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# California and the Pacific Rim Competitive Challenge

Senate Select Committee on the Pacific Rim

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CALIFORNIA LEGISLATURE  
SENATE SELECT COMMITTEE ON  
THE PACIFIC RIM  
SENATOR ART TORRES, CHAIRMAN

**Interim Hearing**



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University of California at San Diego  
October 29, 1990

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# California Legislature

## Senate Select Committee on the Pacific Rim

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To: Members of the Senate Pacific Rim Committee  
From: Terrence Barber, Principal Consultant  
Date: January 7, 1991  
Subject: October 29, 1990 Pacific Rim Committee Hearing  
Preface and Legislative Recommendations

### CALIFORNIA AND THE PACIFIC RIM COMPETITIVE CHALLENGE

#### INTRODUCTION

California faces a critical juncture in our history.

Fueled by a national recession, a consolidating Europe, and robust industrial growth in the Pacific, global competition is rapidly intensifying. Global technology diffusion and deployment challenges our historical comparative advantages in industry and academia.

California's continued economic vitality requires adroit strategic partnerships with Pacific Rim manufacturing and capital resources, yielding access to growing Pacific Rim and other international markets.

With unique comparative advantages in geography, technology, and ethnic diversity, California must leverage its role as the central hub of industrial, academic, and cultural exchange throughout the Pacific Rim. In turn, our unique ethnic diversity promises strong, long-term interpersonal and societal network linkages throughout the Pacific Rim.

Senate Pacific Rim Committee  
January 7, 1991

The potential beneficial economic effects of accessing growing Pacific export markets merit particular attention.

By the year 2000, as Japan and the Four Tigers, Taiwan, Korea, Hong Kong, and Singapore, evolve into more mature, consumer-driven economies, these markets will provide 13 million net new consumers for California exports. Newly emerging countries of Thailand, Malaysia, Indonesia, and the Philippines will provide 68 million, with China providing 100 million.

The trade statistics are compelling. California's exports to the growing Pacific Rim, not including Canada and Latin America, as a whole grew by 18%, from \$17.5 billion to \$20.7 billion in 1989. Exports to Australia grew at 30%; Korea, 24%, Taiwan 23%, and Japan, 20.5%. However, California suffers a trade deficit with the region of over \$33 billion, \$21 billion of which is attributable to Japan.

With a weakening dollar, California exports should and must increase, capturing growth opportunities in the Pacific Rim.

These circumstances highlight the strategic importance of the Pacific Rim. The prospect of strategic partnerships with Pacific Rim manufacturing and capital resources, combined with market access to robust Pacific Rim economies promises continuing growth and prosperity for California.

However, we face enormous challenges and seemingly endless questions:

- \* How competitive are California products and services within the Pacific Rim?
- \* What role must California public sector institutions play in enhancing the state's competitive position?
- \* How can we best leverage our competitive advantages in higher education and technological competence?
- \* How do we translate our advantages of ethnic linkage, scientific and technological prowess, and sheer market size into market access and economic growth?
- \* What is the appropriate role for public policy leaders of the State of California?

These are questions political and business leaders of California must answer.

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**ISSUE: PACIFIC RIM INTEGRATION - CALIFORNIA AS LEADER**

Cross-border Public/Private Strategic Linkage Formation

California leads all other states in the process of economic integration in the Pacific Rim. California businesses have significant operations in Asia and Latin America. Asian businesses tend to congregate in California. To the extent that Pacific Rim developments disproportionately affect California, as a state, California public and private policy leaders must become increasingly active in international policy developments in the Pacific Rim.

California public and private sector decisionmakers are uniquely positioned to provide invaluable input into the institutional process of managing economic integration. California institutions, public and private, comprise a unique force for information dissemination, consultation, and policy development.

It is no surprise, therefore, that the U.S. National Committee for the Pacific Economic Cooperation Conference (PECC) works closely with business, academic, and government sectors of California. A related effort, the official government-to-government Asia-Pacific Economic Cooperation (APEC) process for stimulating economic integration in the region, began last year. APEC is led in the U.S. by Secretary of State James Baker. Recognizing that, unlike Europe, Pacific Rim integration is being led by economic, not political, forces, Baker has suggested that APEC collaborate with the Pacific Economic Cooperation Conference (PECC), a consortium of top business, government, and academic leaders throughout the Pacific Rim.

California policy leaders, public and private must be prepared to fully participate in these supranational policy arenas, at a level commensurate to the state's status as a leading economic, political, social, and cultural force in the Pacific Rim.

In the October 29, 1990 hearing of the Senate Select Committee on the Pacific Rim, as in previous discussions, the leadership of the U.S. National Committee of PECC invited the legislative and executive leadership of the state to explore collaborative arrangements with the PECC, to actuate the unique leadership role within the Pacific Rim for which the State is clearly positioned.

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Pacific Rim, Latin America, and the Free Trade Movement

In this context, any definition of the Pacific Rim must include Mexico and Latin America. In the past year, Chile, Mexico, and Peru became the first Latin American members of the Pacific Basin Economic Council (PBECC), a leading organization of top Pacific industry leadership. Next spring, the PECC also plans to fully admit Pacific Latin American nations.

In view of the emerging US-Mexico Free Trade Agreement, the impact on California-based employment and industrial competitiveness, as a consequence of "back door" market access provided to foreign, particularly, Japanese manufacturers, remains a critical question. Competition from Asian products manufactured in Latin America, particularly Mexico, and imported into California will accelerate.

Driving forces towards this economic trend include lower labor costs and preferential access to California markets. These trends are facilitated by federal initiatives toward Western Hemisphere trade liberalization. Risks of protectionist U.S. public sentiment, including environmental factors, may motivate cross-border cooperation with California.

President Bush is aggressively pursuing his "Enterprise for Americas" initiative to assist Latin American renaissance, in part to address Latin American debt problems. As U.S. efforts toward a North American Free Trade and Latin American Free Trade Zones accelerate, California interests must be effectively represented.

Whether there are opportunities and benefits to accrue to California residents and industry in this phenomenon also remains a question to be addressed.

The dominance of Texas private and public policy leaders in this national effort is an indication of how much is at risk if we do not aggressively command our best role as this international economic drama unfolds.

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**ACTION:**

Explore formal collaboration between the State of California and supranational policy bodies such as the PECC. Create a vehicle for collaboration among executive and legislative leaders for purposes of participation in the PECC and activities of other appropriate policy entities critically affecting the state, including the Office of the U.S. Secretary of Commerce, among others. Primary mandates should include legislative and executive policy and programmatic ramifications of:

- \* The North American (particularly US-Mexico) Free Trade Agreement, including effective articulation in Washington of California interests, taking fully into consideration Pacific Rim factors including:
  - competitive implications of backdoor market access by Asian, particularly Japanese, manufacturers;
  - conversely, opportunities for strategic alliances among California's small and medium-sized enterprises with Japanese and other foreign manufacturers both for access to capital for globally competitive cross-border production and for access to target export markets;
  - seaport and airport and other transportation infrastructural development needs, including offshore (Asian and other) financing opportunities;
  - all other implications for the state's global competitiveness, including impact on the agricultural sector, industrial employment and employability, external economic effects of increased export market development opportunities, and interstate and cross-border competition in the manufacturing sector; and
  
- \* The need for a statewide strategic plan for technology development and deployment (Chapter 1230: Farr, Vasconcellos, Baker, Torres) and the cultivation of a global applied technology information infrastructure (Chapter 1687: Farr, Vasconcellos, Baker, Torres), promoting strategic partnerships between California and our global counterparts, in a manner consistent with the strategic plan, as described below.

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**ISSUE: TECHNOLOGICAL COMPETITIVENESS AND THE PUBLIC INTEREST**

Need for a Statewide Competitive Strategy

Business and government leaders in California must ask how the state economy can most effectively compete and co-exist with the booming economies which will dominate the future of the Pacific Rim.

California is faced with intensifying Pacific Rim and European competition, often characterized by coherent strategic collaboration between business and government. Is California ready to compete for its full share of growing Pacific Rim markets? Does the State of California have a competitive strategy, which envisions taking full advantage of the unique opportunities for strategic partnership and unprecedented growth in the Pacific Rim?

The State of California must seriously be prepared to create an environment supporting the entrepreneurial initiatives of our institutions of higher education and our private sector, towards enhancing our competitiveness. These efforts include cultivating information linkages and organizational innovations in the manufacturing sector, better integrating market intelligence, technological knowhow of employees, production processes, product design, applied technology development, and basic scientific innovation. Support for these efforts will generate meaningful jobs and economic opportunities for Californians.

Juxtaposed to pervasive escalation of global economic competition, most notably including the Pacific Rim, rural areas in California suffer from a lack of economic diversity and lack of access to global capital and product markets. Some urban manufacturing sectors face the long-term effects of the migration of production capital to Asia and Latin America, attracted by cheaper, yet technologically competitive employees, lower land costs, and target market proximity. Declining defense manufacturing expenditures statewide exacerbate this condition.

In contrast, historically, California has possessed significant globally distinctive competencies in science and technology, facilitating the full range of low and high technology commercial applications. These advantages manifested themselves in our institutions of higher education, in our technology manufacturing sector, and in our highly trained research, engineering, and other scientific, technological, and entrepreneurial human resources.



Imperative: Human Resource Development in Science and Technology

Ironically, recent changes in the global competitive environment underscore an increasingly critical vulnerability in California's international strategic position--education, particularly in science and engineering. California's technology industries face a significant shortage of trained scientists, engineers, and technologists, in the laboratories and on the factory floors. The adequacy of public and private financial support for education and technical literacy in the workforce warrants close inspection. This issue is of paramount concern to all California communities, particularly economically disenfranchised populations.

By comparison, Japan's corporations heavily support human resource development and technological education. The societal and financial framework of Japan provides an ability among companies to treat labor as "capital". Key Japanese corporations are highly leveraged with long-term financing from large industrial banks. Japanese banks own more than 22% of corporate equity in Japan. Therefore, Japanese corporations enjoy the availability of relatively low interest debt and the benefits of low after-tax cost of capital after interest deductions. In addition, the same financial institutions spread capital holdings among members of the same historical industrial group, providing a collaborative basis for low dividend pay-out rates.

This configuration frees Japanese corporate managers from having to be responsive to the short-term quarterly vagaries of the public stock market. Therefore, Japanese managers are able to be more flexible with regard to the "strategic capitalization" of labor, including, training costs. In addition, the lack of opportunity for lateral labor mobility means that corporate managers can count on employees staying in place for very long, if not lifetime, commitments. As a result, employees are trained, retrained, and cross-trained over a lifetime by the corporate sector.

By contrast, American corporations must treat labor as dispensable "expenses" in order to remain responsive to the short-term return requirements of public shareholders. High lateral mobility among California employees, a virtue of our free-market economy, yields comparatively lower investments by American corporations in developing human resources, both managerial and labor.

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Therefore, California institutions of higher education, particularly public institutions, play a unique role in supporting the needs of California businesses for a well-educated and technologically competent force of employees. Yet, public coffers run dry. The private sector bears an equally unique responsibility to support education.

This problem is compounded by the fact that the efficacy of the math and science component of the state's K-12 education system pales in comparison to our Pacific Rim counterparts, yet public funds continue to be constrained. Whereas, in Japan, math and science education is universally emphasized at all levels of capabilities, in the face of budgetary constraints, there are increasing pressures in the United States to shepherd limited math and science and related educational technology resources towards readily identifiable gifted and high achieving students.

As a result, while California continues to excel in yielding innovators, the technical literacy of the workforce, as a whole, falls short of the needs of an increasingly technological workplace, subject to intensifying global competition. Moreover, numbers of students continuing through to attain PhD's in science, math, and engineering fail to meet projected demand. Recognizing these challenges, the National Science Foundation, the National Academy of Sciences, and the American Electronics Association place K-12 science and math education as primary priorities.

In the October 29, 1990 hearing of the Senate Select Committee on the Pacific Rim, Dr. Richard C. Atkinson, Chancellor of the University of California at San Diego and former Director of the National Science Foundation (NSF), projects "significant shortfalls between supply and demand for the next several decades at both the baccalaureate and Ph.D. levels" in the United States. Chancellor Atkinson pointed to a recent NSF study, The State of Academic Science and Engineering, projects an average annual shortfall between 1995 and 2010 in the total supply of Ph.D.'s in the natural sciences and engineering of nearly 50% of conservatively projected demand in the United States. Atkinson asserts that "if we believe that education and research are critical for economic growth, international competitiveness, advances in health care, and national security...prudence suggests...that we pursue intervention strategies" at the K-12, baccalaureate, and Ph.D. levels.

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As an outcome of our educational system, California has traditionally yielded brilliant innovators. However, the linkage between basic innovation and commercialization is discontinuous, with innovators seeking technological "breakthroughs", often without the support of long-term capital. Consequently, innovators seek strategic partnerships with corporate, including foreign, partners possessing substantial market access, cash flow, and long-term capital.

The ability to integrate intelligence regarding market needs into the innovation process yields a capacity to produce a balance of short-term commercializable products yielding cash flow to support long-term scientific and technological innovation.

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The American system of autonomous, fragmented entrepreneurship, while arguably crucial for creativity and innovation, remains structurally disconnected from the product commercialization process. The vertically integrated Japanese manufacturing value chain infrastructures tend to integrate market intelligence, production, and product design processes, while purchasing basic innovation and research.

Against this backdrop, foreign, including Asian, investment in California provides opportunity for survival and success for innovative California entrepreneurs, both academic and industrial. Significantly, such strategic partners often comprise foreign enterprises which may exercise dominating power over sources of innovation.

The risk exists, therefore, that Californians may lose control over central corporate decisionmaking, including location of manufacturing facilities and terms of technology transfer. The global diffusion of technological knowhow, whether in Singapore, Japan, or Belgium, means that California's comparative advantages in technological innovation may diminish commensurately. This has already occurred in the field of production and process technologies and organizational techniques.

Technological preeminence of the Pacific Rim workforce already cannot be denied. However, organizational approaches and other technical benefits of the Pacific experience appear to be transferrable and adaptable to various cultural settings, as evidenced by success stories throughout Asia, and more recently, Mexico.

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California institutions of higher education and selected state agencies are uniquely positioned to collaborate with Pacific Rim and California businesses in promoting the reciprocal transfer of key production technologies and knowhow, enhancing our manufacturing human resource infrastructure. Examples of current, promising economic development efforts, integrating human development, technology deployment, and global market access priorities within California institutions of higher education, include the California Community Colleges Economic Development Network (ED>Net) and the Connect Program at the University of California at San Diego.

Just as corporate leaders develop competitive strategies specific to the needs of each enterprise, and just as Japan executes "seisaku sangyo"--orderly industrial strategy, the time has come both for the State of California to begin to draft a coherent, comprehensive California strategy for technological competitiveness and for the debates which the process will certainly engender.

**ACTIONS:**

Implement bipartisan legislation, now enacted into law, created in 1990 by author Assemblyman Farr, Assemblyman Baker, Minority Leader, Assemblyman Vasconcellos, Chairman of the Assembly Ways and Means Committee and Senator Art Torres, Chairman of the Senate Select Committee on the Pacific Rim, among other leaders in the legislature in close consultation with the Administration, in which the Administration and the Legislature address the need for:

- \* a statewide strategic plan for technology development and deployment (Chapter 1230) and
- \* the cultivation of a global applied technology information infrastructure (Chapter 1687), promoting strategic partnerships between California and our global counterparts, in a manner consistent with the strategic plan.

These new statutes call for public/private collaboration in pilot programs and overseas missions, working with our small and medium-sized businesses and institutions of higher education to develop cross-border linkages to access international product and capital markets.

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Through **Chapter 1230**, "Toward the 21st Century, A Strategic Plan for Technology Development and Deployment", the State of California can foster the development of immediate and long-term policy strategies for technology development and deployment, while identifying promising pilot initiatives throughout California addressing the need for technology extension programs, focusing on human resource development priorities. The pilot programs would reflect collaboration among private entities and institutions of higher education, including the California Community Colleges Economic Development Network (ED>Net). The new statute aims at generating a roadmap for stimulating California's economic vitality and global competitiveness, fulfilling California's yet untapped potential in economic development.

**Chapter 1687**, the recently enacted Global Applied Technology Extension Service (GATES) statute, enhances and clarifies the roles of the World Trade Commission and the Governor's Coordinating Council for International Programs, as follows:

- \* To help develop and coordinate statewide public information and consultative resources, including the ongoing efforts of state agencies and institutions of higher education to address global technological competitiveness and trade;
- \* To develop linkages and information exchange with counterpart educational, public and private institutions globally, in part by "deputizing" collaborative efforts among California public and private sector specialists and professionals operating abroad in affiliation with GATES;
- \* To assist technology transfer and market development efforts of the private sector, with particular attention to the needs of small and medium-sized enterprises for easy access to pertinent and timely public information.

Pursuant to Section 15364.23 of the statute, the Governor's Coordinating Council for International Programs may need to assume direct responsibility for GATES in order to facilitate integration of the significant, yet uncoordinated, advances already developed among state agencies. The viability of this approach remains a subject of legislative oversight and inquiry.

