California Business, Transportation & Housing Agency

International Trade and Investment

Toward a California Trade and Investment Strategy

Potential Roles for the State in Global Market Development

Pursuant to the California International Trade and Investment Act of 2006 (Senate Bill 1513) enacted as Government Code Title 2, Division 3, Part 4.7, Chapter 2.5, Section 13996.5

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Toward a California Trade and Investment Strategy

Potential Roles for the State in Global Market Development

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Executive Summary

This document reports on the potential roles for California state government in global markets, the first of two reports pursuant to the California International Trade and Investment Act of 2006. The Act specified that this report include a discussion of economic trends, existing programs, physical and human infrastructure, business surveys, opportunities for coordination, border and under-served areas, and recommendations on policies, programs, funding, priorities and structure. The Act specified inter-agency consultations, and delivery of a specific strategy in 2008.

In preparing this report, the authors undertook original research, writing, and analysis; organized four business focus groups; and held meetings with administrators of over a dozen State offices. The team assisting on this report came from the University of California (UC) and the Bay Area Economic Forum (BAEF). UC efforts, organized by the UC President's Office, included a multi-campus faculty group providing research, counsel, and production of several white papers. BAEF provided staff, consulting and community resources for the production of the final report, input from trade organizations, and business survey results.

Where We Are: California in a Global Economy

California's gross state product (GSP) is more than $1.7 trillion, making it the world's eighth largest economy. Since 2000, the state has lost ground both in this ranking and in its ranking as an export state. Californians have a major stake in the global economy, but face heavy competition from other states and nations. California international business is growing, but not as fast as elsewhere.

International trade and investment is a major economic engine for the state of California that broadly benefits businesses, communities, consumers and state government. As has been described at length in other reports, California’s economy is more diversified than ever before, and the state’s prosperity is tied to exports and imports of both goods and services by California-based companies, to exports and imports through California’s transportation gateways, and to inflows and outflows of human and capital resources.

There are, however, some worrisome trends, and shortcomings to the State’s ability to capitalize on these opportunities.

Trade and investment trends

Exports of California goods and services totaled between $172bn and $190bn in 2006 (including at least $128bn in merchandise) and are experiencing strong growth. Still, exports from the rest of

the US are growing faster, and by some measures California is losing market share.[1] Computer and electronic products are the state's top exports, but are below 2000 peak levels. The other leading export sectors are tourism, machinery, transportation equipment, services such as construction, consulting and education, agriculture and chemicals.

As of 2006, one-fifth of all US two-way trade, by all modes, passed through a California transit gateway. California's seaports handled 29% of all two-way US waterborne trade by value in 2006, amounting to $562bn. This trade has shown solid growth by all measures since 2000; however, the state's share versus other parts of the country is declining.[2]

NAFTA (Canada and Mexico), Asia and Europe are the top destinations for California products. Exports to all of these regions are growing, though Europe is falling on a percentage basis.

California leads all other states in foreign direct investment, with foreign-owned property, plant, and equipment valued at $119.8bn (2004) and 614,300 Californians employed at foreign-owned firms. However, the employment base and book value of foreign direct investment (FDI) have not yet returned to the peak levels reached in 1999-2000.

Europe is the largest source of foreign direct investment by value, and is far and away the largest source of FDI employment; Asia-Pacific sources are important and growing.

Producing quality jobs

An international trade and investment strategy should seek to sustain business and economic growth, leverage and build on the state's competitive advantages, and ultimately support good, high-paying jobs. California is doing a number of things right in terms of economic policy, but faces significant challenges from offshoring, the global redistribution of manufacturing and services, and growing talent pools in other countries. Competition for research & development (R&D) and foreign direct investment is heating up, as other states and regions, and particularly other countries, are pursuing aggressive sector strategies and investing heavily in investment attraction, infrastructure and education.

Diversity and comparative advantage

The state's economic and social diversity give it a global competitive advantage, but create complex opportunities and challenges for designing programs. California's diverse regions support economic diversification, and need to be recognized in any state strategy. The state's many economic clusters (7 traditional and 4 emerging) provide another strong basis for an international business development strategy. Demographic diversity is another asset that can be leveraged to California's advantage as it builds bridges to overseas markets and partners. International business development strategy should recognize and leverage the state's impressive R&D base as a global competitive advantage.

Workforce and education considerations

The education, skills and flexibility of the state's workforce are important factors in California's global competitiveness. Because global businesses are increasingly locating in places where they can access labor pools with the skills they need, workforce development should be a priority.

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[1] See Appendix A for a discussion of data issues.

[2] Note that the Goods Movement Action Plan (BT&H and Air Resources Board, January 2007) reports shipping trends based on the volume measure of Twenty-foot Equivalent Units (TEUs) rather than value.

Career technical education is particularly important for manufacturing and other industries requiring training or education below the bachelor degree level. It will also be important to increase the number of California college graduates, encourage study abroad by California students, and continue to attract students from abroad, who have historically made a strong contribution to California's economy and to the technology sector in particular.

Addressing infrastructure

California is making progress, and the Governor's Strategic Action Plan and bonds approved by voters in November 2006 were a major step forward. But the State still has much to do to compensate for decades of underinvestment, and needs to assess its infrastructure strategies from a global competitiveness perspective. Transportation infrastructure, particularly for goods movement related to both imports and exports, continues to be under strain.

Special needs in agriculture and services

Agriculture. California is the nation's largest agricultural exporting state, exporting more than $9.3bn in crop products, $5.2bn in processed foods, and $1.0bn in beverages and tobacco products. Together, agriculture and food/beverage production ranks as one of California's top three export sectors. The California Department of Food & Agriculture (CDFA) is the lead agency for California agriculture. CDFA and BT&H have the opportunity to work together in a number of areas, including support for infrastructure investment for agricultural regions, support for national and global policies favorable to California, and overseas and other promotional activities.

Services. California has become a service economy, with a growing proportion of income from service industries, many with strong export potential. Service businesses are often the easiest to move, however, so how the State addresses infrastructure, workforce and business climate issues is important. There are also international policy issues (such as tax treatment for cross-border internet-based sales and the protection of intellectual property rights) that are of great importance to service exporting companies.

Leveling the global playing field

US, bilateral, multilateral, and foreign government policies create a shifting environment and barriers for California businesses. The State can help level the global playing field. It can actively monitor and engage as necessary in trade deliberations, represent State interests to the US government in dispute resolution cases before international bodies, ensure that State policies do not contravene US trade obligations, and provide support/troubleshooting services for California companies encountering cross-border barriers.

Where we need to go: Supporting California's economy by promoting its goods and services globally

Existing services

There is already a diverse network of international business support services in California and in foreign markets that can be better coordinated to address business and strategy needs.

An extensive in-state field network of international business support offices exists through the Centers for International Trade Development (CITDs), World Trade Centers and similar organizations, the US Department of Commerce (USDOC), the US Export-Import Bank and the US Small Business Administration. The California Chamber of Commerce, local chambers, and

trade associations offer a range of support functions and expertise. An extensive network of overseas offices and representative offices currently exist through the USDOC, sister-cities, ports, World Trade Centers, the University of California, the California State University system, and the California Travel & Tourism Commission. Some local economic development agencies work on international business development, though most do not have the requisite resources.

A number of State of California agencies have international activities or policy responsibility, including the Governor's Office; Lt. Governor's Office; the Attorney General; the Secretary of State; the Business, Transportation & Housing Agency; the Department of Food and Agriculture; the California Energy Commission; Community Colleges; the University of California, the California State University system; the Travel & Tourism Commission; the Labor & Workforce Development Agency; the Resources Agency; Cal-EPA; and the California Transportation Commission. The State's web resources include the California Business Portal at *www.calbusiness.ca.gov*, the California Business Investment Services site at *www.labor.ca.gov/calBIS*, and the State's overall portal at *www.ca.gov*.

Despite these varied resources and a range of initiatives they have undertaken, the absence to this point of a unifying agency with the responsibility and resources for international business support has meant California government is not optimally structured to respond to global challenges. There remains a lack of focus and cohesion for strategy development and service delivery; limited capacity to leverage the California brand to the benefit of California companies; a lack of dedicated resources for advancing state policy interests (including foreign market access issues); significant variability in services; limited coordination of international trade and investment priorities with related domestic issues (such as infrastructure, R&D, and workforce development); and no sustained institutional capacity at the state level to work with business and other stakeholders to address California's interests in the global economy over the long term. The California International Trade and Investment Act of 2006—which authorized BT&H to engage in international business support activity—together with informal cooperation between BT&H and the Labor & Workforce Development Agency have restored a baseline capacity in these areas in recent years. However, the State's institutional capacity to manage global issues is highly constrained given California's size, and more needs to be done.

What companies say they need

This report relies in part on input from four business focus groups held in San Diego, Los Angeles, Oakland and Fresno. Focus group companies generally felt that California was insufficiently supportive of international activity, and they desired a more comprehensive set of quality, seamless services and trade policy support. Companies would particularly welcome assistance in overcoming regulatory and market access barriers, improved infrastructure, help navigating trade and investment services, more effective leveraging of the California brand, assistance with trade finance, foreign market development support, and due diligence support regarding potential partners. While in some cases these perceptions may be based on a lack of understanding of state vs. federal roles, or a lack of current information about initiatives already underway, they reflect a widely-felt concern that the State is not adequately present as a partner for California enterprises seeking to engage globally.

Attracting inbound investment: What communities want

Investment attraction is growing more complex, and California is facing increased competition from other cities, states and countries. While attracting major greenfield investment remains important, there is also a growing need to focus on smaller deals, R&D partnerships, and venture

capital/private equity investment. Local economic development entities are generally inexperienced in these areas and need more support and training.

What the competition is doing

Most other states and countries both promote their companies' exports and actively work to attract companies from California and elsewhere. With the closing of the Technology, Trade and Commerce Agency in 2003, California is now the only US state without a broad-based international trade and investment program. California can learn from the experience and best practices of other states and countries. Based on research conducted for this report, several conclusions stand out: (1) It is essential to establish solid in-state infrastructure (strategies and programmatic resources) before considering the establishment foreign offices. (2) Where foreign offices exist, many states are switching from full-time offices staffed by State employees to contract representatives, or shared facilities with ports or universities. (3) Some state programs (most notably Florida's) are organized as public-private partnerships. (4) Investment promotion is sufficiently different from export development as to require different programs and staff.

Procedures such as independent audits must also be established to ensure program performance and accountability. In doing so the Legislature and other policymakers should understand the challenges in measuring international business development activity, due to the long lead times before international sales deals are closed (often 12-24 months), or foreign direct investment is consummated (5-7 years). The long lag times between service provision and visible results, and the inherent difficulty in tracking activity and obtaining private company information will require that program leaders develop a pragmatic and realistic set of measures to assess program performance.

How should we respond? Building blocks for a California international trade and investment strategy

Core elements

State government can play a significant role in supporting California businesses overseas by leveraging and focusing (not duplicating) existing assets and by adding strategic value in areas where government is in a unique capacity to contribute. This report recommends that the following four elements inform its international and trade and investment strategy:

1. Link international trade and investment programs to a more comprehensive State economic development strategy that addresses competitive issues and better showcases and leverages California's leadership in areas such as R&D and innovation
2. Better leverage and project the California "brand"
3. Assert California's interests in national and global policy issues, and help California companies overcome policy and regulatory barriers to their global business development
4. Make the attraction of foreign direct investment a priority

Structural considerations

California should create a long-term institutional capacity in state government to advance the State's interests and support California business globally, using a small professional staff under the Undersecretary for International Trade at BT&H to coordinate and integrate other service providers, and provide direct services in strategic areas.

Structural recommendations

BT&H should establish within the office of the Undersecretary for International Trade a senior-level core staff for trade development, investment development, intergovernmental and regulatory affairs, and information and communications; establish an intra-governmental coordinating body among state agencies with programs or activities that impact international trade and investment; continue and expand the California Trade Partnership; engage the California Chamber's Council for International Trade as a policy advisory body; and engage major organizations reflecting California's industrial, scientific and ethnic diversity in planning international services.

Service considerations

A strategy and institutional capacity to address international trade and investment priorities should be established within the State before considering the establishment of foreign offices. Reflecting this priority, this report does not make extensive recommendations on foreign offices beyond the following. If foreign offices are proposed at a later time, BT&H should work with the Legislature and other stakeholders to establish clear location criteria in advance of specific location decisions. This report also recommends that in those circumstances priority consideration be given to using contract offices (as opposed to full offices staffed by state employees), holding periodic on-site inspections, cooperation and development of a working division of labor with US Commerce Department foreign posts, and giving priority attention to investment attraction. The State must invest directly in foreign representation; the funding of "official" foreign offices from purely private sources is inappropriate.

Service recommendations

As a general rule, the State should seek to leverage and supplement existing services through public-private partnerships, rather than serve as the service provider of first resort. These services should relate to a broader state economic development strategy; go beyond traditional export and investment promotion; monitor and advocate for favorable international trade and investment policies at the national level; address foreign market barriers; facilitate coordinated service delivery with private sector partners and the US Commercial Service; develop a directory of subject matter experts in recognized partner organizations; provide a modest funding pool to support innovative shared services with partners; create a state-of-the-art web presence; and establish an agreed methodology for assuring program accountability and measuring performance. Investment attraction should be a priority, focusing particularly on core and emerging industry clusters.

Final recommendations

Develop a program plan and funding structure for recommendation to the Legislature for budgeting and staffing for a five year program for FY2009-2014. The BT&H Undersecretary for International Trade should implement as many of the service recommendations as possible in FY2008-09, issue an annual report on international trade and investment trends, and update the State's international trade and investment strategy biennially. In reviewing this trade and investment strategy, the Governor's Office and the Legislature should carefully consider its relationship to a broader, more comprehensive State economic development strategy, to ensure that international programs and policies are not undertaken in isolation.

1 Introduction

California's gross state product (GSP) is greater than $1.7 trillion, making it the eighth largest economy in the world, the largest state economy, and a heavyweight player in cross-border trade and investment flows.[3]

In the 1990s, California grew faster than many other world economies to become, by some estimates, the world's fifth largest economy. Today, other countries have overtaken the state,[4] and California is still climbing back from economic losses experienced in 2001-2002. In addition, as measured by merchandise exports, California has dropped from its historic position of being the nation's number one exporting state to number two, behind Texas. California's real economic growth from 2000-2006 averaged 2.8% annually, slightly above the national average, but lagged behind Nevada, Arizona, Florida and Texas.[5]

This document presents the findings and recommendations of the California Business, Transportation & Housing Agency (BT&H) on the potential international trade and investment roles of California state government. A second report is due February 1, 2008, outlining the specific recommended strategy. The preparation of both documents is pursuant to the California International Trade and Investment Act of 2006 (Senate Bill 1513), enacted as Government Code Title 2, Division 3, Part 4.7, Chapter 2.5, Section 13996.5.

Purpose, requirements and scope

This study sets out potential roles for state government in advancing California's interests in global markets. It is intended to identify appropriate strategies to create and maintain good jobs for Californians by supporting international business development.

This study includes the following:

- A discussion of California's economy and its relationship to global markets, including identification of current and emerging trends, industries, services, and areas of comparative advantage

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[3] California GSP was $1.727 trillion in 2006. The Center for the Continuing Study of the California Economy provides a convenient source for California economy rankings at http://www.ccsce.com/pdf/Numbers-jul07-CA-Rank.pdf. As CCSCE notes, World GDP (gross domestic product) data is produced by the World Bank and can be found at http://siteresources.worldbank.org/DATASTATISTICS/Resources/GDP.pdf. State GDP data can be found on the Bureau of Economic Analysis (BEA) website at http://www.bea.gov/regional/index.htm#gsp.

[4] California's changing ranking is due in part to currency fluctuations.

[5] CCSCE 2007. It should be noted that due to the large base size of California's economy, it is proportionally easier for other states to achieve higher growth rates.

- An inventory and gap analysis of existing international business programs and services provided by local, state, federal, and private entities
- An assessment and gap analysis of the current and future physical and human infrastructure related to foreign trade and investment, and the appropriate role for state government to address these infrastructure needs
- The results of a survey of businesses on their needs and priorities related to international trade and investment
- An examination of how best to coordinate and leverage existing local, state, and federal organizations, programs, and services related to international trade and investment
- Recommendations for future policies, programs, and funding, as well as observations on infrastructure and other needs, including the need for foreign offices
- Priorities for State activities and funding related to international trade and investment, and an organizational structure for the State's administration of international trade and investment policies, programs, and services.

This report looks at economic activities that ultimately cross international borders and that are related to the sales of goods or services or the flows of funding into investments. It does not look at other cross-border impacts, such as environmental impacts, emigration and immigration, or crime-fighting.

Research

The following activities were undertaken in preparing this report:

- Extensive research and the development of white papers by a University of California team of faculty and graduate students assembled by Gretchen Kalonji (UCOP), John Zysman (UC Berkeley), and Mary Walshok (UCSD) through the Office of the President. See the Acknowledgements and Sources pages for a complete list of UC contributors and support
- Bay Area Economic Forum research and analysis by Sean Randolph, President & CEO of the Bay Area Economic Forum and Paul Oliva of Oliva Global Communications
- Research by Jerry Levine of Mentor International on international programs conducted by other states and foreign governments, including findings from studies of state and national trade and investment programs and interviews of key trade officials from outside California
- Four business focus groups coordinated by the Bay Area Economic Forum and held in Oakland (hosted by the Bay Area World Trade Center), Fresno (hosted by the Fresno CITD), Los Angeles (hosted by the Los Angeles Area Chamber of Commerce) and San Diego (hosted by the San Diego World Trade Center)
- Utilization of a variety of reports on California's global economy from sources including the Public Policy Institute of California (PPIC); the University of California Sacramento Center seminar series on California trade programs led by Gary Dymski; the Gus Koehler report on the closure of the Technology, Trade and Commerce Agency; and the Bay Area Economic Forum/BAYTRADE client services report

- Consultation with over a dozen California state government agencies or programs[6]
- Input from the California Trade Partners, CALED (California Association for Local Economic Development), and the US Department of Labor WIRED initiative

Historic background[7]

In 2003, the Legislature repealed the authorization for the Technology, Trade & Commerce Agency, including the agency's international trade and investment promotion programs (Chapter 229, Statutes of 2003). While this action did not eliminate all California international programs, it ended 25 years of cross-industry international programs for the State.

California's earliest international efforts, including foreign office proposals, had begun in the 1960s during the Reagan Administration. In 1978 Governor Jerry Brown established the first formal program, the California Office of International Trade, under a new Department of Economic and Business Development. Assembly Speaker Willie Brown and Secretary of State March Fong Eu worked together to pass legislation creating the California State World Trade Commission (WTC), established in 1983 with the active involvement of newly inaugurated Governor George Deukmejian.

The WTC operated under a private-sector board authorized to hire and fire the executive director and take in operating funds from private sources. The WTC officially operated out of the Governor's Office, and staff served at the pleasure of the executive director. WTC programs in the late 1980s and early 1990s were rigorously measured and audited. Although the Little Hoover Commission raised concerns about the lack of institutional structure in 1987, by 1992 the Council on California Competitiveness "Uberroth report" cited the World Trade Commission as a model for how state government programs should work, in contrast to the "job-killing machine" the Council on Competitiveness saw in other state agencies.

By that same year, state international programs had expanded significantly, with the WTC operating an internationally recognized export finance office, a robust tradeshow and mission program, and an active policy and research office. The WTC's 1992 report to the Legislature documented $212mn of export growth on a modest $1.9mn budget, resulting in $6.9mn in additional tax revenues to the General Fund. Five foreign trade and investment offices (located, in order of opening, in London, Tokyo, Mexico City, Frankfurt and Hong Kong) had been established within the Governor's Office based on reports and recommendations of the WTC. International programs were thriving at the Department of Food and Agriculture, Department of Commerce (housed at BT&H and including an Office of Foreign Investment), Energy Commission, Tourism

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[6] In addition to involvement of various offices in meetings of the California Trade Partners, specific meetings for this report were held with the Governor's Office (multiple meetings), Office of Small Business Advocate (Marty Keller, July 18), Department of Food and Agriculture (Undersecretary George Gomes, Jonalee Henderson, Josh Eddy, July 18), Labor & Workforce Development Agency (Secretary Victoria Bradshaw, Undersecretary Douglas Hoffner, July 18), Economic Strategy Panel (Ed Kawahara, June 7), Workforce Investment Board (Barbara Halsey, July 20), Employment Training Panel (Michael Saragosa, July 20) , Energy Commission (Tim Olson, July 18), Transportation Commission (John Barna, Jr., and Commissioners R. Kirk Lindsey and Joseph Tavaglione, July 20), University of California (directly involved with the study), California State University (Chancellor Charles Reed, July 23), California Community Colleges (Jeff Williamson, multiple meetings). The Travel and Tourism Commission (Caroline Beteta) and the Office of the Attorney General (Jan Stevens and Susan Durbin) were also contacted. Note that the legislation also specified meeting with the California Commission on Industrial Innovation but the commission doesn't exist as the bill to revive it never passed.

[7] This background is drawn from Paul Oliva sources and Kress 2005.

Commission, and Community Colleges. A Governor's Trade Representative was established, and interagency coordination took place through a Governor's Coordinating Council for International Programs.

In an effort to institutionalize the role of the WTC, and to extend its operational style to management of the foreign office program and the Department of Commerce, Senate Bill 1909 (Vuich) was passed in 1992, creating the California Trade and Commerce Agency by merging these three separate functions. In the ensuing years, the Agency established a more traditional administrative approach, reduced the powers of the Commission, and eliminated the external performance measurement functions while significantly expanding the foreign office program.

From 1994 through 2000, a new regionally-based public-private model for community engagement and coordinated international service delivery came into being with the establishment of the BAYTRADE and LA TRADE programs. Grants from the US Economic Development Administration—matched by port, airport, local government and corporate sources—developed a coordinated statewide network of 11 service centers, performance measurement, client tracking, and an online information portal called TradePort (still in existence). Program results were solid (BAYTRADE averaging $40mn per year in exports on a $1.4mn budget), and for the first time there was a coordinated approach to performance measurement across cooperating federal, state and local service providers. The BAYTRADE and LATRADE programs closed when federal funding expired and the State declined to give its support. Though many of the service centers still exist, there was no funding to operate integrated performance measurement systems or to facilitate coordinated service delivery and quality assurance.

By 2001, the local programs were struggling to shore up funding, the Technology, Trade & Commerce Agency[8] programs had lost confidence and support,[9] and the nation and California had entered a difficult period following the 9/11 attacks and the dot-com collapse. California's exports fell, together with its economy. It was in this context the Legislature eliminated the Agency and the State's core international programs.

In the aftermath of the Agency's closure, a number of key functions were transferred to other agencies. For instance, the Economic Strategy Panel, as well as the CalBIS (California Business Investment Service) program supporting business attraction and retention efforts moved to the Labor & Workforce Development Agency. BT&H took on the small business loan program and related activities, as well as top-level business issues, including the California Goods Movement Action Plan, the GoCalifornia component of the Governor's Strategic Growth Plan, and "Economic Vitality Conversations" with civic leaders,

In 2005 and 2006, both houses of the Legislature conducted informational hearings and evaluated bills relating to California's international activities and foreign office programs. During the 2005-2006 Legislative Session, at least nine bills were submitted addressing BT&H's international authority and/or prescribing foreign office activities. During the Session, the Assembly Committee on Jobs, Economic Development and the Economy, and the Senate Committee on Business, Professions and Economic Development held joint hearings on the subject and produced a report in June 2006.[10] Passage of the California International Trade and

[8] The California Trade & Commerce Agency was renamed the California Technology, Trade & Commerce Agency effective January 2001.

[9] Kress 2005 provides a good discussion of that study, including sources and citations for the California State Auditor's reviews of TTCA as found in the bibliography for this report.

[10] California State Legislature, *California Trade Prospectus*, 2006.

Investment Act of 2006 (SB1513, Romero) provided formal authority for BT&H to conduct international activities and to produce this report.

Definitions and terms

In this report, *international business development* is used to encompass exporting, importing, two-way cross-border investment and other cross-border commercial development activities.

International trade consists primarily of exporting and importing. *Exporting* is the sale of a good or service to a foreign buyer. *Importing* is the purchase of a good or service from a foreign seller. Even tourism or paying for education is considered international trade if an individual (or more importantly, their money) crosses an international border. Buying or selling anything tangible is called *goods trade* or *merchandise trade*. Buying or selling things that are more intangible, such as knowledge or a downloaded song, is called *services trade.*

Investment can take place through the familiar financial market channels of stocks and bonds, through direct purchase of real estate or construction of a facility (*foreign direct investment*) or through other kinds of investment activity such as equity compensation as consideration for services or other value provided. Investment activity can be *inbound* into the state or *outbound*.

When looking at trade and investment activity, it is important to recognize two different types of measurement. *Flow* measurements quantify something over time. For instance, saying that California exports nearly $200bn per year is a flow measure. A *stock* measure tallies the quantity of something at a particular point in time. For example, "at the end of Q3 2005, there were 1.2mn California businesses" is a stock measure. Stock and flow measures can be easily confused in investment data, where the typical data point is a stock measure "the value of plant, property and equipment was $1bn at the end of last year" but activity can also be expressed as a flow, as in "the value of new investments last year (flow during the year) reached $100mn."

