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Seeking Smart Growth: The Idea of a California Global Higher Education Hub

Abstract: In 2010 international students generated more than \$18.8 billion in net income into the US economy. California alone had nearly 100,000 international students with an economic impact of nearly \$3.0 billion. In this paper, we outline a strategy for the San Francisco/Bay Area to double the number of international students enrolled in local colleges and universities in 10 years or less, generating a total direct economic impact of an additional \$1 billion a year into the regional economy. The US retains a huge market advantage for attracting foreign students. Within the US, the San Francisco/Bay Area is particularly attractive and could prevail as an extraordinary global talent magnet, if only policy-makers and higher education leaders better understood this and formulated strategies to tap the global demand for higher education. Ultimately, all globalism is local. We propose that one or all three of California's major urban areas consider developing the hub idea, and specifically outline how the San Francisco/Bay Area, a region with a group of stellar universities and colleges, could re-imagine itself as a Global Higher Education Hub. It could help meet national and regional economic needs, and assuage the thirst of a growing world population for high-quality tertiary education. Other parts of the world have already developed their version of the higher education hub idea. The major difference in our proposed Californian version is that foreign competitors seek to attract foreign universities to help build enrollment and program capacity at home, and are funded almost solely by significant government subsidies. Our model builds capacity, but is focused on attracting the world's talent and generating additional income to existing public and private colleges and universities. Doubling international enrollment from currently around 30,000 to 60,000 students in the Bay Area is an achievable goal, but would require expanding regional enrollment capacity as part of a strategy to ensure access to native students, and as part of a scheme to attract a new generation of faculty and researchers to the Bay Area and California. International students would need to pay higher than the full cost of their education, helping to subsidize domestic students and college and university programs. The result would be a self-reinforcing knowledge ecosystem. At the same time, we recognize that California may not have the political will and interest to take on such a venture. But we sense that some regions in the US will eventually grasp the model and its advantages.

Keywords: California; higher education system; international students; San Francisco/Bay Area.

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1 Introduction

Imagine a business sector that ranks among the top five exporters for its services in the US and that directly pumps nearly \$19 billion dollars into the nation's economy. It is an industry with a global reputation for quality – a brand known as the best in the world. The sector's activities bring many other benefits besides simply money. For one, they draw the world's top talent and contribute hugely to high-tech businesses and a growing service sector. It is a group composed of people who often end up creating start-ups and drives a significant portion of the nation's economic growth. It is the economic export that keeps on giving and feeds what economists call a "virtuous cycle".

At the same time, this is an industry with relatively low cost for taxpayers and low demand for local services. It is a green industry, with a low carbon footprint when compared to just about any other major sector of the economy. Further, it has potential for significant growth; we suggest *a doubling over the next 10 years* – if only political leaders and those in this economic sector would more fully understand its market position in the world. We suggest that with effective strategies it could be nurtured to grow to more than \$37 billion by 2020 – making it one of the fastest-growing exports in the national economy.

In blunt economic terms, this describes the huge potential for the US to recruit more international students, as part of a strategy to expand the enrollment and program capacity of its public and private higher education sectors.

Americans are used to the idea that we draw talent to our universities and colleges from throughout the world, in turn helping to create the highly skilled labor pool essential for high-tech and other industries. The US has done this for decades, in large part because of the reputation of our existing higher education institutions (henceforth HEIs), and also because the nation is known as a land of immigrants, open to those who can come and contribute to its economy and society.

But that monopoly position is eroding. Much of the world is attempting to catch up, building their higher education systems and developing national policies that successfully attract and keep talented people, and simultaneously bolstering their economic competitiveness. Many countries effectively use

foreign-student enrollment to help fund their higher education systems – lowering costs for local taxpayers and subsidizing domestic student enrollment.¹

Lawmakers and business leaders in the US need to better understand the global market position of their HEIs, and the huge potential for their “services” – their teaching, research and public service activities. Of all America’s “exports”, higher education is one of the service sectors with the most potential for growth. It is, however, also an example of an industry in need of a larger global view.

We project that California could more than double the enrollment of international students over the next decade – from approximately 95,000 students to some 200,000, doubling the direct economic impact from an estimated \$2.8 billion to nearly \$5 billion. This would have not only a significant influence on economic activity in the state but a positive impact on local labor markets and inevitably the number of new businesses and high-tech start-ups; it would create jobs for highly talented academics and other high skilled professionals, supporting a self-reinforcing knowledge ecosystem that includes colleges and universities, businesses, and local government, and that is internationally attractive, socially beneficial, and economically viable.

But such a vision will require building up enrollment capacity in the region as part of a strategy to ensure access to native students and a more overt view of international students as a vital component in the larger American higher education community. It also requires a partnership between local colleges and universities, businesses, and local governments in urban areas such as the Bay Area, Los Angeles, and San Diego to jump-start the idea.

2 A Growing World Market

From 1997 to 2008, there has been a continual increase in the trade balance for education services – increases due to real increases in the number of international students coming to the US, mostly at the graduate level so far, and to increased tuition rates. At the same time, education, and specifically higher education, could play a much larger role in rebalancing the US balance of trade – although

¹ See John A. Douglass and Richard Edelstein, “The Global Competition for Talent: The Rapidly Changing Market for International Students and the Need for a Strategic Approach in the US”, CSHE Research and Occasional Paper Series (ROPS), CSHE.8.2009, October 2009: <http://cshe.berkeley.edu/publications/publications.php?id=341>; A shorter version of this paper was published in *Change* magazine, July/August 2009.

it would require a number of key variables and reforms at the federal, state, and institutional levels.

The US is an underachiever in enrolling international students at the undergraduate level, and still strong at the graduate level but with signs that this strength is eroding as universities elsewhere in the world are improving their quality and marketing, and as governments expand programs intended to draw the world's pool of talented and increasingly mobile young people. Only 3% of US undergraduates in accredited colleges and universities are international students; this compares to over 10% in a similar grouping of European nations.² And even in graduate education, top providers in Europe have a higher number and higher percentage of foreign students – over 28% versus 24% in the US. International student numbers have grown in US universities and colleges, but not as much as in other parts of the world.

World demand for higher education continues to climb, driven by the insatiable desires for socioeconomic mobility of individuals, and by governments who now widely recognize that broad access to higher education, and the production of degrees at the baccalaureate, professional, and doctoral level, is one of the primary factors for economic development.

One recent report estimates that world demand for international higher education will increase from 1.8 million in 2002 to some 7.2 million or more in 2025 as countries such as China, India, Indonesia, Brazil, Mexico, Chile, South Korea, Vietnam, and Saudi Arabia grow economically and struggle to meet domestic demand for high quality, advanced education.³

The six main state destinations for international students, in descending order in enrollment size, include California, New York, Texas, Massachusetts, Illinois, and Florida. These states alone represent nearly 50% of the US international student market. The top ten states, as shown in Table 1, enrolled just over 60% of all these students, and with an economic impact of nearly \$12 billion in their local economies – representing nearly 65% of the total US impact, and is disproportionately higher due to higher tuition rates and higher costs of living in most of these states.

All of the top five states are relatively large in their total population, with the exception of Massachusetts. Of all the major urban areas in the US, Boston has

² Douglass and Edelstein, "The Global Competition for Talent": On recent data regarding international graduate students in the US, see Sarah King Head, "US: Chinese help spur modest graduate increase," *University World News*, November 10, 2010: <http://www.universityworld-news.com/article.php?story=20101110133853841>.