Pacific Rim government representatives have expressed strong enthusiasm about linking their technology needs with integrated resources in California. The State of California may, in this manner, enhance market access in difficult markets, particularly for small and medium-sized enterprises.

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**ISSUE: GLOBAL LEADERSHIP IN ENERGY/ENVIRONMENTAL TECHNOLOGY**

One example of an arena in which the State of California can add substantial value to regional policy developments is the energy/environmental field. California is the global leader in energy and environmental technology innovations, including agricultural biosciences. Cross-border government collaboration can yield major opportunities for California businesses.

Global warming demonstrates the need for global cooperation to achieve a balance between economic development and environmental responsibility. New industrial processes for energy conversion are consistently derived from California's aerospace industries.

Environmental issues permeate Pacific Rim economic development efforts. Pacific Rim nations, including Indonesia, the Philippines, and Brazil, are under increasing criticism for deforestation practices. Sulphuric coal-related air pollution has reached epic proportions in China. Moreover, the juxtaposition of domestic environmental (pesticide) restrictions in agricultural production and the differential treatment of agricultural imports from Latin America and Asia is increasingly controversial.

Accordingly, Pacific Rim government officials clearly express interest in acquiring technological knowhow, including reforestation, agricultural biotechnology, and alternative energy technologies from California. They all expressed an interest in the question of "environmentally sustainable" economic development.

The State of California can play a major role in providing economically viable avenues for technology transfer. Technology transfer through academic institutions should coincide with export opportunities for business.

According to the California Energy Commission, Asia/Pacific, Latin America, and African governments express needs for commercially viable alternative energy technologies, addressing demand for low-cost energy, use of renewable indigenous resources, diverse, reliable, secure energy supply, and positive environmental benefits.

The Energy Commission Energy Technology Export Program assists small and medium-sized alternative energy businesses to export technological goods and services. These technologies include solar, thermal, wind, biomass, geothermal, photovoltaic, small hydroelectric, cogeneration, and conservation.

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"Alternative energy businesses have emerged in California as a multi-billion dollar industry. It includes an estimated 1,500 firms manufacturing, selling and servicing a wide array of technologies and products. In fact, this industry accounts for 50 to 90 percent of the U.S. market for several major alternative energy technologies."

As exemplified by the energy/environmental field, California public policy decisionmakers must maintain an environment enabling California-based small and medium-sized enterprises to fully exploit distinctive comparative advantages in competing for lucrative Pacific Rim markets.

**ACTION:**

Initiate the Global Applied Technology Extension Service (GATES), as authorized in Chapter 1687 of the Statutes of 1990, with an initial focus on the environmental technology sector. Through GATES, stimulate private sector participation in developing cross-border database and networks, by integrating existing communications infrastructure with existing institutional and interpersonal market intelligence available among state and federal agencies, institutions of higher education, and the private sector.

Pursuant to Section 15364.23 of the statute, the Governor's Coordinating Council for International Programs may need to assume direct responsibility for GATES in order to facilitate integration of the significant, yet uncoordinated, advances already developed among state agencies. State agency efforts in the environmental technology field include, but are not limited to the Energy Commission Technology Export Program, the Department of Commerce Environmental Technology Program, and the World Trade Commission marketing programs with various public and private initiatives in information dissemination including:

- \* California Education and Research Federation Network (CERFNet) at the San Diego Supercomputer at UC San Diego,
- \* Pacific Rim Commercial Exchange Project at CSU Sacramento,
- \* MEMEX Institute Project at CSU Chico,
- \* California Community College EDNet System, and
- \* various related private sector initiatives.

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### CONCLUSION

As the Pacific Rim integrates and global competition intensifies, are California public policy interests adequately represented, particularly as they pertain to market access, technological competitiveness, and environmental stewardship?

Access to these Pacific Rim markets requires adroit strategic alliances among California entities and Pacific Rim counterparts.

In this context, California faces a paramount need to enhance foreign language/cultural literacy, technological learning, and international business competence of its human resources. Focused collaboration and information networking among industry, academic, and government sectors will be increasingly vital.

Our government and business leaders need the will to lead. The public certainly expects that California will capture our full share in the world's richest trading region, the Pacific Rim.



**SENATE SELECT COMMITTEE ON THE PACIFIC RIM  
INTERIM HEARING**

**SENATOR ART TORRES, CHAIRMAN**

**Graduate School of International Relations and Pacific Studies**

**University of California, San Diego**

**October 29, 1990**

**SENATE SELECT COMMITTEE ON THE PACIFIC RIM**

Interim Hearing, October 29, 1990  
Graduate School of International Relations and Pacific Studies  
University of California, San Diego

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**SENATE SELECT COMMITTEE ON THE PACIFIC RIM**

**Interim Hearing, October 29, 1990  
University of California, San Diego**

**I. INTRODUCTION**

CHAIRMAN ART TORRES: I would like to get started on time because we have a number of subject matter areas to review and also to receive input from. This is the first of a series of hearings and conferences planned for the 1991 session exploring the role of California within the Pacific Rim. Today's hearing will focus on:

- 1) describing current movements toward economic, cooperation, and strategic partnerships among business, academic, and government sectors throughout the Pacific Rim region; and
- 2) ensuring that California interests including market access, technological competitiveness and environmental stewardship are adequately represented in current regional business and economic policy developments.

The hearing will help, I hope, to find an effective leadership role for California policy decision makers in facilitating cross border economic cooperation throughout the Pacific Rim to the benefit of California. We have invited, I believe, expert witnesses from government, industry, and academia to assist this Committee in setting the stage for the Legislature once it reconvenes in January of 1991.

I would like to thank Chancellor Atkinson of the University of California at San Diego and Dean Gourevitch of the Graduate School of International Relations and Pacific Studies for hosting this hearing. I'm certain that this hearing reflects a long-term collaboration to come with the University and this Committee.

The official government-to-government Asia Pacific Economic Cooperation (APEC) process for stimulating economic integration in the region began last year, led in the United States by our own Secretary of State, James Baker. Recognizing that unlike Europe, Pacific Rim integration will be led by the private sector, Baker has suggested that APEC collaborate with the Pacific Economic Cooperation Conference (PECC), a consortium of top business, government and academic leaders throughout the Pacific Rim.

In the past year, Chile, Mexico and Peru became the first Latin American members of the Pacific Basin Economic Council (PBEC), which is a leading organization of Pacific Industry leaders. The role of the State of California remains, at this point, to be explored. Competition from Asian products manufactured in Latin America and imported into California will accelerate. There is no doubt about it.

Driving forces towards economic integration include, of course, lower labor costs and preferential access to California markets. The risk of protectionist U.S. public sentiment, including environmental considerations, may partly motivate cross-border cooperation with California.

It's obvious that the implications for California of Federal initiatives toward trade liberalization throughout the Western hemisphere need also to be examined. Conversely, in the face of declining defense spending and a recessionary U.S. economy, tremendous economic potential for growing Pacific export markets merits our presence here and our further attention.

By the year 2000, as Japan and the Four Tigers (Taiwan, Korea, Hong Kong and Singapore) evolve into more mature and consumer driven economies, these markets will provide 13 million net in new consumers for California exports as well. Newly emerging countries of Thailand, Malaysia, Indonesia and the Philippines will provide about 68 million, with China, of course, providing well over 100 million.

Access to these Pacific Rim markets requires, I believe, adroit strategic alliances among California entities and Pacific Rim Counterparts. In this context I believe that California faces a paramount need to:

1. Enhance foreign language and cultural literacy;
2. Enhance technological learning;
3. Enhance international business competence of our own human resources here in this State.

Focused collaboration and information networking among industry, academic and government sectors is going to be increasingly vital. The unique strengths that we have in terms of our geography, our technology and ethnic diversity here in this State present, I believe, a significant opportunity for California to lead as a principal hub for business, technology and cultural exchange among Asian, Soviet, Latin American, European and U.S. interests throughout the Pacific Rim.

Today's hearing, I hope, will reflect the Legislature's commitment to exercise California's leadership in promoting cooperation and growth within the Pacific Rim, and I appreciate very much the attendance of all of you at this symposium which we're calling a hearing.

To my left is Mr. Terrence Barber, who is Principal Consultant to the Committee and who is responsible for putting together our agenda today.

## II. PACIFIC RIM INTEGRATION

### A. Cross-Border Private/Public Collaboration in the Pacific Rim

CHAIRMAN TORRES: Is Dr. Choate here yet? Ah, you walked right in front. Welcome to the Committee.

ALLEN C. CHOATE: Thank you.

CHAIRMAN TORRES: Dr. Allen C. Choate is Executive Vice President of the Asia Foundation, formerly Executive Director, Center for Asian Pacific Affairs, housing the U.S. National Committee for Pacific Economic Cooperation, the PECC.

DR. CHOATE: Thank you very much. I'm a little breathless. You'll have to excuse my late arrival, I'm afraid the San Diego Airport was fogged in this morning, so we were an hour and a half late getting in.

CHAIRMAN TORRES: I drove in last night, I understand.

DR. CHOATE: Thank you very much for the opportunity to lead off this morning. I will limit my remarks to about ten minutes or so, especially since I see Professor Krause sitting over there and you can't have a better specialist on this topic than he to address this.

I would just like to try and provide some very quick answers to about five basic questions. First, what is the concept of Pacific Economic Cooperation?. Second, what are its origins? What's the current status of this alphabet soup of acronyms, PBEC, PEC, APEC, etc.....? How are they perceived and what about their future? Finally, just a couple of remarks I hope will be useful concerning California connections and California roles.

The concept of Pacific Economic Cooperation is basically an idea which fosters and promotes open and market oriented economies primarily through the promotion of freer Pacific Rim trade, but also by encouraging structural economic reforms in liberalization. It has been consistently on the record, that APEC and PEC personify those ideas pro-GATT (not a trade block operation), in support of various liberalization proposals that have been considered in the current Uruguay Round.

One particular characteristic of this specific economic cooperation movement that makes it different from the European efforts of some decades ago is that, whereas in Europe the OECD represented a political initiative which led to economic policy cooperation and cooperative institutions, the Pacific Economic Cooperation concept is primarily market-driven. It is driven by market economic forces. What we have in the APEC phenomenon, I think you could characterize as an effort by governments to somewhat recognize what is going on in the private sector and come to terms with them.

What are the origins of PEC, APEC, PBEC and these other acronyms which are concerned with economic cooperation? It should be noted that the idea was first spawned in the late 1960's and is, with hindsight, now viewed as a somewhat unrealistic perhaps romantic idea of a Pacific Economic community, not unlike the EEC. Those first efforts were, as I indicated, found quickly to be unrealistic for a variety of reasons and then, after a not too lengthy hiatus, more organizations were formed to address the economic trends that were underway in Asia. The first of these was PFTAD, here's a new acronym, although an older organization perhaps the first in this group. PFTAD stands for the Pacific Free Trade and Development Conference. It is an association of economists and academics investigating regional economic trends. PBEC, on the other hand, the Pacific Basin Economic Council is an association of businessmen also established in the late 60's to represent private business interests in those regional trends. And, both PBEC and PFTAD today have institutional membership in PECC, the PECC.

If I'm talking too fast and if you're not familiar with all of this, we can go back over that later if you like. The PECC itself, the Pacific Economic Cooperation Conference, was formed as a result of the first meeting in Canberra, Australia in 1980. It was deliberately formed as a network of national committees, each tripartite in composition (business, government and academic elements). The purpose was to fashion constructive policy recommendations concerning regional trade and investment and what had become all too clear by 1980 as the vital lively and growing inter-regional trade in the Asian Pacific region.

Finally, APEC itself is an inter-governmental initiative, an official initiative, a series of meetings rather than an organization which first met in Canberra in 1989, and in Singapore just this past July. It will meet again in Seoul in 1991, in Bangkok in 1992 and then in the United States, at a site to be determined, in 1993. These meetings are intended to provide an informal dialogue for officials to discuss trade and economic issues. It may have been mentioned that at the first meeting in Canberra, Secretary Baker, Ambassador Hills, and Secretary Mosbacher all attended.

Now, what is the current status of PECC and APEC, in particular, since these are the leading organizations? They've both developed work programs which to a large extent mirror one another's agendas. These agendas include trade and investment data review, trade promotion, investment expansion and technology transfer, multilateral human resource development initiatives (which had been particularly pushed, I think by the ASEAN countries), energy cooperation, marine resource conservation and telecommunications.

APEC and PECC are in the process of working out a cooperative and collaborative set of relationships. PECC is an official observer at all APEC meetings now. The specific economic outlook about which Professor Krause can certainly talk, since he's the coordinator of that project, serves as a reference for the official trade and investment review conducted by the ministers. The PECC Fisheries Taskforce, for example, coordinates closely with the APEC work group in this area and so on.

Just to delineate membership, PECC at the present time is larger than APEC. APEC consists of Australia, New Zealand, Japan, Canada, Korea, the United States and all of the ASEAN countries. PECC has 15 member economies with--as you mentioned--Mexico, Chile, Peru, Hong Kong, and the Soviet Union all applicants. It is anticipated that at the next general meeting of PECC, which will be in Singapore in May, at least Mexico, Hong Kong, perhaps Chile, perhaps even Peru will be admitted to formal membership.

How are they perceived? I'm watching the time here. I don't want to consume too much. It must be remembered that neither of these groups at the present time are formal organizations or institutions as we normally understand that, with an infrastructure and support staff.

The PECC has within the past year or so established a small relatively modest permanent secretariat in Singapore. Each of the member committees has an institution or a free-standing small group of staff which serve as the national secretariat for each member committee.

So, PECC views itself as process more than an institution and APEC even more modest than that, just views itself as a series of non-formal meetings among officials.

There are three views of these movements that can be identified. First, those who view the whole APEC/PECC as an idea whose time has come. I think you will find that this idea is most commonly held by specialists and economists and observers of the economic trends in the region who can see quite clearly that the pace and volume of trade investment and other economic activity is increasing and, therefore, that the idea of forming some new ways of addressing economic cooperation is a logical consequence to follow that trend.

Second, those who view APEC and PECC, and the idea and the process behind it, as an idea whose time has not yet come but may in the not too distant future. I think that you'd find that that idea is held largely by businessmen who want to know where the payoff in all of this is. Where's the beef? When you have a group of individuals and associations and organizations who are meeting to talk policy and make recommendations for businessmen interested in bottom lines, they want to know what that bottom line is going to be. They want to see evidence of direct input into policy conclusions that will facilitate their trade. All of these are somewhat oversimplified, of course, but I think there are trends they'll be able to identify.

CHAIRMAN TORRES: In 1990--the meeting you mentioned in July 1990, there were seven work projects identified.

DR. CHOATE: Yes.

CHAIRMAN TORRES: Are those the kinds of bottom lines the business sector is looking for from your perspective?

DR. CHOATE: Well, I think there are two kinds of bottom lines, one policy, one very much applied. The policy one would be...for example, I was noticing in the newspaper the other day that Thailand has been recognized or, if that's the word, cited as the primary offender of intellectual property rights globally by a variety of international associations. The attempts to deal with that on a policy and regulatory format are of direct interest to, for example, software producers who don't want to see their products go to Thailand because they'll be ripped off. In addition to sanctions and punitive measures, there are some positive policy steps and regulatory steps that can be taken and I'd suggest that in bodies like APEC and PECC they stand a better chance than in formal, official, bilateral negotiations.



The second example is an applied one. If the work programs of APEC and PECC have to do, for example, with infrastructure development; again, I'll use Thailand as a case in point. Thailand is a booming economy but one whose infrastructure in telecommunications, roads, etc., is running way behind its capacity to absorb foreign investment. There's a lot of opportunity for contract work should the Government of Thailand make the commitments necessary to improve its infrastructure and I think those commitments are probably forthcoming. The encouragement of what would be viewed as activity in everybody's interest, the development of new telecommunications systems, roads, ports, etc. (in this case I'm using Thailand as an example) produces more business, simply stated, and that would be the other payoff businessmen would like to see, if that answers your questions.

CHAIRMAN TORRES: What were the seven projects identified?

DR. CHOATE: I quickly ran through those work programs earlier, trade and investment, trade promotion, investment expansion, technology transfer, human resource development, energy cooperation, marine resource conservation, telecommunications that's APEC's work program. The PECC Task force is...

CHAIRMAN TORRES: Yes, but which of those projects could California interface with from your perspective, most adroitly, as opposed to another?

DR. CHOATE: Well, I guess I would focus on telecommunications first.

CHAIRMAN TORRES: Why do you choose that?

DR. CHOATE: Because of California's comparative advantage in high tech development, and the locations of the number of corporations in this area that have services and products to deliver. There are others in science and technology, Hewlett Packard, for example, is very active in the PECC science and Technology Taskforce, and I would assume that they see potential developments that would be conducive to their own business interests in that area.

CHAIRMAN TORRES: In APEC, Canada is handling the environment. In what way do you see California participating in that relationship?

DR. CHOATE: I'm sorry, in which...

CHAIRMAN TORRES: In APEC, Canada is handling environmental issues through that organization as I understand. How can California interface with that?