International shipment data (which can include shipments by all modes—sea, air, rail and truck) also uses more than one measure. These measures are *value, shipping weight* (SWT), and *TEU*. Value measures naturally represent the stated dollar value of the shipment. SWT as reported by the Census Bureau is the actual shipping weight in kilograms. TEU stands for twenty-foot equivalent units, which is a volume measure related to the capacity of a type of shipping container. As noted in the section on shipping, each measure has strengths and weaknesses when used to formulate policy. The Goods Movement Action Plan primarily looked at TEU measures.

Role of state government supporting international business

Some believe that the role of state government in economic development should be minimal, while others argue for a more activist stance. As has been observed, the simplest reason to engage in international business development is because the biggest market for nearly anything is outside the US. This, *per se*, does not necessarily prove the need for state government involvement. But most observers of California's international economy believe that at least two considerations demand some basic level of involvement by the State in international policies and programs. First, citizens, businesses and government institutions themselves have an enormous stake in California's global success, suggesting that state government has a role to play in advancing these interests. Second, other states and countries are investing heavily to strengthen their own competitive positions in the global economy, so California would be remiss if it failed to assert its own interests.

More theoretically, a 2007 World Bank study[11] points out that the economic justification for government involvement in export promotion is based on the theory of asymmetric information and other market failures. It is exceedingly difficult and expensive to collect all the information needed to succeed internationally. There are great uncertainties—such as the risk of currency fluctuations—and competitive considerations can breed even greater risk. At the same time, increasing international activity generates revenue, diversifies markets, stimulates innovation, and ripples across support industries such as transportation services—and it has these effects not only for the company concerned but also for the state overall. A strong case can be made for a government role that facilitates these micro and macro benefits.

[11] Lederman 2007.

2 Where We Are: California in a Global Economy

The state's trade and investment trends, along with other indicators, suggest that California is experiencing significant changes in its footing in the global economy.

2.1 Trade and investment trends

International trade and investment is a major economic engine for California that benefits most businesses, communities, consumers and State government. As has been described at great length in many other reports, California's economy is more diversified than ever before, and its prosperity is tied on a global basis (1) to exports and imports of both goods and services by California-based companies, (2) to exports and imports passing through California's transportation gateways, and (3) to inflows and outflows of capital and human resources.

This section describes key trends and challenges.

2.1.1 Problems with data

Current sources of international trade and investment data are not sufficient to paint a comprehensive, accurate and timely picture of the export and import of goods, services and capital across California's borders, let alone serve as a robust basis for policy and program formulation. This report provides the Legislature the best available summary of trade and investment trends that could be produced within budget constraints and using standard data sources, inferential analysis, and input from international trade experts. However, the limitations must be understood.

Appendix A details further details these issues, which include:

- Lack of trans-shipment and import data
- Poor data on trade in services (inbound and outbound)
- Limited international investment data (inbound and outbound)

2.1.2 Known trends[12]

The Public Policy Institute of California (PPIC) report *California and the Global Economy: Recent Facts and Figures, 2006 Edition* is one of the best recent summations of the statistics and trends that represent the state's international business ties. Rather than repeat that statistical detail and analysis here, we provide a summary of the most important trends presented by the PPIC, supplemented by analysis from the Bay Area Economic Forum and the University of California.

[12] Unless otherwise noted, the data in this section comes from WISER and Bureau of Economic Analysis data, supported by Haveman 2006 and internal analysis from Paul Oliva and Allan Dafoe.

2.1.2.a Trade

California exports consist of all sales in which the seller is domiciled in California and the buyer is anywhere outside of California. Whether the sale is of a tangible product, data, education, or even consulting advice, the transaction is an export if the buyer is outside the borders of the state. Strictly speaking, a sale to Georgia is as much an export as a sale to Germany, though for the purposes of this report we only consider *international* trade.

Overall exports. Counting both goods and services, exports by California companies easily exceeded $172bn in 2006 and may well have been greater than $190bn.[13] California's merchandise exports under the state Origin of Movement Series rank second only to Texas among US states. (It must be noted that this ranking does not account for service exports, which, if added, could raise California back into the number one spot; moreover, California actually came out on top when using a newer data series to evaluate the first half of 2007).[14] The Census Bureau reported that in 2005, there were 59,406 exporting companies in California, which represented more than a fifth of all US exporters (although these figures count only merchandise exporters).[15] Much employment is directly and indirectly reliant on exports; for example, over 18% of California manufacturing employment is dependent on exports.[16]

California's foreign sales took a big hit in 2002, driven heavily by drops in computer and electronics exports. Merchandise exports dropped over $4bn in from 2001 to 2002, and very few of the state's markets showed growth in that year. [17] Some markets (including Japan and Taiwan) have not yet regained their 2001 levels based on 2006 annual data.

Goods. Merchandise exports are large ($127.7bn in 2006[18]) and are growing at a rapid pace ($10.9bn 2005-2006). Exports from California to almost all markets are growing in both absolute terms and relative to the Gross State Product, suggesting the growing importance of exports.

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[13] A more robust figure would be as follows: WISER origin of movement data for 2006 less agricultural exports ($127.7bn minus $6.4bn) plus CDFA's official California agricultural export estimate for 2005 ($9.3bn) plus a non-statistically validated estimate of California service exports at $60bn for a grand total of over $190bn.

[14] Even the seemingly straightforward evaluation of California merchandise export data establishes no definitive conclusions. There are two primary sets of data intended to show merchandise exports on a state-by-state data, one based on the state "origin of movement" and the other based on the zip code of the "principal party of interest". The origin of movement data shows California clearly in a number two position versus Texas, but the zip code based data shows California in the lead for 2006 ($132.2bn f versus $118.9 for Texas) and for the first half of 2007 (totaling $69.1bn for January through June versus $62.6bn for Texas). See Appendix A for a further discussion of data issues. For this report, we are using OM data because of the free public availability of detailed commodity and country breakdowns through WISER and the US International Trade Administration at its Trade States Express website at http://tse.export.gov.

[15] US Department of Commerce, "Profile of US exporting companies," 2007. This publication reports the number of California exporters as 59,406, however the number was subsequently revised in the current version of the 2005 exporter database to 51,466.

[16] US Department of Commerce, State Export-Related Employment Project.

[17] The dot-com collapse, September 11 attacks, and global economic softening reduced California merchandise exports and inbound investment in 2002, and presumably impacted trade in services.

[18] WISERtrade State Origin of Movement (OM) series. Note that this number does not include CDFA's official total for California agricultural exports (which is only available for 2005 and is much higher than WISER's number for ag exports in th OM series.) WISER zip code data and a separate detailed series on individual crop products also show higher totals for 2006 but is not available without charge,

However, exports from the rest of the US are growing faster, and California's share of US merchandise exports has dropped from 13.0% in 2003 to 12.3% in 2006.[19] This suggests that California is failing to capitalize on export opportunities, that export-related activity is shifting elsewhere, or that California's export mix is shifting to a greater proportion of service exports, or some combination of the three. Because of the size and growth of service industries in the state, and because of the nature of some service transactions (for instance, when software is distributed via a web transfer), the trends in merchandise exports do not necessarily reflect California's overall export trends.

Services. Employment in service industries now represents nearly 50% of California employment. California's service exports represent at least $45bn (2004 estimate, with 2006 likely well above $50bn) and are, by all available indications, growing rapidly.[20] [21] As noted in the preceding section, these exports are not regularly estimated at the state level, making it difficult to evaluate top markets and trends. However, according to the Bardhan and Kroll study, California holds a "dominant position within the US in services exports in research, development and testing services; book, record, tape and software royalties; air freight; information and entertainment services, accounting, agricultural services, and international travel and tourism." They found that top opportunities for California include educational services for foreign students and professionals; energy and environmental services; technical, engineering and scientific services; real estate services; architecture and design services; logistics; software and IT services; finance, banking and insurance; legal services; and travel and tourism (including both attracting foreign travel to California and consulting services related to travel facilities abroad).

Imports. California and other states have traditionally ignored importing, and state-level data are non-existent, yet importing is a key element of the state's economic health. Businesses, government agencies and even individuals source power, raw materials, semi-finished and finished goods, food products, intellectual property and other resources from abroad, and they depend on those items for their ability to conduct business. Many imports are integrated into California products. Developing a statistically valid model to estimate the state's import trends, let alone developing policy conclusions, is beyond the scope of this report but would be useful to evaluate.

Destinations. What markets are the most important destinations for California goods and services? California's largest single market is the NAFTA (North American Free Trade Agreement) countries of Canada and Mexico. Though over one-quarter of California merchandise exports go

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[19] WISERtrade OM data for first half of 2007 shows a continued downward trend in California share of US merchandise exports, dropping from a share of 12.4% in 2006 half-year data to 11.6% in 2007. The merchandise exports of most other states are growing faster on a percentage basis, though the large base for California means that its smaller percentage increases can equal a larger total dollar growth than other states that are reporting faster growth in percentage terms.

[20] Bardhan and Kroll, *Services Export Opportunities*, 2006. This study was underwritten by the California Community College Centers for International Trade Development (CITDs), and it provides an excellent initial analysis and recommendations, though the stated focus was on opportunities for small and medium enterprises and on China and India. For the purposes of this study, we draw upon Bardhan and Kroll's findings in combination with other data.

[21] As Jock O'Connell notes, US service exports are currently about 41% the amount of merchandise exports, which, assuming California is exporting at least the same proportional level of services, would put the state at a minimum of $52.4bn in service exports. Given the size of the financial services and tourism sectors in California, O'Connell estimates the state's service exports at closer to $60bn, which would put California's overall export total for both merchandise and services above $185bn.

to these two countries, they do not represent a common internal market. California's largest single market that has both a common external trade policy and internal market, including a common currency, is the European Union.[22] Beyond NAFTA and the EU, the countries of Japan, China, South Korea and Taiwan are top destinations. All showed high double-digit and even triple-digit growth in their purchases from California between 2002 and 2006, though Japan and Taiwan have not yet returned to the level of their 2001 purchases. The growth of China as an export destination is extraordinary, more than doubling its purchases of California merchandise from $4.7bn in 2001 to $10.0bn in 2006. On an individual country basis, eight of California's top 15 export markets are in Asia (Japan, China, Korea, Taiwan, Hong Kong, Singapore, Australia, Malaysia), five are in Europe (United Kingdom, Germany, Netherlands, France and Switzerland), and two, naturally, are in North America (Canada and Mexico).[23]

Industries. Computer and electronic products were the top merchandise exports *and* the top overall export industry at $44.5bn (34.9% of total merchandise exports) in 2006 state origin-of-movement data, but are still below their 2000 peak levels. Purchases of travel and tourism by foreigners, including passenger fares, are estimated to be the second largest export category, valued at approximately $15.2bn in 2000 and likely much greater in 2006, especially due to the low value of the dollar. [24] Machinery manufactures ($14.9bn) and transportation equipment ($13.5bn) were the third and fourth leading sectors. The export of private business, professional, financial, construction, educational and other services is the next-largest export business for California (it was estimated at $10.6bn in 2000 and is likely much higher in 2006).[25] Agriculture was nearly as strong, with crop products and derivatives valued at between $6.4bn (WISER 2006 origin-of-movement estimate) and more than $9.3bn (2005 CDFA estimate), not counting packaged food products (which represented an additional $5.2bn).[26] Chemical manufactures were also significant at $8.7bn.[27]

Small and medium-sized enterprises (SMEs) play a significant role in California's export economy, driving an estimated 43% of California's merchandise exports, according to the US

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[22] Though the EU is made up of 27 countries, California products face similar regulations in all EU countries (and increasingly a common currency). This makes trade with the EU somewhat similar to conducting trade with the various US states.

[23] All destination data is based on WISERtrade's OM series, which may overstate or understate California exports to certain destinations for at least two reasons: the first is that the data series is only for merchandise and excludes services, and the second is that even for merchandise the data are affected by the activities of consolidators, value-added activities and other transshipment drivers (such as the large degree of consolidation in Texas of Mexico-bound exports).

[24] Shatz, unpublished data, 2003, from personal communication with the author. Please see our discussion on the tourism industry for further explanation of varying data approaches.

[25] Ibid.

[26] CDFA (California Department of Food and Agriculture) reports the state's official export data for agriculture, produced by the Agricultural Issues Center at UC Davis. The numbers include crop commodities, as well as processed crop products (such as juice from oranges and processed tomatoes). Care must be taken in reviewing agricultural export data, because there are multiple methodologies. See Appendix A for more background on these methodologies.

[27] Transportation equipment exports were the second leading sector in 2005. Unlike the top three merchandise sectors, chemical manufactures and crop products both showed steady growth from 2001 onward and were not hit by the overall drop in California exports between 2001 and 2002.

International Trade Administration.[28] This level of SME export intensity is well above the 29% national average. These figures suggest that California's SME base is not only crucial to the state's international competitiveness and export growth, but also that efforts to support international trade growth by SMEs can have a widespread economic impact.

Shipping. California is an important transit point for inbound and outbound trade by sea, air and land (both truck and rail). Shipping and other transit services drive businesses, jobs, and tax revenues. Both domestic and foreign shippers purchase international shipping services; the portion purchased by foreign enterprises is also a service export and amounts to more than $4.1bn based on Howard Shatz estimates. As of 2006, nearly one-fifth of all US trade (19.5%), by all modes, passed through a California international transit gateway. California's seaports processed 29% of all two-way US waterborne trade by value, and nearly 36% of US containerized shipping. California airports carried 19.8% of US two-way airborne trade by value (though this does not count the massive role that airports play in service exports such as business consulting and tourism). The value of imports and exports through California gateways amounted to $562bn in 2006, and showed solid growth in absolute terms for both value and tonnage since 2000.[29]

It is important to note that 84% of the value of waterborne trade through California in 2006 was due to imports. In fact, imports accounted for 74% of California shipping by all modes. For export shipments, California airports played a more important role than seaports on a value basis ($71.6bn versus $59.2bn for vessel shipments),

From 2000 through the first half of 2007, though, the *share* of US trade transiting California decreased measurably, driven by shifts in airport and seaport usage away from California to competing gateways. Looking at Census Bureau data on two-way trade for 2003 through July 2007, there were decreases in California's share of total value, seaborne value, airborne value, containerized value, and airborne shipping weight. Vessel tonnage and containerized tonnage (measured as SWT) were up over the period. Based on more detailed PPIC analysis of the value of goods shipped, California airports lost 7.1% of share to other US airports between 2000 and 2004, seaports lost 2.2%, and land transportation modes gained 0.2%. It should be emphasized that the absolute volumes based on value, TEU, and tonnage are increasing; what the analysis showed is that activity in *other states is growing faster*, resulting in *declining California share*. The

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[28] This figure is drawn from the ITA's Exporter Database (http://ita.doc.gov/td/industry/otea/edb/index.html), with the original source Bureau of the Census, Department of Commerce and prepared by the Office of Trade and Industry Information. The estimate is derived from Census Bureau information on known exporters and the known value of their exporting. This only includes merchandise exporters and not service exporters. For California in 2005, there were 51,466 known merchandise exporters, of which 49,148 qualified as small or medium enterprises with less than 500 employees. These exporters accounted for 43.2% of the known (or attributable) value of California merchandise exports.

[29] These data are taken principally from the US Census Bureau's online service "USA Trade *Online*." Note that the Goods Movement Action Plan (BT&H and Air Resources Board, January 2007) reports shipping trends based on the shipping measure known as a TEU (Twenty-foot Equivalent Unit) rather than value or shipping weight. TEUs indicate physical volume, which most closely correlate to the number of trucks, ships, rail cars, and warehousing space involved in goods movement activities. USA Trade *Online* does not report on a TEU basis but on shipping weight (SWT) in kilograms, as well as on value. Value measures correlate to the nature of items being shipped. Changes in TEU, weight, and value by themselves may not suggest a particular policy challenge (for instance, a shift from low-value, high-TEU/high-weight goods such as waste paper to high-value, low-TEU goods such as semiconductors may be a net benefit). However, changing shares of shipping activity in any of these measures should be examined on a regular basis for any potentially worrisome trends.

PPIC analysis indicated that trade shifted away from California airports due to changing commodities being shipped and reduced demand for use of California airports. The same analysis indicated that for seaports, the major factor in declining share was a reduction in demand, as well as changes in trading partners. For instance, PPIC stated "The recent growth in the share of waterborne trade at the East Coast and Gulf of Mexico ports suggests increased use of the Panama Canal, and perhaps even the Suez Canal, to ship goods directly to the eastern United States. Previously, these goods were transshipped by land. The shift to the East Coast and Gulf ports could also be a result of accelerating growth in trans-Atlantic trade."[30]

Tourism.[31] As stated above, travel and tourism is one of California's largest international industries. However the data can be confusing, since the industry can be measured on the basis of either cross-border payments or visitor data. Data on US trade in services show foreign tourism and travel payments. Based on this measure, the industry accounts for at least $13bn of revenue from foreign purchasers plus $2.2bn in passenger fares purchased by foreigners (note that these are 2000 estimates and are undoubtedly much larger today). By contrast, the tourism industry has its own methodologies based on visitor data to compare numbers and spending trends of domestic and international travelers. The dollar figures between the payments and visitor methods are not necessarily directly comparable.

The following information is based on visitor data reported by the California Travel and Tourism Commission. California's tourism industry has a strong share of the market relative to the rest of the US; however, the state's share of international visitors is declining. Increasing competition from emerging destinations, particularly in light of current negative perceptions of the US, is contributing to this trend. Based on numbers of visitors, *international* tourism would appear to be a small part of the total visitor market (4.1% in 2005). In-state tourists (California residents vacationing in the state) represent 80% of all tourists. Of the remaining 15.9 percent, a significant portion is other US residents vacationing in California. However, out-of-state visitors (both domestic and international) spend more than California in-state tourists—in fact, they represent nearly *half* of total visitor spending though they are only 20% of the visitors. The diversity of California's culture and attractions are a major draw. The current top sources of international visitors are Canada, Mexico, UK, Japan, Australia, Germany, France, South Korea, and Taiwan. While China is not yet a top source, Chinese are beginning to travel, much as the Japanese did in the 1970s and 1980s, suggesting that that the Chinese market merits special attention; this may also be true of India. The internet, and internet-based advertising and communications (such as trip planning guides and maps), will be increasingly important in the future of tourism promotion.

2.1.2.b Investment

As with trade, cross-border investments move both into and out of California.

Typically, the State's investment promotion policy and program roles have focused strictly on inbound foreign direct investment (FDI). Measures of FDI are based on business operations by entities in the US that have more than 10% foreign ownership. FDI does not include investments

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[30] Haveman, 2006. We encourage readers to review the original PPIC analysis. It should be noted that these trade figures consist exclusively of merchandise trade and do not include use of airports, seaports and overland gateways for business travel and tourism. California airports and their land connections, for instance, become even more important when considered for their essential role in enabling delivery of service exports.

[31] Nina Kelsey, 2007. University of California summary based on data from the California Travel & Tourism Commission and other sources

in financial instruments such as bonds, and state-level data do not include capital flows such as equity investment or reinvested earnings. FDI measures at the state level are simply the total value of the investment at a given point in time rather than the value of the money flowing into (or out of) the state.

Outbound. Outbound investment by private investors—and by public entities such as the State retirement systems—has a bearing on the economic health of the state. Such investment activities, though, have not generally been the focus of California trade and investment policies beyond the occasional effort to embargo investments in pariah nations (such as South Africa in the 1980s and Iraq, Syria and Libya more recently). Due to time and resource constraints, this study did not evaluate data on outbound financial investment transactions.

Inbound. The economic bubble in 2000 affected inbound investment as much or more than trade. Foreign investment reached a high in the 1999-2001 period and dropped subsequently. In the ensuing period, FDI either fell or grew more slowly in California than in the rest of the United States.[32]

California is the leading state for FDI, with 614,300 employees in foreign-owned, non-bank firms as of 2004 (the most recent year of available data). However, employment in foreign owned-firms, after reaching a high of 749,400 in 2000, declined from that year until it had sunk below even its 1999 level of 641,400. And though foreign-owned property, plant, and equipment (PPE) was valued at $119.8bn in 2004, this amount is still below its 2000 value.[33]

Inbound manufacturing FDI. Traditional economic development measures focus on the amount of investment in manufacturing plants versus commercial property (real estate) due to the generally greater economic impact of a manufacturing plant in terms of jobs and economic activity. Of the $119.8bn PPE value in 2004, $33.4bn of that amount represented the value of commercial real estate with 10% or more foreign ownership. Of the 641,400 FDI employees, 141,100 of them were manufacturing employees; that number is down from a high of 208,200 in 2000.

Countries of origin. As noted above, one difficulty with the currently available FDI data is that country- and industry-specific data at the state level are only available for entities with 50% or more foreign ownership. Though this undoubtedly distorts the picture, here are the figures for 2004. Majority European-owned affiliates held $45.1 billion in PPE, followed by Asian and Pacific countries ($33.8bn), Latin and South American firms ($4.9bn) and Canadian firms ($4.3bn). Of the commercial real estate that was majority-owned by foreign entities, $8.5bn was held by European affiliates, whereas $14.7bn was owned by Asian and Pacific investors. As a result of both the amount and nature of the investment, European majority-owned investment in California generated far greater employment (337,400 employees) than Asian investment (137,300).

Non-plant investment. Foreign capital flows and strategic partnership activity around the formation and growth of new and expanding companies are an important component of the California economy. More discussion of this specific form of investment activity is included the section on capital and R&D diversity, below.

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[32] Haveman, 2006.

[33] US Department of Commerce, Bureau of Economic Analysis, Foreign Direct Investment in the US.

2.2 California diversity and competitive advantage

California is a diverse state by virtually every measure. This diversity creates a unique set of competitive advantages that work individually and collectively to drive international opportunities.

2.2.1 Competitive advantage and its bearing on State economic development strategy

Competitive advantage is a simple concept. A given geography such as a state has a given set of attributes—land and climate, human resources and knowledge, capital and infrastructure—that allow it to produce items of value with greater quality, lower price, better availability or even complete uniqueness than another geography. If the people and enterprises of the state concentrate on producing and selling the things in which they have greater competitive advantage, and importing the things in which they have less competitive advantage, they will be more prosperous.

Since these forces are dynamic, over time some industries and their employment become uncompetitive and shrink, while others grow. Addressing these actual and potential economic dislocations—while driving net growth and quality-of-life—is a principal challenge for governments, particularly as globalization and technology accelerate changes in the market.

As expressed in work by the President's Commission on Competitiveness in 1984, "The policy objective for governments is classic and enduring: sustain the growth of employment and productivity to assure expanding real incomes of the citizens. Success requires that 'under free and fair market conditions, the community (firms and populace) can produce goods and services that *meet the test of international markets while simultaneously expanding the real income of its citizens*.'"[34]

Centuries of economic development practice illustrate that government can seek to promote areas of competitive advantage, work to mitigate areas of competitive ***dis***advantage, assist with adjustment out of non-competitive activities, help establish entirely new areas of economic demand, undertake some combination or the above, or even assiduously refrain from any government behavior so that market forces can solely determine the positive and negative outcomes of competitive advantage.

California is unusual in that the diversity of its competitive attributes is so great that this diversity is itself a competitive advantage. This diversity also includes areas that are less developed and/or more remote, including rural, border, and economically troubled urban communities. So in addition to growing the economy generally and addressing dislocations, State economic development strategy can consider whether there are international activities that could also help transform the economic potential of such areas into sustainable expanded economic activity.[35]

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[34] Stephen Cohen, D. J. Teece, L. Tyson, and J. Zysman. "Global Competition: The New Reality." *President's Commission on Competitiveness*. Vol. 3., 1984. (This commission, chaired by John Young, then CEO of HP, led to the creation of the Council on Competitiveness.)

[35] Allan Dafoe at the University of California, Berkeley, further summarizes economic theory on the role of government in promoting exports and investment, particularly drawing upon the work of Dani Rodrik at Harvard University. Dafoe (2007, The role of government).

2.2.2 Economic and social diversity[36]

With its economic and social diversity, California is uniquely positioned to be a preferred global partner of regions around the world, particularly regions interested in innovation, science and technology, emerging high-growth business opportunities, and products and services derived from distinctive California attributes such as specialty crop products, earthquake-resistant construction and unique travel destinations.

This section touches on the distinctive character of the economic regions, economic clusters, and distinctive population characteristics of California. *See Appendix B for further details.*

2.2.2.a Regional (geographic) diversity

There is a variety of approaches to mapping California economic regions. For simplicity, this report cites the regions identified by the Center for the Continuing Study of the California Economy (CCSCE) to represent the major sub-regions and economic "clusters" of the State.

San Francisco Bay Area. The Bay Area's economic base has a comparatively large share of California's high tech and professional, business and information service jobs, with particular strength in information technology and software, environmental and clean energy technology, biotechnology, digital media and internet services. It was hard hit by job losses in the post-2000 dot com bust but has an above-average projected job growth rate when measured from 2005.

Los Angeles Basin. The LA basin has an above-average concentration in diversified manufacturing, wholesale trade, and tourism and entertainment. This economic base is projected to expand slightly faster than that of the United States, but slower than that of the State overall. Substantial growth is expected in foreign trade through the region's ports and airports, with tourism playing a strong role.

Sacramento Region. The Sacramento region's economic base is weighted toward government, though it has gained share in many sectors as firms have moved to where land and housing costs are comparatively low for California. Future economic growth assumes a renewal of government job growth and related professional services sectors.