³ Bohm, A., D. Davis, D. Meares and D. Pearce, *The Global Student Mobility 2025 Report: Forecasts of the Global Demand for International Education*, Canberra, Australia (2002).

the closest environment to what we might call a US higher education hub. But that is largely a default position and not part of any overt effort by government or the HEIs in the area. Boston is, indeed, a one-off – an unusual co-location of high-profile private institutions, all of which have proportionately very large graduate school populations. We also surmise that there is limited growth potential in the Boston area, in part because the primary providers of higher education are private and with limited interest in enrollment growth.

There is growth potential in the top 10 states, and the 40 other states in the Union. But we do think that urban areas, where prestige institutions already exist, and where there is a network of quality public universities and colleges, are the primary locations for significant increases. HEIs in rural areas can increase their profile and recruitment of students, but we think this will be a marginal additional draw, and would lack the potential collaborative and joint programs possible in larger urban areas with the right mix of institutional types – in essence, the potential for the hub concept we are promoting.

Creating higher education hubs like what we advocate would be a reliable strategy to help the US double its enrollment of international students by 2020. It is an achievable goal, with larger growth at the undergraduate level, but still some growth at the graduate level.

Top States for International Students	Number of Students	Tuition and Fee (000,000)	Estimated Total Economic Impact (000,000)	% of Total Students	% Tuition and Fee of US Total	% Estimated Total Economic Impact US Total
California	94,279	\$1,611	\$2,834	13.65%	12.30%	15.09%
New York	76,146	\$1,598	\$2,296	11.02%	12.20%	12.23%
Texas	58,934	\$774	\$1,259	8.53%	5.91%	6.71%
Massachusetts	35,313	\$980	\$1,253	5.11%	7.48%	6.67%
Illinois	31,093	\$694	\$869	4.50%	5.30%	4.63%
Florida	29,708	\$555	\$827	4.30%	4.24%	4.40%
Pennsylvania	28,097	\$736	\$888	4.07%	5.62%	4.73%
Michigan	24,214	\$546	\$658	3.50%	4.17%	3.50%
Ohio	22,370	\$447	\$584	3.24%	3.41%	3.11%
Indiana	18,569	\$419	\$514	2.69%	3.20%	2.74%
Total US	690,923	\$13,095	\$18,776	100.00%	100.00%	100.00%
Top Ten Totals	418,723	\$8,360	\$11,982	60.60%	60.60%	63.82%
Top Five Totals	325,473	\$6,212	\$9,338	47.11%	47.44%	49.73%

Table 1: International Student Numbers and Their Economic Impact in Top Ten States (2009–2010).

Source: Association of International Educators (2010).

This would mean the US would grow to a total of 1.38 million international students enrolled in accredited institutions by 2020. The total “export” value in terms of the increase in tuition and fees would be approximately \$26.2 billion – depending on tuition rates and financial aid at the federal, state, and institutional, or perhaps regional, levels. As noted, the total input to the nation’s economy would be some \$37.5 billion.

3 Higher Education and the US Economy – A Role for Hubs

Creating higher education hubs are not only viable in the San Francisco/Bay Area region. They could be replicated in other parts of the US, and fit into the larger national strategy of increasing exports and regional economic development.

In his first year of office, President Obama faced an economy in severe decline. Obama identified “exporting more of our goods” as a key to economic growth. The US trade deficit remains a source of other economic maladies, including huge personal and government borrowing to help buy goods and services from abroad that, in turn, has helped to sustain the quality of living for many Americans – or at least until the onset of the Great Recession. The Obama administration set a goal to double the exports of American goods and services by 2015 – a short 5 years.

Is this an achievable goal? The fact is that the nation’s ability to significantly grow the export of non-high-tech manufactured goods, or even natural resources, is fairly limited, even if the dollar declines in its value as many predict if US borrowing continues unabated. America’s most significant growth potential is probably in the service sector. This includes financial services, patent royalties and licensing fees, management and consulting, entertainment, telecommunications, and education.

As shown in Figure 1, among the top service sectors in which the US had a trade surplus in 2008, education ranks sixth – more important than entertainment (Film, TV, Sports, and the Arts), advertising, and even communications.⁴ Most of

⁴ W. Michael Cox, “An Order of Prosperity, To Go”, *New York Times*, February 17, 2010: <http://www.nytimes.com/2010/02/17/opinion/17cox.html>; see also John Sigmund, “Higher Education Shows a Big Trade Surplus for the United States”, International Trade Administration, US Department of Commerce, http://trade.gov/press/publications/newsletters/ita_0909/higher_0909.asp.

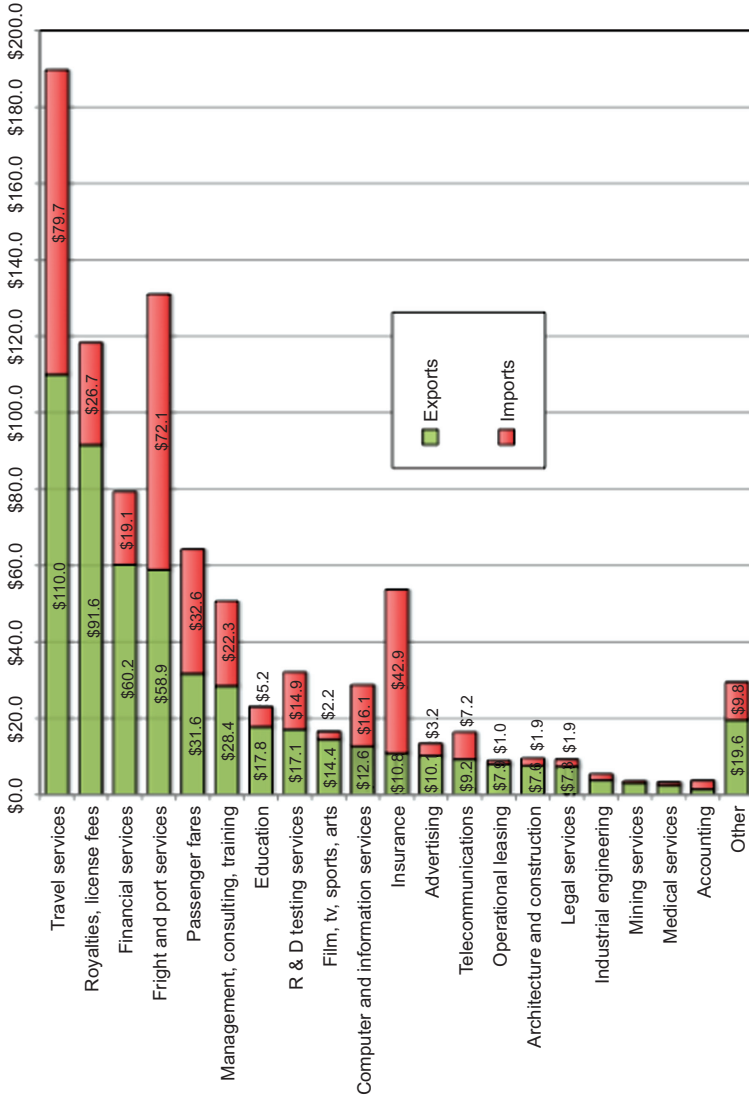


Figure 1: US Trade in Services 2008.
 Source: International Trade Administration, US Department of Commerce, 2009.

the “import” costs relate to US students going abroad for short-term education programs.