DR. CHOATE: Well, the environment, as I understand it, is focused primarily on fisheries and marine resources and it is true that Canada is the lead group taking the initiative on that. But once again the resources that APEC has available to it are the resources of PECC and any other entity, any other group within any of the participating nations that seeks to be assertive in promoting policies and in making recommendations. In other words, the APEC does not have an in-house capability for conducting the inventories and for developing the policy recommendations necessary other than through their own Ministries of Foreign Affairs, Ministry of Economic Affairs. In the case of the United States, I believe that APEC looks to a number of outside organizations, PECC primarily, but to a variety of policy institutions as well as the business sector for soliciting ideas and recommendations on how to deal with some of these issues. The U.S. National Committee of PECC is in the process of, I guess it has developed, an APEC advisory program which would allow sectoral business interests to ban together to make inputs into the APEC process, to arrive at policy conclusions, creating the conditions that would be more conducive for enhanced business.

CHAIRMAN TORRES: In terms of APEC's relationship to our Federal Government in terms of higher education or education as a whole, do you envision a role for the PECC in that relationship as well?

DR. CHOATE: You're referring primarily domestically to the improvement of educational needs in the U.S. system? Quite frankly, I honestly don't. I may have a narrow vision on this but I think that the PECC mandate is primarily one that is concerned with foreign relations, if you will. There is...

CHAIRMAN TORRES: With all of these organizations that are emerging, how does APEC interface with its initiative for education with how you see it perhaps?

DR. CHOATE: My understanding of the APEC initiative on human resource development is that that initiative was generated primarily by the Southeast Asian countries and I think that they are looking primarily at the need for certain kinds of labor and also at problems which go beyond just education.

CHAIRMAN TORRES: So it's more vocationally oriented?

DR. CHOATE: Could be, but it also deals with questions of migration, workforce unemployment, under-employment, questions of that sort. I keep on referring back to Thailand because it's the country I know best at the moment, but there is a question of a rapidly developing economy which is short of that middle level--the foreman level, technician level--in its workforce, whereas in Singapore there simply aren't enough people to go around. They have to import labor. As I understand it, the focus of this initiative is more in the question of labor flows, labor force than it is on education at the present time although it's fairly comprehensive.

CHAIRMAN TORRES: Well, the President has indicated he's going to fund APEC's initiative by ten million dollars for this project over five years with an additional twenty million planned from the private sector and other sources.

DR. CHOATE: The APEC initiative in human resource development?

CHAIRMAN TORRES: Right, right.

DR. CHOATE: Well, then I'm not aware of the details on that particular initiative. I knew that it had come from the Southeast Asian countries. I'm not sure whether the financial resources pledged by the United States will be going toward the development of southeast Asian educational program or survey. I'm simply not familiar with that.

CHAIRMAN TORRES: All right.

DR. CHOATE: That would be my assumption. That doesn't necessarily mean I agree with that idea.

CHAIRMAN TORRES: Of course, but that's not unique today. We have many Republican Congressional candidates not agreeing with their President.

DR. CHOATE: Let me just make a couple of closing comments before taking up too much more time. I'd mentioned two views of APEC. The third one is that it is a risky idea whose time may never come; and that idea is one that you hear privately by representatives of certain governments, especially in Southeast Asia who feel that in order for this kind of mechanism to be successful, they'll have to cede some of their control. I won't say their sovereignty, that's a little too dramatic, but that they would not have the flexibility and room for maneuver that they've had in the past. Now, what about the future?

First of all, APEC and PECC have their momentum generated at the present time. Just carrying out their schedule will take them through the next two years. The importance of these two groups, APEC and PECC will be determined by the need to manage regional economic interdependence and that need, I'd suggest may become more critical in a period of economic slowdown, as we're all aware this is a part of the world which has experienced nothing but growth and rapid performance year after year. If that should slow down to any significant degree, one could speculate that the need for some coordinating mechanisms for coming to terms with some of the need to manage,--I wouldn't call them dwindling resources--but less available resources might become more important.

Secondly, despite APEC and PECC claims, and they're sincere claims, that they are not in anyway directed toward the formation of trade block, there are those who would wink and say, this does provide insurance in the event of a collapse of the Uruguay Round or less than successful of the Uruguay Round. Then countries will have to look at other mechanisms, other ways to establish functioning trade regimes. This could be one potential way for that.

And, finally, of course, the idea of Europe '92. Once again, this is an insurance policy drawn by the countries of the Asia Pacific region--if they are locked out--they have their own economies to fall back on and interact with. What's the California connection and interest? Let me make one announcement here, the next general meeting of the PECC will be in Singapore, as I indicated in May of '92. Following that in the fall of '93 will be the next general meeting. These are held roughly every year and a half or so. That meeting will be held in the United States and it's been determined that it will be held in San Francisco in California. That has the endorsement of the Governor of California. We would also like to have, at that time, if at all possible; a major meeting of APEC to be held more or less simultaneously with that significant meeting. It would--it could possibly by that all of these that I mentioned about the significance of APEC could come to a head about that time.

The California connection, as I mentioned Professor Krause is sitting over here. The Pacific Economic Outlook...

CHAIRMAN TORRES: Waiting patiently to...

DR. CHOATE: And I've gone on too long.

CHAIRMAN TORRES: No, no, no.

DR. CHOATE: I have brought some materials here including several copies of the Pacific Economic Outlook which is a forecast that Professor Krause can talk about. He serves as the coordinator for that project which involves 15 countries. A California corporation, the Inter Pacific Group has partially funded that and my organization, the Asia Foundation also supports it and serves as the West Coast Office for the U.S. Committee of PECC.

Of the 90 members of the U.S. National Committee for Pacific Economic Cooperation, 25 are from California, that's by far the largest number from any single state. The opportunity for California to have its concerns and interest represented on the U.S. National Committee and therefore in the International Floor of the PECC are significant. The California interests are able to raise issues that are of priority concern to them at anytime through the membership of the U. S. National Committee, the California membership, and again, I have some lists of all of the Committee members indicating those--obviously those from California as well.

I mentioned earlier the APEC Advisory program is a new effort by the U.S. National Committee to make sure that sectoral business interests in the United States have an opportunity to register their concerns, raise questions and have them carried through with the official fora of APEC, and more information on that will become available as this program gets. But I would suggest that more active involvement in the U.S. National Committee by those that are already members of the U.S. National Committee from California is one means for furthering California interest and participation in the APEC Business Advisory Program would be a second, and I'll stop at that.

CHAIRMAN TORRES: Give my best to Bill.

DR. CHOATE: I will.

CHAIRMAN TORRES: All right.

DR. CHOATE: He says hello.

B. Strategic Linkage Formation - Leadership Opportunities

CHAIRMAN TORRES: Sergeants, we're going to have to move the witness table over here, otherwise I'll need a chiropractor by the end of the day. Maybe we need to move these chairs over further.

CHAIRMAN TORRES: The proximity, Professor Krause, will encourage more dialogue and informal conversation. Welcome to the Committee. Professor Lawrence Krause, Coordinator of the PECC Forecasting Panel, distinguished by other credentials as well. Welcome to the Committee.

PROFESSOR LAWRENCE KRAUSE: Thank you very much, Mr. Chairman. I wish to thank the Committee--do you have--did I interrupt you?

CHAIRMAN TORRES: No!

PROFESSOR KRAUSE: I wish to thank the Committee for giving me the opportunity to appear before you today to discuss some ideas that are very close to my heart. For over twenty years, I've been a close observer of growing economic interdependence in Pacific Rim, and have directed my research to understanding and promoting this very important economic phenomenon.

Now today, I want to discuss five things with you. The nature of economic integration in the Pacific -- all briefly I should say -- secondly, the challenge of Europe to the Pacific. Thirdly, to pose the question, "What is the United States, now that the Cold War is over, and the new European home is being created". Fourthly, the nature of institutional development in the Pacific. And finally, what is the role fo California in this?.

Not without some irony, the end of the Cold War has suddenly elevated the importance of regionalism in the Pacific. What actually exists is a Pacific Basin--in the Pacific Basin is a process that's leading to very close economic relations--a process that has significant force and momentum behind them. I am conscious of the fact that I have sent this testimony to you so I am going to go through this very quickly and try to avoid duplicating what Allen Choate has already said. It is important to understand that the countries in the Pacific have consistently and universally denied that they wish to form a common market. That is, a principle of Pacific integration is no discrimination against the outside. That is an important principle, but it's interesting nevertheless to compare the Pacific Rim with what has happened in the European community. Because, in one respect, they are similar in that they have a common goal to promote international trade and merchandise.

I've provided a table to you, and I'm not going to go through all the numbers, but I want to point out the message of that table. And that is, if you look at the last twenty years, the Pacific economies are more dynamic, both in the growth of output, their growth of international trade and the degree to which they've become integrated. In other words, the Pacific countries trade about 66% of all their trade with each other. The European countries trade about 56% - 58% with each other. Now, it's only the Europeans that discriminate; so theirs is, in a sense, forced. In the Pacific, that is a natural consequence of economic forces, and I'm suggesting that these data suggest that the Pacific is a more natural economic unit than is Europe.

However, the Cold War--the end of the Cold War has created a lot of changes, including the reunification of Germany, the marketization of Eastern Europe, the decentralization and possible dismemberment of the Soviet Union, and all of these changes are identifying the United States because they are shaping the global environment. One of the most important implications of these developments, along with Europe 1992, is that a larger, stronger and more unified Europe is being created and the announcement that a currency decision has been made with all countries with the U.K. aside, have agreed to form a common currency. That's quite a significant development when you give up your national currency.

European regionalism is a reality and it is incompatible with a concept of a global economy. Within Europe there is a difference between treatment--in treatment--between those who belong and those that do not. The totality of Europe is simply too large to be one element in a global economy in which there are no other groupings of comparable size.

Other countries will find they will need countervailing power to meet the challenge on an enlarged Europe. The challenge could be one of indifference--that is, Europe is so preoccupied with internal issues that they will have no interest in nor care about the rest of the world. And getting Europe's attention will be difficult to even complete the Uruguay round, after that it will be next to impossible. And the second challenge, of course, will be discrimination. Well, that takes me to the question of "What is the U.S. now that the Cold War has ended and Europe has created a larger home." The United States is an ever-changing country because Americans are so mobile, and significant numbers of immigrants are still coming to our shores.

The origin of the new residents of the United States are also changing. They are increasingly coming from Asia and Mexico; hence the U.S. and especially California, is becoming more Asian and more Mexican. It should also be noted that it is the first generation of immigrants whose previous national ties are most important.

Furthermore, the last two wars of the United States were in Asia, so even security is no longer dominated by Europe. However, what is most important is that Europeans clearly do not consider the United States to be part of the new European home. There is absolutely no inclination in Europe to give special consideration to the United States when economic issues are at stake. Hence, I believe that from an economic perspective, and economics is going to be of growing importance in international relations, the United States is a Pacific country wherein from an economic point of view, we are just as much a Pacific country as Germany is a European country.

Economic forces are propelling the United States into closer integration with the Pacific Rim. If Mexico should become identified with the Pacific, which entirely possible, that's intriguing, now that even greater momentum will build in the same direction.

Well, if that is all -- if you take that as a working premise, then the question has to be asked, "Need the Pacific Basin develop more institutional structure?" Allen has described where we are at present. I think there are several reasons why more institutional structure will be needed. The necessity for effective national economic policymaking will force us to more institutions; the needed amelioration of economic disputes and conflicts might well require more institutions; and finally the opportunities for creating joint action.

Now, with respect to Europe, it will be disputes with Europe. They may well force a United Pacific response, and indeed a united response will be the only way to mount countervailing pressure without starting a mutually destructive economic conflict. Clearly, some institutional structure will be very useful in building a consensus of views in the Pacific, and in arranging the modalities of negotiation.

I want to reinforce what Allen said about the process of integration in the Pacific being the reverse of the European community. European community starts with politics, goes through national law-making and then gets to the economic result. In the Pacific you start with economic forces, forcing integration -- everyone sort of becomes aware of it and then the institutions are created at the end of the day that are necessary to help this process along and make it improve the economic welfare.



CHAIRMAN TORRES: Given the nature of the U.S. society, how...what recommendations would you have for our integration with that type of...

PROFESSOR KRAUSE: Well, my view is that the forms of integration are fallout of the analysis, that what is lacking is the understanding of what is going on. It is not a problem so much in California as it is a problem on the East Coast of the United States where, I think, history, tradition and their viewpoint get them to think about Europe as our primary partner when, in fact, the Pacific is much larger and much more important.

It's interesting...the excitement being created by the opening of Eastern Europe. Well, the total population of Eastern Europe is less than Mexico, and Mexico has a lot more promise in the short and probably the long-run than Eastern Europe. Nevertheless if you talk about the impending possibility of U.S./Mexican free trade, that gets very little recognition within the Beltway, but a lot of attention to Eastern European history and culture.

CHAIRMAN TORRES: I was in Caracas meeting with President Carlos Andres Perez of Venezuela at the time when The Wall was coming down, in Berlin. And there was such disappointment in Latin American -- because from there I travelled to Central America as well, as part of a Federal Commission I had served on, to look for the economic push factors for the region that have an impact on migration -- and the underlying concern was that the only hope that we had had, for the Western Hemisphere to be looked at again in cooperation with the U.S. policy for economic incentives, had been totally lost by the romantic notion of moving back to Europe and rebuilding a society that was not as high a priority -- should not be viewed as being as high a priority -- as the Western Hemisphere and the Pacific region. Given that, that Eastern mentality in terms of where people are at in their perceptions, do you envision a regional split within the U.S. economic and political regions to take advantage and what role can California play in that?

PROFESSOR KRAUSE: Well, forecasting the future of political developments is a treacherous ground, but since that's -- I'm an economic forecaster, I tend to fall into that swamp of trying to do it. My judgment is that there will be an explicit rebuff to the United States by Europe. It may come as early as the end of the Uruguay Round -- or attempted end of the Uruguay round, or it may come subsequently as Europeans start to look differently at Eastern Europe and then the U.S. They will -- and they will look in a proprietary way towards Eastern Europe. When that split comes, then there will be concerns in the U.S. -- how do we react?

And then it'll be a choice between the three-region world and the two-region world.

The three-region world is this sort of Europe, Western Hemisphere and Western Pacific. That perspective is again, an East Coast perspective because it views things as this Western Hemisphere entirely from the U.S. perspective; and doesn't recognize the dangers of the politics of a Western Hemisphere union in which the U.S. will be distrusted by the other countries in the region and the U.S. will be feared as dominating them. And it also fails to recognize that the Western Pacific is exactly in the same relationship -- the smaller countries -- with respect to Japan. Therefore, if you go to Southeast Asia, they are tremendously anxious to have the U.S. as a counterweight in Japan; and that's obviously true in Latin as well, they want Japan as a counterweight to the U.S. So, the two-region model makes more political and economic sense for the non-European countries. But a two-region model also has more elements of stability in the relationship between two regions.

To be a theorist for a moment, game theory tells you two-person models are stable because you have repetitive gains of the same kind. Three-person gains can be very unstable because of shifting coalitions and that can be a significant loss--could lead to a significant loss in world welfare. I'm sorry for this long digression.

CHAIRMAN TORRES: No! So where do you place the Soviets, given the agreements in Madrid and agreement yesterday in Paris?

PROFESSOR KRAUSE: The Soviet Union--it may not be dismembered, but it is certainly going to be decentralized. And most of the Soviet Union is Europe-oriented, particularly Russia, despite Siberia being part of the Russian Republic -- it is Europe-oriented -- it's dominated by Europe. My view is that in the main, the Europe Soviet Union will be a European country. In terms of the Pacific integration, it's only if Siberia becomes an independent republic that you will see even part of the Soviet Union being Pacific-oriented.

CHAIRMAN TORRES: Well, with Vladivostok opening...

PROFESSOR KRAUSE: It was in 1984 that Gorbachev promised that Vladivostok would be opened. It really hasn't been yet; and even if they should open it, over the objection of the Soviet military, I think you will find that the resources to develop it won't come from within the Soviet Union.

CHAIRMAN TORRES: They'll come from Japan.

PROFESSOR KRAUSE: So then you have to ask the question, "Is there an economic and political reason for the Pacific countries to help develop that part of the Soviet Union. And I think there will be cooperation, but we're talking minimum. I mean, as compared to say Thailand, that's been mentioned frequently, it's integration with the Soviet Union -- that's complete. The Siberian part of the Soviet Union is trivial in comparison.

Well, I think there may be some forces that will be speeding up institutional strengthening -- and they've already been mentioned by Allen -- that's a possibility of a failure at the Uruguay Round. The Europe in 1992 and, in fact, the worldwide recession which might well force us to look at things in a more integrated manner.

Now the State of California has a strong and direct interest in these institutional developments. First of all, the process of economic integration within the Pacific is felt in California to a much greater degree than in most other states. Hewlett Packard's been mentioned. We could mention a number of companies. American business firms that have extensive operation in the Pacific Rim have significant presence in California. Furthermore, many foreign firms, coming from other countries in the Pacific Rim, have major operations in California. It goes both ways. And of course the people of California have close cultural and societal links to Pacific Rim countries.

How are these interests of California to be represented in the institutions of the Pacific? Clearly as an integral part of the U.S. effort, therefore Californians and the government of the State of California should become involved to a further degree and make significant efforts to support those institutions that represent the United States.

I believe an institution such as the U.S. National Committee for Pacific Economic Cooperation would welcome the participation of California as an entity.