San Diego Region. The San Diego region has a concentration in professional, business and information services, with the highest concentration of professional service jobs, strong tourism, and share gains in entertainment, biotechnology and pharmaceuticals, defense, and transportation[37]. The San Diego labor pool stretches from Riverside to across the Mexican border.

San Joaquin Valley. The San Joaquin Valley's economic base is concentrated in agriculture-based industries and has avoided the dramatic volatility of the other regions. The long-term challenge is to find growth sectors to supplement its resource-based sectors; as yet there is no clear candidate to lead the region's economic base into the future. Availability of land and the opportunity to improve goods movement infrastructure connections from the Valley to California's ports mean that trade logistics could be a growth opportunity.

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[36] In addition to meetings with the California Department of Labor and Workforce Development and the Economic Strategy Panel, sections 2.2.2 and 2.2.3 draw heavily on the working paper prepared for this study by Mary Walshok, Josh Shapiro and Jasmine Farhad, April 2007.

[37] See Walshok, 2007. Taken from SANDAG 2006 traded clusters in the San Diego Region.

Rest of State. The CCSCE groups a large swath of rural coastal and mountainous areas as "Rest of State." These areas are characterized by their fishery, forest, mineral and water resources, as well as recreation and tourism. The decline of the forestry sector has impacted many communities. Small enterprises are beginning to take advantage of lower cost-of-living and internet connectivity to build business such as artistic and gift products, creative design services, and information technology support services.

2.2.2.b Economic diversity and industry clusters

"Industry clusters" draw from companies across a variety of industry sectors in support of a specific segment—for instance a law firm, a test equipment manufacturer, and an engineering firm that support bioscience R&D and manufacturing. California has eight primary clusters and four emerging clusters that in many instances present substantial interlinkages. *See Appendix B for further details.*

California's primary industry clusters include the following:[38]

- **Professional Business and Information Services (30% of the economy)**
- **Diversified Manufacturing (17%)**
- **Wholesale Trade and Transportation (18%)**
- **High-Tech Manufacturing (7%)**
- **Tourism (5%)**
- **Entertainment (2%)**
- **Basic Government**
- **Resource Based** (such as agriculture, timber and mining)

Emerging industry clusters include the following:

- **Life Science and Services.** This cluster has expanded from a traditional base of medical and health technologies and services into a broader life sciences sector (including biotechnology) that deals with issues ranging from medical devices to healthcare, crop technologies, and alternative energy.
- **Value-Added Supply Chain Manufacturing and Logistics.** With the increasing globalization of supply chains and rapid design, development and commercialization of new technologies for delivery around the world, there is new significance and opportunity for value-added supply chain manufacturing and logistics in the state.
- **"Cleantech" and Alternative Energy.** Cleantech is a relatively new appellation to describe the application of innovative technologies from a variety of sectors to create economically compelling, environmentally friendly products and services for a variety of existing industries—from alternative energy generation and wastewater treatment to "green" consumer products. The emerging cleantech cluster can be a major driver for investments and job growth in California.
- **Nanotechnology.** Nanotechnology, which has the ability to work with matter at the molecular level, has already enabled the creation of materials and systems whose

[38] Note that "new media" companies offering internet-based or other electronic services, entertainment or news, while arguably a cluster, are distributed among several of the stated clusters including information services and entertainment.

structures and components exhibit novel and often significantly improved physical, chemical, and biological properties. California is in a strong position to take advantage of its leading R&D position in this field.

This report concludes that policies and programs that address the needs of business clusters will generally be a more effective economic development strategy than those that only target single industry sectors. For instance, focusing on a cluster such as alternative energy will, on balance, generally be more effective than focusing solely on wind power production.[39]

2.2.2.c Population diversity[40]

California is characterized by an exceptional level of demographic diversity, which speaks to the unique and promising position of California in the global economy.

Of the six California regions identified by CCSCE, all but Zone 6 (Rest of State) are more racially and ethnically diverse than the nation as a whole. Some 26% of California's residents were born outside of the United States, more than double the national proportion (11%), with slightly more than half of those coming from Mexico and Guatemala and 33% coming from Asia. [41]

Population diversity potentially represents a formidable asset to the State's future global competitiveness due to the linguistic, cultural and relational competencies this large population base represents. Stanford reports that 40% of California households speak languages other than English at home.

Annalee Saxenian's recent book, *The New Argonauts* (Harvard, 2006) further underscores this point by documenting that more than 40% of the entrepreneurs in the Silicon Valley are foreign-born and that economies such as India, China, and Latin America, can be powerful partners for entrepreneurial advancement and innovation. Research, ideas and capital are shared and "circulated" through co-investment and partnerships in testing, marketing, manufacturing and distribution. A diverse population that is both technologically and entrepreneurially savvy, in addition to being linguistically and culturally competent, can help California sustain its competitive edge.

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[39] That said, John Zysman points out that a different question is what clusters or parts of clusters form a sound target for State support, particularly if large parts of that sector can digitally move out of California due to the "algorithmic transformation" of services: "We have to know which parts of the industries are generating value, what about them makes them rooted in the region, and what fungible competencies does this industry bring to the state." (personal communication, September 2006).

[40] Stanford's Center for Comparative Studies in Race and Ethnicity has been doing important work on the various dimensions of population diversity of the state, which also speak to the unique and promising position of California in the global economy. Walshok 2007.

[41] The Stanford group, as reported by Walshok, 2007, summarizes it as follows: "Regionally, over a third of the population in Los Angeles (36.2%) is foreign-born, as is 27.4% of the San Francisco Bay Area. At the other end of the spectrum, the Eastern Mountain and Northern regions of the State have the smallest [though still significant –Ed.] percentages of foreign-born people residing in them—4.2% and roughly 7.9%, respectively. In California, 67.2% of Asians are foreign-born, followed by 47.4% of people identified as Some Other Race and 43.9% of Latinos; smaller percentages of Blacks (5.0%), Whites (7.7%) and American Indians (15.0%) fall into this category. People identified as Pacific Islander or two or more races have foreign-born percentages similar to the State average of 26.2%."

2.2.3 R&D and capital

In the global knowledge economy, the seed corn of future product innovation—regional start-up enterprise opportunities and resulting job and wealth creation—is deeply rooted in the intellectual capital and R&D activities of specific geographic locales. Appendix B provides further details.

California R&D Funding Profile

Overall, California, with 10% of the nation's population, secures annually 19% of all federal R&D support, making it number one among the 50 states.[42] If California were a separate nation, it would be the fourth-largest R&D performer in the world[43] after adding in private sources of R&D funds, behind only the US as a whole, Japan and Germany. The Department of Defense is by far the largest federal supporter of R&D in California, and private industry is the leading recipient of federal R&D in California. There are eight federally funded research and development centers (FFRDCs) in California, and the University of California operates four California Institutes of Science and Innovation. Independent nonprofit research institutions are also significant.

California Science & Technology Competitiveness

These data on California's diverse and well funded R&D infrastructure are important because they speak to California's capacity as a leader in the "New Global Economy," which represents a fundamental shift from a tangible-asset to an intangible-asset-based economy. A recent Milken Institute Research Report (2004) on California's Position in Science and Technology[44] points out the critical importance, in an intangible economy, of patents, copyrights, customer relationships, brand value, unique institutional designs, the value of future products and services and their structural capital (corporate culture, systems, and processes). Most of this value is anchored to a firm's people and to the locations in which they reside.

According to Milken, although California is slipping *relative to other states* in measures such as business starts, the ability to lure R&D funding, and the percentage of residents with higher education, the state still has major leadership capacity in the five technology and science asset categories that are the hallmark of "intangible economies." These five asset categories are research and development inputs, risk capital and infrastructure, human capital and investment, technology and science workforce, and technology concentration and dynamism.

Other measures highlight the state's role as a global innovation hub. The Silicon Valley Index, a report by Joint Venture: Silicon Valley Network issued in 2007, offers some dramatic evidence. California is home to 7 of the top 10 cities in the US for annual registered patents, and patenting activity is growing, as is venture capital in both the Silicon Valley and San Diego. The nature of that funding is as interesting as the amounts: from 2001-2006, industrial energy funding is up 776%; electronics/instrumentation 72%; media and entertainment 70%; and biotech/biomedical 27%.

The number of degrees granted to foreigners in engineering and science now approaches 18% in Silicon Valley and 16% across the State. Patents with co-inventors is also increasing rapidly from less than 4% a decade ago to over 12% in 2005, and this co-patenting is significantly international, with India, China, Italy, Hong Kong, Finland, Taiwan and Australia in the top tier.

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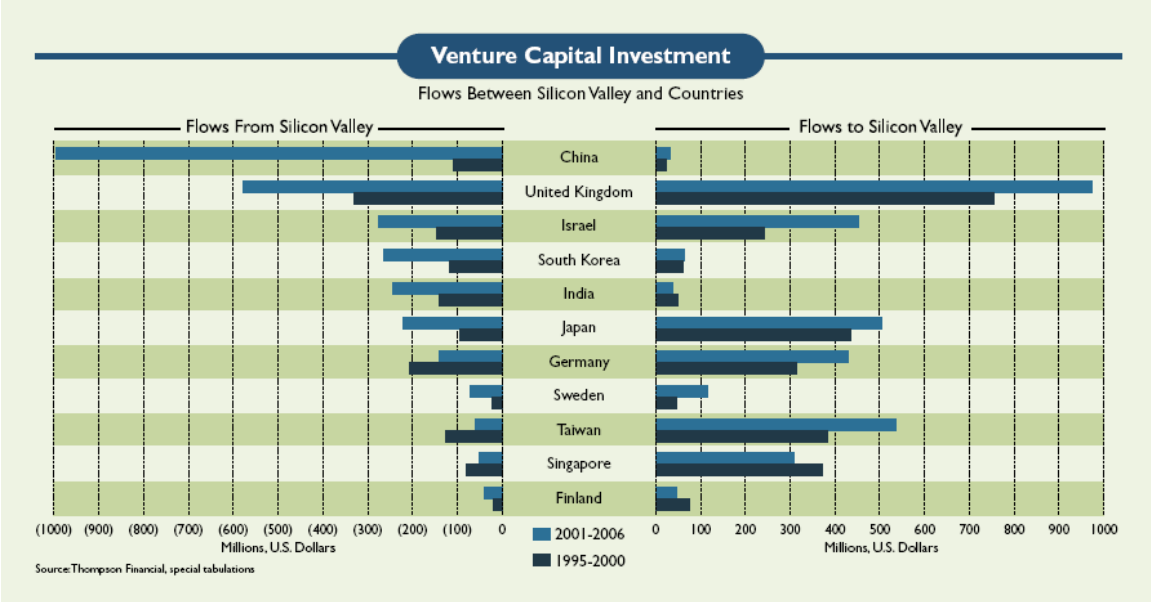
[42] Walshok (2007) provides a detailed table of federal R&D funding to California by federal agency and recipient. The table was originally published elsewhere but is derived from National Science Foundation data.

[43] As measured by the level of annual funding devoted to R&D conducted by entities located within the state's borders.

[44] Available in the publications sections of www.milkeninstitute.org.

Venture capital flows into and out of the Silicon Valley also reveal the emergence of new partners for California in the global network of regions. As the graph below dramatically highlights, VC flows are two-way and international. Nearly every top country involved in investment flows with the Valley has increased the absolute amount of funds both flowing into that country from the Valley and from that country into the Valley.



Further examples of these competitive assets can be seen across California's industry clusters. Appendix B includes Milken's analysis of the bioscience industry, which shows how specific competitive advantages create the prerequisites for vibrant innovation.

California is the undisputed national leader in research, development, advanced education and innovation, as well as the preferred partner of institutions and nations across the globe interested in high value added innovation and entrepreneurship. Global companies such as Volvo, have their design centers in California. International public sector funding has come from such diverse locations as the United Kingdom, Canada, Singapore, Mexico and Germany's Munich region to incentivize partnerships with California universities and companies. Even states—such as Indiana's BioCrossroads and the University of Wisconsin's Alumni Research Foundation—have established beachheads in California to access graduating talent, as well as to tap R&D at research institutions and venture-backed companies.

California's robust, globally attractive R&D capability needs to be a key component of any expanded international strategy by the State.

2.2.4 Concluding observations on diversity and competitive advantage

The state's R&D capacity, economic clustering, and population diversity shows the extraordinary robustness of the California economy on the one hand *and* its tremendous flexibility. As such, California is positioned to be a "preferred partner" for all manner of global engagements in the years ahead. Fostering this engagement will help sustain California's leadership role in the global economy by expanding the knowledge, competencies and connections of our people and enterprises.

The role for California government and its partner institutions should be to connect these diverse capabilities to other innovative regions around the world, and to access, leverage and integrate

innovation in both technologies and business models to support continuing economic growth and global leadership.

2.3 Producing quality jobs[45]

An international trade and investment strategy should seek to sustain business and economic growth, leverage and build on the state's competitive advantages, and ultimately not just generate jobs but expand real income[46] for all Californians. California is doing a number of things right in terms of economic policy and global competitiveness, but faces significant challenges.

2.3.1 Global trends in jobs

Employment strategy, as with many other economic development components, faces a chicken-and-egg problem—or at least tendencies for virtuous cycles and vicious cycles. Good jobs tend to create more good jobs. Industry and jobs can be stimulated and grown through a quality workforce and entrepreneurial base. However, these elements may not exist without a critical mass of jobs and economic opportunity. California has a particular advantage in that people want to live here, and building on the state's other assets, they generate self-perpetuating innovation and knowledge networks tied to California regions.

However, shocks and trends inside and outside of California can affect California's workforce/jobs balance—a dynamic clearly seen in 2001 with the dot-com collapse, September 11 attacks and economic downturn.

Several longer term trends of a cross-border nature have a critical bearing on California's ability to retain and expand quality jobs, including:

1. **Unbundling and Commoditizing.** The global unbundling and commoditization of manufacturing, services and research are changing the economic playing field. Internal job functions (such as computer programming) become products that can be bought on the market through outsourcing, industry functions get broken down on a task-by-task basis that can also be distributed globally, premium products (such as semiconductor manufacturing) become commodities, and sources of differentiation evolve.
2. **Activity Clusters.** Spurred by outsourcing and offshoring, the focus of economic activity is shifting in many instances from industries (such as financial services) to tasks or activities (such as back office or call center operations serving multiple industries).
3. **Competition for R&D and Investment.** Competition for R&D and foreign direct investment is heating up, as other states and regions, and particularly other countries, are pursuing aggressive sector strategies and are investing heavily in investment attraction. R&D, once considered an uncontested internal company

[45] Drawn heavily from the working paper prepared for this study by Bart Watson (2007). Watson's working paper assembles research and conclusions from a variety of authors, including John Zysman, Abraham Newman, Clayton Christensen, Per Kongshoj Madsen, Ton Wilthagen & Frank Tros, Edward Lorenz & Antoine Valeyre, Francois Bar and Michael Borrus, Niels Christian Nielsen & Maj Cecilie Nielsen. See the endnotes to Watson's paper for specific citations for particular subject matter.

[46] Income, after accounting for the affects of inflation on purchasing power.

operation, is now in flux as some elements of R&D seek locations with lower-costs or the best, most qualified pools of talent.

4. **Government Innovation Policies.** California does not have a corner on innovation. Various countries have worked to establish innovation policies, and the Nordic countries have shown particular success by using public sector mechanisms to foster an innovation culture, policy frameworks, and research and commercialization activities.

2.3.2 California's positioning to win good jobs

California's *large consumer base* and *activity and innovation clusters* create some unique attributes that can be maintained long-term with good economic policies. California's clusters deliver relational networks of knowledge that local companies can draw on for both innovation and development. They also create a virtuous cycle for good job growth: high levels of human capital and strong worker skills, support leading firms in high-end sectors, which in turn create complex knowledge networks that support innovation.

At the same time, research indicates some erosion in higher-paid jobs: the level of employment in higher-wage occupations has been shrinking somewhat (though wages in these occupations are growing), while the occupations in California where employment is growing fastest are not, on average, the most highly paid.[47]

In the end, most of California's job retention and growth strategies are not directly driven by its international strategy—but they should be informed by international trends and strategy. California can

- Provide a fertile regulatory environment for growth that promotes investment, facilitates entrepreneurship, and recognizes the unique needs of each sector
- Invest in knowledge networks by supporting universities, university research, and by encouraging university-industry cooperation
- Use initiatives such as the Department of Labor's WIRED program to study innovation models that can be applied to California, and identify further ways to optimize California's capacity for rapid innovation in areas with high commercial value

Workforce is a major component of any job retention and creation strategy. The next section explores some of these considerations.

2.4 Workforce and education considerations[48]

The education, skills and flexibility of its workforce are an important factor in California's global competitiveness, as global businesses are increasingly locating in places where they can access labor pools with the skills they need.

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[47] Kroll presentation, 2007.

[48] Watson (2007) draws information in this section information from the "Open Doors 2006 Report on International Educational Exchange," from NAFSA's "The Economic Benefits of International Education to the United States: A Statistical Analysis" and the Public Policy Institute of California's Diversity and Education and Workforce data.

Any area in which California cannot supply high-quality workers—at the right quantity—will tend to encourage industry to outsource, offshore, or move out-of-state. Service-based and new media industries are particularly easy to move in this way, though manufacturing is a concern as well.

We encourage support for initiatives that evolve workforce development strategies at both the state and employer levels to address workforce weaknesses from a global standpoint.

- California's workforce development organizations are working to transform capabilities to better support higher-skilled workers in addition to entry-level activities.[49]
- Career technical education is a major priority in the Governor's Strategic Growth Plan.
- California must better prepare students for entry into college, increase the number of college graduates and continue to attract students and educated workers from overseas.
- Because global skills are increasingly in demand, the State should encourage study abroad (including the UC and CSU foreign study programs), as well as curriculum approaches that integrate collaborative multinational teamwork activities.
- Education is also an export. Foreign students studying in California are a major source of revenue, and overseas alumni networks serve as important long-term links to California.
- Foreign students who remain to work in California bring important technical and cross-cultural skills, and the State should encourage appropriate federal immigration policies.

2.5 Special needs in agriculture and services

Because of the importance of agriculture and services to the California economy, we offer some specific observations on these two sectors.

2.5.1 Agriculture[50]

The California Department of Food & Agriculture (CDFA) is the lead agency for international policies and programs related to California agriculture. California is the largest exporting state in the nation, exporting $6.4bn to $8.8bn in crop products in 2006.[51] Processed food exports add $5.2bn, and beverages and tobacco products add an additional $1bn to this total. With as much as $15bn of combined revenue (roughly the equivalent of travel and tourism), agriculture and food/beverage production represent the state’s second- or third-largest export category.

Many of California’s agricultural products are differentiated, unique, or high-value crops. California is the sole or primary producer of some crops, such as almonds, and in other instances foreign producers operate on a different growing season than California. As a result, competition from imports is not a major issue for the majority of the state's agricultural products. Many high-volume crop imports such as bananas and coffee tend not to be grown in California. A few areas where there is significant competition include wine, apple juice, garlic, and dried apricots.

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[49] An excellent discussion of some of the drivers behind the needed workforce system transformation is provided by Kroll, August 2007.

[50] In addition to meetings with the California Department of Food and Agriculture, this section draws heavily on the working paper prepared for this study by Daniel A. Sumner (2007) "International Trade and California Agriculture".

[51] Official US data provided through WISER tend to underestimate California crop exports. The lower figure is WISER data, which was used to provide the figure for total merchandise exports from the state. The higher figure is UC Davis estimates of actual crop exports based on the state's agricultural production.

California agricultural exports have been on the rise since 2003, with the exception of beef. The core EU countries represent the largest export market, followed by Canada and Japan; the EU 25 remains slightly larger than core Asian markets (although it is not directly comparable to match the single European market with the various Asian markets with their very different import regulations). For individual products, the average export ratio (the percentage of export to total sales) is 25%, and as high as 50% for some products. Exports and international markets are therefore very important to California agriculture, producing regions of the state and the logistics and support industries that serve agriculture.

Because California's agricultural exports are distinct from those of most of the rest of the nation, along with some of the related emerging technology areas—from water and environmental technologies to agricultural biosciences and biofuels—the state enjoys unique business development opportunities.

CDFA and the California Business, Transportation & Housing Agency have the opportunity to work together on several issues:

Support infrastructure investment. The state would benefit from improved infrastructure investment in agricultural regions, including irrigation, as well as road, rail and port infrastructure to keep transportation costs and transit times as low as possible.

Improve food and crop safety. There is an opportunity to improve support for the safe movement of food and agriculture products into and out of the state, and to control the introduction and spread of harmful invasive species. Problems arising from food safety issues and invasive species can reduce productivity, raise costs, and, in cases like mad cow disease or the recent tainted spinach issue, kill demand. California has a huge stake in food and invasive species safety and has played a leading role in this area, but additional funding is important given the importance of agriculture to the state's economy.

Coordinate on trade policy. California should take a multi-agency coordinated effort to support international trade negotiations that benefit the state. For instance, California can work to

- **Shift federal spending from production subsidies to R&D and infrastructure investment.** While there was money allocated for agricultural R&D in the 2007 Farm Bill, much of the agricultural money in the US goes to subsidies. Since California doesn't need much subsidizing, a shift in spending from subsidies to investment, particularly in R&D to improve competitiveness of unsubsidized commodities, would benefit the state.
- **Support US negotiating strategies that reduce domestic farm subsidies in return for lower tariffs.** Multilateral trade negotiations have been derailed over the issue of agricultural subsidies and tariffs. Since California agriculture gets little subsidy, cuts wouldn't hurt it much, while lower tariffs and non-tariff barriers abroad would significantly benefit it. California can help generate political momentum for a multilateral trade breakthrough by supporting a reduction of farm subsidies.
- **Assess bilateral free trade agreements.** Bilateral free trade agreements such as that proposed with South Korea are also important for California agriculture. California needs to assess such deals and work with federal officials on negotiating strategy.
- **Support industry promotion.** BT&H supports improved funding to CDFA for marketing California agricultural products abroad. In addition, there is an opportunity to develop promotional activities that complement CDFA activities, such as promoting crop biotechnologies, biofuels and water or environmental technologies, as well as foreign investments into California companies in these areas.

2.5.2 Services[52]

California is increasingly moving toward a service economy, with an ever-greater proportion of income from service industries, many with high export potential.

Again, a service export takes place when an individual or corporate buyer purchases services across borders, such as when a company based in France buys a license to use corporate accounting software produced in California. If the French company is part of the same overall corporation as the California based company (also known as an "affiliate"), the transaction is recorded as "affiliated services." If the French company is not part of the same company, it is recorded as "unaffiliated services."

California exported an estimated $45bn of services in 2004. These service exports span a wide variety of activities. A $20bn category is travel and transportation service exports, made up of travel services (over $13bn), passenger fares (over $2.2bn), and other transportation services including freight & port services (over $4.1bn).[53] Royalties and license fees—for things from industrial processes, trademarks and software to books, records, tapes, broadcasting, and franchising—amount to well over $5.3bn[54]. Distribution of films, tapes and broadcast programs, as well as payments to international organizations, add some $3bn. Business and professional services between separate companies (i.e., "unaffiliated") total roughly $4bn and include a wide array of activities such as construction, legal, consulting, accounting, sports and performing arts. Financial services are estimated around $2bn, and education at more than $1.3bn.[55]

The so-called "new media" industry (players such as Google, Yahoo's YouTube and Apple's iTunes) involving electronic and internet distribution of services, news and entertainment, is a particularly important component of the California service sector due to its inherently international and cross-industry reach.[56]

Despite the size and growth of this sector, service businesses are often the easiest to move. This means that how the State addresses its infrastructure, workforce and business climate issues is important to retaining, to continuing growth, and to supporting further innovation in this sector.

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[52] General trend and policy conclusions in this section are drawn heavily from the working paper prepared for this study by Derek Wong (2007) "Services in the California Economy." Export statistics are drawn from other sources, cited below. Wong's paper includes summarization of work by a variety of authors, particularly Zysman (2006) and several works by Cynthia Kroll as sole author and together with Ashok Bardan. Some of these works are specified in the footnotes or references of this report, but see Wong's endnotes for an accurate list.

[53] Note that although foreign tourism to California is also a service export, these numbers do not include all foreign tourism. A cash transaction made by a Japanese tourist at a café in San Francisco is not necessarily counted in the particular methodology used here.

[54] This number includes "affiliated" exports.

[55] The export statistics and sources and methodologies used are based in part on work by Cynthia Kroll (University of California) and additional analysis by Paul Oliva, but the primary methodology and the basis for the value calculations comes from unpublished data by Howard Shatz, computed with Eli Miloslavsky, related to production of Shatz (2003) "Business Without Borders?" Also essential was Miloslavsky and Shatz (2006) "Services Exports and the States."

[56] The new media industry has specific domestic and international considerations worth exploring in greater detail. In connection with this report, Kelsey (2007, New media) provides an overview of these specific considerations.

2.5.2.a The global shift to services

To understand international trends requires some understanding of what components are driving the shift toward service growth and their potential impact on employment.