3.1 A Matter of Competitiveness

Currently the US enrolls some 691,000 international students with a total economic impact of some \$19 billion a year.⁵ The real economic impact of these students is likely much larger than this, as the current model could be extended to job creation and additional potential for international business ventures.⁶ Moreover, the AIE Study only provides data for a limited amount of HEIs, i.e., accredited ones and those that have responded to the survey.

Just as importantly, higher education brings additional benefits, including helping to meet another goal of the Obama administration and increasingly state governments: significantly increasing the production of bachelor’s and higher degrees, considered a vital ingredient for an economy increasingly focused on knowledge production, and less on raw manufacturing and natural resources.

Obama also stated early in his presidency that the US must once again have the “best educated, most competitive workforce in the world” by 2020. In short, this means the US would have to seriously ramp up access and graduation rates at the bachelor’s and graduate levels to compete with our top-performing economic competitors. What is more, the trajectory of foreign competitors, most of who are continuing to invest in higher education including China, Brazil, and many countries of the EU, is rapidly moving upward.⁷

The US now ranks only about 16th among similar developed economies in the percentage of students who enter and then complete a tertiary degree. If indeed

5 Association of International Educators, “The Economic Benefits of International Education to the United States for the 2009–10 Academic Year: A Statistical Analysis, NFSA: New York, November 2010: <http://www.nafsa.org/publicpolicy/default.aspx?id=23158>; see also: Wildasky, B. (2011) “Econ 101 and the value of foreign students”, in *the Chronicle of Higher Education*, February, 14, 2011: <http://chronicle.com/blogs/worldwise/econ-101-and-the-value-of-foreign-students/27868>.

6 See Alan Ruby, “Not So Open Door”, *Inside Higher Education*, November 18, 2010: <http://www.insidehighered.com/views/2010/11/18/ruby>.

7 Kishore Mahbuban, *The New Asian hemisphere: the irresistible shift of global power to the East*, New York: Public Affairs (2008).

Philip Altbach, Liz Reisberg, and Laura Rumbley, *Trends in Global Higher Education: Tracking an Academic Revolution*. UNESCO: Paris, 2009.

the future for US economic growth is greater knowledge production, including high-tech areas such as developing alternative energy sources – technologies that depend in large part on the nation's R&D capabilities and in a highly professional workforce – then states and regions need to think creatively on how to nurture an appropriate talent and labor pool.

If current trends persist, the Public Policy Institute for California (PPIC) estimates that California will fall short by over 1 million college graduates than it needs for its economy by 2025.⁸ Depending on in-migration patterns of highly educated professionals, only 35% of California's population will have some sort of postsecondary degree. PPIC projects that the state will need at least 41% with a college or university degree.

Multiple other studies point to an expanding disjuncture in the educated talent pool and the needs of the modern US economy. The American Society for Training and Development shows that 60% of the new US jobs created will require skills held by only 20% of the work force by 2015.⁹ In 1991, less than half of the American jobs required skilled workers. By 2015, more than three-quarters of the new jobs created in the US will require highly skilled workers, particularly in STEM areas (science, technology, engineering, and math). A recent study by the Georgetown University Center on Education and the Work Force reports that the demand for college-educated workers will exceed supply by 300,000 per year for the next decade. That means a shortage of 3 million college educated workers in America over the next 10 years, particularly in engineering.¹⁰

The Great Recession has accelerated the trajectory of more and more jobs requiring a postsecondary education. “The implications of this shift represent a sea change in American society”, explains the Georgetown Study. Essentially, postsecondary education or training has become the threshold requirement for access to middle class status and earnings in good times and in bad. It is no longer the preferred pathway to middle class jobs – it is, increasingly, the *only* pathway.

The US, and California in particular, must significantly increase the number of domestic students who graduate from high school and attain a tertiary degree. But the US, and California, must also seek to aggressively draw foreign talent as part of a larger strategy. As we have stated previously, these are not mutually

8 Public Policy Institute of California, “California's Education Skills Gap: Modest Improvements Could Yield Big Gains”, April 16, 2009: <http://www.ppic.org/main/pressrelease.asp?p=938>.

9 Tapan Munroe, *Closing America's Job Gap*.

10 Anthony P. Carnevale, Nicole Smith, and Jeff Strohl, *Help Wanted: Projections of Jobs and Education Requirements Through 2018*, Center on Education and the Workforce, Georgetown University, June 2010.

exclusive goals. The key is to build both the enrollment capacity and program quality of America's existing network of universities and colleges to accommodate both strategies in order to meet skills shortage and generate needed revenue.¹¹ The fact is that even the most optimistic forecasts regarding graduation figures of California natives still show a shortfall in the number of university graduates required to match the labor market needs.

Our view is that one needs to attempt to both increase native students entering STEM fields, while also aggressively looking to increase the US market share of international students in these fields, along with various improvements in visa policies and financial aid to encourage this talent pool to stay and participate in local economies.

3.2 Being a Responsible Global Player

Such an expansive strategy would also make the US a responsible global player, because it would help to meet world shortages of graduates. A recent UNESCO report found that there is escalating demand for engineers throughout the world that is not being met. Looking at some 50 different fields of engineering, the report notes the invaluable contribution of engineering and technological advances and an increase in the engineering workforce as crucial to sustainable human, social, and economic development. But many of these improvements have been unevenly distributed for a great many reasons, one being the lack of engineering programs and graduates in developing economies such as Sub-Saharan Africa and India.¹²

The report stresses “the critical role of engineering in addressing the large-scale pressing challenges facing our societies worldwide, such as: tackling the coupled issues of energy, transportation and climate change; natural and man-made disaster mitigation; environmental protection; and natural resource management”. But it is a supply and demand gap that extends to developed economies as well.

Germany reports a serious shortage of engineers in most sectors; by 2020 Denmark will be lacking 14,000 engineers. “And although in absolute numbers the population of engineering students is multiplying worldwide, percentages are dropping compared to enrollment in other disciplines. In Japan, the Nether-

¹¹ Douglass and Edelstein, *The Race for Global Talent*.

¹² Engineering Shortage Threatens Development, *University World News*, November 7, 2010: <http://www.universityworldnews.com/article.php?story=20101105221936787>.

lands, Norway, and the Republic of Korea, for example, enrollment decreases of 5%–10% have been recorded since the late 1990s”, states the report.¹³

As the UNESCO report indicates, there is a world need for well-educated STEM-related graduates, and the US and California-based policy regimes related to international students should encompass the idea that US universities and colleges are an important source for meeting world demand and needs. As noted previously, there is also a general need, in California, in the US, and in the world, for students with bachelor’s degrees, including those in social science and humanity fields.

This means that efforts to expand the number of international students is a matter of helping to meet both domestic and global needs, and should be viewed as part of the US’s efforts to support and meet the United Nation’s Millennium Development Goals. This includes a broad range of issues focused on improving developing economies to reduce poverty in the world and promote sustainable social and economic development, bridging the digital and broader technological and knowledge divides, climate change mitigation and the urgent need to move to a low-carbon future.

3.3 California’s Market Share – Current and Projected

California already attracts significant numbers of international students, but it is nowhere near its market potential. As shown previously in Table 1, California and New York are the biggest players in international education – combined they represent approximately 27% of the US market share for these students, according to data collected by the Association of International Educators.