California will have to make the case that it is more involved in the Pacific Rim than other states, but I think it can be established. To demonstrate its interests, the State of California should be prepared to provide financial and human resources to support the work of the U.S. National Committee. Without financial support the Committee will be unable to represent the U.S. and Californian interests properly. My own involvement is part of the commitment, but more is needed.

Well, when we're talking about the real and the political importance of all this, what difference does the Pacific Rim make, I mean in terms of the bottom-line, for private business sector within the region and within the State of California? It affects them directly because of the growth of markets. Secondly, for the countries in Latin America that we're closely aligned with, and especially Mexico, it suggests that the successful role model for development are to be found in the Pacific. That is the model that Salinas is now following. One shouldn't think of his model of growth as the United States. It's really not that. It's really more the developing countries in the Pacific. Third, the development of the Pacific Rim, and its institutions, should warn the European community that it can not be cavalier about their economic relations with non-member countries. Fourthly, the governments in the Pacific Rim must be aware that opportunities are created for closer economic integration but also that the disputes are coming and we need some institutions to help moderate it.

California should be aware that dispute management, down in Washington, D.C. may not be reflective of the State's interest. Therefore we must be very close to this process. Finally, closer economic integration does provide the presumption that some welfare-promoting institutional strengthening is possible. If the opportunity or the necessity should present itself, then government should welcome rather than resist it. The State of California can make an important contribution to this desired end. Thank you, Mr. Chairman.

CHAIRMAN TORRES: Thank you very much. How does one begin to impact those decisions that are made in Washington and regionalize them more from your perspective?

PROFESSOR KRAUSE: Well, in my view when you have an issue such as relationship with Japan, and when it's treated with small politics, that is a congressman whose district maybe being impacted by imports, indeed someone running for the Congress or even a Senator or conceivably even a Presidential candidate--when they try to make a case for Japan-bashing--and I'm not an apologist for Japan--but when they do that, they are ignoring the interests of the State of California. And I believe that it's an educational effort that needs to be promoted because when it's countered solely by the registered representatives of Japan, then it quite rightly is disregarded. Whereas, a statement written by an unbiased expert goes 90% further than any of these biased statements.

There is no reason why California should be disadvantaged because of the small politics of Japan-bashing or Korea-bashing or whatever it is. And while it's proven to be not a very promising political avenue, I think more and more times we are likely to try to do it.

So we have an educational effort involved and disputes arise all the time. They can be followed and Californians interests can be made known.

CHAIRMAN TORRES: 400,000 Vietnamese are living in California today, many of whom are U.S. citizens; what should California's role be with Viet Nam once economic sanctions are lifted?

PROFESSOR KRAUSE: Well, I have no expertise with respect to Vietnam. I am aware that this isn't a self-selected group who can't...and we may face this significant problem of that group of citizens having a particular view towards Vietnam. It may be even a disputed view. There may be differences of views. I suspect that...

CHAIRMAN TORRES: Um hum. There are.

PROFESSOR KRAUSE: ...we need to utilize that expertise but have a judgment that that's sort of not determined by the national group. We are in the process of trying to sort out our problems with Viet Nam, and I think in not the very distant future, we will have normalized relationships with them.

CHAIRMAN TORRES: AND THE PRC?

PROFESSOR KRAUSE: Well, PRC is much more advanced, of course, and the PRC is trying to do something that is impossible. That is to liberalize their economy and open it up and become more integrated with the rest of the Pacific, while at the same time maintaining a closed political system. I think that is incompatible. I think it will fall of it's own weight, and it may take this particular aged generation to give up power before it happens. But I think it is to California's interest to maintain and to strengthen economic ties with the PRC.

CHAIRMAN TORRES: Well, the politics are these but everyone knows that the mercantile families in Taiwan and Hong Kong are still doing substantial business within the main.

PROFESSOR KRAUSE: Increased.

CHAIRMAN TORRES: An increased business within the mainland, and the Taiwanese population in California is increasing.

PROFESSOR KRAUSE: I think it is a major interacting market with California.

CHAIRMAN TORRES: All right. Thank you very much.

PROFESSOR KRAUSE: Thank you.

### C. Japan, Latin America, and the Free Trade Movement

CHAIRMAN TORRES: Professor Peter Smith, Co-chairman of the Bilateral Commission on the Future of U.S. and Mexican Relations. Welcome to the Committee.

PROFESSOR PETER SMITH: Thank you very much. I appreciate the opportunity to be here today. I'll try to stick within the 14 minute time limit. As you know academics are notorious for having 15 minute cycles of speech. I'll do my best to respect your time, Mr. Chairman.

CHAIRMAN TORRES: Well, we've allowed for fudge factors.

PROFESSOR SMITH: The question in a sense I want to address is, "Who could ever be against free-trade?" It sounds like an unquestionable good for all concerned. A bit like motherhood and apple pie. Who might oppose it and why and what are some of the politics of the free trade movement that might affect the Pacific Rim and Latin America? The problem, in a sense, is that free-trade for members within a region seems to imply a relative advantage over non-members who are not from the region. So a question to ask about a free-trade movement is, "How does it look to non-members?" Specifically, I'd like to address the question of what seems to be the Japanese perspective on the free-trade movement in Latin America and what implications does that perspective have for integration of the Pacific Rim.

By the free-trade movement in this presentation I refer to two phenomena. First, the bilateral U.S./Mexico free-trade discussions as initially promoted by President Carlos Salinas de Gortade of Mexico; and second, the possibility of the prospect of hemisphere wide U.S./Latin America free-trade as proclaimed by President Bush in his speech of late June, this year. My comments are based on years of scholarship and observation of the U.S./Mexico relationship, and all of four months of observation of Japan through a recent fellowship of the Japan Society of New York. So, undaunted by grasp or knowledge of the fact, I will proceed to offer testimony on the basis of these experiences.

First, the U.S./Mexico discussions. My view is that it all depends on the fine print. My specific to you is that bilateral free-trade discussions between the U.S. and Mexico are not so much about trade. That much of that has already been accomplished in recent years. But they really focus on investment, which is what Mexico wants, and competitiveness, which is what the U.S. wants from access to low-cost Mexican labor. Most specifically, with regard to the U.S./Mexico discussions, I think there were three basic issues which have implications for California.

First, the scope of the agreement. Will it cover petroleum as well as agriculture? Will it cover migration and if so, how, as well as investment? Second, the timing of the agreement; President Salinas wants an accord quickly. It's important to notice that his power will begin to evaporate in 1992. His mandate, or term, goes until 1994, but the politics are, that if he is going to get an agreement through, he really needs to do it within the next year-and-a-half. Third, the issue of the uses of the agreement. Will it become a lever for the United States through these negotiations to put pressure on Mexico, either for accelerated political reform within Mexico, or for intensified prosecution of anti-drug wars. These are two of the issues widely discussed in the news--more widely discussed in Mexico than in this country. I am not an economist. I suspect that the California economy would have much to gain from a reasonable, thoughtful, careful U.S./Mexico bilateral free-trade accord. But I am quite certain that California would have the most to lose from a poorly drawn, hastily designed, highly politicized accord.

For example, if anti-drug measures were to become part of the pressure the U.S. would use in dealing with Mexico in free-trade, the implementation of that anti-drug measure would come at the California border and it would have reverberations throughout the State.

If migration increases as a product of short-term recovery in Mexico, as most analysts predict...that is, the trade-off usually discussed in the media is, "you can either have our products or our people from Mexico." The fact is most analysts think in the short-run you would get more products and more people; that in the long-run, you might get products and fewer people. But, if the free-trade accord promotes that and most people come to California as is increasingly the case, then would there be any provision, either in California law or in this free-trade accord, for how to handle this increased impetus toward migration.

If haste in an agreement leads to disregard of adequate environmental concerns, my guess is that California will lose a disproportionate share of investments because of the type of environmental laws in this State compared to neighboring states, and it would also receive a disproportionate share of the cross-border pollution.

In general, my feeling is that a possible atmosphere of recrimination and discrimination resulting from failed aspirations and betrayed hopes resulting from a poorly drawn free-trade accord, would become most volatile here in California.

Indeed jobs would probably be lost. Some jobs would probably go to Mexico as a result of a free-trade accord. The question, in a sense, is whether it isn't better to lose jobs to Mexico than to Asia--at least we get something back when jobs go to Mexico. About 15% or 20% of added income to Mexico as some economists indicate, comes back to the U.S. So for every seven or eight jobs we lose, we get at least one back, if you can believe those figures.

I think the ultimate question is, how important is it for California to have a sustained recovery of the Mexican economy. Or, to put it another way, as we face a possible recession, can California really afford continued and prolong depression of the Mexican economy. That seems to me to be the question at the source of issues that Professor Johnson and others have raised as important for analysis of California's future.

Now, the Japanese outlook, as I understood it in my four months of observations and interviews, the Japanese are rather skeptical about Latin America. They recognize cultural ties. They are fascinated by the history and diversity of Latin American culture. Japanese citizens showed considerable enthusiasm for Alberto Fujimori of Peru, when he made a visit early in July shortly after his election to the presidency. But my feeling is, on the basis of 60 interviews with leading Japanese politicians, investors and bureaucrats, that they're really not very interested in using Latin America as a beachhead for infiltration into the U.S. or for creating a kind of alternative power base.

There are, to be sure, at least three major economic interests that the Japanese have in Latin America. One is access to raw materials, especially food stuffs largely from Brazil, and energy, especially petroleum from Mexico and Venezuela, and coal from Colombia. Second, somewhat surprising to non-specialists, is the importance of the Panama Canal through which a large share of Japanese trade passes, not only to or from Latin America, but also the East Coast of the United States and some European trade as well. So they had a very special stake in Panama. They were very close to Noriega until we told them to change their direction; and indeed they followed the events of last December with great interest. Thirdly, of course, they do see Latin America as a potential export platform to the U.S., that is, a legitimate open back door to the U.S. market. And this is one of the key implications of a potential free-trade agreement--either with Mexico or with Latin America as a whole.



I might say parenthetically that most diplomats and bureaucrats in Tokyo give passing reference to the importance of a potential market, consumer market in Latin America, as another business opportunity. But when push comes to shove, it isn't that important to them. They're rather skeptical about the durability and the power of the Latin American market, and when they compare it to what they see as historic opportunities in a place like China, it simply doesn't compare. So they will tell you that the market is important, and in a way that's one of their major goals; but my feeling, at least on the basis of these interviews, is that that is a relatively minor focus for Japanese investors.

CHAIRMAN TORRES: Isn't that buttressed by the fact that there's been a shift in investment to Eastern Europe as well?

PROFESSOR SMITH: Yes.

CHAIRMAN TORRES: To Latin America?

PROFESSOR SMITH: And they--and as Professor Krause said earlier, you know, the Japanese think all this fuss about a little part of the world like Eastern Europe when, in fact, Asia is much more important. They've also felt burned on the bank loans they've made to Latin America. They have told me that their investments do well in Latin America. That is, the companies make profits but they can't get the money out at a decent exchange rate, either because of exchange rate policies or because of inflation in the local economy, so that...

CHAIRMAN TORRES: That's particularly true in Brazil.

PROFESSOR SMITH: Right! So if the idea is to somehow support a parent company, their feeling is that it's a kind subsidy to Brazil or to Peru, and there is some concern about trying to provide economic sustenance for Japanese migrants in that part of the world. But in all of these conversation in which they kind of evoke these high-minded concerns (and this is not a criticism of them at all) they say the bottom line is we're in it for profit and if we can't make a profit it's not very interesting.

The bankers are very unhappy with various debt reduction schemes that emanate from either the U.S. Treasury or some other part of the world which mean lost profits and debt service payments for the Japanese who did it at the request of the United States. They see that their investments have done well in Latin America but they can't exchange it into Yen to serve a parent company, so my sense is that they are not really just waiting to invest lots of Yen in Latin America.

And one leading banker I asked very directly about the free-trade accord, and he said, "If Mexico achieves a free-trade accord and if that is shown to be durable and if there are several years of sustained recovery in Mexico, then we will consider going back in. So I think the opportunities elsewhere look better to them, and this is on the basis of a rather hard-nosed reading of economic factors.

CHAIRMAN TORRES: That's even applicable to real estate interests in California.

PROFESSOR SMITH: Yes. I would agree. I sense that there are two kinds of concern in Japan as they look on this free-trade movement. First, the main thing they want to do is sustain a close relationship with the United States. They don't want to do anything in Latin America that would threaten the quality or the possibilities of an enhanced and close relationship with the United States. Many of the decisions they make are filtered through the United States. I asked a number of Japanese politicians and bureaucrats if they check with Washington before they do things or take steps in Latin America, and they do. I asked the Canadian Embassy if they ever heard of the Japanese checking in Washington before they deal with Canada, and they'd never heard of that. So clearly, the Japanese recognize what they see as historic long-standing spheres of influence relationships between the U.S. and Latin America. And much of what they do in terms of overseas assistance is done at the behest of the United States and in some ways more to serve the United States than it is to serve Latin America.

Second, I believe, they are very worried about the formation of exclusive regional blocks. That is, notwithstanding the objective economic foundations for an Asian block, that Professor Krause talked about. My sense from these conversations is that they're very worried about having to create an Asian block. For two reasons: they see more inequalities in Asia than in Europe, and many of the bankers and investors kept referring spontaneously to the image of Mr. Fuji. They kept saying, "We are Mt. Fuji, and the rest of Asia is the plains", and you can't create a durable region on that basis. Secondly, they're very concerned about the historic legacies of World War II, and the image of Japan throughout Asia. So their sense is they can't create a region under Japanese leadership as easily as we could create a region or block in the Western Hemisphere notwithstanding the complexities of our relations, and not as easily as Europe is already being able to create a region.

So I'm not sure it's on the basis of principle against regional blocks, although this is often invoked in a kind of theoretical sense; but much more because they feel that they would be disadvantaged in an environment where they had to create a regional block. So they want to take a lot steps, or whatever steps they can, to prevent that. And in this sense, investment in Latin American might be useful as one bureaucrat told me, "That is why we are interested in Latin America -- not necessarily to prevent the formation of free-trade movements -- but to be sure that they are not closed out of some of these opportunities.

In this sense, my feeling is that the Japanese are more sympathetic to the idea of a U.S./Mexico bilateral agreement than to a hemisphere-wide FTA as envisioned by President Bush.

There were several reactions to the President's speech in late June. One, a free-trade zone between Canada, the U.S. and all of Latin America is unrealistic; it's irresponsible, it's not practical and therefore inappropriate. Second, they were concerned that it represents a sort of latter-day reincarnation of the Monroe Doctrine -- of the Americas -- for Americans and not for anyone else. And thirdly, they suspect that it will actually postpone investment in Mexico because investors in Japan and elsewhere will wait to see which country gets the best deal with the U.S. and which country can then offer them the best deal in terms of low-cost labor, investment and access to U.S. markets. So, in short, the irony is that President Bush's announcement might hasten the achievement, or the writing down, of the U.S./Mexican accord because he indicated there that that was one of his priorities. But at least from the perspective of Japan, I suspect Europe as well, it might postpone the realization of its potential benefits because investors will hang back to wait to see what happens with other countries in other regions and whether they might not be able to achieve a better agreement or deal somewhere else in the hemisphere and get an even better point of access to the U.S. market.

I conclude then, Mr. Chairman, with six very general and simple recommendations.

First, that as one looks at the free-trade movements; both in regard to U.S./Mexico, and the hemisphere as a whole, that it is very important to recognize the stakes for California. Whatever happens, California will be the place where the effects are most dearly felt.

Second, I would urge very active steps, and perhaps these are already underway, to take part in the process -- to lobby and talk with our representatives who are carrying out the negotiations with Mexico. I might say -- I know the Mexican end of this better than the U.S. end -- it is a rather small closed group of very brilliant "technocrats" in Mexico. It's not a very open process. On the other hand, talking with either or both sides to reflect and represent the interests of this State seems to me to be essential.

Thirdly, watch the fine print, and maybe it isn't even fine print. My feeling would be that it is possible that better no agreement than a bad agreement because California will be the place where the effects of a bad agreement would have the most deleterious consequences.

Fourthly, I believe, along with Professor Johnson, that we must keep our eye on the long-term, not to ask what these agreements would do between now and 1993, '94 or '95, but ask for the kind of industrial policy and relationship we would like to have beyond the year 2000.

Fifthly, I think it is essential, as one looks at the Pacific Rim integration, to contemplate the role of Latin America in the Pacific, and the relationship between any free-trade agreements involving Latin America and/or Mexico and the U.S. and the implications of those arrangements for increased trade and investment and access to the Asian markets as well.

Lastly, I beseech you to help us to avoid over-politicization of the process. It's hard enough to achieve a free-trade agreement, it's harder to achieve a free-trade agreement that respects appropriate limits on investment as well as other flows of economic factors. It's very tempting to have built into this pressure on Mexico and Latin America for the drug wars, for example, or for political reform that will simply be counter-productive and deleterious. Thank you very much.

CHAIRMAN TORRES: Petroleum, in talking to the Mexican counterparts, does it become a part of the agreement or not?