As originally analyzed by John Zysman of the University of California,[57] there are four transformations that have been taking place: (1) in-house activities are moving to out-sourced services; (2) services make up a rising portion of the consumer and business budget; (3) unpaid domestic work is being converted into marketable services; and very importantly, (4) routine and manual functions are being automated, allowing reorganization of work to other specialized entities and locations. This last transformation, which Zysman calls the "algorithmic transformation," is important because its digital nature drives increased productivity, new and distinct types of services, and ways of managing knowledge on one hand, while driving increased risk of service automation or elimination (and resulting job losses) on the other.

These transformations—in addition to dramatically expanding the importance of managing knowledge and intellectual property—have increased the share of services in the economy, changed the skill sets required, and enabled the physical disaggregation of activities:

A shift is occurring from manufacturing jobs (decreasing) to service jobs (increasing). In California, manufacturing employment has declined steeply, falling from 19 million jobs in 1980 to 17 million in 2000 and 14 million in 2005. At the same time, services jobs have been growing.

International services trade is moving toward higher-end skills. The composition of international trade of services has changed dramatically toward higher-end skills, with increasing integration into foreign production and intra-firm trade, as well as increasing percentages of technical, legal, financial, management and consulting services. This benefits California, but offshoring of high-end services, such as R&D, is a trend that deserves monitoring. [58]

Statistically, offshoring or international competition are not primary drivers of the known shifts in occupations and wage trends in California, but there are risks. Some California occupations such as business and financial support have seen job growth and low salary growth, while other occupations have shown no employment change but above average salary growth.[59] Although there are no direct correlations to global competition or outsourcing, there has been faster growth among lower-wage occupations compared to higher-wage occupations.[60] Moreover, Derek Wong offers research from Bardhan and Kroll and others estimating 9% to 18% of California jobs *could* potentially be done remotely and thus would be at risk of offshoring. This research notes that different regions of the state have differing exposure to job losses from competition and offshoring.

Internal and external knowledge networks are crucial for service innovation. Service innovation is different from traditional manufacturing innovation. Services tend to build innovation from organizational, external-relations, and knowledge/information management. These networks, which include clients, suppliers and partners, need not be based on physical proximity.

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[57] Adapted from John Zysman (2006). See also Stephen S. Cohen and John Zysman, *Manufacturing Matters: Myth of the Post-Industrial Economy* (New York: Basic Books, 1987).

[58] The Wong paper, drawing on Kroll and Bardan (and others), provides a more extensive analysis of offshoring risks and mitigating factors.

[59] Ibid.

[60] Kroll presentation, 2007.

2.5.2.b Opportunities for Service Exports

Opportunities.[61] There is a great potential for service export growth by California companies of all sizes. The opportunities below may include some or all of four modes of delivery: 1) "pure" export opportunities of cross-border supply; 2) consumption by the foreign buyer within California (e.g., by attending a California university); 3) foreign direct investment through a commercial presence; and 4) supply by the provider during visits abroad. High-opportunity segments include the following:[62]

- *Education.* Enrolling foreign students in California institutions; locating branches abroad; training services for foreign students and professionals either in the US or abroad.
- *Energy and Environmental Services.* Meeting the growing demand for services related to energy supply, energy efficiency, clean energy, and environmental management, particularly in emerging economies.
- *Technical, Engineering and Scientific Services.* SMEs (small and medium-sized enterprises) can piggyback on large US high-tech MNEs (multi-national enterprises), with operations in the destination market; there is potential to tap the technological leapfrogging taking place in many emerging economies.
- *Real Estate Services.* The ongoing boom in real estate in certain countries, including India and China, means SMEs with specialized services have the opportunity to partner with California real estate services firms that are well-established there, as well as with local firms.
- *Architecture and Design Services.* California individuals and firms can partner with local firms.
- *Logistics.* SMEs can participate in intermediary roles, providing specialized software and planning services for major transportation hubs.
- *Software and IT Services.*[63] The expertise and creativity resident in California can find major markets overseas, particularly when combined with a local presence or local market knowledge.
- *Finance, Banking and Insurance.* SMEs have considerable scope in specialized niche areas, including real estate finance, risk management, insurance and financial consulting, as mortgage financing, securitization, and mortgage insurance come into use.

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[61] Wong and Oliva draw upon Bardhan and Kroll “Services Export Opportunities,” 2006. It should be noted that Bardhan and Kroll focus principally on opportunities in China and India, though most of their recommendations are more broadly applicable to other markets.

[62] Note that these are based on an evaluation of potential demand by Bardhan and Kroll (2006). John Zysman points out that a different question is where State support is a sound investment, particularly if large parts of that sector can digitally move out of California due to the "algorithmic transformation" of services: "We have to know which parts of the industries are generating value, what about them makes them rooted in the region, and what fungible competencies does this industry bring to the state." (personal communication, September 2006).

[63] This would appropriately include "new media" companies, such as internet services and electronic news and entertainment.

- *Legal Services.* Special opportunities exist in international corporate law, Intellectual Property law, and related areas as business expands and India and China begin to increase IP protection for both foreign and local firms.
- *Travel and Tourism.* California has great potential for tourism from China and India, as these countries experience income growth. There is demand for consulting by travel services firms on tourism infrastructure and services development in these two countries and for investment in tourism related facilities abroad.

Challenges. Despite the opportunities above, there are a number of challenges and obstacles to services exports from the US. Large differences between the price of services in the US and destination locations can pressure producers to provide services at lower prices, and currency risks are greater for service contracts that may span months or years. It is difficult even to establish prices where there is no price history for some new services, and no experience in paying for this type of "intangible." SMEs in particular may not have the initial capital necessary for effective scale of operations, or the ability to carry costs for three to five years before export income increases, and existing sources of working capital may be inaccessible for international service contracts by SMEs. Market knowledge may be costly and culture-specific, and services may need modification for a different economic, cultural, physical, legal, regulatory or institutional setting. Protecting intellectual property can be complex, expensive, and ultimately ineffective. These are all areas where government and other support services could play roles in improving knowledge and reducing costs and risks for cross-border activity by California service companies.[64]

2.5.2.c Policy considerations for service exports[65]

Fostering growth in service exports and international partnerships in the service sector should be a vital component of California's economic development strategy. To retain and grow export-oriented service businesses, mitigate offshoring pressures, and boost the competitiveness of its service sector, California can:

- Facilitate deal development by supporting the effective use of state, federal and private international business support resources, and examine ways to refine those services to assist service companies more effectively.
- Focus on current and emerging clusters for future exports and investment attraction.
- Pay attention to its domestic business environment, including infrastructure, education, workforce development, health care and regulation issues that affect service sector companies and their potential to grow in California.
- Work with service businesses, including new media (internet and electronic news, entertainment, and service), on intellectual property rights issues and federal and foreign decisionmaking on cross-border regulations.

[64] Bardhan and Kroll 2006, edited and expanded upon by the author.

[65] In addition to the Wong, Kroll and Bardhan work, Nina Kelsey's summary of the specific issues facing "new media" companies is important due to the fundamental importance of internet and other electronic media for California's future.

2.6 Addressing infrastructure[66]

Infrastructure refers broadly to facilities and related operations providing basic services to individuals and businesses:

- Transportation: roads, bridges, transit, airports, shipping ports, rail
- Educational facilities: buildings for K-12 schools, colleges, and universities
- Water and natural resources: water, air quality, electricity, parks, and beaches
- Public buildings: fire and police, libraries, hospitals, governmental buildings, courts, prisons, and public housing.
- Telecommunications: telephone, network, internet, cellular, satellite, broadcast and other electronic communications networks

These basic services are absolutely critical for the creation and sustenance of quality jobs and globally competitive businesses in California.

Investing in 21st Century infrastructure also drives new opportunities above and beyond its role as support for general functioning of the economy. Leading-edge technologies will either be developed by California or by its competitors. Forward-thinking infrastructure investment can make sure that the leading-edge markets for infrastructure-related technologies, and the industries they generate, will be in California.[67]

Through the Governor's Strategic Growth Plan and other measures, California is making significant progress in identifying its current infrastructure needs and addressing needed improvements. As it does so, it is important to recognize that simply investing in infrastructure to establish parity with international competitors is not enough. Considerations include enhancing California's existing competitive advantage, supporting adoption and commercialization of new technologies, fostering business growth in key areas of the state, and complementing an overall economic development strategy.[68]

Despite the state's progress, it still lags in key areas, and state government can improve its process for evaluating infrastructure investments from a global competitiveness perspective.

California's $2 trillion transportation infrastructure remains under strain. The Goods Movement Action Plan, the GoCalifornia elements of the Governor's Strategic Growth Plan, and the $3.1bn in bonds approved in 2006 for goods movement infrastructure are important steps forward. Here are some additional considerations that can amplify these key efforts:

- Policymaking around investment in “goods movement” infrastructure needs to support growth in both import and export capacity. Delays, inefficiency and expense in getting goods to and from foreign locations hurt the ability of California companies to be

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[66] In addition to BT&H's own work on infrastructure issues, this section draws on the focus groups that were held as part of this study, a meeting with the California Transportation Commission, and the working paper prepared for this study by Gary Baldwin (2007). See Baldwin's endnotes for attribution to specific sources.

[67] Technologies such as broadband communications, smart roads, and wireless sensor networks, to name three examples from the Baldwin paper.

[68] In addition, the University of California’s four California Institutes for Science and Innovation (CISIs) are working on projects that are relevant for developing next-generation infrastructure capabilities, including smart infrastructure, cyber security and emergency response, and new technologies for visual communication.

competitive internationally. Shortcomings in goods movement infrastructure can have outsized importance for some California communities and industries—such as the San Joaquin Valley and its export-dependent agricultural export sector.

- Similarly, the efficient, reliable, cost-effective international movement of people in and out of the state is essential for international business. Congestion at airports, air traffic control capacity issues, security screening delays, and visa issues all create hurdles for doing business with California. Some of these issues are tied to federal policy or funds. Some are identical to the situation faced by other states. Nonetheless, businesses large and small engaged in international trade look for progress on these issues.
- Every $1 billion of transportation spending in the state creates approximately 18,000 new jobs, so investments should be weighed both on their immediate job impacts and on the job creation/retention effect from increased capacity and efficiency.
- Even with the $20 billion in transportation bonds that were approved by voters in November 2006 (including the $3.1bn related to the Goods Movement Action Plan), California ranks 48th in investment in highways in the nation. Auto-choked roads across the state continue to dominate the concerns of Californians. Growth in truck traffic related to goods movement into and out of California's ports threatens to exacerbate that congestion.

There are gaps in broadband coverage, particularly outside major urban areas, as well as risks to the state's cyber infrastructure. BT&H is the lead coordinator for responding to these issues under the Governor's Broadband Initiative, signed as Executive Order S-23-06 in late 2006. Companies in parts of the state, such as eastern San Diego County, complain that existing broadband infrastructure is insufficient to conduct international business effectively. Sometimes there is a lack of choice in internet service providers, and problems with outages and major bandwidth fluctuations can prevent reliable web conferencing, voice-over-IP telephone service, and email transmission. Concerns also exist about the security of the State's cyber-infrastructure to withstand natural and man-made emergencies. This risk affects not only business operations, but basic infrastructure operations, from traffic lights, bridges and dam operations to emergency responder command and control systems.

Capacity and reliability in the state's energy infrastructure remain a concern. The state's energy needs in the 21st Century will put significant demands on its energy infrastructure. California has already begun to address this challenge, which will have a significant bearing on attracting and retaining international industrial investment.[69]

Water infrastructure remains vulnerable to disruption. Business surveys conducted by the Bay Area Economic Forum and others indicate that failures or disruptions in California's complex water systems would have major impacts on manufacturing, agricultural production, sales, production schedules, employment, and the reputation of California companies as reliable suppliers to their customers. The Governor's Strategic Growth Plan is taking specific steps to address these issues.[70]

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[69] Baldwin provides further recommendations in his working paper, including expansion of demand management, conservation, and transmission capacity, as well as leveraging our leadership in alternative energy sources.

[70] Baldwin recommendations in this area include (1) improving integration of modeling systems and sources of information on hydrology and other relevant factors, including modeling information on levees, seismic risk and climate change;

2.7 Leveling the global playing field[71]

US, bilateral, multilateral, and foreign policies create a shifting and sometimes arbitrary environment for California businesses. Regulatory barriers in other countries limit opportunities for California products and services.

State government can play a valuable role because it can speak with the force of the State of California through intergovernmental channels and utilize its political and economic power to affect policies that open markets. California should take action on public international business and regulatory issues to advance international trade policies favorable to its businesses and their employees.

2.7.1 Trade policy trends

International trade negotiations and international trade adjudication fora are likely to present a distinct pattern of opportunities and constraints in coming decades. Five important shifts and parameters should be considered.

Progress in multilateral negotiations is likely to be limited. The World Trade Organization (WTO) is fractured, with three powerful actors—the United States, the European Union (EU), and developing countries—each able to block progress and each advancing policies that run contrary to the interests of at least one of the other two players. The current result is deadlock in the WTO's Doha Round of trade negotiations; even if the deadlock is resolved, the Doha Round results are likely to be modest. Over the next twenty years, with expected high economic growth rates in China and India (and to a lesser extent in Brazil and Russia), power can be expected to diffuse further at the WTO, making it even harder to conclude broad multilateral agreements. As a major exporting economy and destination for foreign investment, California has more at stake in the success of global negotiations than most other states.

The United States and other countries will likely accelerate efforts on bilateral and regional trade-related agreements. This stems partly from the slow pace of multilateral negotiations. It is also a US strategic reaction—both to EU enlargement and the proliferation of bilateral and regional trade arrangements by other countries that could divert trade and investment from the US.

International trade issues will be litigated increasingly in dispute settlement fora. The WTO and all US bilateral trade agreements contain mandatory dispute settlement mechanisms. This presents both opportunity and risk. While the United States has brought and may bring dozens of actions against foreign governments intended to open their markets, US policies (including California policies) have found and will find themselves under attack through the dispute settlement path.

Domestic laws and regulations will increasingly be the target of negotiations and disputes. "Behind-the-border" domestic regulations, such as those pertaining to environmental protection, labor policy and human rights, competition policy, investment, consumer rights and product standards will be increasingly salient in trade negotiations and disputes. From an economic perspective, these behind-the-border laws and regulations represent the next layer of barriers to

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(2) aggressively expanding urban recycling and conveyance infrastructure; and (3) leveraging this improved set of water management and modeling technologies for international opportunities.

[71] This section draws heavily on the working paper by Richard Steinberg (2007) "California and International Trade," as well as input from the California Council for International Trade and Paul Oliva.

economic integration. At the same time, to the extent such measures represent legitimate objectives, the pressure to eliminate them may threaten the stringency of developed country regulatory standards.

Trade "leakage" issues, such as homeland security, crime, drugs, and illegal immigration will become increasingly salient and linked to liberalization. Each of these phenomena bears a real or perceived relationship to the liberalization of trade and finance. Liberalization (and economic integration more broadly) generates increased international flow of goods, money, and people (in transit legally). This can overwhelm the capacity of states to monitor what and who are crossing borders, possibly presenting opportunities for organized crime, smuggling, illegal immigration, and terrorism. It simultaneously poses a challenge for governments to guard against those problems while facilitating legitimate cross-border flows.

2.7.2 Trade policy options

As the world's eighth largest economy, the nation's largest (or second largest) exporting state and its major recipient of Foreign Direct Investment, California's interests are significantly impacted by global, regional and bilateral trade agreements, and by domestic and overseas trade and investment regulations. This is the case across a wide range of sectors, from information technology to agriculture. By focusing its efforts on negotiations and regulations that either expand or restrict opportunities for large numbers of California companies, the State has an opportunity to make a larger beneficial impact using fewer resources than if it were to focus entirely on providing one-on-one services to individual companies. To advance its interests, the State should consider several policy measures:

The State of California should actively monitor and voice its interests in international trade negotiations. California's interests are widely varied—from its exposure to international challenges on domestic policies to the impact of trade rules on vital industries, both existent and emerging.

- As trade negotiations increasingly address so-called "behind-the-border" domestic issues such as environmental protection and labor regulations, policies typically advanced by the State will increasingly be topics for international negotiation. For instance, California's aggressive climate change regulations could potentially be challenged under future trade agreements without the State's engagement on their negotiation.
- Similarly, California has particular sectoral interests that could be advanced or harmed by the results of trade negotiations, such as those relating to intellectual property protection of pharmaceuticals, films, music, and software; designation of appropriate appellations of origin; and subsidization of agricultural products, including cotton, soybeans, beef, and dairy.
- Further, as a birthplace of innovative products and services, California has a greater interest than many other states and countries in the formulation or adjustment of trade policies that are favorable to emerging technologies.[72]

[72] For example, a product such as a new alternative energy device developed in California might not fall within any applicable provisions when a trade agreement was negotiated in foreign capitals, leaving the producers of such a technology exposed to potential unfavorable treatment by virtue of California's lack of involvement.

California should monitor trade negotiations to ensure that its regulations will not become subject to potential challenge, to ensure that its industry concerns are addressed, and to promote trade agreements that support its emerging technologies.

Working as appropriate with trade policy organizations, industry associations and the Governor's DC office, the State can monitor these negotiations systematically, represent stakeholder interests, and provide timely information about the negotiations.

The State of California should present its interests, when appropriate, before international trade dispute settlement panels and bodies. International trade challenges may be invoked by foreign governments and businesses against California regulations or businesses—for instance, if California is challenged on a ban against fish caught with a certain method used by foreign producers but not used in California. There will also be cases in which California stakeholders may decide that it is important to initiate a challenge against a foreign entity—such as when California-based intellectual property (a pharmaceutical patent or California software, for instance) is being insufficiently protected by a particular country.

When such challenges directly or indirectly involve the State of California or its strategic interests, the State should be involved. To be sure, industry is often well positioned to represent itself in a dispute. However, California does need to be prepared to weigh in on matters of strategic importance. And in some cases, California producers or service-providers in a particular sector cannot easily cooperate on an international trade issue of common concern, either because of fragmentation or because no firms have pockets deep enough to address the issue. In some cases, the State may be better situated than the private sector to gather and analyze unbiased information that bears on a policy that is subject to international dispute settlement.

The State should review policymaking to ensure that it does not contravene US international trade obligations. For example, while the State may offer tax benefits for small business, it must be careful not to deny national treatment to foreign goods or businesses. While it may support economic development in depressed areas, it must not engage in subsidization of exports. And while the State may see opportunities to influence foreign entities by flexing its economic muscle, it must not engage in activity that interferes with the federal government's Constitutional authority to conduct US foreign policy.

California legislation, proposed regulations, and other official actions should be systematically and routinely vetted and drafted so as to avoid running afoul of US international commitments or resulting in dispute settlement challenges or legally-sanctioned retaliation. Establishment of legal counsel with expertise in international trade law, perhaps housed in the office of the Attorney General, could offer systematic advice to the Governor, the Legislature, and various State agencies as they consider adopting laws or taking action that might bear on US international legal obligations.

The State should provide support and troubleshooting services for California companies encountering cross-border barriers. California companies regularly encounter regulatory or other barriers to sale of products or services in another country. In some instances, a foreign country will assign a particular product to an unfavorable tariff classification, such as with a multi-function cellular telephone that gets classified as a computing device at a higher tariff rate than as a telephone at a lower tariff rate.

The State of California is in a better position to obtain a satisfactory resolution to such a dispute than could a small exporter. In other instances, barriers relate to the need for approval or certification of a given product, such as a food product, cosmetic product or healthcare or medical device. In such cases, a formal document or communication from the State of California can

assist with obtaining market entry. To some extent the California Department of Health Services and CDFA assist with such matters by actually issuing the specific certificates[73] required for foreign market entry in particular countries, but it would be useful to make this service more widely known and better supported.

The State should review how it addresses health or environmental safety issues affecting imports or exports. Globalization is increasing the number of cross-border safety issues facing California. From the recent safety issues of Chinese-made toys imported into California, to control of invasive species entering the state, to the problem of bacteria-tainted spinach shipped from California producers, trends suggest the need for greater coordination and resources to work with federal officials on prevention and response mechanisms. Disaster response protocols should also consider cross-border supply chain and safety issues.

[73] For example, certificates of free sale or phytosanitary inspection certificates; further details are provided in the portion of this report entitled "Certifications and licensing" under section 3.3.1.b.

3 Where we need to go: Supporting California's economy by promoting its goods and services globally

The preceding section discussed current cross-border economic trends, how those trends pertain to competitive advantage, and their impact on California regions, industries, and government. This section looks more directly at service-specific issues, including existing services addressing cross-border trade and investment, and the additional services that companies and communities say they might expect from state government.

3.1 What companies say they need

This report draws, in part, upon input from four focus groups of businesses and business organizations around the state.

The focus groups were coordinated by the Bay Area Economic Forum and held in Oakland (Bay Area World Trade Center), Fresno (Fresno Center for International Trade Development), Los Angeles (Los Angeles Area Chamber of Commerce) and San Diego (San Diego World Trade Center).

As detailed in Appendix C, the focus groups collected input from 68 companies of various sizes. The participants were either the principal or senior executive of the company or were in charge of international business development, and they represented a diverse set of California industries in the agriculture, manufacturing, services (consulting, banking, investment), and high-tech sectors. The companies' international business development efforts spanned a range of activities (not simply exporting), experience levels (from just beginning to experienced) and intensity (from a minimal share of revenues to more than 50%).

The sample was not large enough to project opinion quantitatively across all industries in California. However, the researchers, host organizations and participants felt that the results reflected an accurate qualitative picture of major concerns, issues and needs of California companies.

Comments by companies did not necessarily reflect a detailed familiarity with the initiatives currently underway at BT&H or other state agencies, but did reflect perceptions that appear to be widely shared.

3.1.1 Identified barriers

Focus group participants were asked to discuss their largest challenges with doing international business as a California company. In this exercise, most participants in all four of the focus groups had similar concerns.

Leading as the number one concern, receiving a score of 384 out of 400—more than 35% greater than the number two concern—was the problem of **regulatory barriers** that restrict international business operations. The second- and third-ranked concerns were about equal, with scores of 246 and 241, respectively. California **business environment** (246) ranked second, and participants cited difficulties in obtaining **capital** as their third top concern. The remaining top concerns included (4) **business development difficulties (241)**; (5) **trade service difficulties**; (6) **internal resource limitations**; (7) **difficulties in obtaining market information**; and (8) **tax and accounting issues**. A common theme to these issues was a feeling that the lack of a focal point or entity in state government to work with and support international business was a partial reason these issues were so frustrating.[74] Intellectual property issues, R&D difficulties, and product testing did not score as high as these other issues, though this is likely due to the particular industry mix of participants.

1. Cross-border regulatory barriers. Regulatory and trade barriers were by far the top concern of participants. Companies discussed a variety of regulatory challenges they face when doing business, such as visa issues; market entry and market access problems; tariffs; non-tariff barriers; and regulations on importing and exporting products both overseas and in the US.

2. Business environment. Companies cited challenges to doing business in California, emphasizing both costs of labor and port labor issues that prevent companies from receiving or shipping products in a timely manner. Participants also voiced various infrastructure issues: broadband network shortcomings, energy reliability issues, insufficient border staffing, and lack of state leadership on international issues. Other issues included lack of State attention to international diplomacy, workers compensation costs, workforce education on international issues, and the need for more free trade zones.

3. Capital. Access to capital ranked third but scored nearly equal to business environment concerns, particularly among small and medium-sized companies seeking capital and funding for their importing and exporting businesses.[75]

The following issues (4-8), are the cluster of issues that were partly connected with lack of State of California support services.

4. Business development. Participants cited difficulties with effective due diligence in identifying business partners and customers abroad.

5. Trade service issues. Participants identified a lack of access to trade assistance programs (in the case of federal programs due to factors such as delays with returning calls),[76] a lack of state

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[74] There was a perceived void in information, contact and services since the closing of the Technology, Trade and Commerce Agency, and there seemed to be a pent-up demand for more activism from the State.

[75] This subject has often been viewed either in terms of basic small business lending or in terms of trade finance. It is important to recognize that focus group companies were including other concerns under this topic. They cited difficulties, for instance, with the chicken-and-egg problem of obtaining funding to secure patents in multiple countries before having secured licensing or other revenue-generating deals. It can also be difficult to secure funding for startup or growth of a technology venture for which the US domestic market is insufficient or non-existent but which may have a large foreign market (alternative energy technologies are a classic example of this situation).

[76] For instance, a couple of companies described trying to get assistance with a federal export license and encountering automated phone system and voicemail issues, and then delays of 10 days or more to get a response to questions. Technically there were no problems with access issues—the support program existed, and it was accessible by telephone—but there were service delivery issues that affected access. **Companies felt that the key to making**

trade offices or dedicated support in foreign markets, and the fragmentation of services provided by currently available programs.

6. Internal resources. Small and medium-sized businesses stressed the need for actionable third party or government export assistance to reduce the amount of time the company needed to spend on preparatory or follow-up transactional activities.

7. Market knowledge. SMEs reported issues with lack of cultural knowledge of foreign countries, and difficulty identifying good business partners and obtaining information.

8. Tax/Accounting. California's unitary tax method was raised as an issue of concern, as was the challenge of navigating tax and accounting rules for international trade.

Not all of the issues identified by the focus group participants lend themselves to resolution by the State. However, as a whole, participants perceived that California is not as supportive as it should be in helping businesses expand, find business partners, or overcome regulatory barriers to doing business both within the state and internationally.

3.1.2 Desired services

Based on these challenges, participants cited the types of services they would like to see the State of California provide.