California’s estimated share of the US total market in international students is 13.9%, and 12.6% in tuition and fee revenue. Because public universities in California are the primary providers of higher education in the state (enrolling approximately 80% of all students), a higher proportion of international students are in these institutions. This helps account for the relatively lower fee revenue. On average, out-of-state students are charged a tuition rate still below most private institutions – although this is changing. But their overall economic impact is, at 15.6% of the national total, larger than, for example, Ohio because of the higher cost of living in California.

¹³ UNESCO, *Engineering: Issues, Challenges and Opportunities for Development*, November 2010; see <http://climate-l.org/news/unesco-releases-report-on-engineering-and-development/>.

In which California colleges and universities are these students enrolled? Table 2 provides a list of the top 20 nationally accredited HEIs in California in terms of total enrollment of international students in 2009–2010. It is an interesting mix. The University of Southern California (USC) is the largest in enrollment, with nearly 8000 – indeed it has the largest number of international students in the nation.

In USC's case, increasing the presence of international students was not really about the money – it is a private university and international students pay the same tuition as domestic students. It may have had to do with creating a more global environment. Another possible motivation: a substantial increase in the number of these students at the undergraduate level because of their relatively consistent higher test scores, thus helping to boost USC's standing in national and world rankings.

Other major universities follow USC in the number of international students, with 5685 at UCLA (USC's Los Angeles neighbor), Stanford with 3934, Berkeley with nearly the same number at 3883. But then the remaining HEIs include a mix of one small private and vocationally oriented institution (the Academy of Art University in San Francisco), a number of other University of California (UC) and California State University (CSU) campuses, and impressive numbers at some five California Community Colleges (CCCs) – local colleges that are *not* commonly thought of as destinations for international students.

Among the public institutions, it really is about the money first, and perhaps other, more enlightened reasons after that. How else to account for the significant number of international students at some local community colleges? These colleges have certainly redirected resources to recruit abroad with the explicit goal of increased revenue.

The search for additional revenue streams is a universal reaction of cash-starved public colleges and universities. But in the case of California, and probably elsewhere in the US, there is a select group of providers. The top 20 HEIs in enrollment controlled 61% of California's total international student market last academic year; some 68% of the tuition revenue (at \$1.1 billion), and 62% of the total estimated economic impact (at \$1.8 billion) – discounting for a larger financial aid commitment by these institutions compared with their less competitive lower performers.

A look at the top 10 California HEIs indicates that the dominant players in terms of enrollment, and in tuition revenue, are even more concentrated, representing 43% of the enrollment of these students, and 54% of the related revenue. As shown in Table 3, international nationals are concentrated in a select group of community colleges with certain characteristics.

	City	Students	Tuition and Fees	Living and Dependents	Minus Financial Aid	Estimated Total Economic Impact
	University of Southern California	7987	\$249,546,590	\$166,755,297	\$161,347,078	\$254,954,809
	University of California-Los Angeles	5685	\$139,937,483	\$141,059,338	\$84,096,126	\$196,900,695
	Stanford University	3934	\$126,098,186	\$92,965,752	\$93,709,573	\$125,354,365
	University of California-Berkeley	3883	\$107,452,160	\$118,112,934	\$74,980,621	\$150,584,473
	Academy of Art University	3534	\$52,882,938	\$93,705,574	\$28,666,811	\$117,921,701
	Santa Monica College	3212	\$17,869,500	\$75,578,488	\$4,219,980	\$89,228,009
	San Jose State University	2611	\$38,759,261	\$49,642,640	\$12,228,393	\$76,173,508
	De Anza College	2576	\$11,894,169	\$62,077,315	\$3,704,177	\$70,267,307
	San Francisco State University	2572	\$32,526,944	\$55,890,193	\$11,547,470	\$76,869,667
	California State University-Northridge	2372	\$29,225,428	\$52,321,654	\$10,955,049	\$70,592,034
	University of California-Davis	2346	\$62,743,249	\$62,181,666	\$39,646,027	\$85,278,888
	California State University-Long Beach	2324	\$28,596,722	\$41,595,822	\$9,489,082	\$60,703,463
	University of California-San Diego	2320	\$54,185,208	\$50,508,789	\$33,761,395	\$70,932,602
	San Diego State University	1899	\$23,770,240	\$45,265,277	\$22,724,459	\$46,311,058
	University of California-Irvine	1775	\$41,160,575	\$38,105,574	\$30,223,449	\$49,042,700
	California State University-Fullerton	1742	\$22,816,245	\$30,255,463	\$7,049,778	\$46,021,930
	California State University-East Bay	1557	\$20,810,723	\$31,518,643	\$6,831,407	\$45,497,959
	Diablo Valley College	1508	\$9,804,060	\$29,353,988	\$1,875,092	\$37,282,956
	California State University-Los Angeles	1327	\$16,773,051	\$23,405,847	\$5,344,984	\$34,833,913
	City College of San Francisco	1322	\$7,290,036	\$22,756,684	\$1,378,489	\$28,668,232
	Foothill College	1125	\$5,654,942	\$26,670,351	\$1,440,020	\$30,885,273
	Top 20 Totals	57,611	1,099,797,710	1,309,727,287	645,219,458	1,764,305,539
	Top 20% of State Total	61%	68%	62%	73%	62%
	Top 10 Totals	40,712	868,935,908	970,290,850	525,101,305	1,314,125,453
	Top 10% of State Total	43%	54%	46%	60%	46%

Table 2: Top 20 California HEIs by International Student Enrollment 2009–2010 and Economic Impact.

Source: Association of International Educators (2010).

	City	Students	Tuition and Fees	Living and Dependents	Minus Financial Aid	Estimated Total Economic Impact
Santa Monica College	Santa Monica	3212	\$17,869,500	\$75,578,488	\$4,219,980	\$89,228,009
De Anza College	Cupertino	2576	\$11,894,169	\$62,077,315	\$3,704,177	\$70,267,307
Diablo Valley College	Pleasant Hill	1508	\$9,804,060	\$29,353,988	\$1,875,092	\$37,282,956
City College of San Francisco	San Francisco	1322	\$7,290,036	\$22,756,684	\$1,378,489	\$28,668,232
Foothill College	Los Altos Hills	1125	\$5,654,942	\$26,670,351	\$1,440,020	\$30,885,273
Pasadena City College	Pasadena	1120	\$6,274,510	\$25,349,668	\$1,409,131	\$30,215,047
Santa Barbara City College	Santa Barbara	1115	\$7,194,969	\$29,221,769	\$1,685,472	\$34,731,266
Orange Coast College	Costa Mesa	970	\$6,019,920	\$22,379,391	\$1,265,814	\$27,133,497
Peralta Community College District	Oakland	950	\$5,618,690	\$20,955,470	\$1,184,379	\$25,389,782
El Camino College	Torrance	921	\$4,566,744	\$21,319,145	\$1,178,296	\$24,707,593
Los Angeles City College	Los Angeles	841	\$3,978,175	\$20,181,230	\$1,106,655	\$23,052,749
East Los Angeles College	Monterey Park	707	\$3,874,360	\$17,029,375	\$931,511	\$19,972,224
Santa Ana College	Santa Ana	581	\$3,019,500	\$13,254,854	\$738,522	\$15,535,832
Glendale Community College	Glendale	505	\$2,139,620	\$11,466,359	\$606,058	\$12,999,921
Citrus College	Glendora	485	\$2,931,504	\$11,364,023	\$657,504	\$13,638,023
Mission College	Santa Clara	425	\$1,948,224	\$10,741,360	\$612,026	\$12,077,558
Fullerton College	Fullerton	364	\$1,997,632	\$5,992,528	\$356,985	\$7,633,175
Mt. San Antonio College	Walnut	364	\$1,766,421	\$8,546,221	\$473,721	\$9,838,921
Cerritos College	Norwalk	307	\$1,810,728	\$7,299,154	\$405,982	\$8,703,900
Riverside Community College	Riverside	281	\$1,313,400	\$6,312,492	\$339,847	\$7,286,045
CCCs Top 20 Totals		19,679	106,967,105	447,849,864	25,569,660	529,247,309
% of State Total		21%	7%	21%	3%	19%

Table 3: Top 20 California Community Colleges (CCCs) by International Student Enrollment 2009–2010 and Economic Impact.

