

**A GLOBAL TALENT MAGNET:
How a San Francisco/Bay Area Global Higher Education Hub Could Advance California's Comparative Advantage
In Attracting International Talent and Further Build US Economic Competitiveness ***

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ABSTRACT

During the 2009-10 academic year 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 ten 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 policymakers 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 the San Francisco/Bay Area, a region with a group of stellar universities and colleges, should re-imagine itself as a Global Higher Education Hub to meet national and regional economic needs, as well as 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 30,000 to 60,000 students in ten years or less will 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 San Francisco/Bay Area Global Higher Education Hub – a self-reinforcing knowledge ecosystem that is internationally attractive, socially beneficial, and economically viable. We offer a path for analyzing the feasibility of this Global Higher Education Hub, including the steps necessary to engage the private sector and local government to help create enrollment capacity and academic programs, a discussion of a financial model, possible marketing strategies, and for developing shared facilities and services. This initiative will require most Bay Area colleges and universities, including UC Berkeley and Stanford University, to collaborate. By providing a leadership role, Berkeley and Stanford would help brand the hub idea internationally, provide leadership in shaping direct and indirect economic returns of the SF/Bay area higher education hub, while also gaining from the increased international attractiveness of the region and the use of shared facilities. It is about the money. But it is also about establishing closer ties with the regional universities and colleges, business interests and local governments, enhancing the quality and reputation of our universities and colleges, building enrollment capacity for native students, integrating international perspectives into the activities and learning of students and faculty, and broadening the opportunity for international collaborations. It is about solidifying the Bay Area as a global talent magnet, one that is even more culturally diverse, even more innovative, and that continues to attract talent from throughout the world. We conclude the paper by suggesting that a regionally based knowledge hub would also be a viable strategy for a select group of other urban areas of the US.

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

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contribute hugely to high tech businesses and a growing service sector. The resulting talent pool is composed of people who often end up creating start-ups and drive a significant portion of the nation's economic growth. It's 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 costs 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 ten 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 potential costs for local taxpayers and, in effect, subsidizing the cost for domestic student enrollment.¹

In this paper, we argue that lawmakers and business leaders 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 a case example of an industry in need of a larger global view.

Much media attention, along with the efforts of academic leaders in the US, has focused on new foreign ventures pursued by major name-brand universities, including the development of campuses in foreign lands, new joint degree programs, and various teaching and research agreements. New York University, MIT, Michigan State, Yale, Carnegie Mellon – these and many other HEIs are engaged in a growing cavalcade of international ventures and investments. But the reality is that "off-shore" projects are largely small in scale in terms of student enrollment; and many are of questionable sustainability.²

In terms of student enrollment, the most pronounced international activity is the "on-shore" market. Attracting foreign talent, and making the academic environment more transnational in its teaching and research activities, may be the most important way for American universities to become even more internationally competitive. In a previous paper, "The Global Competition for Talent," we proposed a number of needed policy changes at the federal level, and argued for a broader understanding by state governments and leaders of public universities of how they might better organize themselves to enroll and graduate more international students.³

The result would be a San Francisco/Bay Area hub – a self-reinforcing knowledge ecosystem that includes colleges and universities, businesses, and local government, and that is internationally attractive, socially beneficial and economically viable.

While overt national policies to increase international student enrollment and stay-rates are vital, ultimately there is a need for coherent regional approaches to recruit and enroll these students. Some growth in enrollment can occur organically in a decentralized manner, with US HEIs taking up market opportunities to attract these students. That has been the path thus far. But we think there are limitations to this single approach. Hence, our contemplation of the Bay Area as a potential leader in what we think will eventually emerge as a phenomenon in other ripe regions with a critical mass of HEIs.

We project that the San Francisco/Bay Area could double its current international enrollment from some 30,000 to some 60,000 students in ten years or less, generating a total direct economic impact of an additional \$1 billion a year into the regional economy, and more in indirect economic activity and with positive impact on local labor markets and inevitably the number of high-tech start-ups.

But this will also require building up enrollment capacity in the region as part of a strategy to ensure access to native students; it requires a more overt view of international students as a vital component in the larger American higher education community. As we also argue, it would require Berkeley and Stanford be a leader in the effort, and act as an "anchor" for the initiative. In turn,

this will act as a catalyst for attracting a new generation of faculty and researchers, creating a more robust and innovative regional economy.

The result would be a San Francisco/Bay Area hub – a self-reinforcing knowledge ecosystem that includes colleges and universities, businesses, and local government, and that is internationally attractive, socially beneficial, and economically viable.

The following narrative outlines how international talent already constitutes a valuable source of capital for the region. We then discuss the growing but shifting market for higher education globally, offering examples of the efforts by national competitors to create their own hubs. This leads to a strategic plan for creating a San Francisco/Bay Area Global Higher Education Hub – essentially, an American and California flip on an idea being pursued elsewhere in the world. Finally we discuss the reasons the US should more actively pursue attracting talent throughout the world, both to help meet the Obama administration's goal to increase "exports" and to serve more altruistic purposes.

A. A GROWING WORLD MARKET

From 1997 to 2008, there has been a continual positive increase in the trade balance for education services due to real increases in the number of international students coming to the US, mostly at the graduate level so far, and to growing tuition income. At the same time, education, and specifically higher education, could play a much larger role in rebalancing the US balance of trade – although it would require a number of reforms at the federal, state, and institutional levels.

The US is an underachiever in enrolling international students at the undergraduate level, and while still strong at the graduate level, there are signs it 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.

As outlined in a previous paper, only about 3 percent of US undergraduates in accredited colleges and universities are international students; this compares to over 10 percent in a similar grouping of European nations.⁴ And even in graduate education, top providers in Europe have a higher number and higher percentage of foreign students – over 28 percent versus 24 percent in the US. International student numbers continue to grow in US universities and colleges; it is just that their numbers are growing faster 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 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.