As the top desired action by a margin of 18%, participants wanted to see more California leadership addressing the **business environment**. Several of their specific business environment issues are already being addressed by the Strategic Growth Plan and the Governor's Broadband Initiative. Three additional topics (ranked almost equally) were: the desire for services to help with (2) **regulatory assistance**, (3) **assistance with navigating services** and (4) **financing/capital assistance**. In order of priority, the remaining services were (5) more services to **find and qualify business partners**, (6) more low-cost **tradeshow and other promotional opportunities**, (7) more individualized, expert **consulting assistance**, and (8) customized and accurate **market research**. There were other categories of desired service, but they received lower scores.

1. Business Environment. Participants hoped to see a comprehensive approach to planning and building infrastructure that takes into account international business competitiveness. Participants saw this including more effective strategies for trade development and policy support; better electricity, broadband and transportation infrastructure; post-secondary education for international trade development; expansion of the export management company / export trading company (EMC/ETC) model;[77] support for start-up costs of free trade zones; and making airports more international visitor-friendly.

"access" and service delivery feel as effective as they would desire would be having a one-stop resource with live staff personally committed to helping them (1) navigate federal, state and other services; (2) obtain resolution on problems; and (3) take deals to an actionable stage.

[77] EMCs and ETCs act as export intermediaries, in many instances undertaking all of the necessary trade-related activities from business development to arranging financing and logistics. ETCs will often take title to the goods directly and provide an immediate payment. EMCs and ETCs are the for-profit model of export development services, however they are not necessarily an appropriate solution for all industries or would-be exporters. The US Export Trading Company Act of 1982 encourages the use and formation of EMCs/ETCs by authorizing favorable antitrust and banking environments.

2. Regulatory Assistance. In a reaction to the difficult regulatory challenges businesses face in the exporting and importing process, businesses would like to see more assistance with market entry issues. Specifically, they would like to see assistance with US and foreign customs processing / expedited procedures; resources to press for better federal responsiveness on certifications and other issues; action to combat foreign regulatory barriers; and a certification support program to assist with market entry of products requiring certification or testing.

3. Service Assistance. These businesses wanted more assistance navigating the maze of international services and programs and training service providers; outreach to startups to acquaint them with international programs; and more customized, consolidated and optimized services. Participants also felt institutionalized relationships with counterparts overseas (through foreign offices or a network of partners) could help address barriers to trade, find business partners and improve California's image.

4. Financing/ Capital Assistance. Businesses need assistance with securing startup, early stage and working capital. There were significant calls for restoration of the California Export Finance Office,[78] potentially redesigned to waive the California content requirement and to allow lending on import transactions.

3.1.3 California action

Participants were shown six conceptual roles for State services (shown in quotation marks below) and asked to rank them in order of importance. Out of the six options, there was an overwhelming demand for (1) **extensive services** over any other option given.

Ranking:

1. **Score of 400. Extensive Services Concept** – "California is a major state, and I would expect the State to offer very specific, very high quality services, with measurable outcomes, to support international business growth by companies." A few of the things businesses mentioned that they hope to be included in extensive services follow:
    - One stop shop for all needs
    - Have individualized and expert consulting
    - Help with accessing markets
    - Connect with experienced people who have worked in a foreign country
    - Have California trade offices overseas
    - Help find distributors and business partners
    - Assist in pushing for changes of regulations
    - Treat businesses as clients

2. **Score of 210, California Brand Promotion Concept** – "California as a state would best be able to help my company and community by focusing on promoting the overall name of California internationally so that my company location stands out even more among the competition."

3. **Score of 166, Focus on Coordination Concept –** "I'm not sure California needs to offer a lot of new services as much as helping to coordinate and make it easy to use all the existing services out there."

[78] Under the California World Trade Commission and later under the California Technology, Trade & Commerce Agency, CEFO issued loan guarantees covering 85% of a commercial bank loan to finance the working capital needs of an export transaction.

4. **Score of 126, Fee-based Services Concept –** "I like the idea of California offering services that businesses have specifically identified, but it really needs to operate like a business, including charging real fees that create an incentive for high quality services."
5. **Score of 70, Limited, but Quality Services Concept –** "California should provide a very limited number, maybe one or two, of the top-priority services we've identified, and it should focus on just doing those few things very well and completely measurably."
6. **Score of 13, Status Quo –** "I don't think California should do more than it's doing."

3.1.4 Hot-button issues

To validate the accuracy of scoring in ranking the top issues and solicit the most important top-of-mind issue, participants were asked to name one thing California should do to assist in international business development. There were many common concerns among the four focus groups; all four groups expressed the top actions as the following:

- Policy changes related to labor, manufacturing, and trade barriers
- Prioritize small business and start-up success with financial support, and overall assistance
- Provide services through individualized consulting, establishing a foreign office to assist in trade, create assistance programs, and streamline access to services
- Provide proactive leadership in California in the area of trade

In addition to the common top hot-button issues for all four focus groups, there are several topics that were mentioned multiple times.

- Three out of the four focus groups wanted to see increased training in higher education to graduate more individuals experienced in international business.
- Half of the focus groups (San Diego and Fresno, both with substantially more inland and rural participants) voiced a strong need regarding infrastructure, particularly water, electricity, broadband internet, railway service to airports, and ports.
- Mentioned at various times, two of the focus groups raised assistance with trade barriers as a top hot-button issue. The other two focus groups that did not single out trade barriers as a top hot-button issue wanted to see increased efforts in promoting California's international trade presence ranked as a top issue.

3.1.5 Focus group conclusions

Focus group companies generally felt that California was unsupportive of international activity. They looked for a more comprehensive set of services and trade policy support, with the State working to make those services high quality and seamless. Overall:

- Companies need assistance dealing with Federal regulations.
- Companies need assistance with cross-border regulatory and market access barriers.
- There is a perception that it is more difficult than it should be to do international business in the state due to uncertainty about the reliability and capacity of transportation infrastructure, power supply, and internet connectivity and bandwidth (particularly outside major urban areas.)

- There is a perception that State information and services, where they exist, are difficult to locate and use.
- The State is not developing and using the California brand effectively to support its companies.
- Companies could use better trade finance and capital attraction options.
- A range of business development and due diligence services is also needed.

To some degree these views may reflect a lack of familiarity with state vs. federal roles, or with current activities and initiatives being undertaken by the State. Several of the issues identified by the participants are in fact being addressed through measures such as BT&H's Goods Movement Action Plan, and funding for goods movement infrastructure approved last year in Proposition 1B. They do, however, reflect challenges that many in California face, and a common perception that the State lacks a focal point for strategy, services or policy that impact California companies and economic interests.

3.2 Attracting inbound investment[79]

Earlier sections of this report defined what is meant by foreign direct investment, outlined trends in investment, and summarized the various government-related services that support investment decisionmaking. This section reports on how California may need to respond to some of these trends.

3.2.1 Trends and implications

Investment attraction is growing more complex. The volume and value of investment transactions seemingly is growing, and the variety of equity and strategic partnership models to drive technologies and ventures is expanding.

In the past, most investment attraction activities focused on so-called "greenfield" investment. Economic development entities would seek out major companies that were planning an entirely new manufacturing, R&D, warehousing, customer service or other facility that would need to be sited in an undeveloped tract of land—or green field. While there are still opportunities to attract greenfield investment, their importance has lessened somewhat, as other forms of investment have come to the fore.

Technology startups, outsourcing, supply chain and multinational R&D efforts mean that investment attraction has expanded to include securing equity investments and other strategic partnership activity. This may involve smaller deals, R&D and other partnerships, and VC/private equity investment.

It is also important to look at *two-way* investment activity, which can engage multiple partners and investment sources. The California/British Columbia Collaborative is a recent example of a cross-border model to invest in R&D and technology commercialization in the life sciences, ports, energy, and environmental technologies.

The implication for the economic development community in California is that investment attraction and retention activities need to evolve. There is an opportunity to broker/market local

[79] This section particularly draws from meetings with Wayne Schell of CALED, Secretary Bradshaw of the Labor and Workforce Development Agency, and Ed Kawahara of the Economic Strategy Panel, along with Paul Oliva insights from meetings of the Department of Labor WIRED initiative and other internal analysis.

ventures or assets for startup, growth or project capital, as well as to assist with strategic partnership formation and development of supply chain or other business activity. To succeed in brokering deals, however, there is a need for in-depth industry and technical knowledge, as well as reexamination of tactics, skills and performance measurement at economic development agencies. For instance, as is being identified in the Department of Labor's WIRED initiative, economic development officials need to become familiar with innovation assets such as specific research or testing labs, workforce pools with specific technical qualifications, and emerging ventures and technologies, if they are to support innovation investments. State efforts should work with CALED to consider how best to bridge opportunities with resources in the field.

3.2.2 State-local objectives

To be sure, most investment decisions—whether for a new site location, an equity investment, or a real estate transaction—are made based on market forces and private counsel that the State cannot (nor should it in many instances) influence.

However, the State and local communities need to work together in a more concerted fashion to promote investment in a variety of ways:

- Address inaccurate preconceptions or lack of awareness by investment decisionmakers about California as a destination for investment
- Counteract aggressive competition from other countries, states and cities
- Increase awareness of specific opportunities, new technologies, emerging industries and other trends that favor California as an investment destination
- Drive business growth in industries and geographic areas that are consistent with an economic development strategy and supportive of deepening competitive advantage in strategic ways
- Assess and provide needed infrastructure, workforce or other economic inputs that support investment attraction
- Identify and address factors that may cause a company to leave California
- Improve coordination and planning with communities to maintain California's competitiveness as a destination for foreign investment.

3.3 Existing services

There is already an extensive network of government, non-profit and for-profit international business support services in California and in foreign markets, many of which have been in operation for decades.

The State of California should not duplicate these services. However, the State has the potential to fill certain gaps in services and, in some ways more importantly, to improve awareness and coordination of these programs.[80] Businesses and communities should feel that international business and strategy needs are addressed here better than in competing geographies.

[80] Allan Dafoe at the University of California, Berkeley, further summarizes economic theory on the role of government in promoting exports and investment, particularly drawing upon the work of Dani Rodrik at Harvard University. Dafoe (2007, The role of government).

3.3.1 Understanding the network of relevant services

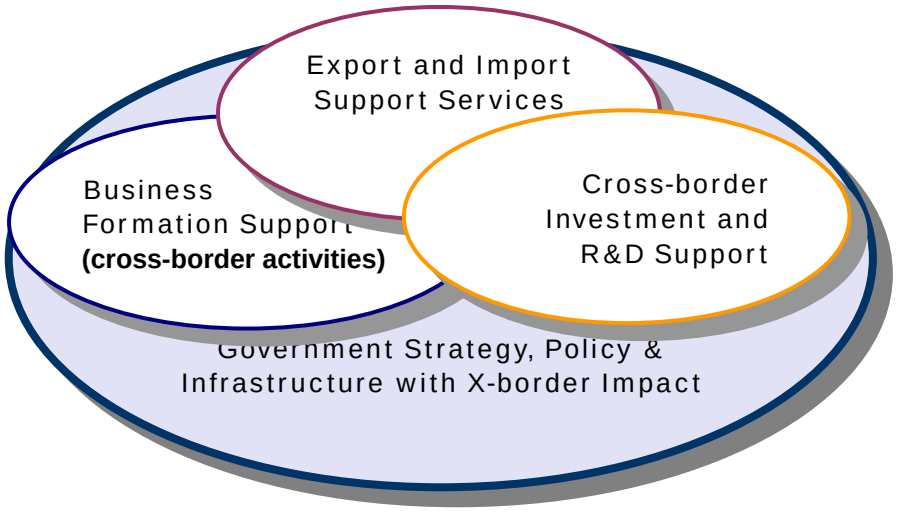
The public debate about services to promote international business tends to be skewed toward export development. It is important first to outline a more comprehensive conceptual model for international service provision.

Any policymaker reviewing the list of services in this section may rightly find it daunting. International business development is significantly more challenging and risk-prone than domestic business. This is why governments seeking the benefits of international diversification in their economies invest in services that reduce the cost, complexity, and risks of international business for their companies.

3.3.1.a Assessing services

A conceptual model. As presented in the diagram above, this section lays out various categories of service relevant to cross-border business development. Government strategies and policies create an overall environment in which international activity can flourish. On top of these foundational policies, government and other service providers can deliver specific services that support business formation, sales activities, and investment. This model highlights the scope of international trade and investment services. Then, based on this model, this study summarizes existing services and identifies gaps.

International Trade and Investment Services
A Broad View



Considering qualitative differences. In addition to understanding the scope of services, it is important to point out qualitative differences in services. Even though a service may exist, it may not in fact be easy-to-use or results-oriented.

One issue behind the quality of service as perceived by business is eligibility rules. Some programs establish eligibility requirements that can be a major barrier to service provision.[81] A second qualitative issue (for want of a better term) is *actionability*. By this we mean the major distinction that businesses make between services that are merely consultative or informational and those that deliver immediate results.

To illustrate the *actionability* difference, consider a frequently mentioned service such as trade leads (the provision of potential business opportunities). A typical approach would be to deliver to

[81] The eligibility consideration is important. Some programs require potential users to certify that 51% or 75% of the value of the product or service that would be supported is of California or US origin. This alone can be a major barrier to service provision.

a client a set of leads that match the general industry of the client.[82] A more actionable approach would be to provide a small number of leads that are precisely the type of deal the client can immediately respond to and for which the potential buyer has already expressed interest in purchasing from the client,[83]

These are two fundamentally different approaches. The latter is what businesses are more interested in; the former is more typically provided.[84] As a result, the actionability measure affects not only the value of the service to the company, but also how the company may respond to subsequent assessment of the service.[85]

3.3.1.b Categories and types of international business development services

As portrayed in the graphic above, four general categories of services are relevant to expanding California's international business flows. They include services specifically geared to (1) address government strategy, policy or infrastructure decisions that may have an international trade and investment impact; (2) address cross-border issues of business formation and start-up ventures; (3) develop international sales or distribution deals through specific export or import services; and (4) facilitate cross-border investments and partnerships.

<u>Service Type 1:</u> Services or Operations Focused on Government Strategy, Policy or Infrastructure with Cross-Border Impact

The most fundamental thing California government can do is accurately address the policies and operations it undertakes that have an international business impact, and to plan and coordinate them appropriately.

In addition to BT&H, and not counting relevant offices and committees of the Legislature, there are several State of California agencies that have international activities or some level of international policy responsibility, including the Governor’s Office, Lt. Governor’s Office, Attorney General, Secretary of State, Department of Food & Agriculture, Energy Commission, Community Colleges, University of California, California State University, Travel & Tourism Commission, Labor and Workforce Development Agency, Resources Agency, Cal-EPA, and Transportation Commission.

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[82] Simple consultative/informational approach to trade leads: Provide all possible leads that may be relevant to the California company after having developed a simple profile (via web form or face-to-face consultation) of the California company's interests.

[83] Highly qualified trade lead program: Narrow the list of leads to only the top three or five top prospects, contact the prospective buyer/partner on behalf of the California company to ascertain a definite match and level of interest, verify the regulatory or tax issues that might be involved for the California company delivering on the lead, determine recommended logistical or other considerations that should go into the proposal, and provide expert advice in negotiating, closing and structuring a deal.

[84] Often such differences are the result of program design or budget constraint, though sometimes they are a function of the capability of individual staff or even of the system of measurement or quality assurance that may (or may not) be employed.

[85] Consider a company obtaining a trade lead under the first example, subsequently completing a sale, and the agency taking credit for the result. When later contacted, the company may say the agency did nothing or very little to support the sale (they may even have forgotten the original source of the lead). The company would have been more enthusiastic about (and assisted by) the services had it been the more qualified version. Programmatically, both types of services would be called "trade leads," though they are qualitatively different.

- **Economic development strategy and planning.** While a number of State offices focus on economic strategy, including the Economic Strategy Panel, the Lt. Governor's Economic Development Commission, and the California Jobs Commission, there is currently no systematic process in state government for defining an overall economic development strategy; assessing programs, services, initiatives, coordination, and funding; and carrying it forward to implementation. Ideally, international trade and investment strategy should be one component of an overall economic development strategy, and tactical initiatives should follow.
- **International business policies.** The nature of international policy opportunities and challenges are outlined in the section on trade policy. From a program development perspective, they roughly break into two areas:
    - *Policy advocacy.* Policymaking at the local, state, and federal levels—as well as bilateral and multilateral negotiations—have an impact on California competitiveness. This function should monitor international business policymaking and advocate favorable policies for California, as well as formally participating in the US Trade Representative's Inter-Governmental Policy Advisory Committee (IGPAC). Another California policy advocacy function should be to assess how proposed and existing California regulations comply with evolving federal treaties. BT&H, the Governor's Washington DC office, and the Attorney General's office ostensibly have the ability to monitor and advocate appropriate policies, but none have the resources to do so. The CalChamber's newly rechristened Council for International Trade, into which the California Council for International Trade recently merged, provides a single statewide voice for business on international policy matters.
    - *Market access and compliance.* Market access and compliance services are somewhat different than policy advocacy and monitoring functions. The former look at helping businesses address market access barriers and are more reactive. The latter seek to influence the development of future policies and are more proactive. The US Department of Commerce (USDOC) operates a Market Access and Compliance division, and the Governor's Office operates the Office of Small Business Ombudsman. In addition, the industry specialized agencies such as the Department of Health Services and CDFA assist, on a resource-available basis, with addressing certification needs to obtain foreign market entry of California products. However, none of these programs is well-known by businesses.
- **Workforce.** The Labor & Workforce Development Agency has well-defined processes for assessing workforce needs and implementing strategies to meet them. The CITDs also feed into curriculum planning at their respective colleges. However, there is currently no strong ongoing mechanism to integrate CLWDA planning with non-workforce economic development strategies at other agencies.
- **Infrastructure.** Decisionmaking and prioritization of investments in world-class 21st Century infrastructure should include international trade and investment considerations within the context of an overall economic development strategy. This should look at not only infrastructure needed for California to remain competitive, but also infrastructure technologies that may generate new commercial opportunities (such as smart roads).
- **Energy.** The Energy Commission currently has an integrated approach to tracking developments and promoting new technologies in the energy industry, including

international business development activities. California has an opportunity to capitalize globally on selling and licensing its next-generation energy technologies and services.

Service Type 2: Services for Startups Focused on Cross-Border Business

More start-up companies are going global earlier in their development than ever before. Traditionally, startup and entrepreneurship activities were the domain of domestic economic development services, while international business development activities were, on the whole, more geared to support more established businesses. This concept is evolving as economic development strategies begin to look at how emerging technologies and industries need to be commercialized based on money, markets and partners both within and outside California's borders.

Startups that may have cross-border activity can range from a California-based entrepreneur seeking to operate in California and abroad, to an individual or small company elsewhere in the US or abroad that is interested in partnerships in California, to a startup backed by a larger company anywhere in the world that is attracted to California and its unique base of assets (such as Virgin Atlantic starting Virgin America).

Resources are already available to startup and small businesses. However, they may not always be well-equipped to address the cross-border aspects of business formation. Some examples of cross-border aspects of a start-up would be when development of a business model requires detailed knowledge of specific technical regulations in foreign countries (such as certification requirements); attracting foreign venture or equity capital; legal issues (such as securing intellectual property protection in particular countries); or cross-border taxation issues (for instance, when selling services over the internet).[86]

Services that fall into this category would include startup counseling and training resources, startup financing support, and matchmaking activities for startups.

Service Type 3: Services Focused on Cross-Border Sales

Sales-oriented international business development services—traditionally called trade development or export development—typically provide a range of training, counseling, market development, lead generation and transaction support services to generate specific sales, distribution or agent agreements with foreign business partners. This is in contrast to the business formation activities described above and the investment and R&D activities in the subsequent section.

The TradePort website (www.tradeport.org) and the CalChamber's International Resources website page at www.calchamber.com provide excellent listings of services. Traditionally such services have been exclusively export-oriented and heavily focused on supporting sales of tangible products as opposed to sales of services. Over the past two decades in California there has been progress toward also supporting businesses that import and those engaged in service trade (such as architectural and engineering services).

International business development services are made up of generalized cross-industry services, industry-specific services (e.g., for agriculture), and specialized services (e.g., export working

[86] Think about how difficult it would be, for instance, to develop an accurate business plan for a wind energy company that requires foreign markets to have a sufficiently large customer base... but for which the legal and regulatory issues are unknown and for which there is insufficient capital to pay high-priced consultants to undertake accurate due diligence work.

capital). Delivering trade services effectively generally requires in-state resources to provide localized delivery and client relationship management, as well as resources in foreign locations to conduct research, open doors and maintain local knowledge.

There are various approaches to measuring results, although the most prevalent methodology is that used by the US Department of Commerce. Commerce categorizes client companies by their exporting experience (new-to-export, new-to-market, old-to-market) and measures results by a new business transaction that the client company will attribute, at least in part, to the provision of a Commerce Department service. Such a new business transaction is called an "export action" and is categorized by its relation to the company's experience (i.e., an export action can be new-to-export, new-to-market or increase-to-market). Offices have quotas, and results are tallied on the number and dollar value of export actions in these various categories. There are other metrics for provision of certain types of services, such as selling certain types of fee-based services. Naturally, more specialized programs such as export financing have different types of metrics.

Another major question in the trade development community is to what extent government and non-profit services should be fee-based and self-sustaining without ongoing public funding. Fully fee-based programs would be as expensive as private consultants are. Thus, public funding is generally deemed essential to encourage success among the greatest number of companies, in response to the public interest in competitiveness and diversification of markets.

There are several different types of international business development services:

- **Networking.** The simplest and most time-honored function that all trade organizations provide is the networking event. Such events introduce businesses to other potential partners, to service providers, to international experts, to government contacts and even to competitors.
- **Counseling and training.** Most organizations provide some form of in-person and/or online training that addresses strategic and "how-to" topics. The website www.tradeport.org and the SBA publication *Breaking Into the Trade Game* provide excellent overviews of these types of topics. Most organizations also provide some form of one-on-one counseling. What is less common is true consulting, whereby specific work is completed on behalf of the client to solve problems, make fact-based decisions or consummate deals.
- **Market research and analysis.** Through the US Department of Commerce, World Trade Centers, online resources and other channels, there is a variety of sometimes detailed and actionable market research, analysis and insights on business opportunities. Most organizations are able to collect such existing resources to pass on to a client. However, less common is completing truly customized market research that is completely specific to the needs of the client company.
- **Matchmaking and introductions.** Most organizations strive to provide some form of matchmaking, which can include collection and distribution of business leads (both through online and one-on-one consultative services), as well as more customized location of buyers/agents/distributors and face-to-face meeting arrangements such as through a US Department of Commerce Gold Key service or in connection with a trade mission. Matchmaking usually involves market research and analysis. Matchmaking services have been evolving toward a more generalized ability to locate business partners (instead of just buyers) and making use of virtual services such as videoconferencing. They require some form of representation in foreign locations, and this is a primary function of Commerce Department foreign posts, World Trade Centers,

state foreign offices, and occasionally other foreign offices such as those operated by sister cities, ports, foreign governments, industry associations and contract representatives.

- **Tradeshows and missions.** Organizing client company participation in tradeshows and missions is a key tool to support international business development for a group of companies and to highlight what a state or region has to offer. Shows and missions can take place domestically or internationally. The role of government and non-profit entities is to reduce participation costs through economies of scale, to improve company preparation and success through support services, and to draw attention through a critical mass of interesting participants under the cachet of a US or California banner. For practical reasons, missions generally focus on a specific country or region. Tradeshows are intended for more multi-country exposure. As with matchmaking services, it is easier to organize and support such activities with some form of foreign representation or partner.
    - On the domestic side, for instance, exhibiting at the Consumer Electronics Show in Las Vegas, at the BIO International Convention (which BT&H is planning to leverage when it is next held in California in 2008), or the Tulare Farm Show can reach foreign business partners in these industries. Organizing cross-industry or industry-specific inbound business delegations from a particular country is another way to bring potential partners together domestically and highlight capabilities within the state. Show and mission activity can naturally be combined, with a major show providing a draw and a mission providing added meeting, promotional, and structured discussion opportunities.
    - Outbound activities work in a similar fashion. Some of the world's largest tradeshows take place abroad, such as the CeBIT show in the electronics industry, Paris Airshow for aerospace, or the Tokyo Gift Show for specialty consumer items. Organizing group exhibits and related promotional activities at such shows is generally seen as an effective business development tactic. As on the domestic side, outbound missions to a specific country or area can be organized on an industry-specific basis or with a broader mix of participants. Outbound missions can be effective for a more in-depth look at opportunities in a particular country and broader exposure to political, economic and business trends and players. Again, outbound show and mission activity can be combined.
- **Advertising and promotions.** International advertising and promotional activity for a region or industry can be an important tactic for raising awareness and driving interest and preference. Such tactics are very familiar in the tourism and food industries, as well as in investment promotion. Well-known examples include the *Got Milk?* campaign, the California Raisins, VisitCalifornia.com, and the *California Wants Your Business* billboard campaign featuring Governor Schwarzenegger. Advertising and promotions have not been used as extensively as international business development tactics outside of tourism, food and investment promotion, where stiff competition in advertising by other states and countries, financial self-assessment by industry, and cooperative funding activities (including federal funding in the agricultural industry) have a stronger tradition. In addition, in other California industries, advertising by individual companies and/or the reputation of the industry (such as semiconductors, film, or bioscience) reduces the need for state-led advertising and promotions.