PROFESSOR SMITH: That is a major question within Mexico. In the same day, from people of equal authority, I heard the same answers. One said, "Absolutely not, it is symbolic. We cannot touch it anymore than you could change your constitution". Others say that there may be ways of achieving subcontracting and so on. I think it's very unlikely that Mexico could permit U.S. companies to come in and dig for oil, excavate for oil, but they could increase, they can create, contracts for purchase of oil drilling equipment. They can, perhaps, go into joint ventures in a variety of places within Mexico or offshore elsewhere.

That is--my guess is that the public stance in Mexico is "absolutely not". I spoke with one of the people most involved in these negotiations in PEMEX. He said that his instructions were to avoid anything that would permit any kind of subcontracting. He said that a good New York lawyer can take a subcontract and divide it into six parts and none of them is a subcontract, but when you add them up it is. He says he is under instructions not to permit that to happen, but by the same token, some of the people involved in the free-trade negotiations themselves, from Mexico, say maybe there will be ways to do it.

It is, at the moment, I suspect, one of the most controversial and difficult issues from Mexico's point of view.

CHAIRMAN TORRES; My talks with President Salinas de Gortari and Commerce Secretary, Jaime Serra Puche, in terms of the economy just in May, indicated that there have been significant steps taken by the Mexicans with respect to, obviously, the privatization of the banks and the foreign investment as it relates to resort development in which 40 miles of the Baja coastline are being developed now by Japanese interest. Are those steps that the Japanese view as significant from their perspective?

PROFESSOR SMITH: They regard the policy steps as significant. They gave me the impression they were waiting to see the effect; both in terms of economic recovery and whether Salinas' successor will continue the policies in the same way.

CHAIRMAN TORRES: Do you believe that there is a similarity between steps being taken in Brazil with Salinas' steps as well, as two economies that are moving ahead?

PROFESSOR SMITH: I think -- yes, I think in general, if one thinks of each of these kind of readjustment packages -- each one has a different sort of emphasis. The Brazilians, not being quite so close to the United States, have a different kind of tradition with regard to foreign investment. They are less concerned with the background of the investors and whether they're U.S. citizens or foreign citizens, and more concerned with the performance and how they behave once they're in Brazil. That is, they tax them more, or they are likely to take some other kind of measure.

Yes, I think that what one is seeing is that throughout Latin America, there is a remarkable wave of these kind of restructuring or economic readjustment programs that vary from place to place because of the specifics.

They show almost no variation by political propensity of the incumbent. That is you have Menem in Argentina, a Peronist and a populist; Fujimori, elected as a populist, now in office as a moderate; Salinas who came in as a technocrat. It almost seems to make no difference what the political background is, but there are two schools of thought. One is the international environment is giving these countries no choice and they all have to do the same thing. The other is that they all have finally realized that laissez-faire economics is the best. I am a little inclined toward the first solution because I'm not sure that these are changes of faith. I think that Salinas, for example, has seen his options reduced and, of course, in the last two years he went to Europe and he was told basically, "We're not going to invest in Mexico, we're going to invest in East Europe".

He went to Japan in mid-June, as his advance man told me in Tokyo, to sell free trade -- meaning the back door -- and a week later President Bush unveiled the Hemisphere-wide Plan, so all of the Japanese investors stood back and said, "Wait a minute, Mexico's not special anymore". So my feeling is that these are kind of instrumental pragmatic responses that are all...they tend to be taking the same shape. But unless they work, unless they begin to show some result, I could also anticipate waves of populist reaction in a variety of these countries.

CHAIRMAN TORRES: Okay, when Japan is not finding the labor force for labor-intensive industries within its own boundaries, is it realistic to say that they are not going to continue to invest in Brazil or in Mexico, where the resources of petroleum and other raw materials, as well as labor, with the maquiladora and where those approaches are viable options for them?

PROFESSOR SMITH: I think they will search for labor force, whether they feel they have to do with a Latin America, or that's the best place to do it is...

CHAIRMAN TORRES: What other options do they have?

PROFESSOR SMITH: Robotics is one, the maquiladoras, as you mentioned, are another. But I think that they feel that the maquiladoras (and there are experts in this room who know more about this than I do) but the Japanese perspective is that the maquiladoras as we have come to know them, and perhaps love them, may not last forever. The advantage of a free-trade arrangement is that it is broader and more durable and offers more security from the viewpoint of investors. They are aware of some disputes in Mexico over the role of the maquiladoras, as well as the reactions of U.S. labor and other groups in this country.

So I'm not sure that they see that's a long-term solution forever, although, as everyone knows, they are very prominently invested in the maquiladoras sector.

CHAIRMAN TORRES: What were their perceptions toward Vietnamese petroleum?

PROFESSOR SMITH: I don't know.

CHAIRMAN TORRES: That question was never raised?

PROFESSOR SMITH: Not while I was there. I did have some discussions about what was likely to be from the viewpoint of the Japanese Foreign Ministry, the most interesting event of the forthcoming year, and they all said it was Gorbachev's visit, for a variety of reasons. One of the envisioned trade-offs is that if they can achieve some kind of normalization of relations, that...

CHAIRMAN TORRES: On the island issue?

PROFESSOR SMITH: Yes.

CHAIRMAN TORRES: Part of the discussions that we had on this commission that I served on dealing with immigration, patterns in law, the politicalization of the Brazil program and what it represents symbolically in terms of the Latino community in America, especially in the Southwest, is a notion that we need to reform. ...That if a free-trade agreement emerges that's realistic for both sides, that immigration is going to be a key element of that agreement and that California, probably more than any other state, is going to be impacted by the politics as well as by the economic and societal impact of that accord. The notion of new type of permit or immigration permit for Mexican nationals to come into California, to travel at-will for economic purposes and return at the end of the day, more so than it/s being done now, is a viable option that we ought to pursue. What's your perspective on that?

PROFESSOR SMITH: I agree with that. I think it not only is, in some ways, a requirement of the logic of a free-trade agreement, that you will get more pressure from for that reason, but my feeling is that the government people were more political in this sense--about calculating relations with the U.S. than the investors were themselves and the bankers were in-between.

CHAIRMAN TORRES: Thank you very much Professor Smith.

PROFESSOR SMITH: Thank you. thank you very much.

**D. Private Sector Perspectives:**  
**California and the Free Trade Movement**

CHAIRMAN TORRES: Richard Sinkin, President Inter-American Holdings. Well, we've heard the academic response, now lets hear from the private entrepreneur.

MR. RICHARD SINKIN: Well, my name's Richard Sinkin with Inter-American Holdings Company in San Diego. You're probably familiar with the University of California and other organizations that have been represented here but not with our company, I suspect. I'd like to take just a brief minute and tell you what it is we do and why...

CHAIRMAN TORRES: Sure!

MR.SINKIN: ...and why I'm qualified to speak here. Inter-American Holdings is a three year-old company that has four basic business activities. It engages in -- all involved with U.S./Mexican economic relations in one form or another. We manage an equity fund that is largely made up of Mexican financial institutions as the investors and the purpose of that fund is to invest in U.S. low-tech or mid-tech manufacturing operations whose production we can restructure, as well as finances of the company we can restructure, largely by moving production to a maquiladora and by adding value to the company. We are looking for strategic buyers in Mexico to buy these companies, who would then be able to use that already-established structure to penetrate the U.S. market. It's a little bit on the model of what Vitro did with Anchor Glass, but it's at a much smaller scale, obviously.

The second activity we're engaged in is we do a lot of investment banking work. We have, through our banking sources in Mexico and United States, abilities to finance companies going to Mexico and we put together financing packages and help people do investment work there. We also manage companies who want to go and produce in Mexico but don't want to set up wholly-owned subsidiaries or corporations there. I think we're the fourth or fifth largest shelter operators in Tijuana right now. And we began as a consulting company before we got into these other activities through the partners. The various partners of the firm have set up 14 maquiladoras occupying a little over 1,200,000 square feet and applying close to 3,000 individuals...

CHAIRMAN TORRES: Along the border.



MR. SINKIN: ...almost exclusively along the border. We did a large facility in Ensenada for Louisiana Pacific Corporation, it's western division headquartered in northern California in Somoa, that's really the only off-border--direct borders...

CHAIRMAN TORRES: What were they manufacturing?

MR. SINKIN: They are going to do wood products down there. They're going to barge in rough-cut lumber and dry it and then plane it and mill it and remanufacture it and ship it back to Southern California by barges. It's \$100 million project -- twelve factories -- 1,200 employees when all is said and done. It's four/five year project. The first factory came on-line this week and is now shipping milled lumber back to southern California in barges.

CHAIRMAN TORRES: Lumber from where?

MR. SINKIN: The lumber is from Louisiana Pacific's holdings, plus other lumber that it get up in there -- it saws it in the North and then ships it South by barge.

CHAIRMAN TORRES: Hmm.

MR. SINKIN: So that's what we do. We're involved very much in border concerns. I just completed a week-long trip with the Secretary of Commerce from Mexico -- Jaime Serra Puche whom you obviously know, as well as the U.S. negotiating team and the entire key group of the Mexican negotiating team for the free-trade agreement. And what I'd like to do is amplify a little bit about what Peter Smith was talking about, about the Mexican perspective and the U.S. perspective on this free-trade agreement.

This thing has been primarily a Mexican initiative. The roles have been reversed in sort of interesting ways. Historically the United States has been pressuring Mexico for free-trade agreement. I think for the first time now Mexico's really taking the lead in this and there has been some reluctance in Washington to enter into the game.

There was a very sizable internecine struggle inside the Bush Administration with Carla Hills, U.S. trade representative and Clayton Yeutter, the agricultural representative, really opposing a fast track trade agreement. The Texans, on the other hand, Mosbacher, Baker, really prevailed in the struggle and the Texans are running the show. I say that, I am a Texan and I have close connections to these people, for a long time, and they are playing a very, very important role. I think that has important implications for California that I'd like to come back to, but obviously the changes in Mexico are really what drove this.

As Peter mentioned, Salinas de Gortari went to the World Economic Forum, Davos, Switzerland and basically said, "I'm going to throw a foreign investment party. I'd like everybody to come". And the Europeans threw up their hands and said, "We're not interested, we've got our own if we're going to do low-cost labor production, we're going to do it in Central Europe. The European market is forming and we have no interest in coming".

The Japanese have essentially been telling Mexico, "Until there is change in your foreign investment laws, and guaranteed access to the U.S. economy, other than through the maquiladora, we're not going to be major investors in Mexico". And so those were driving forces for the Mexicans. And on the U.S. side, the willingness to enter into the game really came about because of the changes that Mexico is undertaking. And I think they're very under appreciated really in the United States. The dramatic perestroika which has occurred there; obviously you understand it, but I really believe Senator, that most Americans don't have a clue as to what's going on. We...I speak to lots of local groups just right here on the border and the understanding of Mexico and what's happening there is...is at ground zero. I mean it's really the point as you pull out the map and you do the blue parts water and the brown parts land. I mean that's about the level of knowledge.

The entrance of Mexico into the GATT, the reduction of inflation to the levels of nearly 200% to 20%, the change in government deficit would be a model, I think, for everybody, including this country. The maquiladora movement, the investment rules that are changing, ultimately the laws that will be changing, all of these really represent a major change which is driving this free trade agreement. The other side of it, of course, is that the Mexicans recognize very clearly that 80% of the capital flows in the world flow among first world nations and that the entire third world competes for the other 20% and that with the formation of Europe and the economic power of Japan and the lack of interest that Japan has had in Mexico and the rest of Latin America, the Mexicans understand that really...as Henry Kissinger said, "the absence of alternatives clears the mind wonderfully". That's clearly what's happened here, the absence of alternatives, I think, rather than some philosophical or ideological change.

I mean this is really out of strict necessity and the Mexicans who are going to negotiate this are young, pragmatists, almost all educated in the United States. These are people who have a deal in mind and they want to make it...they really want to make a deal. They're not really operating out of any ideological vent, and they're very very much afraid of being left out in the formation of trading blocks.

They are absolutely convinced that Europe is going to be closed to Mexico and they're absolutely convinced that they will never be successful in Asia and they look around, there's nothing else but the United States, so all of these things coming together are really driving this free trade agreement.

Based on this week of travelling with them and watching them sell this agreement to New York, Houston, Dallas, Chicago and Los Angeles on Friday, where actually we participated, I brought you the participation book and if you have trouble sleeping at night, this will cure all of your problems, I guarantee you. The view that I'm getting of a likely free trade will include the following. Canada will be seriously involved. The goal really for both the United States and Mexico and now Canada is a North American free trade community, a trading community. The view is that Bush may have complicated things by launching the hemispheric initiative and they wish that that had been held off until this deal was done, but apparently it wasn't.

There will be a phased in reduction of tariffs and while it's true that investment and other issues are important, trade is still very very important in this structure, particularly in the economies of steel and agriculture and textiles. Those are, I think the three hottest trade issues that will be on the table. Mexicans and U.S. teams seem both very concerned about having close regulations of subsidies and countervailing duty structures and the dispute mechanism that's going to be proposed by the U.S. side is the same dispute mechanism that's governing the Canada-U.S. trade agreement which they're all saying works very well. I don't know from any personal experience but Ann Hughes (who is the Deputy Secretary for Western Hemisphere and who is...was one of the negotiators for Canada and is on the trade dispute mechanism committee with Canada) says that they've resolved very very quickly and efficiently given the mechanisms that were set up in the Canada-U.S. agreement. So, the Mexicans seem comfortable with that, the Americans really want it, the Canadians would like it because it makes it parallel across both borders.

The general impression I have, a very strong one, is that neither side, neither the Mexican or U.S. side, will consider migration in these negotiations. That is really not on the table as a discussion. Everybody is aware that it has major implications for what happens but they do not see this as part of the trade agreement directly and the Mexicans very much want to have it outside of this. And I think from what I understand from the folks who will be involved from at least the Department of Commerce side of this, they've agreed to that already.

The final element of this is that, well there's actually two, one is that petroleum will also be off the table in terms of demanding a change in the structure of the way Mexico handles petroleum. But, as Peter says, and I think he's absolutely right, there will be discussion of how to get around that in a way that satisfies everybody's needs. And the use of trusts and a variety of other things are being held out as ways of making this sort of thing happen.

CHAIRMAN TORRES: What's happening already in resort developments?

MR. SINKIN: It's happening in resort development, it's happening in a variety...it's been happening for a long long time so...but their view is they're not going to make any...they're not going to negotiate anything that is going to require any constitutional change. The most they're going to do is change the foreign investment laws and there will be an initiative submitted to Congress early next year that will fundamentally bring the laws into compliance with the way the regulations are now written. So it's usually the regs that make the laws work; it's going to be the other way around in Mexico.

What are the issues that will affect California in this? I think there are several. One is the agricultural side which is not an area I know a lot about, but it certainly has been a topic of discussion a great deal. The Mexicans are selling this agreement on the basis of complementarities. Their argument is that the agricultural cycles in the United States and the agricultural cycles in Mexico are different and that products come on line at different times and that, in fact, this will be a benefit for both sides, winter vegetables being the clearest example where the United States buys substantial amounts. The questions of tomatoes and other things, avocados, for example, which is a very important issue here, are yet to be resolved.

A second issue for California is the shift of low tech manufacturing to Mexico now that the rules of the game are clear. What's inhibited a lot of manufacturing, especially in small to mid-size companies from going is just the Mexican fog, we call it, don't understand what's going on down there. When the rules of the game are made more clear, I think the view of everyone is that there will be a shift of low tech manufacturing, and the sales pitch that is being made is that you would rather have those jobs go to Mexico. You're going to lose them anyway, California's going to lose them anyway. You'd rather have them go to Mexico than to Southeast...to Southeast Asia, wherever...because you'll at least get a couple of benefits. One, you may not lose the corporate headquarters which often happens if you go to Asia, people just get worn out flying across the Pacific; and two, that if the jobs go along the border that a substantial amount of the salaries will come back into the United States by the way of consumption of U.S. goods.

All of this will, however, put serious pressure on border infrastructure. For those of us who are moving trucks across the border everyday this is already a difficult issue and I think it's going to become much much worse and there really are not mechanisms for dealing with this. You know, mostly we're talking about Federal entities here, it's a very low priority in Washington. The California Legislative delegation, frankly I don't think has represented us all that well on these border issues. There are very few who really understand it. The Texans are much much more advanced in terms of what they're doing on behalf of their border communities.

CHAIRMAN TORRES: That's usually a Texas mentality.

MR. SINKIN: Well, the Texan does have a border mentality. Besides, part of this infrastructure is going to be Southern California ports and there's going to be much heavier use of these ports.

CHAIRMAN TORRES: Right.

MR. SINKIN: And I think we need to be prepared for that and make...

CHAIRMAN TORRES: How are the Mexicans preparing for that in terms of their industry?

MR. SINKIN: They're not. They basically do not have any major port development policy...they...

CHAIRMAN TORRES: Highways?

MR. SINKIN: Highways they're handling by privatizing the roads. Basically, what they've done is opened up road building to the private sector. They are not...

CHAIRMAN TORRES: That's to handle also the recent innovation in terms of licensure of tourist and bus companies as well.

MR. SINKIN: Exactly, and they're going to do...we just have a new client who's going to build five power plants, each one is a billion dollar investment--each one---and throughout Mexico on a "build, operate, and transfer" to the Federal Electrical Commission structure.