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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.⁵

Currently, the US enrolls some 691,000 international students; these students paid tuition and fees estimated at a total of \$13 billion dollars during the 2009-10 academic year. This is according to a yearly study supported by the Association of International Educators (AIE). Discounting financial aid, and adding the cost-of-living expenses for students and their families, the AIE estimate that the direct total economic impact of international students is nearly \$19 billion a year.⁶

The real economic impact is most likely much larger than this, as the current economic impact model could be extended to indirect impacts like job creation and additional potential for international business ventures.⁷ The AIE study also is limited to accredited colleges and universities and relies on data supplied by HEIs that report their number of international students – and some do not respond.

With these caveats noted, the six main state destinations for international students, in descending order in enrollment size, include California, New York, Texas, Massachusetts, Illinois and Florida (see Table 1). These states alone represent nearly 50 percent 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, probably, 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 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 have limited interest in enrollment growth.

Table 1 - International Student Numbers and Economic Impact in Top Ten States – 2009-10

Top States for International Students	# of Students	Tuition and Fee (000,000)	Est Total Economic Impact (000,000)	% of Total Students	% Tuition and Fee of US Total	% Est 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%

Source: Association of International Educators 2010

There is growth potential in the top ten states, and the forty 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 could 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 ingredients for the hub concept we are promoting.

Creating higher education hubs could be part of a larger strategy to have the US double its enrollment of international students by 2020. It is an achievable goal, with larger growth at the undergraduate level, but with substantial growth at the graduate level as well.

We project that the US could grow to a total of 1.38 million international students or more enrolled in accredited institutions by 2020. The total “export” value in terms of the increase in tuition and fees would be about \$26.2 billion – depending on tuition rates and financial aid at the federal, state and institutional, or perhaps regional, levels. The total input to the nation’s economy could be some \$37.5 billion. But it would take an overt and coordinated effort between colleges and universities, government, and we think private sector support and some investment.

B. CALIFORNIA'S MARKET SHARE TODAY 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 about 27 percent of the U.S. market share of these students, according to data collected by the Association of International Educators.

It is useful to understand the current market for international students in California for our analysis. California’s estimated share of the US total market in international students is 13.9 percent, and 12.6 in tuition and fee revenue. Because public universities in the state are the primary providers of higher education (enrolling about 80 percent of all students), a higher proportion of international students are in these institutions. This helps account for the relatively lower fee revenue illustrated in Figure 1. On average, and in California, out-of-state students are charged a tuition rate still below most privates – although this is changing. But their overall economic impact is larger, at 15.6 percent of the national total, than, for example, Ohio because of the higher cost of living in California.

In which California colleges and universities are these students enrolled? Table 2 provides a list of the top twenty nationally accredited HEIs in California in terms of total enrollment of international students in 2009-10. It is an interesting mix. The University of Southern California (USC) is the largest in enrollment, with nearly 8,000 – 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 substantially 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 5,685 at UCLA (USC's Los Angeles neighbor), Stanford with 3,934, Berkeley with nearly the same number at 3,883. 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 and California State University campuses, and impressive numbers at some five California Community Colleges (CCC) – local colleges that are *not* commonly thought of as destinations for international students.

Among the publics, 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.

Table 2 - Top 20 California HEIs by International Student Enrollment 2009-10 and Economic Impact

	City	Students	Tuition & Fees	Living & Dependents	Minus Financial Aid	Est Total Economic Impact
University of Southern California	Los Angeles	7,987	\$249,546,590	\$166,755,297	\$161,347,078	\$254,954,809
University of California - Los Angeles	Los Angeles	5,685	\$139,937,483	\$141,059,338	\$84,096,126	\$196,900,695
Stanford University	Stanford	3,934	\$126,098,186	\$92,965,752	\$93,709,573	\$125,354,365
University of California - Berkeley	Berkeley	3,883	\$107,452,160	\$118,112,934	\$74,980,621	\$150,584,473
Academy of Art University	San Francisco	3,534	\$52,882,938	\$93,705,574	\$28,666,811	\$117,921,701
Santa Monica College	Santa Monica	3,212	\$17,869,500	\$75,578,488	\$4,219,980	\$89,228,009
San Jose State University	San Jose	2,611	\$38,759,261	\$49,642,640	\$12,228,393	\$76,173,508
De Anza College	Cupertino	2,576	\$11,894,169	\$62,077,315	\$3,704,177	\$70,267,307
San Francisco State University	San Francisco	2,572	\$32,526,944	\$55,890,193	\$11,547,470	\$76,869,667
California State University - Northridge	Northridge	2,372	\$29,225,428	\$52,321,654	\$10,955,049	\$70,592,034
University of California - Davis	Davis	2,346	\$62,743,249	\$62,181,666	\$39,646,027	\$85,278,888
California State University - Long Beach	Long Beach	2,324	\$28,596,722	\$41,595,822	\$9,489,082	\$60,703,463
University of California - San Diego	La Jolla	2,320	\$54,185,208	\$50,508,789	\$33,761,395	\$70,932,602
San Diego State University	San Diego	1,899	\$23,770,240	\$45,265,277	\$22,724,459	\$46,311,058
University of California - Irvine	Irvine	1,775	\$41,160,575	\$38,105,574	\$30,223,449	\$49,042,700
California State University - Fullerton	Fullerton	1,742	\$22,816,245	\$30,255,463	\$7,049,778	\$46,021,930
California State University - East Bay	Hayward	1,557	\$20,810,723	\$31,518,643	\$6,831,407	\$45,497,959
Diablo Valley College	Pleasant Hill	1,508	\$9,804,060	\$29,353,988	\$1,875,092	\$37,282,956
California State University - Los Angeles	Los Angeles	1,327	\$16,773,051	\$23,405,847	\$5,344,984	\$34,833,913
City College of San Francisco	San Francisco	1,322	\$7,290,036	\$22,756,684	\$1,378,489	\$28,668,232
Foothill College	Los Altos Hills	1,125	\$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%

Source: Association of International Educators 2010

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

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

There are 110 California Community Colleges. Among our top 20 CCC performers, the top eleven or so have significantly higher enrollments, with Santa Monica Community College having by far the largest– some 3,212 when compared to the last college in this list, Riverside Community College, with only 281 students.