There are 110 CCCs. Among our top 20 CCC performers, the top 11 or so have significantly higher enrollments, with Santa Monica Community College having by far the largest – some 3212 when compared with the last college in this list, Riverside Community College, with only 281 students.

The big community college players tend to be in relatively wealthy communities that, through local tax measures, provide much more robust funding for their colleges: Santa Monica, De Anza (in the heart of Silicon Valley), Foothill, Pasadena, and Santa Barbara. They then, it appears, have more resources for recruiting and developing networks. The other top players are also all in metropolitan areas and are relatively large in terms of enrollment. At the same time, there is increased demand internationally to enter these institutions. Why? One reason is that international students see the CCC as an easier route to enter California’s public 4-year institutions. This, we think, is a relatively new phenomenon.

The tuition and fee income brought to these institutions is significant and will likely grow as they seek to expand alternative revenue streams in the face of declining public investment. UC, CSU, and our sample top 20 CCCs all have very similar enrollment totals for international students – ranging from 19,679 at the CCCs, 19,095 at CSU, and 18,924 at UC’s 10 campuses (see Table 4).

But fee revenue is very different among the institutional types, with UC generating nearly double what CSU earned, and nearly five times that of CCCs. This is because UC is charging much higher tuition and fees, now nearly approaching peer public institutions for out-of-state students and creeping up to elite private institutions.

The market for international students is different for both CSU and CCCs. At UC, most of the international students are in graduate and professional programs. Across the 10 campuses, some 18% of graduate students are foreign

	Students	Tuition and Fees	Living and Dependents	Minus Financial Aid	Estimated Total Economic Impact
UC International Students	18,924	\$477,766,626	\$485,776,162	\$315,494,789	\$648,047,998
CSU International Students	19,095	\$246,143,326	\$365,563,164	\$81,739,376	\$529,967,114
Top 20 CCC International Students	19,679	\$106,967,105	\$447,849,864	\$25,569,660	\$529,247,309
Selected California Public HEI Subtotals	57,698	\$830,877,057	\$1,299,189,190	\$422,803,825	\$1,707,262,422
% of State Total	61%	52%	62%	48%	60%

Table 4: International Students Enrolled in California’s Public Universities and Sample Community Colleges 2009–2010.

nationals, with Berkeley at 27%; at the undergraduate level, the percentage in 2009 was around 4% – although there is a new goal at the UC-wide level to raise the number of out-of-state US and international students to 10% to draw increased income.¹⁴

Seeking additional revenue, Berkeley announced plans to increase that figure to 20% of all undergraduates. At CSU, almost all the international students are at the first-degree level, and all CCC students are undergraduates. Because most international students within the UC system, thus far, are at the graduate level, there are different dynamics in attracting top international talent. It requires more generous and competitive financial aid packages at UC, and particularly the more prestigious campuses, compete with increasingly wealthy private institutions such as Stanford and MIT to attract top graduate students.

Hence, UC gives out much higher amounts in financial aid, according to NAFSA data. Taking this into account, the net impact on the state economy is less varied among the public segments in California: CSU and the sample CCC group are almost exactly the same, generating \$529 million each, while UC pumps in approximately \$648 million. However, if UC grew more dramatically at the first-degree level, the economic impact would be disproportionately more significant than, say, at CCCs because of the tuition revenue and the net impact on the local labor pool.

Again, this estimate of economic impact assumes that these international students are not displacing fee-paying native students – a big assumption in light of recent reductions in access to all three segments – UC, CSU, CCCs – in California’s public higher education system. This is an issue we will return to.

The main point of this discussion is that there are differential economic impacts on where the international students are enrolled, and where they might be enrolled in any coordinated attempt to substantially increase their numbers.

3.4 The San Francisco/Bay Area Market

We propose that one or all three of California’s major urban areas consider the development of the hub idea, including San Diego, Los Angeles, and the San Francisco/Bay Area. In the following, we outline specifically how the San

¹⁴ See University of California Accountability Report – Graduate and Professional Student Profile, 2009: http://www.universityofcalifornia.edu/accountability/documents/accountabilityreport09_grad.pdf.

Francisco/Bay Area, a region with a group of stellar universities and colleges, could re-imagine itself as a Global Higher Education Hub that could help meet national and regional economic needs, as well as the thirst of a growing world population for high-quality tertiary education. The San Francisco/Bay Area (SF/BA) is uniquely positioned to attract international students from throughout the world, but in particular for a booming Asian market for higher education.

Figure 2 provides data on the number of international students and the fee and net income they generate for the area. In total, there were approximately 29,500 international students in SF/BA colleges and universities in 2009–2010. They represented 31% of all foreign enrollments in California, some 30% and 32%, respectively, of the total tuition and fees generated in the state, and in the net direct impact on the California economy.

Table 5 also provides a target projection for a significant increase in international students in the SF/BA region. It is a simple projection, but we think it is a realistic goal to double these numbers – in total enrollment, in tuition and fees, and in the net impact on the local economy – by 2020. Enrollments would grow to over 59,000 international students, up from 29,500. With or without a statewide or regional strategy, some increase in the number of international students in California is inevitable. The strategic approach we propose would constitute an overt effort to attract international students, and not simply rely on a largely *laissez-faire* model.

But to formulate such a strategy, we need to know more about the efforts of our competitors and understand the changing global market for talent.

3.5 The Advent of Higher Education Hubs

Higher education hubs are multiplying across the world, which means that it is worth exploring why and how other parts of the world are pursuing this concept (for examples and nomenclature of hub efforts internationally, see Table 6). There are big differences regarding the motivation and needs of the cities and regions that are pursuing this path, many of which do not fit or closely approach the tremendous brand name advantage and quality of the higher education institutions in the Bay Area.

The major difference in our proposed American version is that foreign competitors largely seek to attract foreign universities to help build enrollment and program capacity at home, and are funded almost solely by significant government subsidies; our model builds capacity, but is focused on attracting the world's talent and generating additional income to our existing public and private colleges and universities.