CHAIRMAN TORRES: Nuclear power plant?

MR. SINKIN: No. Coal...oil generated or oil burning plants. Mexico basically is running out of electrical power along the border and also they're privatizing the steel mills.

Another one of our clients is buying one of the steel mills...wants to buy one of the steel mills that is being privatized, and one of their concerns is that there's not enough electrical power to run the steel mill at full capacity which is what they want to do.

CHAIRMAN TORRES: Where?

MR. SINKIN: It's Sicartsa. It's a Lazaro Cardenas Industrial Complex in Michoacan. There's not enough electrical capacity to run that mill at full power so our other client wants to build a plant right there to support this group of Brits who are buying the steel mill. This is very very complex on how this all works but basically the infrastructure is being privatized in a certain way, but ports are a problem. You can't...unless you're...you can, as a private individual, build a port in Mexico. You can get a permit to do that, but to make use of the ports that already exist is really quite...there just aren't the resources there to do that.

CHAIRMAN TORRES: And where are they contemplating that these ports be located?

MR. SINKIN: Well, they're really wherever you want them to be. One of the issues, built the port for the steel mill. One of the issues we're dealing with right now is that when this group buys Sicartsa, are they're also buying the port? And, if so, who gets to use it? I mean as long as it was a government entity then there were no problems. Once it becomes a private entity then you have very complicated...selling a public port to a private entity is tricky.

CHAIRMAN TORRES: Are they contemplating the establishment of a port close to San Diego?

MR. SINKIN: No, they would like Ensenada to be improved. They have a master plan for that Governor Rufo is pushing very very hard.

CHAIRMAN TORRES: Baja Sur.

MR. SINKIN: Baja Norte.

CHAIRMAN TORRES: Norte.

MR. SINKIN: Yes.

CHAIRMAN TORRES: What impact will that have on the San Diego economy?

MR. SINKIN: Well, my view is it isn't going to happen very quickly. The real question what's going to happen in Long Beach.

That's the real impact because San Diego just is not a commercial port in a significant way and when people bring...

CHAIRMAN TORRES: Everybody knows what's going to happen to Long Beach, Walt Disney is going to move in.

MR. SINKIN: This is news to me, Senator I didn't...

CHAIRMAN TORRES: Really.

MR. SINKIN: Really.

CHAIRMAN TORRES: Ah, L.A. Times. Major story, close to a three billion, allegedly a three billion dollar investment.

MR. SINKIN: That's not going to do those of us who are bringing in you know pipe nipple from Korea much good, you know that sort of thing, but that's...

CHAIRMAN TORRES: But you're saying the biggest competition for an Ensenada expansion in a port area would be to Long Beach, not to San Diego?

MR. SINKIN: Not to San Diego. I don't...San Diego's really made the commitment to have a tourist center here and with the navy and tourism there really isn't room in this port for substantial commercial expansion. It's just not there, container docks and these are very very serious investment and there's no will to do that here.

CHAIRMAN TORRES: So you see shift from Long Beach to Ensenada?

MR. SINKIN: I think so.

CHAIRMAN TORRES: Timetable?

MR. SINKIN: Seven to ten years.

CHAIRMAN TORRES: How would you compare...other things that the Legislative delegation in California has not been effective, as effective as the Texas delegation...what other analogies might I take advantage of to tell my colleagues?

MR. SINKIN: Well, you know, we...what I think California needs to have is a joint public private sector negotiating team in place here that represents California's interest. I couldn't agree more with Peter about the...bad agreement would be a disaster for the State and we have to be represented and...

CHAIRMAN TORRES: And we're not.

MR. SINKIN: We're not. Diane Linguist is here, wrote an article for the San Diego Union on Sunday and really pointed out that...

CHAIRMAN TORRES: That she could write.

MR. SINKIN: She's a good writer and she pointed out that it's really a Texas show...

CHAIRMAN TORRES: Misquote, it's a misquote.

MR. SINKIN: It's a misquote.

AUDIENCE: Laughter.

MR. SINKIN: She pointed out that it's really a Texas show and the private sector folks in Texas are really close to Carla Hills, very close to Roger Wallace, who's going to be the Department of Commerce individual...he's really going to be the number two person to Carla Hills and you...we don't...I...as far as I can tell I mean I was on the show for a week, road show with these guys for a week and I didn't see any Californians. Not a one playing at the level that they ought to be. I think we were the closest people to it.

CHAIRMAN TORRES: Are they getting back to us because of how Reagan treated the Texans during his presidency?

MR. SINKIN: I don't think so. I just think it's pure economics, you know, driving the deal here. The Texans are in Washington, they're in the White House, they're in the Department of Commerce, they're very very aware and they're much more aware of the need for this free trade agreement for them. California has been rock and roll here for so many years that we kind of, you know, Mexico is just out there.

CHAIRMAN TORRES: Okay, thank you very much.

MR. SINKIN: Thank you. Let me leave this with you.

CHAIRMAN TORRES: Yes, thanks. Since I'm looking over election results, I think this might prove to be more interesting.

MR. SINKIN: I think so.

CHAIRMAN TORRES: I appreciate your time with us.



### III. COMPETITIVENESS

#### A. Need for a Statewide Competitive Strategy

CHAIRMAN TORRES: You are so efficient, Professor Johnson, thank you for coming up. Professor Chalmers Johnson, welcome to the Committee.

PROFESSOR CHALMERS JOHNSON: Mr. Chairman, thank you very much. My pleasure to be here. My task this morning, I think, is to provide some of the red meat of controversy.

CHAIRMAN TORRES: I thought more vegetarian spirituality....(laughter)

PROFESSOR JOHNSON: In a sense that I guess my specific points are to respond to and are tied to the Committee's work with Assembly Bill 2852 which says "Existing law does not provide for a Global Applied Technology Extension Service", or Assembly Bill 3625 with the statement "Existing law does not provide for the development of a strategic plan for technology development and deployment in California".

I want to talk about industrial policy a little bit, which is enormously controversial. And let me begin with a couple of -- like an established preacher -- with a couple of texts. First, the speech on September 26th to the Semiconductor Industry Association by Dr. Andrew Grove, President and Chief Executive Officer in INTEL Corporation. He traces a systematic, in his view, decline of the American technological base. He sees -- worries about -- the future of the semiconductor industry as a whole. He blames government for "a religious devotion to laissez-faire philosophy in the face of Japanese new-mercantilism", and makes various other comments. He points out that the wealth-creating capacity of the United States is at risk because our technological base is eroding in so many industries and points out that such a loss of wealth has historically contributed to social instability. Grove was the individual who recently sent Budget Director, Richard Darmond, a violin so that Mr. Darmond might pass the time fiddling while the U.S. electronics industry burns.

The second text comes from Timothy Stone, the Chief of Corporate Intelligence for Motorola. He has recently outlined the destruction of America's technological foundations through the year 2000. Let me just offer you a study--an overview of Stone's work.

In the time period of the 1950's and 1960's, looking at the evolution of Japan's electronic industry, he sees the global objective in that period catch up with the West's strategic emphasis -- quality; the target industries -- TV's and radios.

In the 1970's, the Japanese global objective was global market expansion. This strategic emphasis -- aesthetic design/product refinement; the target industries -- cameras, audio equipment and VCR's.

For the 1980's, the Japanese global objective was market domination. The strategic emphasis -- product innovation; the target industries -- laptop PC's, fax machines, 8mm videos.

For the 1990's, the global objective, as Mr. Stone and Motorola see it there, of course, in a joint venture with Toshiba, for the global objectives for 1990's--market creation and becoming the technology leader. The strategic emphasis on research creativity, technology integration; the target industries, opto-megatronics, bio-electronics, super-conductivity.

And for the year 2000 +, he sees the global objective for Japan, global leadership role -- international contribution; the strategic emphasis, spiritual and physical well-being; the target industries -- bio-megatronics, bio-communications, neuro-computing and other very advanced technologies.

I raise these, to say that it's not news that Japan and the United States are on a collision course. What really is news is how enormously controversial this issue is. This year, 1990, marks the 22nd year of American trade deficits with Japan. Deficits that are now so large they threaten to destroy the global trading system. Japan is, as we well know, the financier of America's fiscal and trade deficits and we have been made enormously vulnerable by -- in our recent negotiations over the structural impediments initiative by Japan's usage of its fiscal leverage to intimidate us. I mean to say that if we don't cover the next trip -- that if we don't -- if we keep pushing in its particular position, Japan might not come to the next treasury auction.

Particularly important to California, Japan is the leader of a campaign of direct investment in American that is unprecedented in its scope and velocity and is, of course, the major source of long-term capital on Earth today.

These, and other aspects of Japan's amazing economic achievements are well-known. It is also, I think, important to stress, as we talk about the Pacific Rim, Japan is the genuine superpower of this part of the world. It produces 50% of the GDP of the Pacific. That is, all other nations combined, including the five states of the United States. So that it's...it's... sometimes people speak of Taiwan and Korea in the same breath, but there really is no comparison of the enormous size of the Japanese economy, both manufacturing and financially.

The controversy arises over how to explain these events and what to do about them. On the one hand, professional neo-classical economists and an array of lobbyist, apologists, and public relations specialists, claim that the Japanese economy is just like any other capitalist economy. Although they usually do not read a word of Japanese, and have made no empirical study of the Japanese economy, they claim that the Japanese just get up earlier, work harder and save and invest more than their competitors. This school is often known as "The Chrysanthemum Club". I like to say that at time, I believe, much of the economics profession is riding on Japan today, sounds very much like medical doctors working for the tobacco industry. That's my own view of this.

On the other hand, scholars of the Japanese state bureaucracy, myself included, some American trade negotiators, many American manufacturers who have competed successfully everywhere else on earth except Japan, argue that the Japanese economy is different from that described in American economic models -- that it is a capitalist developmental state -- that the role of the state has a quite different role in it -- or position of the state than in neo-classical economic theory.

This school has been dubbed "the revisionists" because its members are attempting to revise orthodox American policy by calling for specific trade measures, tailor-made for Japan. This latter group, it seems to me, is beginning to achieve some small measure of success as seen, for example, in the Bush Administration's structural impediments initiative to open the Japanese market. I don't think that this was well founded or that it's going to succeed, but it's the first time the U.S. government ever undertook such an attempted reform against another government that amounts to very serious interference in, what are perfectly obviously, domestic affairs. It did cause some Japanese to come back with some structural impediments initiative in American proposing that every American be limited to one credit card, and a few others. There is that order to the discussion.

Everyone agrees that many things have contributed to the collision course and that to single out any of them as central is a source of error. I think all of us stipulate that for functional industrial policy in the United States we must, at some point, resume financing our own government, provide incentives for our people to save instead of consume, to progressively reorient our engineering from military to commercial products, and to get much more serious about educating the labor force, and particularly at the required level.

There is one cause of the trade deficit, however, that is extremely controversial and this is Japan's industrial policy--"sangyo seisaku". Industrial policy is to English-speaking economists, something akin to sin. It means governmental affirmative action on behalf of domestic industry to foster the orderly retreat of declining industries, and to build a high-value added industries of the future. It works on the supply side, and takes as its criterion the number of truly valuable jobs held by a nation's workers. I want to stress this. The Japanese government, in implementing its industrial policy, does not take, as its criterion of success, global efficiency. Its criterion of success is the number of truly valuable jobs held by Japanese. I regard this as perfectly plausible governmental objective. But we're talking, past each other often, when, to the extent that our industrial policy is being forced to conform to a body of abstract thought, the Japanese industrial policy favors computer chips over potato chips. I have in mind here the fact that the current head of the Council of Economic Advisors to the U.S. President said that, in his view, there was no difference.

The Japanese are past masters at industrial policy which they began to employ during the late 1800's. The most important command posts within their economic general staff, the ministry of international trade and industry, is called "The Industrial Policy Bureau". The prime tools of industrial policy are export incentives, trade barriers to protect the home market, low-cost credit, pro-business/environmental and educational policies, unorthodox accounting practices and other incentives to cause private firms to go into government approved industries, foreign commercial intelligence services, nationalistic patent policies--it took 29 years for Texas Instruments to get its basic patent on the integrated circuit in the Japanese market. Now, Texas Instruments will make substantial royalties throughout the rest of the 1990's but, during that 29 years, memory chips were lost completely to the Japanese market.

A host of other forms of economic covert actions (want to stress that public subsidies are not very important; that is, there is Japanese subsidization of research cartels and other such things, but it is not primarily a matter of money) is, it seems to me, a matter of strategy.

The challenge of Japan today goes well beyond the old shibboleths of protectionism, level playing fields and competitiveness. The only people advocating protectionism are those who invest in politicians rather than in new equipment -- as, for example, Pat Choate in his new book, "Agents of Influence" documented. In fact, it seems to me, industrial policy is the specific antidote to protectionism of important but weak industries such as machine tools and robotics. That is to say, we do not wish to protect industries that we know are uncompetitive or inefficiently managed, things of this sort, but in some cases we need these industries and in that case, it becomes a function of the government to assist in developing.

The idea of a level playing field means that people should play by the same rules. But since the Japanese play by different rules, and since we've had very little success in agreeing on what a new set of common rules might look like, we must learn to match rather than to imitate or to argue with them. We certainly have discovered that we and the Japanese differ almost entirely of what might be meant by the phrase "open economy" or "liberalization". That is the case of the negotiations of liberalized Japanese financial markets in the 1980's, the Japanese Ministry of finance made it clear to us that they had analyzed the effects of what we were proposing and that the effects would make eight of the ten largest banks on earth Japanese. They then said "If you want to call that liberalization, we will agree to it. If it wasn't going to have that outcome, we shouldn't have agreed to it."

The idea currently popular in some American business schools is that American firms lack competitiveness. Actually, it seems to me American firms are primarily the products of and responding to the short-term incentives and signals sent out by the American political and financial systems; and until these are changed, there is no such thing, generally speaking, as an enterprise-level solution to the problem of competitiveness.

Let me conclude, Japan differs almost completely from the United States in its history of industrialization, in the role of the state in it, and the place of economic affairs in national security. Japan is not, however, unique. It is similar to that other great late developer -- Bismarckian Germany. Both began intentionally to catch up with the original beneficiaries of the industrial revolution at about the same time...1868 for Japan, 1870 for Germany.

Both have experimented for more than a century with corporatist forms of social goal-setting while retaining the efficiency of the market. It is an Anglo-American conceit that either Germany or Japan should play by same rules simply because after World War II they were briefly occupied by the allied powers.

The challenge for American nationalist corporate economic policy is to recognize our differences in Japan and above all to begin to formulate strategies for managing them. It also seems to me to be the indispensable first step toward avoiding another national collision.

Let me then try to bring this abstract discussion of industrial policy down to California cases, which is what particularly interests you. It seems to me that one of the most controversial issues in America today is the fact that we have 50 industrial policies for each state, but we don't have one for the nation. This produces contempt in Japan. I mean the fact that Kentucky paid \$150 million to attract a corporation to invest in Kentucky worth \$16 billion, and that the purpose of this investment was to prevent (or this money expenditure was to prevent) Toyota from going to Indiana, Illinois, Michigan, Ohio produces a sense, I believe, in Japan that these people don't know what they're doing.

So this issue, I believe, is (particularly if California is the largest and best represented state) that we should not underestimate the influence that California can have in producing national response to the Pacific Basin.

A second implication here is that high-tech industries are particularly important in California. That is, by high-tech industries we mean industries with very high R & D costs, and relatively short product life cycles. Which means, in fact, if that's the only business you're in and you're in it to make a profit, you're probably today going out of business if you're trying to compete with the Japanese "Keiretsu". Where the Japanese "Keiretsu" are in these businesses not to make a profit but to provide jobs for their people for the future -- really good jobs. And they are very strongly supported by the government.

It seems to me that in California it is critically important that we come up with policies that deal with the health of our aerospace and micro-electronics and biotechnology industries, particularly these which we are quite good at; and that, moreover it is important for us to recognize that foreign direct investment is a critical issue in this State.

The Japanese regularly say, "We sympathize with you, but why do you always blame the buyer?" That is, "Why can't you put together policies that would reflect what kind of investment you want?" And they suspect that we can't do that because we're too doctrinaire...that we're too worried about heresy to some abstract economic concept. But it seem to me that the lack of reciprocity in foreign direct investment is one of the most critical issues out there right now. Japan buys what it wants in America and our legal system gives it full rights of protection as an owner. Whatever one may think of T. Boone Pickens, he is the owner of the Koito Company in the Toyota "keiretsu" and the Japanese political system is -- legal system is--uninterested in his punative rights as an owner. But now, if you're not playing ownership -- if you're not interested in ownership -- you're not playing capitalism anymore. It may be that you're playing something better. Maybe the Japanese are playing something better, given our record of leverage buyouts and manipulation of the stock exchange during the 1980's; but this issue is very much present, it seems to me.

CHAIRMAN TORRES: Well, how does it affect California's long-term investment strategies.

PROFESSOR JOHNSON: Well, I think thaqt we must decide what kind of investment we want in California. do we want joint ventures, do we want the buyouts, do we want greenfield start-ups? What's its effect on the labor force? We have a series of issues that have ben sensationalized in the press, but they are also quite present in the legal world today.