There are impressive numbers at some five California Community Colleges – local colleges that are not commonly thought of as destinations for foreign students. Among the publics, 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?

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 largely for the purpose of generating even more income. The other top players are also all in large metropolitan areas and are relatively large in terms of enrollment. At the same time, there is increased demand internationally to enter these institutions. Why? Perhaps because the CCC are

increasingly recognized by these students and their families as a more easy route to enter California's public four-year institutions. This, we think, is a relatively new phenomenon.

Table 3 – Top 20 California Community Colleges by International Student Enrollment 2009-10 and Economic Impact

	City	Students	Tuition & Fees	Living & Dependents	Minus Financial Aid	Est Total Economic Impact
Santa Monica College	Santa Monica	3,212	\$17,869,500	\$75,578,488	\$4,219,980	\$89,228,009
De Anza College	Cupertino	2,576	\$11,894,169	\$62,077,315	\$3,704,177	\$70,267,307
Diablo Valley College	Pleasant Hill	1,508	\$9,804,060	\$29,353,988	\$1,875,092	\$37,282,956
City College of San Francisco	San Francisco	1,322	\$7,290,036	\$22,756,684	\$1,378,489	\$28,668,232
Foothill College	Los Altos Hills	1,125	\$5,654,942	\$26,670,351	\$1,440,020	\$30,885,273
Pasadena City College	Pasadena	1,120	\$6,274,510	\$25,349,668	\$1,409,131	\$30,215,047
Santa Barbara City College	Santa Barbara	1,115	\$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
CCC 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%

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 CCC all have very similar enrollment totals for international students – ranging from 19,679 at the CCC, 19,095 at CSU, and 18,924 at UC's ten campuses (see Table 4).

Table 4 – International Students Enrolled in California's Public Universities and Sample Community Colleges 2009-2010

	Students	Tuition & Fees	Living & Dependents	Minus Financial Aid	Est 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 Sub-Totals	57,698	\$830,877,057	\$1,299,189,190	\$422,803,825	\$1,707,262,422
% of State Total	61%	52%	62%	48%	60%

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

The market for international students is different for both CSU and CCC. At UC, most of the international students are in graduate and professional programs. Across the ten campuses, some 18 percent of graduate students are foreign nationals, with Berkeley at 27 percent; at the undergraduate level, the percentage in 2009 was around 4 percent – 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 percent to draw increased income.⁸

Seeking additional revenue, Berkeley announced plans to increase that figure to 20 percent of all undergraduates. At CSU, almost all the international students are at the first-degree level, and obviously 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 as the University of California, and particularly the more prestigious campuses, compete with increasingly wealthy privates like Stanford and MIT to attract top graduate students.

Hence, UC gives out much higher amounts in financial aid, according to the 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 about \$648 million. However, if UC grew more dramatically at the first-degree level, the economic impact would be disproportionately more significant than, say, at the CCC 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, CCC - 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.

C. THE SAN FRANCISCO/BAY AREA MARKET

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. Table 5 and Figure 2 provide 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 2009-10. They represented 31 percent of all foreign enrollments in California, some 30 and 32 percent respectively of the total tuition and fees generated in the state, and in the net direct impact on the California economy.

Table 5 - International Students (IS) in California and the San Francisco/Bay Area 2008-09 and Projected Target 2020

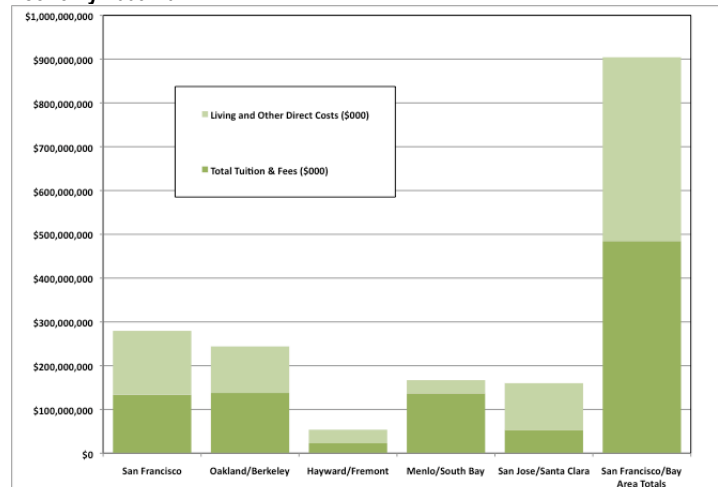
	International Student Enrollment	% of State Total	Total Tuition & Fees (\$000)	% of State Total	Net Contribution to Economy (\$000)	% of State Total
California Totals	94,279	100%	\$1,611,159,000	100%	\$2,834,164,000	100%
San Francisco	9,226	9.79%	\$133,828,431	8.31%	\$279,533,004	9.86%
Oakland/Berkeley	7,329	7.77%	\$137,704,961	8.55%	\$243,961,025	8.61%
Hayward/Fremont	1,942	2.06%	\$22,847,220	1.42%	\$53,810,725	1.90%
Menlo/South Bay	5,368	5.69%	\$136,782,883	8.49%	\$166,980,229	5.89%
San Jose/Santa Clara	5,669	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 also provides a target projection for a significant increase in international students in the SF/BA region. It's a simple projection, but we think it is a realistic goal to double these numbers by 2020– in total enrollment, in tuition and fees, and in the net impact on the local economy. Under this scenario, enrollment 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 fair* 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.