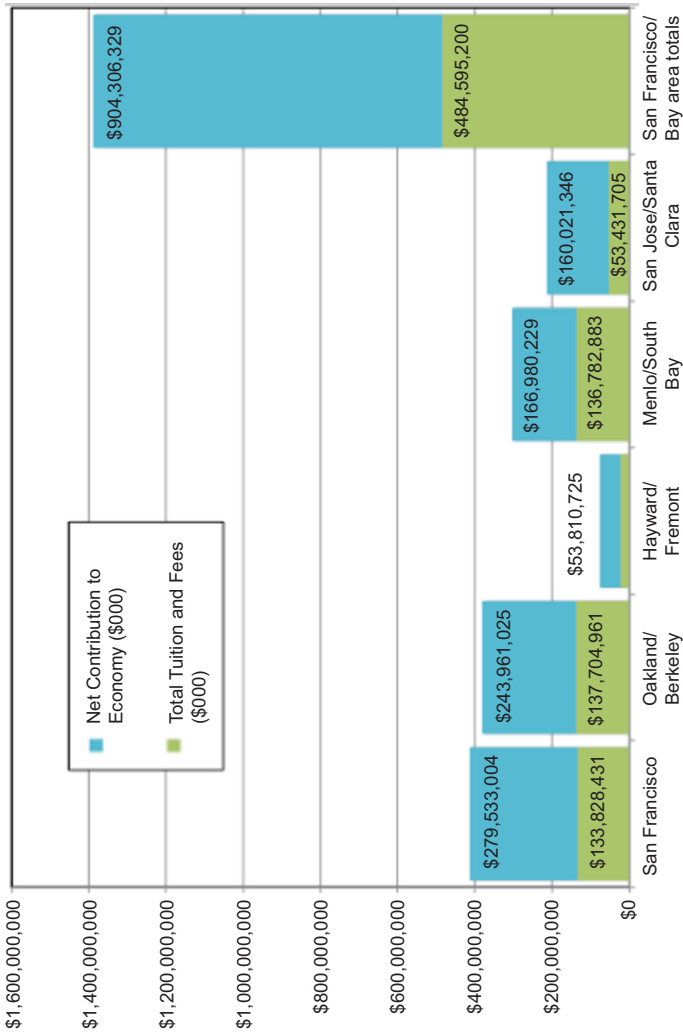


Figure 2: Total International Students Estimated Tuition/Fees and Net Contribution to the SF/BA Economy 2009–2010.

	International Student Enrollment	% of State Total	Total Tuition and Fees (\$000)	% of State Total	Net Contribution to Economy (\$000)	% of State Total
California Totals	94,279	100%	\$1,611,159,000	100%	\$2,834,164,000	100%
San Francisco	9226	9.79%	\$133,828,431	8.31%	\$279,533,004	9.86%
Oakland/Berkeley	7329	7.77%	\$137,704,961	8.55%	\$243,961,025	8.61%
Hayward/Fremont	1942	2.06%	\$22,847,220	1.42%	\$53,810,725	1.90%
Menlo/South Bay	5368	5.69%	\$136,782,883	8.49%	\$166,980,229	5.89%
San Jose/Santa Clara	5669	6.01%	\$53,431,705	3.32%	\$160,021,346	5.65%
San Francisco/Bay Area Totals	29,534	31.33%	\$484,595,200	30.08%	\$904,306,329	31.91%
Projections for 2020 – Hub Strategy	59,068		\$969,190,400		\$1,808,612,658	

Table 5: International Students in California and the San Francisco/Bay Area 2008–2009 and Projected Target 2020.

Higher education is recognized worldwide as a major contributor to regional economic growth and the hub would be part of a larger effort. Improving our regional higher education infrastructure, including expanding enrollment capacity; improving the teaching and research quality of educational providers; attracting international talent and the resources they can bring would strengthen the diffusion of this talent towards businesses and would ultimately help bolster local economies and socioeconomic mobility.¹⁵

Clearly recognizing that the global market for international students is growing rapidly, China, Singapore, Qatar, the United Arab Emirates, South Korea, Malaysia, China, and a number of cities in the European Union have all launched highly publicized efforts to create “World Class Universities” and higher education hubs in cities or regions over the past decade. Largely inspired by *The Silicon Valley Idea* and the experience of the San Francisco/Bay Area in demonstrating the power of using prestigious research universities such as Berkeley and Stanford as a key resource and partner in creating new knowledge intensive enterprises, these nations have launched their own higher education “hotspots”.

¹⁵ OECD (2007) “Understanding the regional contribution of higher education institutions: a literature review”, Education working paper no. 9 EDU/WKP(2007)4, OECD: Paris <http://www.oecd.org/dataoecd/52/33/40139991.pdf>.

Hub Names

Education City (Qatar)

Global Schoolhouse (Singapore)

Knowledge Village (Dubai)

EduCity (Kuala Lumpur)

Global University Campus (South Korea)

CREATE: Center for Research Excellence and Technological Enterprise (Singapore)

Branch Campus Approaches (Singapore, Qatar, Abu Dhabi, South Korea, Malaysia) Universities (primarily American, British, and Australian) open a satellite facility abroad offering their degree programs. Most often they are relatively small in scale and focus on professional degrees such as business, engineering, and computer and information systems. In a few cases, they are larger facilities offering undergraduate degrees across a broader range of disciplines targeted to local and regional markets. Private-for-profit companies such as Laureate have purchased local private universities to enter the market.

Brain Train The phenomenon in which a student takes a degree or credential in one country, moves to another for additional work or another degree, then moves to a third country and needs their degree and qualifications recognized.

Joint Degree, Dual Degree, and Double Degree Programs Increasingly, universities are partnering with institutions abroad to offer degree options that include a significant period of study at the partner university. Double and dual degrees essentially allow the possibility of receiving separate degrees from each of the partner institutions by fulfilling separate requirements. Joint degrees have an integrated curriculum taught by faculty from both institutions that award a degree under the authority of both universities.

Virtual Campuses Usually refers to online degree programs that are primarily if not exclusively dependant on distance learning mediated by a technology platform. There is significant growth in these offerings in the for-profit and not-for-profit sectors.

Higher Education Franchising Some universities license their name and program curriculum to foreign institutions or companies for a fee. Often they then grant degrees to graduates of the franchised institution or company.

Conventions on the Recognition of Qualifications UNESCO and other international organizations such as OECD as well as the Bologna Agreement in Europe progressively seek to create mechanisms that recognize degree and professional qualification equivalencies across different countries and regions.

Free Trade in Educational Services – General Agreement on Tariffs and Trade (GATT) Higher Education as a commercial enterprise subject to international trade agreements has been debated in the context of the GATT negotiations. Some fear this will lead to a forced opening of national education markets to foreign suppliers, but thus far this has not progressed significantly in practice.

Gateway Strategies An approach by some universities to establish offices, facilities, and representation in key international cities such as Shanghai, Paris, Mumbai, Sao Paulo, London, Tokyo, Dubai to support faculty and graduate student research, alumni relations, fund raising, and some instructional programs.

Table 6: The Nomenclature of International HEI Ventures.

