countries.

<u>Medium term (10-36 months):</u>

Geographically focus the technology identity of the County: Use the master planning process to designate districts that are on the natural path of growth from technology hubs in Montgomery County (Mt. Airy) and Baltimore County (Finksburg) or represent immediate land availability opportunities (Warfield and north side of Westminster). Support the development of an inventory of high quality office and flex space in these districts.

Create a Carroll Research Roundtable: Include individuals who live in the County who are engaged in research and development, beginning with those who work in the County and through them, identifying R&D workers whose jobs are outside the County. Use the Roundtable to help refine the technology strategy, to make and expand connections to the research institutions where they work, to encourage entrepreneurship, and to identify opportunities for business attraction.

Attract satellite research facilities: Particularly in the areas of agriculture-related and aging-related research, pursue universities and/or federal laboratories, building on linkages of existing Carroll County businesses, institutions, and individuals.

Work with the human resource managers network to develop strategies for reaching commuters with information about job opportunities in the County.

Develop an inventory of entrepreneurial histories of Carroll County firms, to be used in marketing materials, speeches, and mentoring.

<u>Long term (three to 10 years):</u>

Expand marketing: When land is available and telecommunications service is sufficient, ratchet up marketing and outreach through partnerships with state and regional organizations in Baltimore, Washington, and "Potomac" areas. Target the production/distribution facilities of technology manufacturers, contract research organizations, bioinformatics firms, and high tech machinery and instruments firms. Make sure all public and private ambassadors can articulate the County's strengths as a welcoming, high quality of life, low-cost, tech-savvy, high quality labor, nearby alternative within a tech-rich region.

Improve infrastructure: Reduce congestion through transportation improvements and expand water and sewer service outside of towns in technology districts.

Expand access to early stage equity capital: Work with the University of Maryland's Dingman Center to establish an angel capital network in Carroll County.

Continued support for education: Maintain the County's strong support for schools and bring math achievement to parity with reading achievement; continue the County's strong support for the community college.