Figure 2 - Total IS Estimated Tuition/Fees and Net Contribution to the SF/BA Economy 2009-10



D. THE ADVENT OF HIGHER EDUCATION HUBS

Higher education hubs are multiplying across the world. But 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 focuses on attracting the world's talent and generating additional income to our existing public and private colleges and universities via a regional strategy.

Higher education is recognized worldwide as a major contributor to regional economic growth. Nation/states are attempting to build their regional higher education infrastructure, including expanding enrollment capacity, improving the teaching and research quality of educational providers, attracting international talent, and bolstering local economies and socio-economic mobility. This triangle of government, higher education, and the private sector is one of the hot topics internationally and the focus of numerous studies and reports.⁹

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 partner in creating new knowledge intensive industries and enterprises, these nations have launched their own new higher education "hotspots."

The model is to leverage large investments of public and private funds to develop national "flagship" universities, as well as to attract leading research universities from the U.S. and Europe to locate a satellite campus or facilities there.

Often state or local governments create economic development associations and foundations to create what are sometimes called "Education Cities." Malaysia, for instance, has a quasi-public-private investment venture called "EduCity."¹⁰ In Singapore, one of the more successful hub efforts, the "Global School House" project started in 2002. See Appendix 1 for leading international examples of the emerging hub model.

And what about the US? Many American universities are engaged in providing advice on how to replicate the Silicon Valley model, and providing services and programs – almost always with an eye on gaining additional income and banking on brand name reputations. Thus far, it has been a one-way-street. But that will change.

In a recent twist on the hub concept, the city of New York recently invited Stanford University and other universities, domestic and foreign, to help develop graduate programs in engineering and science and technology-related fields.

In early March 2011, New York City mayor Michael R. Bloomberg's office "received 18 responses from academic institutions seeking to develop and operate a new applied science and engineering research campus in New York City," including Stanford and the Indian Institute of Technology in Mumbai, and under the concept that the city had a deficit in academic programs and graduates needed to bolster high-technology industries.¹¹

Table 6 - The Nomenclature of International HEI Ventures

Hub Names

Education City (Qatar)
Global Schoolhouse (Singapore)
Knowledge Village (Dubai)
EduCity (Kuala Lumpur)
Global University Campus (S. Korea)
CREATE: Center for Research Excellence and Technological Enterprise (Singapore)

Branch Campus Approaches (Singapore, Qatar, Abu Dhabi, S. 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 focused 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 seek progressively to create mechanisms that recognize degree and professional qualification equivalencies across different countries and regions.

Free Trade in Educational Services - GATTs - Higher Education as a commercial enterprise subject to international trade agreements has been debated in the context of the GATTs trade 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.

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 Organisation for Economic Cooperation and Development (OECD), UNESCO, the World Bank, the Observatory on Borderless Higher Education (OBHE), the National Association of State Universities and Land-Grant Colleges (NASULGC), American Council on Education (ACE), the Committee on Institutional Cooperation (CIC), and media outlets including the *Chronicle of Higher Education*, *Insider Higher Education*, and the *New York Times*.¹²

Whether they succeed or not, they clearly represent a new competitive force in the global market for talented human capital and economic investment, and formulated to help address inadequacies in national and regional economies. The US has its own set of problems, including low higher education graduation rates, the need for better skilled workers, and the need to remain competitive in seeking talent from throughout the world. It would be beyond hubris to think there are not things we can learn from our competitors.

E. CREATING A SAN FRANCISCO/BAY AREA GLOBAL HUB

The following provides a path to develop a coherent San Francisco/Bay Area Hub strategy, including an outline of a feasibility study that would need to address organizational, political, and funding challenges. Again, the objective: to expand the Bay Area as a world leader in research, and business development, and as a vibrant center for the creative arts and culture.

As we have noted, it is more than just about bringing more undergraduate and graduate students from abroad to the Bay Area and to California, and generating much needed dollars to local HEI's. The hub-ecosystem requires the participation public universities and some private universities, the involvement of businesses in public-private partnerships, as well as the support of regional and governmental bodies.

This partnership would strengthen the attractiveness of the region to international students, as well as talented professionals (including academics) and investors; it would help bolster the region as a talent magnet and environment for innovation and an international player – what is referred to as a “virtuous economic cycle” (see Figure 3).

For universities the hub would act as a talent multiplier. It would attract a pool of international applicants to choose from, both for its undergraduate and graduate education (at the graduate level the pool of talent would increase both through the direct influx of students from abroad as well as the retention of undergraduates). This would stimulate innovation in the sciences and other fields, and make donations from businesses more likely because of closer cooperation and benefit from the increase in prestige of the entire area. Universities would also benefit from the potential to expand capacity by sharing facilities. Hubs provide a wide array of public and private benefits that are summarized in table 7.

Potential college and universities partners may be at first reluctant to start new investment programs in this constrained economic climate. A Bay Area hub would admittedly require an initial investment, the cost of which is to be determined by further studies, but that we think would be moderate.

The existing infrastructure lowers the marginal costs of the hub. Moreover, these costs would be recuperated by universities in the form of new tuition and fee income, by businesses in the form of new spending by international students and expenditures related expanding the program capacity of local colleges and universities, and by government in the form of increased tax revenue.