These newer locations attempt to leverage large investments of public and private funds to develop national champion universities as well as to attract leading research universities from the US and Europe to locate a satellite campus or facility there. It is hoped that the concentration of high-quality national universities and internationally recognized institutions from abroad in these hubs or clusters will allow them to compete for talented students and faculties and attract entrepreneurs and investments in new knowledge-intensive industries. Economic development associations are leading many hubs – sometimes called “Education Cities” supported by foundations established by local governments, or in some instances through quasi-public/private investment ventures, as in Malaysia.¹⁶

Higher education practitioners and scholars are “curious and concerned” about the functioning, impact, and sustainability of these new and fast expanding initiatives. Hubs have therefore received increasing attention from stakeholder organizations, such as the American Council on Education (ACE), the Observatory on Borderless Higher Education (OBHE), the Association of Public and Land Grant Universities (APLU), the Committee on Institutional Cooperation (CIC), and media outlets including the *Chronicle of Higher Education*, *Insider Higher Education*, and the *New York Times*.¹⁷

Whether they succeed or not, they clearly represent a new competitive force in the global market for talented human capital and economic investment.¹⁸

3.6 Creating a San Francisco/Bay Area Global Hub

The competition for talent is likely to increase as more nations and other areas of the US invest in higher education and human capital formation. Current economic, social, and especially political realities in California are so problematic and wrought with uncertainty that Bay Area leaders in industry, higher education, and local and regional government must recognize the costs of inaction and

16 See Jane Knight (2010) “Higher Education crossing borders: programs and providers on the move”, in D. B. Johnstone, M. B. D’Ambrosio and P. J. Yakoboski (eds.) *Higher Education in a Global Society*. USA: Edward Elgar Publishing Ltd.

17 GlobalHigherEd (2008) GlobalHigherEd Surveying the Construction of Global Knowledge/Spaces for the “Knowledge Economy”, April 16, 2008: <http://globalhighered.wordpress.com/2008/04/16/metaphors/>.

18 Richard Edelstein and John Aubrey Douglass, “To Judge International Branch Campuses, We Need to Know Their Goals”, *Chronicle of Higher Education*, February 2012: <http://chronicle.com/article/To-Judge-International-Branch/130952/>.

seek to find renewed energy to innovate and create new paths for raising funds and supporting our critical human capital resources for the future.

We also must recognize the limits of our current *laissez-faire* market approach that depends on efforts of individual universities and companies to attract international talent. The heightened competitiveness increases the necessity of collaborative and coordinated efforts.

In the following, we offer a pathway for developing a coherent Bay Area Global Higher Education Hub (or GHEhub) strategy (Figure 3), including the identification of a number of critical studies and political and funding problems that would need to be addressed. A major objective is to not simply sustain but expand the Bay Area as a world leader in research, business development, and a vibrant center for the creative arts and culture.

3.6.1 Establishment of a Study Group

A GHEhub Study Group that includes representatives from local higher education institutions, business, and government sectors could initiate discussion and analysis on the feasibility of a strategic plan and enabling studies. The Study Group could be co-chaired by a higher education leader (preferably the president

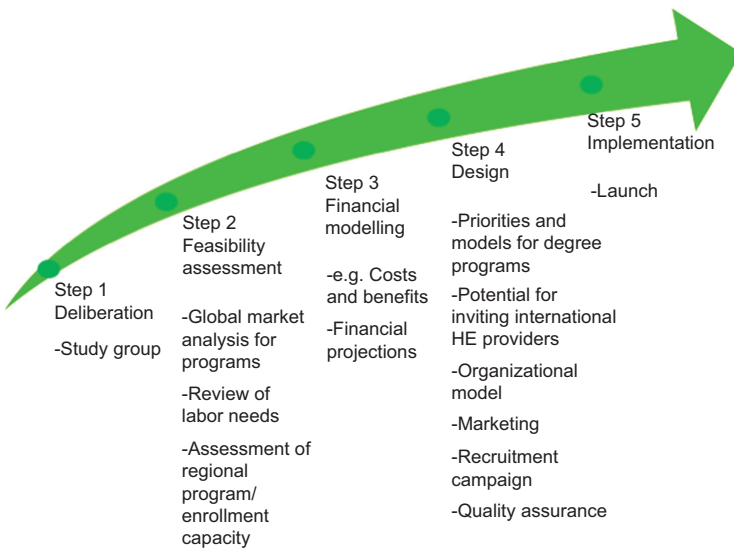


Figure 3: The San Francisco Bay Area Moving Forward: A Pathway to a Global Higher Education Hub (GHEhub).

of Stanford or the chancellor at Berkeley) and a major business leader (preferably linked to the region's high technology sector) and be supported or affiliated with local regional economic development groups and associations who, in turn, could provide funding for aspects of a feasibility study.

The following outlines a number of major questions and studies that could be coordinated by the Study Group.

Global Market Analysis for Existing and New Academic Programs The market for international students continues to grow rapidly. But as noted, there are an increasing number of poor to very high quality providers in virtually all corners of the globe. An analysis of these trends, based on UNESCO and OECD data, but also in some form of qualitative research (such as interviews and targeted market analysis in major nations such as China).

This analysis requires not simply a sense of the macro trends in migration and changing labor markets but also shifting government policies and efforts to, for example, ease the path to citizenship or financial aid provision. Other factors should be considered in such an analysis, including:

- How might the GHEhub build-off of existing program strengths of colleges and universities in the Bay Area?
- How might the hub concept aid in recruiting and enrolling international students from underserved and economically developing nations?
- And similarly, how might the GHEhub serve lower income students, perhaps in some cases providing lower division and perhaps remedial programs for targeted populations?

Analysis/Review of Regional, State and National Labor Needs One goal of the GHEhub is to add to the pool of talent in the region and state, and for that matter the national labor market. As noted, there is an increasing array of economic studies that point to a severe shortage of those with bachelor's degrees and skill sets that will meet projected labor needs in the US, with an even more significant disparity within California.

While the GHEhub may be rationalized as simply an income generator for regional universities and colleges, and a boost for the regional economy, there should be an alignment with the skills and labor needs of the area. There is a growing need for those with degrees and skills in science and technology, and these are fields that will draw significant international interest by talented students. The GHEhub should scan this market and also explore programs that could attract postdoctoral students that could link to both industry and university research activities.

Assessment of Regional Enrollment Capacity What is the capacity of local institutions to absorb an increase in foreign students? Public universities and colleges, which host some 80% of all US students, have the most capacity to grow and attract foreign talents. Independent institutions, such as Stanford or Cal Tech, have some ability to take in more foreign students, but most will not grow in enrollment capacity. They prefer being relatively small and highly elite and will, in effect, represent a declining percentage of the enrollment pie. US-based for-profit institutions will tap into this potentially lucrative market. But on average, their quality is low, and they go for low overhead and high profit margin degree programs – few competent offerings in the sciences and engineering, preferring business and vocational type programs.

Create Financial and Business Model As noted, we see the GHEhub as a potential net income generator for the region, and for colleges and universities. Income generation could be pursued simply by charging a premium tuition, the precise amount of which should be determined by further studies. And service charges would also be made possible by a global market, the attractiveness of brand name universities and colleges in the GHEhub consortium and the San Francisco/Silicon Valley and Bay Area quality of life and reputation. Under this rubric, one could see funding and organization of the hub as largely a venture of local HEIs.

But because of the economic advantages to the economy and region, we would imagine that local businesses and government would be a partner in funding the GHEhub, particularly in the initial phase of its development – and reflecting the model seen in other parts of the world in developing higher education hubs. Local and national philanthropic foundations could also be partners.

The extent of this private and public sector partnership would need to be carefully explored regarding how it might influence the organizational structure that emerges to govern and develop the Bay Area hub. Among the consideration for developing a funding model and business plan are the following:

- The effects of tuition and costs pricing on market demand.
- Tuition could be set by each HEI or under joint agreements with some form of GHEhub revenue sharing.
- Whether a GHEhub Financial Aid program is necessary and how to fund and develop it.
- Other incentives for the enrollment of international students.