CHAIRMAN TORRES: Well what happens in January when a new governor calls you and says -- she wants you to tell her what out to be California's policy to foreign investment.

PROFESSOR JOHNSON: We need a licensing program in California. The Japanese regularly say to us the most common headline in Honolulu is. "Last Golf Course in Maui sold to Japanese". Now they say, "We're somewhat sympathetic to that. We wouldn't want the last golf course in Karuizawa sold to Americans--we wouldn't even let you play golf there". But, the issue is: why do you always blame the buyer? If you want some municipal golf courses in Maui, or some other such way, produce a plicy that will influence this investment -- that will direct it the way you want to go. Similarly, in big purchases such as Columbia Pictures by Sony, this raises the whole issue of intellectual property rights -- whether these should be sold or should have been licensed. When Mr. Morita was asked whether the American film industry could make a film about Japoanese Emperor he said, "Yes, of course you could. We just wouldn't let you show it in Japan". Well, you don't make films if you can't show it in the second largest market. So this, in effect, does have a frustrating effect.

Let me say just a third -- put on the record -- a third area that seems to be as relevant to California in this context. Many people, I'm thinking of the Joel Kotkin book, many people believe that we in California have an advantage because our demographics are better than Japan's. We have a more interesting group of immigrants coming into the State, whereas, of course, Japan restricts all forms of immigration. You can become a citizen in Japan only by being a child of a Japanese male or now female (for the last three years). That we have a younger population, Japan faces an aging -- a remarkably aging -- population. That is, our demographics cause some in America to be optimistic, but I don't think they have much reason to be optimistic. Then my point here is that this is all true. We do have a better demographic composition in California than they have in Japan. But demographics don't add up to a strategy. Good demographics still will not compete with Japanese family stability, high levels of education. The asymmetries that we have in education...Let me just say a word about education because I know of your interest.

CHAIRMAN TORRES: Yes.

PROFESSOR JOHNSON: It is remarkable the asymmetries between the two countries. Japan does an absolutely superb job of education--in required education--producing a labor force capable of very high value-added manufacturing.

Japan falls down rather badly at the University level, and its graduate schools are a farce. That is to say whenever I've heard people talk about workaholic Japanese I know they've never been to a Japanese university, because there you would discover the most extraordinary goof-offs almost anywhere on earth. By contrast, the American educational system does an almost disgraceful job of required education. Catching up enormously fast and at a highly elitist manner at the university level, and with world-leading graduate schools. I mean people still come to America to to to graduate school. No one we know--we know of no known case where someone came to America to go to elementary school, unless he happened to have been caught here. This, I think, poses another major problem for the State. Japan is very much aware that we do a great deal of our research and development in our public universities and that these are open to all comers on the basis of academic freedom, if they're qualified. Japan, by contrast, does most of its research in proprietary research institutes, comparable to those owned by IBM or Toshiba or things of this sort. This has resulted in a campaign by Japan to try to improve its universities, and there is a major effort to up-grade the main campus of Tokyo University into something like an international graduate school.



But I think the concrete result today, of this asymmetry in research, is extraordinary Japanese investment in acquiring the research product of American universities by either supporting research, by endowing chairs, by...this has been controversial in California...

CHAIRMAN TORRES: Yes, U.C. Irvine.

PROFESSOR JOHNSON: U.C. Irvine. It's very controversial with the Massachusetts Institute of Technology. And all I can really say on that is -- what I think is important to this Committee -- is that the only defense that these university administrators have is that they've been acting without a policy. That is, our government leaders can be often critical of our universities, but at the same time they won't make a policy on how far we want to go with Japanese investment in higher education in America. Do we want to do it for research? What access do the Japanese firms have?...and things of that sort. But I think I've exhausted my time, I thank you for your attention.

CHAIRMAN TORRES: We'll be back!

PROFESSOR JOHNSON: Thank you.

CHAIRMAN TORRES: Thank you very much Dr. Johnson.

#### B. Need for Science and Technology Human Resource Development

CHAIRMAN TORRES: I'd like to call on Chancellor Richard Atkinson, former director of the National Science Foundation and member of the U.S. People's Republic of China Joint commission on Science and Technology.

CHAIRMAN TORRES: Chancellor. Welcome to the Committee and thanks again for allowing us to be on the campus here and your cooperation and support by you and your staff is very much appreciated.

CHANCELLOR ATKINSON: It's good to see you again.

CHAIRMAN TORRES: It's good to see you again, too.

CHANCELLOR ATKINSON: I've had a chance to look at your agenda for the morning and I must say you've had some interesting presentations. If they lived up to billing, they should have been a fascinating morning. Let me just begin...I do have a topic and I'll get to it very quickly but just let me make a few introductory remarks about this particular campus.

As you know, it really has its origins in science and technology and that's how the campus started and the early emphasis was very much on science and engineering programs. But a little over ten years ago we really recognized the importance of international activities, international trade, international affairs and began to focus subsequent expansion of the campus very much on international activities and part of that expansion involves the Graduate School of International Relations and Pacific Studies, the first Graduate School of International Relations in the University of California system. We're very proud of it and you've seen several faculty members from that School this morning. We think we are indeed recruiting a first quality faculty to lead that school. We have a new undergraduate college, fifth college, which is very much focused on international study, international affairs. We have a very active program for taking students to other nations to study and may surprise you but we probably have more students than any other University of California campus studying abroad at any time. So, although we're rather...we're not nearly the size of UCLA or UC Berkeley, we have a tremendous emphasis on overseas studies and that is represented in terms of the number of students that we have studying overseas. And, then finally we have very active foreign language instruction programs and we think we have the highest percentage of our undergraduates involved in foreign language instruction of any other public school in the State.

So there is a strong emphasis on international activity. I think it's in a sense a natural following up from the early engineering and science emphasis...a very natural and nice meld. We see some very interesting interactions between science activities and international affairs on this campus that I think have real implications for this Committee's focus this morning.

My topic is going to be dispensed with fairly quickly because I have a report here, it's a reprint of an article of mine that appeared in Science Magazine and I've just...going to play on this for a moment by saying that I was President of the American Association for the Advancement of Science this last year and part of my Presidency involved the Presidential speech and this is the speech published in Science Magazine.

I say this for a reason because about three years ago I made a similar presentation to the Regents of the University of California and it focused on the issue of supply and demand for science and engineers, and in that earlier presentation to the Regents, it got a great deal of national attention and I have made some adjustments in terms of my predictions based on that early presentation.

The point I'm trying to make is that this has really been well-vented on the national scene and locally over the last four years and the statements I'm going to be making, I think, are really quite conservative in terms of what I judge to be overwhelming, shortfall in scientists and engineers that will begin to occur about 1995. For the next five years we're not going to notice that shortfall, but when it sets in the mid '90's it will be very abrupt and it will expand to massive proportions by the 2010 of the next century.

I won't go through the counting..of the, it's really gone through in some detail in the paper, but just to give you a feeling for numbers let me take one area and talk about Ph.D's. The supply and demand for Ph.D's is science and engineering and if I could just have you look at what's called page 429, this figure right here. This is the projected supply and demand of Ph.D's in science and engineering for the country as a whole and I'll try to focus in on California in a minute. But, you can see that we're going to be supplying about a little less than 12,000 Ph.D's a year from all the universities in the United States and that supply fluctuates up and down over the years but stays roughly at that level, and then what you see are four demand curves and I won't go through the details of those but the D-0 curves is just saying wherever the demand was last year we'll just assume that demand is constant for all time. But we know that's not going to be the case, we have to augment that D-0 demand curve with the number of retirements that we can expect in the workforce and we have very good data nationally on retirements in the workforce that's compiled by the National Academy of Sciences, and if one decides you have to replace those retirements in the workforce that leads to the D-1 curve for the demand for Ph.D's. Then, we also know that starting somewhere in this next decade, in the middle of the next decade there's going to be a tremendous expansion in terms of the college age population, and if one assumes that we will have the same ration of teachers to students as that college age population expands, then we're going to have to increase the number of Ph.D's to meet that expansion requirement and that would generate cumulatively the D-2 curve. And, then the D-3 curve is based on an issue on how many Ph.D's will industry require, and this is based on the assumption that there is going to be about a 4 percent growth in the needs of industry for the number of Ph.D's.

Again, one would have to go through all the detail of this, but I assure you that if we got into a discussion you would end up believing that my assumptions are really fairly conservative. But now let me examine what this implies. If you look at the year 2010 on that curve we're going to require about 25,000 Ph.D's produced that year and the actual production will be about 12,000 and that's how the matter spreads out.

If you'll just look at this little flow chart down on the bottom of that page, that gives you the average for the period from 1995 to the 2010 for the supply and demand under those different scenarios but you can see with the D-3 scenario, the bottom one, we're going to need about 20,000, 21,000...the demand will be for about 21,000, the supply a little over 11,000 with a shortfall of 9,600.

CHAIRMAN TORRES: How does that compare to our other competitors in the world?

CHANCELLOR ATKINSON: I can't, I can't really give you a detailed comparison. We're going... I really can't respond to that. I mean I assume the rest of the nations of the world are going to maintain their supply of Ph.D's, roughly at the level they're at. We have some peculiar aspects to this situation and that's good question, I better be careful about the answer. I really don't know how it will stand in the rest of the world, but I do know that we're going to have this really dramatic drop and that we're going to have to deal with it. Now, the first point I would make is that the University of California supplies 10 percent of all the Ph.D's produced in the United States, so the University of California is a tremendously important supplier.

The next point I'd make is that the Federal Government has really walked away from graduate education and that's represented here in the...

CHAIRMAN TORRES: Right, I saw that.

CHANCELLOR ATKINSON: You already got to that. I mean here...if you look at just the striated area in 1969 the Federal Government supported 60,000 fellowships at the graduate level, by 1989 this last year were supporting about 12,000 fellowships. So the Federal Government just simply walked away from graduate support and as you well know, Senator Torres, the State of California has not been very forthcoming in terms of supporting graduate education in the University of California. We were really counting in these last several years in readjusting our programs. We've had this tremendous expansion at the undergraduate level but have been absolutely static at the graduate level. For a campus like this it's been a real problem because as we've expanded dramatically at the undergraduate level, we've not been able to have a corresponding increase, even a partial increase, at the undergraduate level.

So, I think these are issues that should be very much on the minds of the Legislature, our situation in terms of productivity and international competitiveness depend certainly on the supply of technically trained people, they depend on the level of basic research, lots of other factors, but those are two key ones where the university is very much involved.

CHAIRMAN TORRES: When I served as chair of the Science and Technology Committee a few years back, one of the major priorities I put out was engineering education because even then in '83, '84 we knew what was coming through the statistics that were available to us, and one of the factors was that we are educating more foreign engineering Ph.D's than almost any other country combined, but yet they leave which is humanitarian on our part but from our own interests not necessarily a practical move for our needs. Is that still occurring?

CHANCELLOR ATKINSON: That's a very, very strong point. I mention that I've made similar presentation to the Regents about four years ago that I changed some of my assumptions because of a lot of critiquing. The assumptions that I made originally in that early Regents paper was that 70 percent of the foreign nationals receiving Ph.D's in the United States would remain in the U.S. workforce. That turned out with subsequent data to be just too optimistic a number. It's now...in this paper I use 50 percent, but other countries are becoming so competitive, I mean Korea, Japan, Hong Kong and many other countries are becoming so competitive that Ph.D's that had been trained here and would have stayed here are now finding their way back to those countries and there's a lot of evidence so one might even question the 50 percent measure.

The issue of attracting American students into graduate education is a key one. You have to get the message out that there are tremendous opportunities. I just this week was with the President of Princeton University. They have an entering graduate class in the Department of Astronautical and Space Sciences 15 entering graduate students. They, of course, made offers to U.S. citizens and non-U.S. citizens. They have 15 entering students, everyone is a foreign national. So I mean I think it's we...I wouldn't want to cut out the flow of foreign students into this country, but one thing is we have to..the change in immigration laws that permit us to bring in more foreign scientists is certainly to our advantage, it's to the the disadvantage of other countries but it is to our advantage. That's something that has been modified. The issue of drawing more American students into graduate education and I think hopefully holding more of the ones that are foreign students that are trained here is something that is part of the productivity base of the country.

CHAIRMAN TORRES: How do we do that with K through 12?

CHANCELLOR ATKINSON: Well, you know a lot of people are focused on K through 12. The AAAS, the American Association for the Advancement of Science, has what's called Project 2061 which is named because that's the return of the Haley's Comet. The year that the Project started was the year that the Haley's Comet last passed here. The point, though, is that it's very much focused on science education, many groups are, the issue of bringing minorities into science education is a very important issue. All of my projections, for example, assume that the same percent of students will go on in science as have done so in the past but if you look at the minority groups, it's a much lower percentage so we have to bring those percentages up dramatically.

So there are real issues in K through 12 but what I'm going to say now may surprise you. I've been spending some time with some Assistant Superintendents and school teachers and I must say they have a tremendous set of difficulties before them. I mean I...I mean I've ended up feeling that they were working very hard, I felt very sympathetic with them. They just have a tremendous set of responsibilities. The day I was there students were being...being dropped at six in the morning and picked up at six in the evening. The school system on its own, hiring part-time people and the like had to run a pre-school program, a post-school program. The teachers, the Assistant Principal and Principals that I dealt with were working incredibly hard. I worry that we have just gotten into the mode of blaming everything on the teachers and school system when the problems are much broader, I mean there are problems in the school system but it won't be solved by whether method A or method B is better for reading or that is going to be some magical cure. But, I do think that there is one thing that we just refuse to focus on and a lot of people have attended to this and it's a popular statement, but I really believe it's correct.

If you look at the United States, we have our students in school K through 12 180 days a year. In...on the average in European countries, their students are in school 220 days per year. In Japan their students are in school 240 days per year and in Korea they're at 250 days per year, and what happens during a school day in Europe or in Japan is much more intense than what happens in the United States. I think I would be one who would advocate that we need to extend the school year. Students need more time in the schools and I think that would cost money and whether the Legislature, whether this Government, would ever say yes we need to spend that kind of money is another matter.

We've got a President who says he's the education President. Maybe he will march forward and raise the money to expand school programs. Imagine 180 days to 240. That's a 25 percent increase in the number of days in school, but it could really make a difference.

CHAIRMAN TORRES: Well, I won't hold my breath on this President, but I will argue that on top of all that, year-round schools have provided a tremendous pressure in terms of dealing with those requirements and the over-crowded conditions that we face in the teacher-pupil ratio is also indicative and which brings those figures of 220, 240 and 250 even more pronounced by the quality of education provided during those days versus the 180 days and the quality that we continue to provide. Thank you very much.

CHANCELLOR ATKINSON: Thank you very much.

C. Energy/Environmental Technology:  
California as Pacific Rim Leader

CHAIRMAN TORRES: Professor Gordon McDonald, Chief Scientist, MITRE Corporation.

PROFESSOR GORDON J. F. McDONALD: Thank you very much, Mr. Chairman. It is indeed a privilege to appear before you.

CHAIRMAN TORRES: Welcome to the Committee.

PROFESSOR McDONALD: The topic I'm going to discuss or represent somewhat of a shift from the two prior discussions. And I'm going to try to focus in on two issues where I think California can play a leading role among the Pacific Rim countries. Much has appeared in the press over the last few years about global change and particularly about greenhouse warming. this week there's an international conference -- Oil/Climate Conference in Geneva. It will be followed by a ministerial meeting which will provide the basis for the beginning of a negotiation on a convention--the goal being to have a convention ready for signing the next United Nations Conference on Environment -- the follow-up to the Stockholm 1972 Conference.

That convention will undoubtedly include two kinds of provisions. One, probably a phased-in approach to the limitations of the emissions of greenhouse gases, particularly carbon dioxide. The second, provisions for the protection of the tropical forests of the world. In both cases, I think that these developments provide a very major opportunity for California, California industry and the California academic establishment.

The limitations of emissions of carbon dioxide depend very heavily on the development of technology that is energy efficient. The more efficient you are in converting heat into useful product or work, the less greenhouse gas gets into the atmosphere.

A little-known fact is that over the past fifteen years, basically since the oil crisis of '73, the U.S. industrial component has become more efficient at the rate of about 2% to 3% each year. That is, we are using less energy to produce more goods. This is a benefit environmentally...a benefit economically.

A very large part of that increased efficiency has come out of research and development carried forward in California and particularly in the California aerospace industry. The development of new materials and new processes that gradually diffuse into other industries has increased the efficiency of U.S. industry significantly, and thus lowered the percentage of greenhouse gases that the U.S. contributes.

There is, I believe, a very large opportunity for selling energy-efficient industrial processes abroad, particularly in the developing countries in the Pacific -- Philippines, Indonesia, throughout Latin America and PRC. There's a very important question of how that technology is transferred--how the U.S. effectively gets in to make sure is that those industrial processes penetrate the market. There is a bit of an effort within the Federal Government. There is a committee that is looking into the transfer of environmentally sensible technology and what can be done to promote it. I think within California, we have an opportunity, both within industry and within the university community, of making knowledge of these technologies known, making it clear that that kind of technology is important if indeed that the requirements of the upcoming convention are to be met, if the environmental goals that are going to be set internationally are going to be met.