Figure 3 - A SF/BA Hub Virtuous Cycle

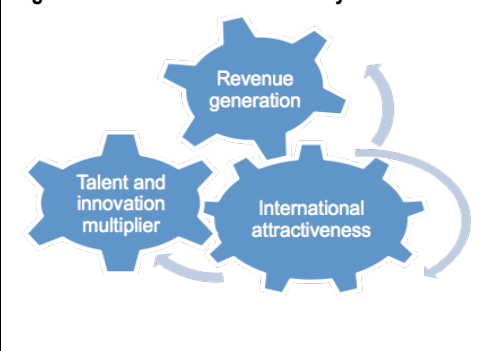


Table 7 - Summary of SF/BA Global Higher Ed Hub Benefits

	Public	Private
Economic	<ul style="list-style-type: none"> Labour, 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

For the largest impact, UC Berkeley and Stanford would need to act as “anchors” for the Global Higher Education Hub. We recognize that this will be a harder sell to gain the support and meaningful participation of these two major institutions. Berkeley

and Stanford are able to attract international talents without having to rely on cooperation because of their prestige. However, they need to recognize that they too would benefit from the positive externalities of a self-reinforcing environment: a big university in an attractive location with strong employment opportunities becomes more internationally attractive, more positively tied to their local economic and political environment, and more useful to Californians. As we have noted previously, attracting international students would provide a source of revenues for *all* regional colleges universities suffering from decreasing state appropriations via direct increases in tuition and other income, or as we suggest here via a shared revenue scheme.¹³

Moreover, these universities should take a leadership role to reinforce their image as progressive and innovative institutions, and not simply islands of quality unconnected with the regional economic and cultural needs beyond their traditional roles.

How to proceed? We suggest that the triumvirate of academic-business-policy partners consider the following steps toward the creation of a San Francisco/Bay Area Global Higher Education Hub.

- **Establishment of a Study Group**

To empower individual universities and companies to attract international talent, a study group should be formed, perhaps under an alliance or leadership of the Bay Area Council (a business-sponsored advocacy group with members from some 275 of the largest employers in the Bay Area), the Joint Venture - Silicon Valley Network, the Association of Bay Area Governments & Bay Area Alliance for Sustainability, and other business and higher education groups such as the Berkeley Roundtable on the International Economy (BRIE).

This Hub Study Group would interest partners by initiating discussion and analysis on the feasibility of a strategic plan and enabling studies. This Study Group could be co-chaired by a higher education leader (preferably the president of Stanford or the chancellor at Berkeley) and a major business leader (preferably linked to the regions high technology sector).

The following outlines a number of feasibility studies and steps toward fruition 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 could be based, in part, on UNESCO and OECD data. But there is also a need for 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, the international competition for students and changing labor markets, but also shifting government policies and efforts to ease, for example, the path to citizenship, or to increase the financial aid provision for foreign students.

One could imagine, at some later point in the maturity of the Hub, that an agreement could be reached with specific ministries of education, or a significant grouping of partner universities, to offer education abroad programs that lead to a Bay Area Global Higher Education Hub-related degree – or some variation on this theme. But our sense is that the strategy should not be so much to encourage short stays by students – for a single year or semester, for example – but enrollment and programs that lead to degrees and some selection of credentials at local colleges and universities.

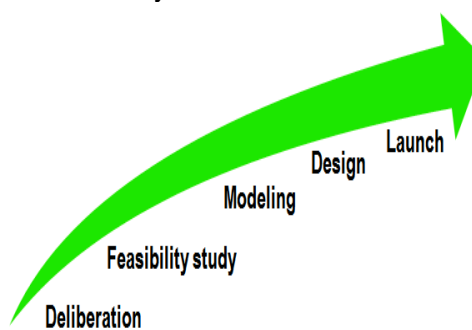
Other factors should be considered in such an analysis, including:

- How might the hub build on 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?
- Should specific disciplines or fields be emphasized in program development and recruitment efforts?

The following questions would also need to be adequately addressed:¹⁴

What could be done to solve the visa problem that foreign students often encounter in applying to US universities? Could Bay Area government and business leaders persuade the State Department to put international students at Hub universities on a fast

Figure 4 – A Pathway to a SF/BA HE Hub



track for visas? Could some other process be worked out with our embassies in each sending country? Could there be some special dispensation for graduates of Hub to stay in the US if employed? What policies might California pursue to retain international students who graduate from Hub programs beyond more liberal visa policies set by Washington – to avoid “brain drain”?

The Hub model could educate international students who then find employment in other states. If these students have paid full-cost tuition, then this is not really much a problem; at the same time, we are entering an era of “brain circulation” in which talent is mobile and may go elsewhere for employment only to come back again to the Bay Area. At the same time, high-quality academic experiences create new international networks that inevitably lead to new business opportunities and often alumni support for colleges and universities.

- **Analysis/Review of Regional, State and National Labor Needs**

In theory, one goal of the Hub 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 Hub 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 the science and technology fields, and these are fields that will draw significant international interest by talented students. A hub would also increase the availability of labor with much sought after international skill sets (language skills, multi-cultural awareness, etc.).

The analysis should scan this market, and also explore programs that could attract post-doctoral students that could link to both industry and university research activities. International students could also take part in integrated professional programs, such as consultancy or internships, in isolation or partnership with resident students, in regional businesses to facilitate the flow of expertise and innovation between entities.

- **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 percent of all US students, have the most capacity to grow and attract foreign talents. Independent institutions, like 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-profits 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.

If international, and out-of-state, students bring in additional revenue because of a large price differential when compared to what Californians pay in tuition and fees, will they replace these native students? Will increased tuition rates at these publics, and hence lessening the differential between private and even for-profit universities and colleges, reduce their market attractiveness? Berkeley already charges foreign students nearly what it costs an undergraduate to go to an elite, prestigious private, where students get much lower faculty to student ratios and an environment that is often more nurturing and interactive than can be provided at large public universities.

It may seem paradoxical that increasing international student numbers can also increase places for Californian students while improving the quality of education for both groups. At a time when there is scarcity of places for local students to attend public institutions higher learning, how can it be argued that we should increase enrollments of international students?