Develop Priorities for Degree Programs Depending on the market analysis for international students, estimates on the proportion of undergraduate and graduate incoming international students, priorities for local labor markets, and the

interest and agenda of participating universities, the GHEhub would need to look at a range of formal degree programs that it might include. These could be programs that are offered by a single HEI, or it could be part of a joint program with two or more HEIs. Among the range of degree programs that could be considered are the following:

- Gap Year – Remedial Programs, with agreements/paths for matriculation to selected GHEhub HEIs.
- Semester Abroad – could be joint with more than one HEI and combine CCCs and 4-Year.
- CCCs.
- Baccalaureate.
- MA.
- Professional.
- Doctorate.
- Postdoctoral.

Assess Viability of Inviting International Higher Education Providers In addition to attracting international students from the global marketplace, the Bay Area could invite some world-class universities, educational institutions, as well as international investors and private equity companies specialized in higher education to establish a presence here. As the global knowledge economy and communications technology encourages all organizations and companies to co-locate facilities outside their national base, there is increased competition to create cities and regions that are part of the global network of talent centers that attract entrepreneurs, capital, and most significantly innovators, researchers, and creative individuals whose ideas drive the economy of the 21st Century. Singapore, Shanghai, Bangalore, Dubai, and South Korea have all launched projects to attract leading universities from around the world to establish programs or campuses locally.

Considering Organizational Models Depending on the findings of the previous suggested assessments, and other factors, such as the interest of universities and colleges in the area, there will be a number of potential organizational models to consider. They include:

- A voluntary grouping of regional public and private HEIs that is self-governing and financed.
- A voluntary HEI partnership with some subsidization from the private sector for academic programs.
- A voluntary group that partners HEIs with businesses, *and* government, and includes perhaps different operational spheres, including:
 - Academic programs and degrees.

- A Housing Program that could include subsidized housing for some international students in key locations, and possibly the development of a new International House (complementing Berkeley’s I-House) for GHEhub students.
- Student Support Services (e.g., visa, counseling, social events, and job opportunities coordinated with participating GHEhub HEIs).

The creation of a successful hub requires a critical size. But a smaller-scaled hub, for example, including Berkeley and/or Stanford, as well as a few other neighboring universities and businesses, could constitute a pilot scheme before expanding to a larger program. Each institution will need to weigh the costs and benefits of taking part in this hub.

A Marketing and Recruitment Campaign A marketing and recruitment campaign is essential to give the GHEhub its global outreach. Marketing includes various aspects, starting with the name of the hub. We have used the working title of a “Global Higher Education Hub”, but it may be important to include into the name a reference to San Francisco or the Bay Area.

Another aspect of the marketing effort is the values and image that partners in the Bay Area would want to promote. For example, partners might want to market the hub as a space of high-tech innovation and creativity, of tolerance and multiculturalism, of academic rigor and even as a pathway to the Californian lifestyle.

The first step to a marketing campaign would rely on new technologies. It would include an online portal on the Bay Area hub, including higher education opportunities, but also business life and lifestyle elements, as well as tourist activities, similar to the ones used by other higher education hubs (see, for example, the portal of Nusajaya higher education hub in Malaysia).¹⁹

In a second step, this marketing effort would concentrate on other targeted strategies. Reaching out to the alumni of the various partners would allow for a global, reliable, instantaneous, and almost cost-free source of marketing.

Develop a Quality Assurance System The GHEhub will require a Quality Assurance System (QAS) that would complement the internal assessment processes that universities and colleges are all engaged in. One can find examples in other hub initiatives, such as the Singapore Quality Class that, among other things, evaluates and recognizes for-profit private higher education institutions, and

¹⁹ See: http://www.nusajayacity.com/sdev_educity.php.

their business practices.²⁰ Their model is in part to invite private and for-profit HEIs to help enhance the hub concept in Singapore and employ an ongoing evaluation process to assess the time for visa processing along with a wide array of other factors.

4 Conclusion – Some Organizational and Political Considerations

We started this paper with an attempt to note the potential market and the financial impact of international students on the US, California, and the local Bay Area economy, and the clear potential for growth if accompanied by a coherent strategy. Ours is a purposeful attempt to say that it is about the money and the opportunity to grow a major US “export”. Universities and colleges, the private sector, and lawmakers should understand the potential financial advantages, and begin to assess why a more coherent strategy, such as what we propose, could leverage America’s, and the Bay Area’s, market advantage. We proceeded to set out our vision to leverage such market advantage through the creation of a Bay Area hub and explained the main components of such a hub.

Beyond its economic value, a higher education hub would provide an array of societal benefits. It is about enhancing the quality and reputation of our universities and colleges, building enrollment capacity for native students, integrating international perspectives into the activities and experiences of students and faculty, and broadening the opportunity for international collaborations. It is about solidifying the Bay Area as an international center, one that is even more culturally diverse, in which talent from throughout the world will continue to migrate and contribute to our economy and socioeconomic experience. Table 7 provides a matrix of some of the benefits of a properly constructed hub.

That said, we also know that the idea of a SF/BA Global Higher Education Hub is not wholly formed and possesses a number of problems. Not the least is whether a critical mass of regional universities and colleges would participate. As we noted, we think it is critical that Berkeley and Stanford be a leader in the effort and act as an “anchor” for the initiative.

These are difficult financial times. Public universities and colleges in California, and throughout much of the US, face dizzying cuts in public

²⁰ Singapore Quality Class for Private Education Organizations, <http://www.singaporeedu.gov.sg/htm/stu/stu0109c.htm>.

	Public	Private
Economic	<ul style="list-style-type: none"> - Labor, capital and knowledge contribution to relevant regional businesses (high tech) - Development of a global network (international business and diplomatic relationships) - Increased innovation potential - Increased tax revenues - Revenue generation - Greater productivity - Increased consumption - Increased workforce flexibility - Decreased reliance on governmental support 	<ul style="list-style-type: none"> - Higher salaries and benefits - Employment - Higher savings levels - Improved working conditions - Personal/professional mobility
Social	<ul style="list-style-type: none"> - Social cohesion/appreciation of diversity - Increased charitable giving/ community service - Increased quality of civic life - Improved ability to adapt to and use technology - Diversity in the arts - Reduced crime rates from more tolerance 	<ul style="list-style-type: none"> - Increased global awareness and sense of multiculturalism - Improved quality of life - More hobbies/leisure activities

Table 7: SF/BA Hub Benefits.

funding. One consequence is that UC, CSU, and CCCs are cutting enrollment and limiting access to higher education in the state. Meanwhile, demand for higher education is growing, in California, in the US, throughout the world. And the need for highly skilled labor and, more generally, those with a college degree is growing.

There are some positive indicators that this hub idea might gain traction if supported by higher education and political leaders. Colleges and universities in the Bay Area are in desperate need of additional resources and many have capacity to grow – if only they have the financial resources.

At the same time, the economy may be in the process of turning a corner, welcoming the prospect of some increased resources via local government and, more importantly, the private sector. We recognize that the ability of California and its struggling public higher education system to innovate may be at an all time low.

Pursuing a coordinated and strategically focused effort may just be too advanced a thought in the current political and budgetary environment.

Nevertheless, we predict it is only a matter of time before an urban area in the US, such as New York, or Seattle, creates something along the lines we outline. But we think none is riper for this entrepreneurial advent than the dynamic urban areas of California. Our goal is to start a conversation among university, business, and government leaders. It is about the money, but much more.