- **Project- and venture-based services.** Services that focus on development of specific projects or ventures are a less common and more specialized tactic for international business development. However, they have the potential to be very appropriate and effective, particularly in areas of emerging technology where understanding of and demand for the technology is embryonic, as well as for highly capital intensive opportunities (such as aerospace, public infrastructure, alternative energy or the life sciences). The basic tactics are to identify a company or group of companies with a capability, identify a strategic business opportunity (potentially a government bidding opportunity or a demonstration project), use the reputation of government to add credibility to the effort, assist with the various financing and other political or logistical support needed to structure and close the deal, measure the success of the deal, and seek to replicate it elsewhere. Sometimes a consortium may be formed or a large company involved. In other instances, a specific project or enterprise needs to be set up in a foreign location, which the services of programs such as the US Trade and Development Agency (USTDA) and the Overseas Private Investment Corporation (OPIC) can help finance and support. The best ongoing example of such an approach in California is the Energy Commission's Energy Technology Export Program. The core of this program is not traditional matchmaking, shows, or missions, but rather technology-driven opportunities that lead to development of project or venture-specific initiatives. In addition to identifying and helping structure and finalize opportunities, the Energy Commission also assists with grant funding from USTDA, as well as pitching financing from public and private investors. The success rate and return on investment of this program are good. It is an excellent example of supporting California’s emerging technologies with results-oriented international business development initiatives.[87]
- **Due diligence.** Assistance with conducting due diligence activities on potential foreign business partners is also something companies need. Aside from being a good business practice, it can be required by lenders and investors. Due diligence typically involves checking the banking, credit and establishment information of a potential business partner, along with making a thorough qualitative assessment of the potential partner's technical and business capabilities to meet the company's needs. Some ability to undertake due diligence is available through the US Department of Commerce International Company Profile program, as well as more informally through World Trade Centers and chambers of commerce. This is also a service that state foreign offices may provide. However, there are indications from California companies interviewed for this report that these resources may frequently stop short of making an assessment of the potential partner's technical and other capabilities to perform the work. The result is that a California company may not ultimately pursue an opportunity because it is too difficult and time consuming to get an accurate assessment of the potential business partner, particularly if the potential deal has tight profit margins or otherwise limits the cost-effectiveness of conducting thorough due diligence.
- **Transaction structuring.** When putting together a proposal and a legal agreement for an international business deal, it is essential to put together the right terms for delivery, payment, intellectual property protection, tax and customs, compliance with regulations, and other considerations. Most trade service organizations provide general how-to and

[87] Critical to the success of the Energy Commission program, however, is detailed technical knowledge of the industry, companies, and emerging technologies, as well as the flexibility and consistency to shepherd projects to completion over multiple years involving many different players.

counseling, with the client company then required to seek professional legal counsel on the details. Such legal services can be expensive, so most smaller companies, and those involved in tight margin transactions, would like more extensive government or non-profit services at below-market rates. The Export Legal Assistance Network arranges for free initial consultations by attorneys, but these services do not extend to drafting or reviewing agreements, or conducting any sort of analysis.

- **Transaction financing and grants.** Transactionally-focused financing and grant activity is different than venture and growth financing and is an important tool for companies engaged in international business to obtain working capital. While there are many different specialized forms of financing used in international business, the basic concept is not unlike payday loans made to individuals when they obtain an advance on their paycheck by taking a short-term loan. In transactional financing, a loan is extended to a seller to cover the costs for delivering on the sales contract. The loan is repaid out of the proceeds of the sale. Because the loan is simply bridge funding that a seller will receive in a known timeframe, the balance sheet of the recipient company is less important than the buyer's ability to pay and the seller's ability to deliver. As such, transaction financing can help a young or cash-poor company—one that may even struggle to get a general loan—bootstrap itself. Microfinance can also be structured in this way.
    - In addition to private lenders, transaction financing comes from the SBA, US Export-Import Bank, OPIC (Overseas Private Investment Corporation), USDA, and multilateral development banks. Some states also offer such programs, and for over a decade the California Export Finance Office was considered the best program in the country before it was eliminated with the California Technology, Trade & Commerce Agency closure in 2003.
    - We also place grants into this category, because grants are typically related to a specific scope of work with specific deliverables rather than to support general operations. Grant opportunities are more limited, but USDOC, USTDA, and SBA offer some programs.
    - Credit and political risk insurance also falls into this transactional financing category. These services offered by Eximbank and OPIC protect a seller or investor from a buyer's inability to pay or the collapse of an international venture due to political turmoil, currency shocks or other risks.
- **Certifications and licensing.** Specific types of documentation are often required to secure market entry of some kinds of merchandise in particular countries, and in some instances to ensure a business service is accepted abroad. Many of these are managed by federal entities; in practice, others fall to state or local entities. Companies need help both determining what they need and then in obtaining the documentation or otherwise complying with the applicable regulation (for instance, to obtain some certifications or approvals may require changing the product or service). Here is a short list of some of the main types of documentation:
    - *Export licenses.* A USDOC license is required for export of sophisticated and high technology products; short supply items; technical information and products that have defense, strategic, weapons development, proliferation or law enforcement applications.
    - *Other trade controls.* Licensing or other federal control provisions apply to medical devices, drugs, controlled substances and chemicals, defense services

and munitions, nuclear material and equipment, toxic waste, natural gas, electric power, and endangered fish and wildlife.

- *Certificates of origin.* Certain nations require a signed statement certifying the country of origin of an export item. Such certificates are usually obtained through a semiofficial organization such as a local chamber of commerce.
- *Certificates of inspection and manufacture.* A Certificate of Inspection certifies that merchandise (such as perishable goods) was in good condition immediately prior to shipment. A Certificate of Manufacture certifies that manufacturing has been completed and the goods are now at the disposal of the buyer.
- *Phytosanitary Inspection Certificate.* This certificate issued by the USDA satisfies import regulations of foreign countries that a US shipment has been inspected and is free from harmful pests and plant diseases.
- *Certificate of Free Sale.* For items intended for human consumption—such as dietary supplements, infant formulas, medicinal foods, and even cosmetics and beauty products—some countries require the issuance of a Certificate of Free Sale in addition to a Certificate for Export to show that the products comply with US requirements and would be acceptable for consumption in the US.
- *ISO or other international standards certification.* Both products and services may be required or recommended to be certified as meeting international standards under the International Standards Organization or other certifying body. Such standards also relate to certain labeling requirements.
- *Other requirements.* Beyond licensing and certifications, there are often other specific labeling, content or other regulatory requirements.

- **Logistical and other support.** Many other specialized activities are often needed to complete an international business deal, including supply chain issues, shipping or transportation logistics, translation and cultural adaptations of materials, development of marketing and customer communications, changes in product or service design or delivery, customer service, customs clearance, and intellectual property protection. Most organizations will provide referrals—or at least guidance—to locate vendors who can assist with these activities. Freight forwarders and customs brokers can also manage some of these tasks on behalf of the importer or exporter. Most government and non-profit organizations do not directly provide these services, though most smaller businesses would welcome below market rate provision of such services.

Service Type 4: Services Focused on Cross-Border Investment or Partnership Arrangements

The business development services described above focus on revenues through sales, distribution, or purchase of products or services. This section looks at investment and non-sales transactions, inbound and outbound.

Typically, the type of investment pursued by states is the attraction of new manufacturing, other facilities or real estate investment by foreign individuals and companies. It is this type of investment that is measured as "foreign direct investment" in federal statistics.

This type of foreign direct investment can be important, as it not only represents the potential for new wealth-generating capital, employment and technology or productive capacity entering the state, but also represents resources that another competing state could attract.

The further policy question is whether outbound investment deserves consideration, and whether other kinds of non-sales, non-FDI activities—such as the development of R&D partnerships—warrant active attention by the State.

Outbound investment is important to consider. When outbound investment involves equity investment in new ventures abroad, California's interest is an outstanding return for that investment and the potential for economic and business connections that drive further exports, travel or other economic activity in the state. When outbound investment involves a California company setting up a facility in a foreign location, market forces have already determined that California may not be a competitive location for such a facility. As a generally higher cost state that wants to maintain well-paying jobs, California policy should be focused on retaining headquarters operations and/or innovative capacity or companies, and helping those operations to be as efficient and successful as possible. Some kinds of manufacturing may also be competitive in California, particularly when it is high value/low volume, linked to California-based R&D (such as biotech, nanotechnology or clean energy technology), or depends on design elements that are highly market sensitive (such as fashion apparel). These kinds of activities can generate sales, R&D or supply chain relationships that involve affiliated or unaffiliated suppliers in California. Further, as the graph of Silicon Valley inbound and outbound investment flows indicates (see the R&D and Capital section above), there is a likely correlation between two-way investment flows, innovative capacity and economic vitality.

Non-sales, non-FDI activities are also important. Development and commercialization of new technologies involves partnerships for research, design, development, testing, licensing, intellectual property sharing, supply or distribution chain sharing, joint marketing and other activities that may not always involve significant cross-border monetary flows. From an FDI perspective such activities are invisible or negligible. However, in an era in which the capital demands (and profitability demands) of innovation require sharing R&D burdens and driving markets globally, such activities deserve attention and facilitation.

- **Promotion and information.** Websites, presentations, advertising, and direct marketing can all be used to raise awareness and drive interest in the state generally and in specific opportunities.

  California already has some resources devoted to international promotions. In addition to the Governor's appearances domestically and abroad, there is the CalBIS program, with its how-to and staffing resources. There have also been some limited advertising / promotional activities accompanying the Governor on his missions. The *VisitCalifornia* website, while focused on consumers and the travel industry, helps to promote California's 12 tourism regions. The UC, CSU and Community Colleges also undertake international promotional activities.

  Outside of state government, there are business and partnering resources such as the Connectory.org site, economic development entities such as the California Association for Local Economic Development (CALED) and its member organizations, regional facilitators such as the Bay Area Marketing Partnership, ports and airports, and the incubator programs mentioned in the startup section. For instance, the San Francisco International Airport's attraction of Virgin America stemmed from a multi-year effort to woo Virgin Atlantic and help it overcome regulatory and other hurdles. However, there is neither a high degree of coordination statewide, nor alignment with a generally agreed economic development strategy. In stating this, not all economic development entities need to operate in lock-step. However, a greater level of common strategy and shared

tactics should allow all stakeholders to operate more effectively and for the state to improve its reputation for operating effectively.

- **Tradeshows and missions.** As with sales-oriented activities, international shows and missions can be very effective for building awareness and understanding of opportunities in California. Managed and followed up properly, they can generate bona fide leads on investment and partnering activities. Beyond Governor's missions, some of these activities have continued following the elimination of the Technology, Trade & Commerce Agency. For instance, this year a group of local economic development agencies joined together to exhibit at the BIO International Conference, which took place in Boston. Cities, counties, industry groups, regional organizations, ports, airports and trade associations continue to undertake tradeshow and mission activity. As with general promotional activities, however, there is limited coordination and no statewide strategy driving focused efforts.
- **Matchmaking and brokering.** Either in concert with the above tactics or as a stand-alone function, matchmaking and brokering activities can be essential to stimulate investment and partnering deals. This work includes qualifying both the foreign and stateside parties and their needs and capabilities. Other than CalBIS, there are few entities able to play such an intermediary role.
- **Site selection.** Site selection assistance is essential for companies or investors seeking real estate or sites for facilities with specific requirements. This can range from narrowing down options for the specific quantity and price of land to assessing water and power supplies, transportation corridors, zoning issues, and proximity of workforce. CalBIS is the primary contact for referring interested parties to site selection assistance resources in California. Foreign government entities typically provide site selection assistance to California entities.
- **Deal structuring and incentives.** A range of financial, tax and non-financial incentives is typically offered for inbound foreign investment. CalBIS helps coordinate development of deals for inbound investment, and can organize "A-Teams" of state and local officials to help address the needs of potential investors in the state.

3.3.1.c Categories and types of service providers

A truly comprehensive list of service providers for international business development activities would literally number in the thousands. The TradePort website (www.tradeport.org) and the CalChamber's International Resources website at www.calchamber.com/international provide excellent listings of some of the primary service providers.

To give a sense of the scope of these providers, here is a basic overview.

State Government. Counting BT&H, but not counting relevant offices and committees of the Legislature, there are at least 15 State of California agencies that have international activities or some level of international policy responsibility. These include the Governor’s Office, Lt. Governor’s Office, Attorney General, Secretary of State, Department of Food & Agriculture, Energy Commission, Community Colleges, University of California, California State University, Travel & Tourism Commission, Labor and Workforce Development Agency, Resources Agency, Cal-EPA, and Transportation Commission.

Federal Government. There are 19 primary federal agencies with programs related to international business, international commercial policy or essential oversight functions for these activities. Their efforts are coordinated through an interagency body called the Trade Promotion

Coordinating Committee (TPCC), established by Congress in 1992, which is chaired by the Secretary of Commerce. The TPCC submits a mandatory national export strategy to Congress annually. Of the 19 agencies, 11 have direct interaction with businesses. These are the Department of Agriculture, Department of Commerce, Department of Energy, Department of Labor, Department of State, Department of the Treasury, Export-Import Bank, Overseas Private Investment Corporation, Small Business Administration, US Trade and Development Agency, and the US Trade Representative. The TPCC's other members are the Council of Economic Advisors; the Departments of Defense, Interior, and Transportation; the Environmental Protection Agency; the National Security Council/National Economic Council; Office of Management & Budget; and the U.S. Agency for International Development.[88]

Local Government. City and county government agencies principally deliver internationally relevant services and planning through their economic development agencies, most of which are members of CALED, and through ports or airports within their jurisdiction. There are some 500 local economic development entities that are members of CALED. Their level of attention to international opportunities varies widely. The majority of city and county authorities do not have any dedicated staff or programs for international business. In some instances, there may be only one or two staff dedicated to economic development in its entirety. However, some cities or counties do operate an office or employ one or more staff to address international business issues, and some operate sister-city or sister-region relationships. In some instances a State or non-profit program such as a CITD or a World Trade Center may have a special service provider relationship with the official economic development entity in the jurisdiction to improve attention and coordination to international issues while lessening the burden on official city or county budgets.

Non-profit. California has a rich tradition of non-profit organizations addressing international business and policy issues. There are several membership associations that deliver extensive services, including the world trade centers and independent associations such as the Monterey Bay International Trade Association. Chambers of commerce often have international committees, and they are most often called upon to prepare certificates of origin. International policy matters are taken up by the CalChamber's Council for International Trade, by regional organizations such as the Bay Area Economic Forum, and by industry associations such as the Semiconductor Industry Association. And a host of specialized organizations look at high policy issues, such as the Pacific Council for International Policy and the World Affairs Council, or particular constituencies, such as the Customs Brokers and Forwarders Association, the Cal-Asia Business Council, and Hispanic Chambers of Commerce. Private educational institutions are also noteworthy, including USC (which hosts a major annual business conference on Asia), the Monterey Institute of International Studies, and the School of International Studies at the University of the Pacific.

For-profit. By all measures, for-profit enterprises play the most important facilitative role in international business. Transportation and logistics, export management/export trading companies, legal services, financial services, management consulting, accounting, marketing, business brokers, site selection consulting, all have helped make California an economic power and will continue to do so whether or not California State operates international programs. However, where the role of for-profit players ends is at the margins where deal size, lack of

[88] For a recent evaluation of the TPCC, its work on the national export strategy, and more details on federal operations, see the General Accounting Office (2006) *Export Promotion: Trade Promotion Coordinating Committee's Role Remains Limited*.

resources, inexperience, geography, or fundamental disinterest in California create hurdles for international business activity. Many of the services provided by government and non-profit international business programs ultimately feed into referrals to for-profit providers, and as such can serve as a pump-priming activity for profitmaking enterprises.

Foreign entities. It is important to recognize the role of foreign entities in California. The consulates of foreign nations are clustered in San Francisco and Los Angeles, but often have additional locations in other cities. These consulates generally have economic or trade consuls to attend to commercial matters. Alongside the consulates are, in many instances, official trade, economic development and investment attraction offices of foreign governments. These include entities such as the Hong Kong Economic and Trade Office, the Japan External Trade Organization, Canada's Trade Commission, and subnational entities such as Think London and the Paris Regional Economic Development Agency. Finally, though technically established as non-profit organizations, there are the bi-national chambers of commerce such as the German-American Chamber of Commerce, the China Chamber in California, the US-Mexico Chamber of Commerce, and the British-American Business Council. These entities can serve as excellent partners and sources of connection to their respective countries, particularly when planning missions or working on significant, investment, trade or partnership deals.

3.3.2 Inventory and gap analysis

Based on the foregoing discussion of services and service providers, this section summarizes existing programs and evaluates gaps.

Note that of the different service provider categories, some services are only provided for a specific industry—for instance many services are listed for state government, but some are restricted to agriculture and energy companies. The CITDs are the primary provider of generalized services, and they are qualitatively different than the federal programs in that they assist with both importing and exporting.

3.3.2.a Service Inventory Summary Table

Service	Possible gap	State Government	Federal Gov't	Local Government	Non-profit	For-profit
Government Strategy, Policy or Infrastructure with Cross-Border Impact						
Economic development strategy and planning	✓	D%	D	DV	X	X
International business policies *Policy advocacy* *Market access and compliance*	✓	N	D	N	D	X
Workforce		D	X	X	X	X
Infrastructure		D	X	X	X	X
Energy		D	X	X	X	X
Cross-Border Business Formation						
Startup Counseling and Training Resources	✓	D%	DL%V	NV	D	N
Startup Financing	✓	DL%	DL	N	DRL%	D
Startup matchmaking	✓		DL%	N	DRL%	D
Cross-Border Sales						
Networking		DR	DR	NV	D	N
Counseling and training		DR	DL	NV	D	N
Market research and analysis		DR	DL	NV	D	D
Matchmaking and introductions		DR	DL	NV	D	D
Tradeshows and missions	✓	D%R	DR	NV	D	D
Advertising and promotions	✓	D%	N	NV	D%V	D
Project- and venture-based services	✓	DL	DL	N	N	D
Due diligence	✓	R	DR	N	R	D
Transaction structuring	✓	R (some offered directly)	R	N	R	D
Transaction financing and grants	✓	DLR	DL	N	R	D
Certifications and licensing	✓ (on policy basis)	RV	D	N	DR	N
Logistical and other support	✓ (difficult to deliver)	RV	R	N	RV	D
Cross-Border Investment or Partnership Arrangements	(could expand existing services)					
Promotion and information	✓	DL	DLR	DV%	N	DV
Tradeshows and missions	✓		N	DV%	N	D
Matchmaking and brokering	✓	DLV%	N	DV%	D%	D
Site selection	✓	RLV%	N	DV%	N	D
Deal structuring and incentives	✓	DRLV%	N	DV%	N	DR

D = Available directly | **R** = Available through referral | **L** = Limitations on client eligibility | **%** = Limited scope / limited international scope
V = Varies significantly | **N** = Some limited service may exist, but not a core service or not generally available
Blank = Not generally existent | **X** = Exists or may exist, but not relevant to analysis

3.3.2.b Gap Analysis

Institutional. While isolated or event-specific services are available, there is currently no integrated State of California direction or strategy. The California "brand" is underutilized as an asset for companies seeking to do business overseas, there is minimal integration and leveraging of existing State and non-State resources, and no sustained, long-term institutional capacity at the state level to support California companies and potential foreign investors.

Services. Many California companies wishing to do business abroad need assistance with overseas marketing, subject matter expertise, due diligence, and government-level assistance in overcoming regulatory barriers. Regarding overseas market development, while the Federal government and other private entities provide trade services, at present there is very limited institutional capacity in state government to support inbound foreign investment, minimal communication with federal entities and other governments on policy and regulatory issues impacting California companies and interests, and a significant lack of sector/industry expertise specific to California that is available to companies.

- Several State of California agencies have international activities or some level of international policy responsibility, including the Governor's Office, Lt. Governor's Office, the Attorney General, the Secretary of State, Food and Ag, the Energy Commission, Community Colleges, UC, the State University System (CSU), the Travel & Tourism Commission, the Labor and Workforce Development Agency, the Resources Agency, Cal-EPA, and the Transportation Commission.
- The State's web resources include the California Business Portal at www.calbusiness.ca.gov, the California Business Investment Services site at www.labor.ca.gov/calBIS, and the State's overall portal at www.ca.gov.
- An extensive in-state field network of international business support offices exists through the Centers for International Trade Development (CITDs), World Trade Centers and similar organizations that provide counseling, seminars, trade event support and other one-stop services. Many of these are already coordinated with offices of the US Department of Commerce, which maintains its own extensive network in the state, and with the US Export-Import Bank and the Small Business Administration.
- The California Chamber of Commerce, local chambers, and trade associations offer a range of policy, educational and business support functions and expertise.
- An extensive network of overseas offices and representative offices currently exist through the US Commerce Department, sister-cities, ports, World Trade Centers, UC, CSU, and the California Travel & Tourism Commission.
- Local economic development agencies in some instances work on international business development, but most do not have the requisite resources or experience.

Despite these varied resources, there are significant gaps and shortcomings in the services currently available:

- There is no coordinated interagency economic development strategy from which to build an integrated international trade and investment strategy; the lack of cohesion for strategy development and service delivery suggests missed opportunities.
- There is a limited capacity to leverage the California brand to the benefit of California companies.

- No dedicated resources are available in state government to advance state policy interests and to troubleshoot foreign market access issues. Other than the California Trade Partners convened by BT&H, the State possesses no sustained institutional capacity to work with business and other communities to address California's interests in the global economy over time.
- The significant variability in quality and scope of services available across the variety of entities and locations in California creates confusion and may diminish their effectiveness.
- Performance measurement and quality assurance are concerns, as measurement issues contributed to management and perceptual issues that played into elimination of the Trade & Commerce Agency.
- There is limited coordination of international trade and investment priorities with decisionmaking on related issues such as infrastructure, R&D, and workforce development.

While BT&H theoretically brings these elements together, in fact its business programs are mainly regulatory in nature and not conducive to strategic or policy leadership on business or economic issues. Lack of resources and the diffusion of international activities across state agencies contribute to the perception that, overseas missions by the Governor aside, California lacks a coherent international strategy.

3.3.3 Challenges in border and underserved areas

There are particular challenges and opportunities in developing businesses and attracting investment along the border and in historically underserved urban and rural areas.

On the whole, access to support services is good. With the exception of the northernmost portions of the state, most parts of California are within a two hour drive of a CITD or USEAC. Online availability of services and innovative approaches such as videoconference business matchmaking have made it easier than ever for underserved areas to access opportunities.

Key opportunities include the following:

- Development of an overall economic development strategy can serve to connect activities in underserved and border areas with international trade and investment strategies and services.
- Opportunities to improve outbound freight transit from rural areas, such as development of a cargo rail connection from San Joaquin Valley to the Port of Oakland, merit further exploration.
- Resources at border crossings and international transit hubs need to be improved, not only to reduce wait times (in concert with INS, Customs and TSA), but also to appropriately control for invasive species (CDFA).
- Working through CALED, it may be worthwhile to assist local economic development agencies in rural areas and throughout the state on training to improve their ability to support and respond to international business development opportunities.

3.3.4 Coordination and leveraging opportunities

The various activities that must be undertaken to consummate an international business deal are daunting, time consuming and complex. In addition, the array of services and service providers, as well as the various eligibility requirements, can seem bewildering.

There are various dimensions to coordination and leveraging. The two most salient are interagency coordination and coordination with the trade and economic development community.

3.3.4.a Interagency coordination

In the 1980s, the heads of all of the core California State international agencies met monthly in the Governor's Office to update each other on initiatives and to identify and resolve any coordination issues. Through the structure of the World Trade Commission, this discussion then extended on a quarterly basis to include the Governor, Lt. Governor, Secretary of State, a Senator, an Assemblymember, and private sector Commissioners.

Some form of monthly or bimonthly international interagency coordination meeting should be resumed.

3.3.4.b Service partner / stakeholder communication

Companies continue to seek a more efficient and consultative single-point-of-contact approach to service provision. The BAYTRADE and LA TRADE initiatives of the 1990s developed such an approach, which was well-received. They provided single-point-of-contact convenience combined with the expertise of all staff in the network, an integrated client relationship management and tracking system, and a consolidated performance measurement and quality assurance system that extended to the USDOC and other partners to avoid double-counting of results. By mobilizing participation by cities, counties, ports and airports, the network also allowed for work on investment attraction, partnerships and policy matters. Companies polled by BAYTRADE were supportive of greater integration and homogenization of the programs.

However, what made the BAYTRADE and LA TRADE programs feasible was the availability of significant federal grant resources that required matching funding. The funding created the imperative for coordination, consistency and oversight. Unfortunately, federal and local funding dried up in 2001 due to lack of funding and formal participation from the State of California. Although the TradePort website created by BAYTRADE and LA TRADE has continued to exist, as have most of the service centers, most observers believe that more formal coordination of disparate—and sometimes competing—service providers is difficult without a source of funding to provide the glue.