The answer is twofold. First, by concentrating on increasing international undergraduate enrollments and setting tuition rates at levels that are both competitive internationally and higher than the real costs of the degree program for domestic students, revenues can be produced that can be used to increase capacity and access for local students. While the economics of this requires further elaboration, the high quality of our institutions combined with the attractiveness of Northern California are significant assets that have yet to be fully leveraged on an international scale.

... by concentrating on increasing international undergraduate enrollments and setting tuition rates at levels that are both competitive internationally and higher than the real costs of the degree program for domestic students, revenues can be produced that can be used to increase capacity and access for local

Second, as advanced learning and professional education increasingly require knowledge and experience that is both international and intercultural, the increased presence of foreign students will contribute to a higher quality of education for all students by changing the context of learning, to be more international and relevant to the increasingly global economy.

As noted previously, currently international undergraduate students represent barely 3% of post-secondary enrollments in the U.S. Even a doubling of international student enrollments will not come close to the averages found in most other Asian and European nations.

An additional source of revenue can come from possibly attracting some selective group of leading universities from Asia and Europe to establish satellites in the Bay Area, and to possibly partner with local institutions. Many institutions, especially from strong emerging economies, have the financial means to invest in infrastructure, professional services, and personnel in the Bay Area.

This would constitute a form a foreign direct investment that contributes to our local economy and some of which can be reinvested in the capacity and quality of California's education system. They may also offer educational opportunities in key developed and emerging economies for local students, thus contributing to capacity building of our educational system. But these is a possibility that would need further analysis as to how it would influence the hub model and, specifically, help local college and universities.

- **Create a Financial and Business Model**

As noted, we see the Hub 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. 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 Hub, 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 considerations for developing a funding model and business plan:

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

Appendix 2 provides elements of an economic model for evaluating costs and benefits.

- **Develop Priorities for Degree Programs**

Depending on the market analysis for international students, estimates on the proportion of international undergraduate and graduate students, priorities for local labor markets, and the interest and agenda of participating universities, the Hub 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 joint program with two or more HEIs. Among the range of degree programs that could be considered:

- Gap Year – Remedial Programs, with agreements/paths for matriculation to selected Hub HEIs
- Semester Abroad – could be joint with more than one HEI and combine CCC and 4-Year
- Associate of Arts
- Baccalaureate
- MA
- Professional
- Doctorate
- Post-Doctoral

- **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, cooperation can take a number of organizational forms to consider. They include:

- A voluntary grouping of regional public and private HEIs that is self-governing and financed
- A voluntary HEI partnership with local major businesses with some support 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 Hub students.
 - Student support services (e.g., visa, counseling, social events, and job opportunities) coordinated with participating Hub HEIs.

The creation of a successful hub requires a critical size. 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.

But a truly viable Hub initiative requires the participation of UC Berkeley and Stanford University. These institutions will provide an anchor of legitimacy and help in developing the branding of the hub concept. But what is the advantage for them to participate and take a leadership role? We see advantages for these two high-profile Bay Area universities, and few costs. Each HEI will, essentially, need to go through a similar analysis.

There will be significant differences in the advantages provided by the Hub to each university and college campus. They can be analyzed in a set of “hub engagement factors”:

1. Campuses that have existing enrollment and program capacity that they could better capitalize via the hub concept.
2. Campuses that choose to expand enrollment and program capacity in association with Hub.
3. Campuses that might gain by having joint degree and credential programs with marketing and other advantages via the Hub.
4. Campuses that might gain by collaborating in shared housing facilities, student support services, and perhaps a Hub-subsidized financial aid program.
5. Campuses that view the Hub as a means of attracting talent that may matriculate to graduate programs.
6. Campuses that view the Hub as a collaborative means to gain financial resources – for example, perhaps through a financial aid program supported by regional businesses and eventually some support from local governments.
7. Campuses that view the hub concept as outreach to important emerging economies and to help build the regional and state economies of California.

Depending on the financial scheme and revenue model developed, Berkeley and Stanford will likely view the potential advantages as limited to factors 5 through 7. They currently draw from a worldwide pool of students at the graduate and to lesser extent undergraduate levels, with plans, such as at Berkeley, to expand international and out-of-state undergraduate students to 20 percent of total enrollment of those students. At the same time, we think these two campuses should see the development of the Hub as a means to expand and diversify their pool of high quality applicants, particularly in “underserved” parts of the world such as Africa, parts of Asia, and South America.

Other HEIs will need to analyze how a collaborative effort will enhance their campus, including their current plans to draw international students. How might it help build overall enrollment capacity and key programs? How might it help expand opportunities for native students in the Bay Area and the state in general?

Another important variable is the regional definition of the Hub. What universities and colleges are in the hub area and what might constitute eligibility to participate?

... hub partners may want to market the hub as a space of high-tech innovation and creativity, of tolerance and multiculturalism, of academic rigor or as the birthplace of the Californian lifestyle.

Our initial concept is that participating HEIs be in an area that is served, in some fashion, in a distinct geographic area serviced by public transportation, and where joint programs and shared facilities would be viable for students and faculty associated with the effort. But that rubric could be strategically expanded after further review to other nearby communities – e.g., UC Santa Cruz, or HEIs in the Sacramento area.

- **A Marketing and Recruitment Campaign**

A marketing and recruitment campaign is essential to give the Hub its global outreach. Marketing includes various aspects, starting with the name of the hub. We have used the working title “San Francisco/Bay Area Global Higher Education Hub,” but a more enticing title should be considered.

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

A marketing campaign could rely largely on creating a major internet presence, including an online portal on the SF/BA 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).¹⁵

Marketing could also concentrate on other targeted strategies, for example reaching out to the alumni of the various partners would allow for a global, reliable, instantaneous and almost cost-free marketing tool. Because they are so recent, a global and successful alumni base is a resource that hubs in other regions of the world have yet to develop. This gives Bay Area colleges and universities a potential market advantage.