The second area, tropical forests, is also an area in which I think California can play a very significant role. The problem in the destruction of tropical forests has been imperfect management of forestry services. Forests can be managed in a way that they can be economically developed and developed in a way that's environmentally sound. Those techniques of management have evolved to a very large extent within California, both within the university community and within the timber industries in California.

Once, again, I believe that it is important that these technologies be made available both in order to aid the economic development of countries, aparticularly in the tropical regions of the world, and in order to minimize the environmental disbenefits of improper forest management.

Those are the two areas where I think California can make very significant improvements. We probably need some unified approach either it's an institution based within the university or institution that involves an industry and the university, to make information available to countries that can make use of these technologies. I think there is an opportunity for growing markets. One in which California can play an important role. I also think it's one in which there's going to be increasing competition. In previous discussions, years ago when in Japan we'd talk about the greenhouse effect, very often the audience would break into smiles and say, "This is a wonderful business opportunity, because we can make things that are very efficient". But in fact, right now, the U.S. industrial processes are digging out Japan. And we have to make that fact known, get that technology into the hands -- or the knowledge about that technology -- into the hands of potential users. So, I would single out these two areas that are going to receive attention within the international discussions in a time-scale of two years and really set the stage for California to play an important role in making available those technologies and getting them into the countries where they can be used. Thank you, Mr. Chairman.

CHAIRMAN TORRES: Professor McDonald, I'm very much appreciative of those comments. I serve as Chairman of the Toxics Committee in the Senate and I have travelled to most of the countries innumerable times in the Pacific Rim region. Not only on the Latin American side, but also on the Asian side. And as I sit down when the technocrats, whether it be in Taiwan or whether it be in Hong FKong or whether it be in Japan or other areas, I see so fervently the need for technology that I'm aware of (which I think is far superior to German technology or Italian scrubbing technology in terms of incineration) that's not being brought to those regions. There can be tremendous advantages not only is a good public relations force for California, but clearly as a good economic advantage for California.

When I sat down with the Director of the Environment in Taipei and realized only that only 13% of that population is on a sewage system in that country, and seeing the technology they were using that we've already rejected here for environmental reasons in terms of incineration, it frustrated me in terms of how we begin to put those two environments together to forge a new agenda--which is environmentally sounder with respect to their needs.

When you speak of institutions to bridge that gap, obviously an academic foundation come to mind because it's almost a neutral territory. And, sometimes I'm of the opinion that government doesn't always do things properly or right or efficiently. What kind of institution--have you given some thought that perhaps those of us in the Legislature that are like-thinking could promote and support?

PROFESSOR McDONALD: Yes. I would look at it as a university-based -- University of California-based -- clearinghouse with several functions.

1. To maintain a continuing inventory of environmental technologies to maintain a listing of potential customers. Taiwan as you bring out, is really a country in which they are almost overwhelmed by their own waste; and they do not know how to deal with it.

2. For the university clearinghouse to attempt to provide a linkage between the U.S. California-based producers of the products and industries and processes, and the potential users in other countries. And I think it's largely a question of getting information to flow both ways. Countries abroad, whether it's Taiwan or Korea, are not aware of the technologies that exist today, that are in use today, that are much cheaper and more efficient than the technologies that are being sold by the Germans in particular, and we need to make that kind of linkage. And I do think the university-based clearing house should have the role of collecting information about potential users around the Pacific Rim and trying to make those linkages.

CHAIRMAN TORRES: Costs?

PROFESSOR McDONALD: And the cost, and this is very much of the back of the envelope calculation that I did last week, would run about \$2 million a year. It's, I think, a relatively small investment with a potential very large payoff.

CHAIRMAN TORRES: Which would provide an incentive for the private sector to help finance?

PROFESSOR McDONALD: Yes, I think in the longer term you want private sector participation, but in order to maintain the required neutralities so that particular industries do not feel they're either favored or disfavored--I would base it within the university setting.

CHAIRMAN TORRES: All right, thank you very much.

PROFESSOR McDONALD: Thank you.

#### D. Information/Communications Infrastructure Development

CHAIRMAN TORRES: Robert De Martini, Director, World Trade Commission, Susan Estrada, Executive Director, Californai Education and Research Federation Network, please come forward. What's our time frame here? Susan, do you want to start off?

SUSAN ESTRADA: Sure, thank you for this opportunity today. My name is Susan Estrada. I'm the Executive Director of the California Education and Research Federation, CERFnet known affectionately as. Our motto...

CHAIRMAN TORRES: CERFNET?

MS. ESTRADA: CERFnet. Our motto marries the cry of the surfer and the happy computer user, Cerfs Up. I'd like to welcome you all to San Diego on behalf of CERFnet. My organization and the San diego supercomputer Center, in the building just over here, where we have our hadquarters, are identified in AB 2852 as two of several organizations already in place and able to assist in cooperation and technological leadership for the Pacific Rim through the proposed Global Applied Technology Extension Service. We are not just eager to help, we are chomping at the bit and I'd like to explain why.

The San Diego Supercomputer Center, SDSC, was born six years ago when an aggressive consortium of representatives of commerce, the universities, and government obtaind major funding from the National Science foundation and the State of California. The mision was twofold: To provide access to supercomputing to a supercomputer starved academic research community, and to give leadership in promoting university, industry and government collaboration in computational science and engineering. You might think that the logical thing to do wa to divide the access question from the leadership question and set up CERFnet as a way of facilitating access, but that's not how history went, and, as it turn, out, we're very glad that it didn't, because the two questions aren't really separable.

CERFnet was born two and a half years ago with a grant from the National Science Foundation as a midlevel network, part of the Internet, which provides access for scientists and engineers to the NSFnet, a backbone network linking five supercomputer centers across the country as well over twenty midlevel networks. SDSC is the only supercomputer center with a direct connection to this backbone in the West, although the Internet also extends to many other supercomputer centers throughout the nation. CERFnet, like SDSC, is a project administered by an industrial research firm, General Atomics, a company with a long history in leading-edge technology located very close to here.

Both SDSC CERFnet combine the functions of providing access and leadership and it's a lucky think they do, because the form of the access can play a very large role in determining the breadth and the scope of the leadership. CERFnet now connects five campuses of the University of California and the University of California office of the President, all but one the twenty state university campuses, several research laboratories, and twenty-two industrial sites. Every one of those sites can have instant access to the MELVYL catalog of the University of California Library, which includes the California State Library holdings, because that is a valued-added service of CERFnet.

But what does that mean? It means that it's possible for a researcher sitting at a workstation in a pharmaceutical firm to perform a calculation on the San Didgo Supercomputer and to see recent references to the compound that is being calculated on the Current Contents database available to MELVYL. Two windows on the workstation screen are as convenient as opening two publications on the same desk, but we have just made the desk as large as the University of California's multi-million volume library. The simple collation of two items of inforamtion, the result of the calculation and a journal refernce, could take the same researcher the better part of a day or even longer, if she had to drive over to the nearest UC library. That's a very simple example, but I think it's also very telling. The productivity and efficiency of our scientific and technological establishment can be multiplied many times by networking, and that's what CERFnet is trying to do. We couldn't...

CHAIRMAN TORRES: Does that go in line with what Professor McDonald cited earlier in terms of a need or kiosk of information?

MS. ESTRADA: Yes. We couldn't do it if we were simply technical folks good at making connections from the back of one computer to the back of another. We have to be what we are, vitally interested in the progress of computational science and the cornucopia of research results that are flowing from the supercomputers across the networks. A couple of weeks ago, the Interop conference of networkers across the nation was held in San Jose, and CERFnet won Interop's highest award, for best network in the service sector. We were very much honored, and we have to attribute it to our commitment to the progress of research and engineering.

As far as being part of a Global Applied Technology Extension Service, we are cut from exactly the right cloth. We understand why at it can mean to put the world at the fingertips of a researcher, in very graphic terms. Because we are already the result of university, industry, and government collaboration, we understand how to concentrate on the most important task, breaking down the barriers between the sectors that are barriers to progress, while respecting the interest of each sector.

We understand that we have opposite numbers and counterparts in every country along the Pacific Rim, and both SDSC and CERFnet have engaged in exchanges of information with many of them. Just last Thursday we were visited by Dr. Habibie, the Indonesian Minister of Research and Technology. On the same day, an agreement in principal was reached with the systems Engineering Research Institute at the Korea Institute of Technology. We expect a link between CERFnet and SERI to be installed in the early part of next year. We have hosted delegations from universities and computer centers and government agencies from Japan, China, Korea, Australia and Hong Kong, all in the last six months. The CERFnet staff already has a mixture of nationalities and has native speakers of Spanish, Cantonese, Mandarin, Hindi, and, of course, English.

We believe that CERFnet has already been a powerful stimulant to technology transfer and cooperation among various sectors of the economy. One of our projects involves cooperation with Fullerton College, a community college, and with NASA for access to NASA's giant Technology Transfer database for all CERFnet subscribers. Another one of our projects involves a partnership between the FredMail Foundation to provide a gateway between our two networks. The FredMail Foundation is oriented towards providing K-12 collaboration through the use of computers and networks throughout the nation and the world and headquartered in San Diego.

The establishment of the Global Applied Technology Extension Service would mandate that we cement all of these relationships, including our Pacific Rim contacts, and expand our activities to include access to shared informational resources on a global scale.

It should be possible for California businesses to get on to CERFnet, access one of the Extension databases, and find out, for example, the volume of shipping heavy goods between California and selected Asian ports over the last five years. It should be possible to command and to see such data in a clear graph, right in front of you, or to feed the data into an econometric model running on the supercomputer and obtain a realistic prediction of future trade. A network is an informational circulatory system, keeping alive the possibility of the happy coincidence of good minds and good information that issues in human advancement and progress.

I hope that you're getting the impression from my description of the kinds of activities we are undertaking, that the legislation in AB 2852 is a close fit with what is already taking place in this field. There should be no hesitation at this threshold of opportunity. Thank you.

CHAIRMAN TORRES: Thank you. Mr. De Martini.

ROBERT DE MARTINI: Thank you, Senator. I'm Bob De Martini from the office of Export Development which is a unit of the World Trade Commission. I'm here today to talk about some of the information management that we've brought on line in the last four or five years of operations, some things that we're about to announce, and some things we hope to accomplish in the future.

For those unfamiliar with the World Trade Commission, we're considered the agency in the State that's responsible for most matters pertaining to world trade in California. We fulfill this role through three areas of emphasis. One, through the office of Trade Policy and Research. We perform legislative advocacy in Sacramento and Washington.

CHAIRMAN TORRES: Opposing some of my bills, I might add, but go ahead.

MR. DE MARTINI: Two, through the Export Finance Office we administer a very aggressive export finance program credited with supporting well over 200 million dollars of export sales that otherwise would have been lost; and, third, through the Office of Export Development, to which I am affiliated. We perform all marketing activities of the Commission. As information management falls primarily within the purview of this office, I hope to give you some insight to our efforts in the area. Our active marketing support focuses on facilitating participation by California companies in major foreign trade shows. We also work with foreign buyer match maker events. We produce a "Made in California" products catalog. We organize California stands in nearly twenty-five trade shows around the world each year on a predominantly cost recovery basis.

We take about 250 companies to these events. Our trade show program alone is credited by some independent studies with making over 150 million dollars in export sales that otherwise also would not have occurred, and these are from companies that have never exported before or are new to those markets that we've taken them to. We're also considered a model program within the United States compared to what other states are doing at this time. The success of our program can be in many ways attributed to our learning very early that we would have to purchase, collect, build, or otherwise develop industry specific data bases of California companies in order to outreach our programs effectively. Today our data bases contain over 43,000 California companies which can be accessed by SIC codes, by key words, by location within the State. We use these data bases every day in promoting our program, soliciting participation in our events, matching foreign trade leads with California companies. We also use it to research specific industries. Because of the importance of these data bases to our program's success we continue to look for new ones wherever possible, to share information wherever possible, and to purchase and develop our own if we need to.

As an adjunct to our data base work, we helped to create the California International Trade Register. The Register is a broad base directory of California companies that are currently involved in international business. The listing of a company in the directory is free to any California firm involuntary. Each company is listed with full contact information on the firm, the size of the company, their products and the foreign markets where they are active. The first edition which we produced last year, was the 1990 edition, had approximately 4300 companies. The 1991 edition which is currently in final stages will have about 8,000 companies registered. We'll feel pretty comfortable once we have between 12 and 15,000 companies contained with the register. Because it is voluntary it's a big job on our part to get that message out to companies to encourage them to sign up.

In addition to providing the book to California's foreign offices, we send a copy of the International Trade Register to all U.S. Embassies and Consulates abroad for use in their commercial libraries. Many of these libraries receive hundreds of visitors monthly seeking new suppliers from the United States. We also help to promote the book's availability in foreign publications and in our own Made In California magazine.

Due to the attraction of doing business with California firms, the private sector also produces a number of high quality directories of California companies. Included among these are the California Manufacture Register, which many of us will be familiar with, and the Southern California Business Directory. Through a partnership this year with the Japan External Trade Organization, JETRO, we facilitated the placement of an electronic version of both of these books in 28 business information centers throughout Japan. The data base lists over 24,000 California manufacturers and product suppliers which can be retrieved electronically again by SIC codes or by key words.

My comments thus far have been about our collection and manipulation of data regarding California companies. Identifying and being able to efficiently reach these companies is very important to the success of our programs and any ongoing developments that we look towards. In mid-November the Office of Export Development will be introducing a new on-line system for companies seeking international business. The new system will allow any firm in California with a personal computer and a modem instant access to detailed export information and trade leads.

CHAIRMAN TORRES: Through you, through the Commission?

MR. DE MARTINI: Provided by us in a partnership with California State University of Fresno using ATINet which is a State on-line system. So, California companies will be able to retrieve market and industry research, export trade leads, information about existing Federal and State programs, and a calendar events of...we're putting on with the federal Government...might be putting on, plus any sort of training seminar, symposium within the State of California will also be on the system. Referred to as the Automated Trade Library Service or ATLAS, the system utilizes the state-wide CSU network. The network allows almost any firm in this State access to ATLAS with a local phone call to any one of 19 California State University campuses. There is no cost to individuals or companies participating in the program, no fees, no monthly charges, no cost for information retrieval. The system is available 24 hours a day, 365 days a year. During the week of November 12th we'll be conducting system previews to key trade groups, industry multipliers, colleges and universities, and State and Federal agencies in four regions of California. On the following Monday, November 19th, the system will be open for registration to any firm in the State. Though the system is free of charge, registration of users is necessary. This will allow us to restrict access to only California firms and to manage the system effectively. We'll be able to identify what sort of company's individuals are using the system, what files and information are accessed most frequently, what benefit results they received, and where improvement and expansions of the system should be made.



We are readying resources and expectation that this initial launching of ATLAS will be followed by later releases which will take advantage of the enormous possibilities nationally and internationally that an on-line system such as this offers. The automated Trade Library Service will also have the technological capacity to support many of the initiatives put forth in the recently established Global Applied technology Extension Service, the GATES Initiative.

There are a number of existing information systems currently available and others under development that would be of great value to those individuals and for seeking international exchange in greater global competitiveness. The greatest challenge to the World Trade Commission and the GATES Initiative is to coordinate linkages among State, Federal and foreign information networks for the betterment of information exchange. We certainly look forward to entering a dialogue between all these groups in order to explore methods of collecting, maintaining, and distributing information to targeted users wherever possible.

As we move forward in this area, we will always remember that the programs that have been most successful with our office have been those that California industries have told us we should make available. It is very important that we keep our end users in mind as we put information systems in place. We should never rely on our own assumptions and notions as to what is needed. In addition to an active dialogue among the various information providers, I encourage a similarly active dialogue with the end users of each of these systems. System users of any particular system want to get in, get their information and get out. If their entering and exit is impeded by too many menus, irrelevant data and information, potential users will be unwilling to use the system and will offer little benefit.

I will never advocate the ATLAS system or any other information system try to be all things to all people. The targeted users of each of these systems typically have dissimilar needs. Where there are areas of commonality, however, I hope free information exchanges will occur. I applied the effort to the Committee and I look forward to answering any questions you might have.

CHAIRMAN TORRES: What impact will you have in your action with the UC system?

MR. DE MARTINI: I look forward to actually sitting down and talking to them about where we can be exchanging information.

CHAIRMAN TORRES: Oh, you've set up meetings with them already?

MR. DE MARTINI: The first system previews will be occurring during the week of November 13th and at that time we're looking to demonstrate our system to all the different entities that are managing systems and to see where we can have areas of cooperation.

CHAIRMAN TORRES: What interaction are you going to have with the UC system? When do you have those meeting planned for?

MR. DE MARTINI: The week of November 13th through the 16th.

CHAIRMAN TORRES: In Berkeley, or?

MR. DE MARTINI: We're in Sacramento, San Jose, Los Angeles, and San Diego.

CHAIRMAN TORRES: So you haven't highlighted particular campuses then? This is just a general...anybody can come to. I was asking more specific.

MR. DE MARTINI: I'm sorry. Only multiplier groups, trade multiplier groups and the university systems. Also, the Federal Government through their U.S. Department of Commerce also are maintaining a lot of information that we hope to see where we can have future exchange.

CHAIRMAN TORRES: Ok, thanks very much. This hearing is adjourned.