Ideally, a BAYTRADE-style model could be revisited. However, short of a grant or contracting source of funds to drive common service provision and measurement, an alternative strategy is to host regular meetings of international business service providers to consider shared interests and opportunities. This could improve coordination, help troubleshoot issues, and provide a platform for identifying and pursuing joint initiatives. Such a mechanism is currently in place through the California Trade Partners group, which is periodically convened by BT&H and includes the state's leading trade service organizations.

In addition, some form of regular communication should go out to the international business and international organization communities in California. This could be in the form of an email newsletter, blog, or even short articles or notices to be sent to partner entities for inclusion in their member communications.

3.3.5 Industry targeting considerations

Industry targeting generally improves the performance of international business programs, allows for hiring of staff with industry expertise, and provides linkages with domestic economic development strategies. For purposes of international strategy, the State should focus on industries that offer the best potential return on investment for the expenditure of limited State resources, as well as major industry clusters and significant emerging technologies.

One question is how best to select target industries. In the past, targeting in California's international programs was based on several criteria that included the size of the industry in California, its international performance in terms of volume and growth of cross-border transactions, the availability of major industry-specific international tradeshows, and the potential emergence of a new industry as a potentially large or strategic one for California.

Because many of California's exports, as well as foreign investment entering the state, are technology-intensive, the existence of major programs in workforce development or new R&D investment at state, federal or private labs should also have a bearing on industry selection. A current example of a cluster with growing promise is clean energy technology, which is benefiting from high levels of research investment from federal, state, and private sources, as well as investment in new businesses by venture capital.

As part of a set of design principles for government programs, Dani Rodrik at Harvard University provides additional criteria for choosing activities and industries. He suggests that prioritizing targeting activities should take into account the benefits that will remain within the state from undertaking the activity, such as first-mover and learning-by-doing advantages, and the impact of economies of scale and agglomeration (i.e., clustering).[89]

[89] Summarized in Dafoe (2007, The role of government).

4 Assessing the competition[90]

Other states and countries have increased their spending and are actively competing to attract and support companies. While California need not replicate what others are doing, these programs present both a challenge and an opportunity for identifying best practices and potential partnering channels. At the least, we should understand what our competitors are doing.

To assess trends and considerations for California, three primary sources were used: a formal third-party survey of state trade directors,[91] an extensive World Bank survey of national export promotion agencies,[92] and direct interviews with selected officials.[93]

The survey of state trade directors was produced in November 2006 by the national organization of state trade agencies called SIDO (State International Development Organizations, www.sidoamerica.org). A total of 38 states, plus Quebec and Chihuahua, responded.

The World Bank study included outreach to ministerial level contacts in 147 countries, resulting in 88 completed responses, which were followed up by telephone. This professional review of developed and developing countries includes references from thirty other surveys and analyses from 1905 to 2007. Although this survey relates to national, rather than sub-national entities such as California, its conclusions are relevant for the State due to the relative size and development of California.

To validate the basic conclusions from the surveys, one-on-one telephone interviews were conducted with selected state and foreign international trade officials. These (non-California) officials were chosen based upon their experience and their ability to express their experience in terms of useful observations for California.

Here are the findings:

Competition from other governments is strong and growing. With the closing of the Technology, Trade and Commerce Agency in 2003, California is today the only state in the nation with no formal broad-based international trade and investment development program.

Other countries and sub-national organizations support well-funded programs. State trade promotion budgets in 2006 ranged from $315,000 (Nebraska) to $20.7 million (Pennsylvania).

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[90] This section draws primarily from the working paper prepared for this study by Jerry Levine, Mentor International, "California's Global Initiatives: Learning from Other States and Other Countries" (June 24, 2007).

[91] SIDO, Member survey (November 2006).

[92] Daniel Lederman, Marcelo Olarreaga, Lucy Payton, "Export Promotion Agencies: What Works and What Doesn't" (World Bank Policy Research Working Paper 4044, November 2006, Revised March 2007)

[93] Levine, 2007.

The mean state budget expenditure is over $2.5mn, and the median budget[94] is $1.16mn. At the national level in OECD countries, the median export promotion agency budget is 0.08% of total exports. Were it used in California, such a ratio would indicate an export promotion budget $137mn.

When asked why states should engage in international promotional activities, respondents in the research conducted for this study observed, "The bulk of the market for anything is outside the US."

Investment and innovation support initiatives are expanding. Other states and countries are also operating significant R&D and innovation growth initiatives, some with explicit international components. Investment promotion programs are increasing.

California needs to carefully consider structure and budgets to avoid problems with staff quality and bureaucracy. How stateside services, operations and management are structured is critical to success. The World Bank study cited criticisms that US state programs were at times lacking strong leadership, inadequately funded, and operated by staffs that were insufficiently client oriented. Interestingly, these criticisms echo in part the concerns expressed about the Technology, Trade & Commerce Agency by the State Auditor and the Legislative Analyst's Office, which focused on the lack of strategic planning, outcome-based performance measures, and quality assurance activities. State trade directors who were interviewed for this study stressed the need to focus on defining programs and objectives in-state before even considering establishing foreign offices, and offer in-depth local counseling to exporters supported by a worldwide network of contacts. They also emphasized the need to concentrate on clients and the solutions to their challenges, and the importance of personnel selection.

The World Bank found that to be successful, export promotion agencies should “have a large share of the executive board in the hands of the private sector but a large share of their budget should be publicly funded. Publicly funded agencies directed by the private sector are the best performers.” Four or five states have active public/private entities. The most advanced is in Florida. In no case is a majority of the funding from the private sector.

Certain types of activity and partnerships may further improve trade performance. In contrast to the small business mantra often heard in the US, the World Bank study found that exports increase most when the programs focus on larger firms that are not yet exporting.[95] The Bank also found that larger export returns may result from investing in a strong business climate, including education and infrastructure. Most states are looking at China/India, but agree it’s important not to ignore big *existing* markets such as Europe.

With respect to US Department of Commerce services, most states are focusing on utilizing USDOC overseas support more than domestic offices.

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[94] Median budget: the budget value above and below which all other state budget values appear with equal total frequencies.

[95] This may seem to contradict the earlier finding about the importance of small and medium enterprises in California global growth. In reality, the World Bank finding suggests that both small and larger enterprises are worth helping, and that definitional differences may exist about company size. The US SME definition includes companies up to 500 employees, which may have been considered a large company by some of the World Bank respondents. In addition, working with larger companies can increase the likelihood of winning much larger and more easily quantified business development deals. Smaller companies should still be served, but larger companies shouldn't be ignored if significant new business could result from helping them.

Cooperation and information exchange with other states, such as through membership in SIDO, can bring operational benefits and is strongly recommended.

With limited staffing, it is better to utilize industry sector specialists rather than geographic specialists for export promotion activities.

Co-location in-state with Eximbank, USEACs, university, and agriculture officers is advantageous.

Foreign offices remain popular, but contract or partner offices are reducing costs. States maintain 230 offices in 30 countries, down slightly from 243 offices in 2002. The average cost of an overseas office in 2006 was about $134,000, which was 23% lower than the average reported in 2002. The cost reductions reflect a shift from full time employees to part-time, or to contract representatives. Some offices have been consolidated with other states or with in-state entities such as ports, cities, or universities.

Conclusions regarding foreign office programs include:

- All states agree that solid in-state resources are essential to follow up on international business development opportunities, especially investment deals; the principle is to establish infrastructure at home before undertaking foreign offices.
- There is a growing sense that investment promotion and export development are sufficiently different as to require different offices or staffing when operating abroad.
- For foreign office operations, most states are switching to contract representatives rather than full-time offices staffed by state employees. The Canadian provinces of Ontario, Alberta and British Columbia all have multiple overseas offices and also use independent contractors.
- Shared facilities with the overseas offices of a state's universities, ports or cities can work well.
- China is seeing explosive growth in state offices. India will follow. States are shifting export promotion staffing from European offices to Asia, but are not reducing Mexico exposure. They find that for FDI, Europe is still vital. Other states mentioned Canada, Japan, UK, Germany, and Korea as key office locations.
- Virtual offices can be useful, but for investment promotion, personal contact with potential investors is vital. For assistance to state exporters, knowledge of country industry sectors and national practices is necessary.

Approaches to measurement need to be realistic. The Legislature and other policymakers need to understand the realities of measuring international programs: international sales deals and partnerships can take twelve to 24 months before closure; foreign direct investment can take 5-7 years for fruition. Measuring results is difficult due to these lag times; favored techniques include:

- Measure by results rather than levels of activity (recognizing lag times and the involvement of multiple organizations)
- Record companies served and business deals signed
- Conduct independent audits of program performance
- Develop a client and performance database to track operation of international programs and foreign offices; measure managers and staff by these criteria

Be receptive to innovative approaches. Here are a few of the unique programs that were uncovered in the interviews with state trade directors:

- Offer an in-company full-day free assistance program.
- Offer a trade show participation subsidy to small businesses that conduct most of their value-added activity in-state.
- Create a virtual service warehouse at a base in Europe and select a consortium of service providers including attorneys, CPAs, logistics and market consultants to provide localized support.
- Contract with “executive suites” in different countries that register a local phone number in the name of the state’s trade office.
- Conduct numerous trade missions each year, but restrict state government participants to trade directors or their staff.
- Appoint “Honorary Commercial Consuls” in some countries, from the state, or a company headquartered in the state.

5 How should we respond? Building blocks for a California international trade and investment strategy

5.1 Core elements

In a quickly changing economy influenced by powerful global trends, how state trade and investment programs are organized will not, in most cases, have a major influence on import, export or investment numbers. State government can, however, play a useful role in supporting California businesses overseas, by leveraging and focusing (not duplicating) existing assets and by adding strategic value in areas where government is in a unique capacity to contribute. By doing so it can enhance the competitiveness of its companies, compete with other states and countries where necessary, and bring new business to California. This report recommends that the following four elements inform its international and trade and investment strategy:

1. Link international trade and investment programs to a comprehensive economic development strategy

- Economic development strategy in the state should be produced comprehensively and implemented across programs and agencies. The State currently has no institutional mechanism to work with business and with multiple communities and sectors on economic and business development issues, or to integrate and implement economic development programs in a sustained and comprehensive manner.
- Infrastructure, workforce, science and technology, education and business climate issues should be included in any broad-based economic development strategy. Particular attention should be paid to the state's innovation (education, R&D, science and technology) infrastructure as a foundation for California's global competitive position.
- International trade and investment programs should not be siloed, but should be directly linked to the State's broader economic development strategy and mechanisms.

2. Better leverage and project the California "Brand"

- California is identified worldwide with technology, innovation, food and wine, and an attractive lifestyle—all assets in the global marketplace. The California brand should be managed and leveraged to help California companies with global business development.
- Creating a coherent brand identity for California should build on the successful efforts of the California Travel & Tourism Commission and the California Grown campaign.

- Agencies with international programs should participate in an integrated branding, web, and media strategy to promote California business globally.

3. Assert California's interests in national and global policy issues, and help California companies overcome policy and regulatory barriers to their global business development

- The interests of the State and its companies are directly affected by international trade negotiations, but are not systematically represented in policy debates or in international trade negotiations. Policy intervention on issues where California interests are at stake should be a key role for the State.
- California companies frequently encounter complex regulatory barriers to their exports, generated in the United States and in foreign countries. Helping companies overcome those barriers should be an important State role.

4. Make the attraction of foreign direct investment a priority

- While a variety of Federal and private organizations provide international trade services, the attraction of foreign direct investment into California is a role that state government is uniquely qualified to fill. Through the USDOC, the federal government plays some role in generally promoting the US as a destination for foreign investment and responding initially to foreign inquiries—however, it is up to states to respond.

5.2 Structural Considerations

California should create a long-term institutional capacity in state government to advance the State's interests and support California business globally. In doing so, the State should remain flexible in adapting this capacity and strategy into the future, so that it can respond to changing market conditions, challenges and opportunities.

Options include the following: (1) create the capacity under the purview of the Undersecretary for International Trade within BT&H to directly provide a full range of international trade and investment services; (2) develop a small core staff under the purview of the Undersecretary for International Trade within BT&H to coordinate and integrate other service providers, and provide direct services in strategic areas; and (3) create a California International Trade and Investment Commission as a public-private entity outside state government, with dedicated staff and the authority to both coordinate and directly provide trade and investment services.

Due to budgetary and other constraints, options 2 and 3 appear the most promising. Because of its cost-effectiveness, simpler management structure, the need to coordinate international trade and investment activity with other State agencies, and because it can be implemented more quickly, our recommendations focus on option 2.

Structural recommendations

- Establish an experienced, senior-level core staff under the direction of the Undersecretary for International Trade at BT&H with responsibility for the following functions: trade development, investment development, intergovernmental and regulatory affairs, information and communications.
- Establish an intra-governmental coordinating body modeled on the Federal government's Trade Policy Coordinating Committee (TPCC), chaired by the Undersecretary, to facilitate

communication and coordination between State agencies with trade and investment-related responsibilities.

- Continue, and expand as appropriate, the California Trade Partnership, as an officially recognized vehicle chaired by the Undersecretary to facilitate communication and coordination with external partners. Specific qualifications should be developed as criteria for participation in the Partnership.
- Engage the California Chamber's Council for International Trade as an advisory body on trade and investment policy.
- As appropriate, engage major organizations reflecting California's industrial, scientific and ethnic diversity in planning and implementing international policies and programs.

5.3 Service Considerations

A service infrastructure and institutional capacity should be established domestically, within the state, before considering the establishment of overseas offices.

If overseas offices are considered in the future, contract offices (as opposed to full time offices staffed by State employees) appear in general to offer the best option from an economic standpoint. Contract or other offices, if opened, should be subject to periodic on-site inspection and review. The location of any overseas offices should be based on clearly-identified criteria and priorities (e.g., industry and market complementarities, current market size, potential market size, or major current or potential sources of FDI.) Until those criteria are established, the State should refrain from opening or supporting overseas representative offices.

Since trade services are available in all major markets through the US Commerce Department, a major emphasis for State services should be placed on the attraction of foreign direct investment.

Full private funding of entities that represent the State internationally is inappropriate, as a general proposition. It can lead to issues of responsibility and accountability, and can undercut the value of the California brand without strong oversight. Serious State programs will require the State to make a direct financial commitment.

Service recommendations

- Through the office of the Undersecretary for International Trade and the other institutional mechanisms outlined above, BT&H should provide a focused set of services for California companies that leverage existing organizations and programs, and include overseas marketing support, access to subject matter expertise, and help with due diligence and overcoming regulatory barriers.
- These services need to be responsive to 21st century business processes that go beyond the traditional governmental model of promoting only exports and inbound investment. Beyond those core services, the Undersecretary should work with the TPCC and California Trade Partners to support a more diversified set of business needs related to imports as well as exports, creating joint ventures, joint R&D and strategic alliances, and facilitating both inbound and outbound investment.
- Under the leadership of the BT&H Secretary and Undersecretary for International Trade, the State should develop an institutional framework and management process that leverages, draws on, and integrates programs and services already provided by governmental and non-governmental partners in California. Focal points should include coordinated service delivery,

and in the case of joint or funded activities, measurement and quality assurance. Key components should include:

  - Continue, and as appropriate expand, the existing California Trade Partners group.
  - Engage the US Commercial Service to provide specific services to California companies, including access to overseas offices and domestic subject matter experts.
  - Develop a directory of subject matter experts in recognized partner organizations to address the need for industry/country expertise.
  - Create a modest funding pool to support shared services with and among partner organizations, and stimulate innovative proposals and initiatives.
  - Investment attraction should be a priority, with dedicated staff and activity distinct from trade. Investment attraction strategy should focus particularly on core and emerging industry clusters in California, and on leveraging assets such as research institutions.
  - The capacity should be developed under the Undersecretary for International Trade to actively monitor and articulate California's interests in international trade negotiations, and to monitor and represent the State before international dispute resolution bodies.
  - The capacity should also be developed to provide support/troubleshooting services for California companies encountering cross-border trade and investment barriers.

- BT&H should establish a state-of-the-art web presence as a link between State services, domestic and overseas partners, client companies, and the media. While not a substitute for staff or programs, a sophisticated web presence has the potential to project California, its companies and its programs globally at minimal cost, and to direct both California and overseas companies to the most appropriate governmental or non-governmental service provider.
- A credible independent mechanism should be established for ensuring accountability and for tracking the effectiveness of international trade and investment programs. BT&H should establish an agreed set of parameters for measuring program effectiveness. This should include periodic external audits.
- BT&H and partner organizations should be allowed to charge companies for service based on criteria that might include size, ability to pay, level of service, and frequency of use.
- Innovative methods should be explored for assisting California companies with foreign market entry, obtaining venture capital for project development, and funding working capital needs for international deals. The California Energy Commission's Technology Export Program offers a creative model for market entry and funding for technology projects in foreign locations.
- It would also be worthwhile to explore the development of a guarantee fund program that supports working capital needs for companies engaged in international transactions and leverages private sector financing. Such a program could also generate fee and interest income to reduce costs and risks to taxpayers.
- Because of California's wealth of educational institutions, international educational services (the attraction of foreign student at all levels) should receive special attention.

5.4 Final Recommendations

We recommend the following actions:

- Develop a program plan and funding structure for recommendation to the Legislature for budgeting and staffing for a five year program for FY2009-2014.
- Implement the structural recommendations above and the related staffing components.
- Implement as many of the service recommendations as possible in the FY2008-09 fiscal year, and take these service recommendations into account in developing the five-year plan for 2009-2014.
- Issue an annual report on international trade and investment trends, including merchandise and services, and international investment flows.
- Update the State’s international trade and investment strategy biennially.

Appendix A:
Issues in state-level international economic data

This appendix provides further details on Section 2.1.1 Problems with data*.*

Current sources of international trade and investment data are not sufficient to paint a comprehensive, accurate and timely picture of the export and import of goods, services and capital across California's borders, let alone serve as a robust basis for policy and program formulation. This report provides the Legislature the best available summary of trade and investment trends that could be produced within budget constraints and using standard data sources, inferential analysis, and input from international trade experts. However, the limitations must be understood.

The available data to assess California's cross-border business activity are poor for a variety of reasons, ranging from the lack of sufficient federal resources to track state-level inflows and outflows to the complexity of accurately quantifying inflows and outflows across supply chains:

Lack of trans-shipment and import data. Data on the California origin of US goods exports is reasonably good, especially when agricultural commodity exports are evaluated using industry-specific sources[96]. However, the data do not include California products that are shipped to another state and exported from there (as in California components in a Washington-produced Boeing aircraft). What's more, there are no reliable sources of data on the California destination of US goods *imports*. This is important because of the dependence of so many California businesses upon importing of raw, semi-finished and finished goods for domestic sales, and in many instances, for eventual export of value-added products.

Poor data on trade in services. There are no consistently calculated data on the export or import of services at the state level. This means that there are no comparable data that allow cross-industry evaluation of major segments of the California economy, from foreign tourism to entertainment media such as movies, and from engineering and architectural services, to educational services, legal and professional services, financial services, internet-based sales of information, and licensing or R&D in information or biotechnology. Eli Miloslavsky and Howard Shatz have produced a useful methodology for calculating service exports, but there is no entity officially producing data using this methodology.[97]

Investment data is limited. Flows of inbound foreign capital are not measured at the state level, nor are flows of capital from California sources to foreign destinations. The US Bureau of Economic Analysis does report the stock of foreign direct investment in California, but this only includes data for companies with more than 50% foreign ownership. Thus, California has only a very restricted view of its cross-border capital flows even at a time when venture capital and other forms of investment—beyond ownership of manufacturing plants and commercial property—are of critical importance in fueling California's economic growth.

Multiple data series for state-origin merchandise data need to be used with care. Even the seemingly straightforward evaluation of California merchandise export data establishes no definitive conclusions.

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[96] Haveman, 2006, p.37.

[97] Miloslavsky and Shatz, 2006.

Overall state-by-state merchandise export data. There are two primary sets of data intended to show merchandise exports on a state-by-state basis, one based on the state "origin of movement" and the other based on the zip code of the "principal party of interest". In addition, there are multiple methodologies and sources for agricultural exports.

There are significant differences in data generated by the different methodologies. The origin of movement data shows California clearly in a number two position versus Texas, but the zip code based data shows California in the lead for 2006 ($132.2bn f versus $118.9 for Texas) and for the first half of 2007 (totaling $69.1bn for January through June versus $62.6bn for Texas).

Both series are originally produced by the US Census Bureau and then refined by WISER (World Institute for Strategic Economic Research), and both series draw on export documentation filed by the exporter with the US Customs Service. The State of Origin of Movement (OM1) series, produced starting in 1988, is based on the 2-character state abbreviation of the state of origin of movement, defined as "the state where the product began its journey to the point of export, or the state of consolidation of shipments, or the state of greatest value in the case of consolidation, or the state of a foreign trade zone."

For a gateway state such as California, the OM1 series may increase the amounts and affect the size of certain export destinations depending on the degree of value-added manufacturing, export consolidation, brokering or wholesale activities taking place here or elsewhere. For instance, OM1 data may misstate California exports to Mexico due to heavy consolidation of shipments on the Texas-Mexico border.

The newer zip code data series (WISER calls it OM2), was produced starting 2006. It is partly intended to enable metropolitan area reporting, but it is also intended to reduce the impact of consolidators in reporting of state-by-state exports and more fairly show where export goods are produced. For California, both concepts are relevant, as consolidation, transshipment and value-added activities (such as labeling / packaging for export) are important for the state.

For this report, we are using OM data because of the free public availability of detailed commodity and country breakdowns through WISER and the US International Trade Administration at its Trade States Express website at http://tse.export.gov.

Agricultural export data. Accounting for agricultural exports adds further complexity when creating a single official estimate of California exports, let alone an overarching analysis of top destinations and trends. CDFA (California Department of Food and Agriculture) reports the State's official export data for agriculture, produced by the Agricultural Issues Center at UC Davis. The numbers include crop commodities, as well as processed crop products (such as juice from oranges and processed tomatoes). However, there are multiple official methodologies used in the US. CDFA's data specifically indicates crop production in the state produced for export and does not show products that originated in another state but exported from California. The USDA Economic Research Service uses a different methodology that does not reflect actual export percentages for California crops, and WISERtrade's OM series simply reports exports based on shipper export declarations, which undervalues California crop exports because of consolidation activity in other states, WISER has a separate detailed agricultural export dataset that is actually higher than the CDFA estimate.

As a result, the official total of California exports as reported by the federal government not only fails to include services, it does not include CDFA's official total for California agricultural exports (which is only available for 2005 and is much higher than WISER's number for ag exports in the OM series.)

Appendix B:
Detailed findings on economic diversity and jobs

This appendix supplements the more summarize information contained in Sections 2.2, 2.3 and 2.4.

California is a diverse state by virtually every measure. This diversity creates a unique set of competitive advantages that work individually and collectively to drive international opportunities.

Competitive advantage and its bearing on State economic development strategy

Competitive advantage is a simple concept. A given geography such as a state has a given set of attributes—land and climate, human resources and knowledge, capital and infrastructure—that allow it to produce items of value with greater quality, lower price, better availability or even complete uniqueness than another geography. If the people and enterprises of the state concentrate on producing and selling the things in which they have greater competitive advantage, and importing the things in which they have less competitive advantage, they will be more prosperous.

Since these forces are dynamic, over time some industries and their employment become uncompetitive and shrink while others grow. Addressing these actual and potential economic dislocations—while driving net growth and quality-of-life—is a principal challenge for governments, particularly as globalization and technology accelerate changes in the market.

Generally accepted economic development theory suggests that government can seek to promote areas of competitive advantage, work to mitigate areas of competitive ***dis***advantage, assist with adjustment out of non-competitive activities, help establish entirely new areas of economic demand, undertake some combination or the above, or even assiduously refrain from any government behavior so that market forces can solely determine the positive and negative outcomes of competitive advantage.

California is unusual in that the diversity of its competitive attributes is so great that this diversity is itself a competitive advantage. This diversity also includes areas that are less developed and/or more remote, including rural, border, and economically troubled urban communities. So in addition to growing the economy generally and addressing dislocations, State economic development strategy can consider whether there are international activities that could also help transform the economic potential of such areas into sustainable expanded economic activity.

Economic and social diversity[98]

With its economic and social diversity, California is uniquely positioned to be a preferred global partner of regions around the world, particularly regions interested in innovation, science and technology, emerging high-growth business opportunities, and products and services derived from distinctive California attributes such as specialty crop products, earthquake-resistant construction and unique travel destinations.

This section briefly elucidates the distinctive character of the economic regions within California, the economic clusters characterizing each of those regions, and the emerging and converging clusters within California, given our long and distinctive history as a center of R&D and innovation. It also outlines the distinctive population characteristics of California, a state made up of an unusually large and diverse number of immigrants. A population that has diverse cultural competencies and communities with global links is well-positioned to connect the State's innovation economy with global opportunities.

Regional (geographic) diversity

Various mappings of California economic regions are used within government, including the 12 tourism regions used by the California Travel and Tourism Commission, and the nine economic regions used by the Labor and Workforce Development Agency. The map below was developed by the Center for the Continuing Study of the California Economy (CCSCE) to represent the major sub-regions and economic "clusters" of the State.

As characterized by the CCSCE, but oft described, California is an economy of regions. Each of these regions has different industries, infrastructures and workforces, based upon diverse histories, ecologies and ethnicities. The CCSCE notes that when making public policy, establishing laws and taking other actions that affect the economy, the unique industry composition of each region will lead to varying impacts on the regional economies. A particular industry or cluster may be critical to one region, while not significant to another; only some industries and clusters are of importance to all regions.