Current alumni are likely to know potential applicants with similar characteristics and can promote the Bay area hub to these potential applicants. They represent the most reliable advertisement campaign. Their achievements provide a strong signaling mechanism in favor of the institutions they graduated from and alumni generally share a strong commitment to their *alma mater*. Alumni are also a very cost-efficient source of advertisement. Word-of-mouth is free, as are most online networking tools (e.g. Facebook groups). Some alumni may also be designated as ‘hub ambassadors’ in their region of residency as well.

Some colleges and universities in the US currently contract third-party operators, called recruitment agents, to ensure international recruitment. For example, the American International Recruitment Council (AIRC) founded in 2008 by a leading group of accredited US colleges and universities, aims to establish and promote high professional standards in international student recruitment.

But recruitment agents are currently in the middle of debate focused on the inherent tension between the academic ethic and the profit motive of these international recruiters (usually paid in commissions ranging between 10 to 15% of the first year’s tuition). This includes some agents rumored to authorize admissions on the behalf of institutions.¹⁶ Our hub strategy would look to avoid or reduce this dependency on third-party middlemen – a strategy that could bring some savings to some Bay Area institutions.

Another strategy could include being represented in international fairs. Hub member institutions could consider setting up their own recruitment team for this purpose.

- **Develop a Quality Assurance System**

The Hub 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 their business practices.¹⁷ Their model is in part to invite private and for-profit HEIs to help enhance the hub concept in Singapore and employ an on-going evaluation process to assess the time for visa processing along with a wide array of other factors.

In the case of the SF/BA Hub, any QAS should take into account the larger goals of the enterprise, the array of institutional types, and the existing accreditation and other external and internal quality-assurance efforts of participating local universities and colleges. For example, the Western Association of Schools, Colleges and Universities has extensive policies and best practices related to all potential HEI partners in the Bay Area hub. All public and independent/private universities have internal policies such as regular reviews of academic programs.

Such external and internal quality efforts vary considerably, and for-profits, if a selective group was to participate, are the least transparent in their efforts to ensure quality. This noted, one could imagine a Hub QAS that would regularly assess the following program elements:

- Admission practices
- Visa Support
- Relevance of Curriculum
- Qualifications of Faculty

- Social Interaction of Students – must avoid isolation
- Financial Aid
- Housing Support and Guidance
- Student Services Support
- Health Care
- Sustainability and monitoring of student experience and attrition rates

F. 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 five 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.

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.¹⁸ Most of the “import” costs relate to US students going abroad for education programs.

A Matter of Competitiveness

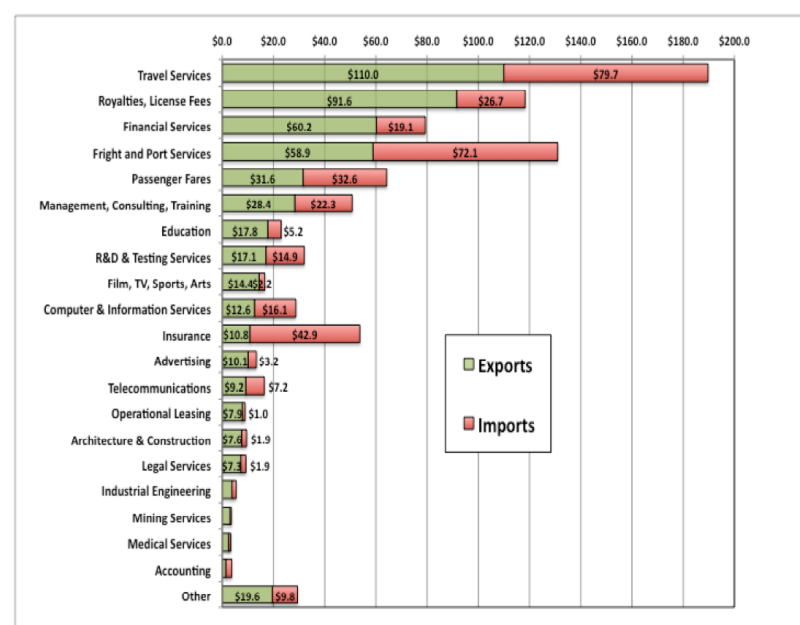
As noted, currently the US enrolls some 691,000 international students with a total economic impact of some \$19 billion a year.¹⁹ The real economic impact of these students is likely much larger than this, as the current economic

impact model could be extended to indirect impacts like job creation and additional potential for international business ventures.²⁰ The AIE study also is limited to accredited colleges and universities and relies on data supplied by HEIs that report their number of international students – and some do not respond.

Just as importantly, higher education brings additional benefits, including help in meeting 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.

Early in his presidency, Obama stated that the US must once again have the “best educated, most competitive workforce in the world” by 2020. In short, this means the US

Figure 5 - US Trade in Services 2008



Source: International Trade Administration. US Department of Commerce. 2009

If indeed the future for US economic growth is greater knowledge production, including in 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 – than states and regions need to think creatively on how to nurture an appropriate talent and labor pool.

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.²¹

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 the future for US economic growth is greater knowledge production, including in 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 one million college graduates than it needs for its economy by 2025.²² Depending on in-migration patterns of highly educated professionals, only about 35 percent of California's population will have some sort of post-secondary degree. PPIC projects that the state will need at least 41 percent 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. By 2015, 60 percent of the new U.S. jobs created will require skills held by only 20 percent of the work force, according to the American Society for Training and Development.²³ 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 U.S. will require highly skilled workers, particularly in STEM subjects (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.²⁴

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 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.²⁵ 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'

Being A Responsible Global Player

There are other ways to assess the demand and supply side of global higher education markets, and why the US, and potential hubs like the Bay Area, should think expansively. 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.²⁶

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 Netherlands, Norway and the Republic of Korea, for example, enrollment decreases of 5% to 10% have been recorded since the late 1990s," states the report.²⁷

And what are the supply and demand needs of the US and California? A number of reports have projected large-scale deficits in science, engineering, math, and technology baccalaureates and graduate degrees in the US. As we argue in "The Global Competition for Talent," there are significant problems with the educational pipeline into STEM fields in the US, and in California, including low high school graduate rates and low interest in these fields.