San Francisco Bay Area

The Bay Area's economic base has a comparatively large share of California's high tech and professional, business and information service jobs, with particular strength in information technology and

[98] In addition to meetings with the California Department of Labor and Workforce Development and the Economic Strategy, sections 2.2.2 and 2.2.3 draw heavily on the working paper prepared for this study by Mary Walshok, Josh Shapiro and Jasmine Farhad, April 2007).

software, environmental and clean energy technology, biotechnology, digital media and internet services. It was hard hit by job losses in the post-2000 dot com bust. A strong rebound is taking place in most sectors; however, the number of high tech manufacturing jobs is not expected to increase. The Bay Area has an above-average projected basic job growth rate when measured from 2005.

Los Angeles Basin

The Los Angeles basin has an above-average concentration in diversified manufacturing, wholesale trade and tourism and entertainment. This economic base is projected to expand slightly faster than that of the United States, but slower than that of the State overall. Substantial growth is expected in foreign trade through the region's ports and airports, with tourism playing a strong role.

Sacramento Region

The Sacramento region's economic base is heavily weighted toward state government jobs. Sacramento has gained share in many sectors during the past decade, as firms have moved to where land and housing costs are comparatively low for California. Future economic growth in the region assumes a renewal of job growth in state government and professional services sectors related to activities in the state Capitol.

San Diego Region

The San Diego region has a concentration in professional, business and information services. San Diego has the highest concentration of professional service jobs, and it has also gained share in industry sectors including entertainment, biotechnology and pharmaceuticals, defense, and transportation[99]. The region also has a strong tourism base. The San Diego economy draws from a wide labor pool that stretches from Riverside to across the Mexican border.

San Joaquin Valley

The San Joaquin Valley's economic base is concentrated in agriculture-based industries. The region has avoided the dramatic volatility of the other regions because it does not have a high concentration in industries heavily tied to business cycles. The long-term challenge for the valley is to find growth sectors to supplement and build on its large resource-based sectors. Some relocation of activities from coastal regions has occurred, but as yet there is no clear sector to lead the region's economic base into the future. Availability of land and the opportunity to improve goods movement infrastructure connections from the Valley to California's ports mean that trade logistics could be a growth opportunity.

Rest of State

The CCSCE map groups a large swath of rural coastal and mountainous areas as "Rest of State." These areas are characterized by their fishery, forest, mineral and water resources, as well as recreation and tourism. The decline of the forestry sector has impacted many communities. However, there is also a noticeable trend toward small enterprises that can flourish in these lower cost-of-living counties but sell out-of-area, often using the internet to compensate for their remoteness. These enterprises include artistic and gift products, creative design services, and information technology support services.

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[99] As reported by Walshok, taken from SANDAG 2006 traded clusters in the San Diego Region.

Economic diversity and industry clusters

"Industry clusters" draw from companies across a variety of industry sectors in support of a specific segment—for instance a law firm, a test equipment manufacturer, and an engineering firm that support bioscience R&D and manufacturing).

California has eight primary clusters and four emerging clusters that in many instances present substantial interlinkages.

California's primary industry clusters

- **Professional, Business and Information Services.** Professional, business and information services comprise 30% of the California economy and make up the largest sector (in terms of jobs) in all regions except Sacramento (which is led by government) and the San Joaquin Valley (which is primarily resource-based). This sector is particularly strong in the San Francisco Bay Area, where it is more than double the size of any other job sector.
- **Diversified Manufacturing.** Diversified manufacturing is strongest in the Los Angeles region, where fabricated metal products are the largest sub-category, followed by printing and machinery. Diversified manufacturing makes up 17% of the California economy.
- **Wholesale Trade and Transportation.** The wholesale trade and transportation sector comprises around 18% of the California economy. This sector is spread fairly evenly across the regions. Transportation, including rail and truck movement, is particularly focused around the state's major ports and airports, in particular the Ports of Los Angeles, Long Beach and Oakland, as well as Los Angeles International Airport and San Francisco International Airport.
- **High-Tech Manufacturing.** High-tech manufacturing accounts for 7% of California's economic base. It is mainly concentrated in the San Francisco Bay region, followed by San Diego and Los Angeles. The largest sub-category within high-tech manufacturing is semiconductor and electronic components, followed by computers and peripheral equipment.
- **Tourism.** As already discussed , tourism is a leading California sector. To supplement the tourism data already presented, the CCSCE/UC estimate is that total revenue from tourism for California in 2005 was $88.5 billion. Tourism centers on the major counties of Los Angeles ($21.1bn), San Diego ($10.1bn), San Francisco ($9.6bn) and Orange ($8.0bn). As can be seen, these four counties compromise over half of all money spent on tourism. Californians themselves are the mainstay of the State's travel and tourism industry, comprising 83% of domestic travel, or 279.8mn person-trips. Out-of-state visitors account for 55.5mn person-trips. California hosted approximately 8.4mn international visitors in 2004, of which 4.2mn traveled from overseas. More importantly, California garnered an 11.1% market share of total US domestic travel in 2005 and 22.1% of all overseas travel to America.
- **Entertainment.** The entertainment industry generates upwards of $38bn per year. Its main cluster is in Los Angeles, but is expanding into other areas of Southern California, where the number of entertainment establishments has grown significantly. The entertainment industry fuels creativity and growth in many other industry sectors, from computer graphics to tourism. In terms of jobs, tourism and entertainment combined represent the fourth-largest component of California's economic base.

- **Basic Government.** This cluster is strongest in the Sacramento region, followed by San Diego and San Francisco.
- **Resource Based.** Resource based clusters, such as agriculture, timber and mining, are heavily concentrated in rural areas. This cluster centers on the San Joaquin Valley and the other rural areas designated "Rest of State."

Emerging industry clusters

- **Life Science and Services.** This cluster has expanded from a traditional base of medical and health technologies and services into a broader life sciences sector (including biotechnology) that deals with issues ranging from medical devices to healthcare, crop technologies, and alternative energy. This cluster is growing throughout the state, but particularly in metropolitan areas where university, laboratory and venture capital resources are based.
- **Value-Added Supply Chain Manufacturing and Logistics.** California has long been a major logistics hub both for the United States and the global market. However, with the increasing globalization of supply chains and rapid design, development and commercialization of new technologies for delivery around the world, there is new significance and opportunity for value-added supply chain manufacturing and logistics in the state. Among other trends, "Supplier Transformation" strategies are being adopted by manufacturers, small businesses and entrepreneurs to respond to this "flat-world" global manufacturing transformation. California possesses extensive specialized high-tech testing, materials development and production capabilities. Its logistics capabilities are also strong. Combined with its strategic Pacific Rim location, airports, highways, warehouses and distribution centers, there will continue to be major growth in this cluster.
- **"Cleantech" and Alternative Energy.** Cleantech is a relatively new appellation to describe the application of innovative technologies from a variety of sectors to create economically compelling, environmentally friendly products and services for a variety of existing industries—from alternative energy generation and wastewater treatment to "green" consumer products. The emerging cleantech cluster can be a major driver for investments and job growth in California. Already the environmental industry supports an estimated 180,000 jobs, a figure that is expected to rise dramatically over the next decade. Setting the pace, California has also captured a leading position in both public and private cleantech investment. Within the cleantech cluster, alternative energy has become a major subsector, driven by growing attention to climate change, rising fuel prices, and geopolitical concerns. Alternative energy spans a host of approaches in which California is a leader, including solar, wind, water, geothermal, magnetic and chemical, nuclear and other sources, and it includes energy efficiency, energy storage, transmission and management technologies.[100] With California's public and governmental interest in environmental protection, and its wealth of federal, university and private research labs, the state is well situated to take a leading position in the expanding global cleantech sector.

[100] An excellent overview of alternative energy research is available in the recent Bay Area Science and Innovation Consortium report, *Fueling a Clean Energy Future* (San Francisco: BASIC, 2007). The report can be downloaded from http://www.bayeconfor.org/basic/basicevent.html.

- **Nanotechnology.** Nanotechnology, which has the ability to work with matter at the molecular level, has already enabled the creation of materials and systems whose structures and components exhibit novel and often significantly improved physical, chemical, and biological properties. A few nanotechnology-enabled materials have already entered the consumer market, and many more are being developed. Economists predict a trillion dollar global market for nanoproducts in the next ten years and NSF estimates that two million workers will be needed to support nanotechnology industries worldwide within 15 years. As with the semiconductor revolution, nanotechnology is less an industry than an emerging set of scientific knowledge, capabilities and technologies that will be utilized across many industries. California is in a strong position to take advantage of its position in this field due to the leadership of its research universities and private laboratories, its success in commercially adapting technology innovations to create new products, and the relevance of nanotech for industries such as semiconductors where California producers already play a leading role.

Given the current trajectory of the global economy and the changing nature of production, policies and programs that address the needs of business clusters will generally be a more effective economic development strategy than those that only target single industry sectors. For instance, focusing on a cluster such as alternative energy will, on balance, generally be more effective than focusing solely on wind power production.

Population diversity

California is characterized by an exceptional level of demographic diversity.

Stanford's Center for Comparative Studies in Race and Ethnicity has been doing important work on the various dimensions of population diversity of the state, which also speaks to the unique and promising position of California in the global economy.

The regional dispersion of these residents is impressive, representing a potential global economic asset to all parts of California. Of the six California regions identified by CCSCE, all but Zone 6 (Rest of State) are more racially and ethnically diverse than the nation as a whole. In two regions (Los Angeles Basin and San Joaquin Valley) no single group constitutes a majority.

Some 26% of California's residents were born outside of the United States, more than double the national proportion (11%), with slightly more than half of those coming from Mexico and Guatemala and 33% coming from Asia. [101]

Population diversity potentially represents a formidable asset to the State's future global competitiveness due to the linguistic, cultural and relational competencies this large population base represents. Stanford reports that 40% of California households speak languages other than English at home, and of those households 10.7% speak Indo-European languages, 24.6% speak Asian/Pacific Island languages, and 51.7% speak Spanish.

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[101] The Stanford group summarizes it as follows: "Regionally, over a third of the population in Los Angeles (36.2%) is foreign-born, as is 27.4% of the San Francisco Bay Area. At the other end of the spectrum, the Eastern Mountain and Northern regions of the State have the smallest [though still significant –Ed.] percentages of foreign-born people residing in them—4.2% and roughly 7.9%, respectively. In California, 67.2% of Asians are foreign-born, followed by 47.4% of people identified as Some Other Race and 43.9% of Latinos; smaller percentages of Blacks (5.0%), Whites (7.7%) and American Indians (15.0%) fall into this category. People identified as Pacific Islander or two or more races have foreign-born percentages similar to the State average of 26.2%."

California's linguistic and cultural diversity is typically treated as a problem due to its impact on classroom instruction, health care and law enforcement. However, in the new global economy where trans-national collaboration, partnerships and reciprocity are critical to growth and prosperity, population diversity of the kind California enjoys is an asset worthy of development.

Annalee Saxenian's recent book, *The New Argonauts* (Harvard, 2006) underscores this dramatically. Her research on the Silicon Valley, in addition to describing how more than 40% of the entrepreneurs in the Silicon Valley are foreign-born, offers some challenging ideas directly pertinent to California. Saxenian's work suggests that formerly peripheral economies, such as India and China, and increasingly Latin America, can be powerful partners because of the "brain circulation" and productive partnerships that develop between entrepreneurial knowledge centers, such as the Silicon Valley and similar centers across the globe. Research and ideas are shared and "circulated," as well as capital, through co-investment and partnerships in testing, marketing, manufacturing and distribution. Countries around the world are expanding external investment. Potential partners are everywhere. A diverse population that is both technologically and entrepreneurially savvy, in addition to being linguistically and culturally competent, can help California sustain its competitive edge.

R&D and capital

In the global knowledge economy, the seed corn of future product innovation—regional start-up enterprise opportunities and resulting job and wealth creation—is deeply rooted in the intellectual capital and R&D activities of specific geographic locales.

The ecosystem of innovation and economic value creation is not limited to the Silicon Valley, but is replicated in distinct ways in multiple regions across the State.

California R&D funding profile

Overall, California, with 10% of the nation's population, secures annually 19% of all federal R&D support, making it number one among the 50 states.[102]

- California is an R&D powerhouse that performs nearly one-fifth of all federally funded R&D. The state received $18.0 billion in federal R&D funding in the 2004 federal Fiscal Year—18.2% of the national total—giving it a ranking of first place among the 50 states and the District of Columbia, far ahead of second-place Maryland.
- If California were a separate nation, it would be the fourth-largest R&D performer in the world[103] after adding in private sources of R&D funds, behind only the US as a whole, Japan and Germany.
- The Department of Defense is by far the largest federal supporter of R&D in California, sending $9.5 billion to the state in FY 2004. This represents 53% of all federal R&D funds to the state and also represents 20% of DOD's total R&D portfolio.
- Private industry is the leading recipient of federal R&D in California, with $7.9 billion in FY 2004.

[102] Walshok (2007) provides a detailed table of federal R&D funding to California by federal agency and recipient. The table was originally published elsewhere but is derived from National Science Foundation data.

[103] As measured by the level of annual funding devoted to R&D conducted by entities located within the state's borders.

- Federally funded research and development centers (FFRDCs) are the second-largest recipients of federal R&D, receiving $2.9 billion or 20% of all federal R&D funds to California. There are eight FFRDCs in California, the largest being the Jet Propulsion Laboratory (JPL) in Pasadena, operated by the California Institute of Technology.
- Close behind JPL in size is the Lawrence Livermore National Laboratory in Livermore, operated by the University of California. In addition, the University operates four California Institutes of Science and Innovation, including QB3 (California Institute for Quantitative Biomedical Research), CaliT2 (California Institute for Telecommunications and Information Technology), CNSI (California Nanosystems Institute), and CITRIS (Center for Information Technology Research in the Interest of Society).
- California voters recently approved bonds to support the California Institute for Regenerative Medicine, to support stem cell research.
- California's universities and colleges are major recipients of federal R&D grants. Four out of the top 10, and 11 of the top 100, university recipients of federal R&D funds nationwide are located in California. Nine California universities each receive more than $100 million annually in federal R&D funds.
- Federal agencies performed $2.6 billion worth of R&D in their own laboratories in California.[104]
- California's independent nonprofit research institutions received $948 million in federal funds in FY 2004.

California science & technology competitiveness

These data on California's diverse and well funded R&D infrastructure are important because they speak to California's capacity as a leader in the "New Global Economy." A recent Milken Institute Research Report (2004) on California's Position in Science and Technology[105] points out:

> What economists really have been describing with growing frequency in recent years is the movement from a tangible-asset to an intangible-asset-based economy. The economy is not itself new, but the relative importance of economic assets has been fundamentally transformed. In an intangible economy, concepts such as patents, copyrights, customer relationships, brand value, unique institutional designs, the value of future products and services and their structural capital (corporate culture, systems, and processes) become ever more important to firms. Most of the value of the intangible economy is anchored to a firm's stock of human capital and to the locations in which they reside.

According to Milken, although California is slipping *relative to other states* in measures such as business starts, the ability to lure R&D funding, and the percentage of residents with higher

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[104] For more insights and specific recommendations related to the State's relationship to the federal labs, see the California Council on Science and Technology study "California's Federal Laboratories: A State Resource" (February 2006). Directly relevant to the California International Trade and Investment Strategy, the CCST report recommends the State assess and partner to bring research capabilities and facilities to California that will help retain its competitive edge. Report information available at http://www.ccst.us/publications/2006/2006labs.php.

[105] Available in the publications sections of www.milkeninstitute.org.

education, the state still has major leadership capacity in the five technology and science assets categories that are the hallmark of “intangible economies.”

These five asset categories are research and development inputs, risk capital and infrastructure, human capital and investment, technology and science workforce and technology concentration and dynamism. To assess California's relative capacity, Milken compares California to an average of US states across 75 different measures of technology and science assets to generate an indexed picture of California’s relative innovation capacity.

In 2004, California ranked number two in the nation, second to Massachusetts, based on an aggregate of these 75 measures.

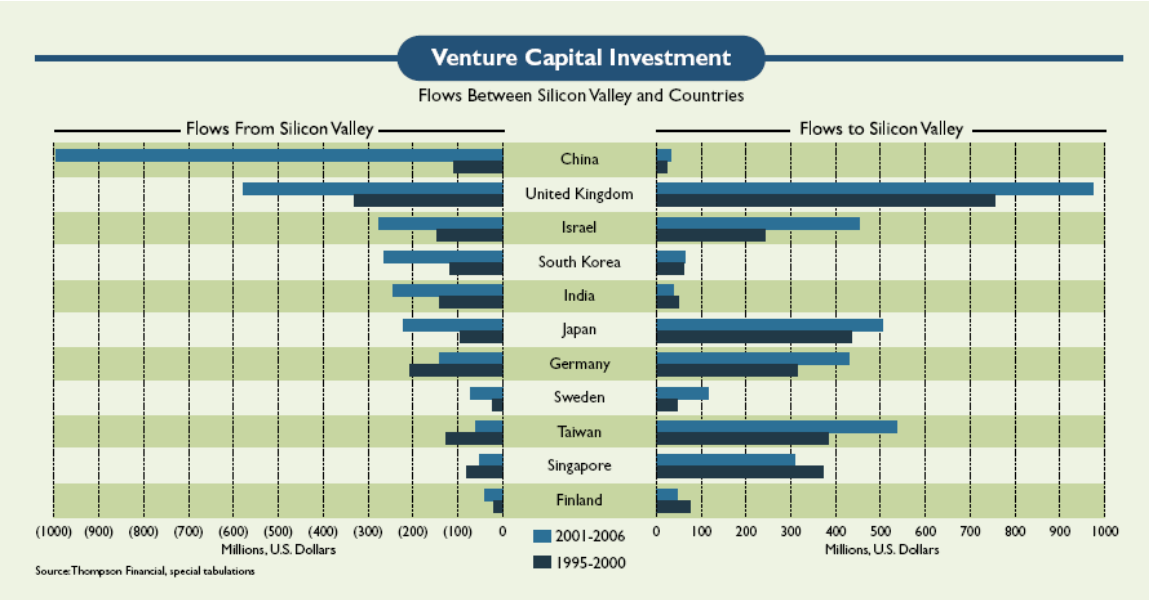
Other measures highlight the state’s promising role as a global innovation hub. The Silicon Valley Index, a report by Joint Venture: Silicon Valley Network issued in 2007, offers some dramatic contrasts.

While underscoring the continued influx of immigrants and the growing language diversity discussed in the previous section, the report points out that California is home to 7 of the top 10 cities in the US for annual registered patents.

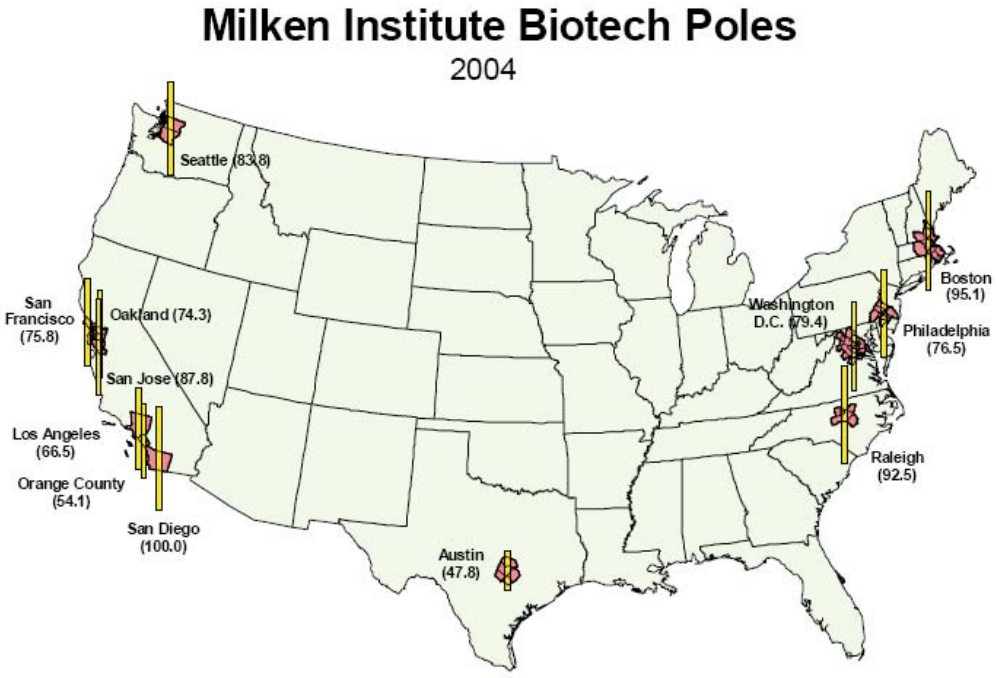
Patenting activity is on the rise, as is venture capital in both the Silicon Valley and San Diego. The nature of the funding is as interesting as the amounts: from 2001-2006, industrial energy funding is up 776%; electronics/instrumentation 72%; media and entertainment 70% and biotech/biomedical 27%.

The number of degrees granted to foreigners in engineering and science now approaches 18% in the Valley and 16% across the State. Patents with co-inventors is also increasing rapidly from less than 4% a decade ago to over 12% in 2005, and this co-patenting is significantly international, with India, China, Italy, Hong Kong, Finland, Taiwan and Australia in the top tier.

Venture capital flows into and out of the Silicon Valley also reveal the emergence of new partners for California in the global network of regions. As the graph below dramatically highlights, VC flows are two-way and international. Nearly every top country involved in investment flows with the Valley has increased the absolute amount of funds both flowing into that country from the Valley and from that country into the Valley.



An example of the emerging power of just one of the R&D clusters, biotech, further drives home the global power of California's innovation economy. In a separate 2004 Research Report focused exclusively on biotech, the Milken Institute developed a biotech-anchored index of robustness similar to the five dimensional factors they used to assess overall science and technology competitiveness. It documents that California has five major biotech centers, with San Diego being the strongest among all US centers, followed by San Jose, San Francisco, Oakland, Los Angeles and Orange County. On a regional basis, the nation's largest concentration of biotech and supporting companies is in the Bay Area. As indicated by the map below, Milken identified only six comparable regions across the entire United States.



Concluding observations on diversity and competitive advantage

This brief overview of R&D capacity across the State—coupled with the economic clustering by geography and California's population diversity—shows the extraordinary robustness of the California economy on the one hand *and* its tremendous flexibility.

As such, California is positioned to be a "preferred partner" for all manner of global engagements in the years ahead, sustaining its leadership role in the global economy.

The conclusion to the Joint Venture: Silicon Valley Network report, paraphrased to reflect all of California, sums it up well. Regardless of a region's strength or areas of specialization, globally competitive regions that are also integrated with other global regions will learn and develop faster, expanding their knowledge, competencies and connections.

The role for California government and its partner institutions should be to connect its diverse capabilities to other innovative regions, and to access, leverage and integrate the best of the best to produce innovation in both technologies and business models. By continuing to invest in talent and new ideas and connecting with other global regions, places such as Silicon Valley and ultimately all of California, can compete and prosper.

Appendix C:
Focus group organization

Four focus groups were coordinated by the Bay Area Economic Forum and held in Oakland (Bay Area World Trade Center), Fresno (Fresno Center for International Trade Development), Los Angeles (Los Angeles Area Chamber of Commerce) and San Diego (San Diego World Trade Center).

The focus groups collected input from 68 companies of various sizes:

Employee base	# Participants
1-9	22
10-49	6
50-199	12
200-499	6
500+	6
Undisclosed	16
Total	68

The participants were either the principal or senior executive of the company or were in charge of international business development, and they represented a diverse set of California industries in the agriculture, manufacturing, services (consulting, banking, investment), and high-tech sectors. The companies' international business development efforts spanned a range of activities (not simply exporting), experience levels (from just beginning to experienced) and intensity (from a minimal share of revenues to more than 50%).

The sample was not large enough to project opinion quantitatively across all industries in California. There were also industries such as motion picture, software, and aerospace that were not represented. However, the researchers, host organizations and participants felt that the results reflected an accurate qualitative picture of major concerns, issues and needs of California companies.

Comments by companies did not necessarily reflect a detailed familiarity with the initiatives currently underway at BT&H or other State agencies, but did reflect perceptions that appear to be widely shared.

The focus groups were scheduled to run for two hours, but ran somewhat longer in some instances.

Participants were asked to provide detailed self-introductions. They were then asked to discuss the barriers they were experiencing in international business development, respond to a prepared list of barriers, and then consolidate and prioritize barriers using a scoring system.

Similarly, they were asked to discuss the primary services they used to deal with the barriers, discuss the service gaps and optimization issues they felt were important, respond to a prepared list of service gaps, and then consolidate and prioritize their wish list of service gaps that should be addressed.

To assess degree of interest in various resource approaches, participants were presented with a list of statements describing possible approaches and asked to score those statements.

Finally, participants were asked to name a single top priority "hot button" issue in the form of "If I could recommend one thing to the Governor."

The scoring system noted above was used to generate composite scores and rankings for the various issues discussed. The focus groups each had different numbers of participants, so to allow comparisons between focus groups, scores were indexed to generate scores on a 100-point scale, and ranked. Scores for each issue for each focus group were tallied and then added together to generate a combined score of zero to 400.

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