Our view is that one needs to attempt to both increase native students entering STEM fields, while also aggressively looking to increase the US's 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.

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 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 (MDG's). This includes a broad range of issues, largely focused on improving developing economies, for reducing poverty, promoting sustainable social and economic development, bridging the digital and broader technological and knowledge divides. Specific emerging issues and challenges include climate change mitigation and adaptation and the urgent need to move to a low-carbon future.

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.

Major research universities like Berkeley and Stanford have many activities, and faculty, engaged in these issues. The Hub concept helps bolster these efforts, providing opportunities to link institutional activities and create a greater collective impact. We have not address here adequately how the hub concept could create stronger cooperative research between faculty and students in the Bay Area, but we think this is more likely with the creation of the first meaningful regional approach to attracting talent. It creates an infrastructure, and a cash flow for sustaining and creating other activities with a regional and world influence.

G. CONCLUSION - Some Organizational and Political Considerations

We started this essay with an attempt to note the potential market and the direct financial impact of international students on 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 hub.

Of course, it is not only about the money. 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, a more powerful a source of innovation, in which talent from throughout the world will continue to migrate and contribute to our economy and socioeconomic experience. Table 8 provides a matrix of some of the benefits of a properly constructed *hub*.

That said, we also know that the idea of a San Francisco/Bay Area Global Higher Education Hub is not wholly formed, and possesses a number of challenges. 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.

There is also the prospect that a number of institutions, public and private, might see such an effort as distracting from their current enrollment and program plans; or they might participate by creating low quality add-on programs and not integrate a sub-population of Hub international students into their regular teaching and research programs.

Ultimately, potential partner colleges and universities will have to see and actually gain four things out of a joint effort:

- An enhanced international profile and branding.
- An enhancement to existing teaching, research, and public services activities.
- Financial gain that helps support campus's general operational costs.
- Campus specific or Hub shared facilities and services for international students.

Because the benefits would be substantial to the Bay Area in terms of business activity and an enhanced talent pool, we sense that the Hub would require involvement and financial support from the private sector in its initial phase -- perhaps from a few key and progressive high-technology companies. Further, and as noted, it might emerge as a quasi-public and private venture. The Bay Area Council or other business oriented groups could be a potential partner in vetting this idea more fully, including helping to support or conduct a series of planning studies outlined previously.

Because the benefits would be substantial to the Bay Area in terms of business activity and an enhanced talent pool, we sense that the Hub would require involvement and financial support from an engaged private sector -- perhaps a few key high-technology companies.

These are difficult financial times. California's state government fiscal problems are arguably the most severe in the nation. Public universities and colleges in California, and throughout much of the US, face dizzying cuts in public funding. One consequence is that the University of California, the California State University, and the California Community colleges are cutting enrollment and limiting access to higher education in the state.²⁸ 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 greater with each passing year.

Thus, the timing for something along the lines we propose is extremely good. For one, colleges and universities in the Bay Area are in desperate need of additional resources and many have capacity to grow – if only they had the financial resources. At the same time, the economy may be in the process of slowly turning a corner, with the eventual prospect of some increased resources via local government and, more importantly, the private sector.

We predict it is only a matter of time before an urban area in the US, such as Los Angeles, New York, or Seattle, creates something along the lines we outline in this paper. But we think none is riper for this entrepreneurial advent than the dynamic and progressive Bay Area. Our goal is to start a conversation among university, business and government leaders.

It is about the money, but so much more.

APPENDIX 1

Examples of Higher Education Hubs

- **Hong Kong** – A regional education hub

Hong Kong has recently become more aggressive in competing for foreign students, faculty and partnerships with foreign institutions. The government announced a stronger commitment to establishing Hong Kong as a “regional education hub.” They plan to make the city into a major academic center in Southeast Asia and to initiate stronger global partnerships with American universities and others. They estimate that Hong Kong will need to hire about 1,000 scholars in the coming years and it also plans to increase the share of international students in its universities from 13 percent of all students enrolled to 20 percent. To achieve this objective, the government has established a \$128.5-million scholarship fund; foreign students are eligible to receive double the financial award that is available to their local peers.

As an additional approach to achieving these objectives, the territory intends to increase the number of programs and degrees it offers in partnership with foreign institutions in the city. The objective of attracting more overseas students has led local universities such as Hong Kong University, the University of Science and Technology and City University of Hong Kong to adopt more proactive student exchange programs and the funding of joint programs with overseas universities.

Hong Kong has reformed its educational system to become more like the American system and move away from the British style system it has had historically. This reflects a desire to make it easier for students, faculty and hiring companies to quickly understand the nature of the education received by graduates as well as make the territory more attractive as an educational destination. The government has set aside some land for the establishment of a new international campus and is inviting foreign universities to make proposals on how to develop it. They would like to create a multi-campus facility similar to Education City in Qatar.²⁹

- **Singapore** – The Global School House

Singapore was among the earliest cities/regions to initiate a higher education hub strategy. Beginning in 1997 the “Singapore 21 Committee” was established to create a vision for Singapore in the 21st century. Recognizing the new imperatives of the global economy, the committee identified the need to attract and retain foreign talent as a key element in the creation of a research intensive, technology centered entrepreneurial economy. In 1998 the “World Class Universities” program started a fifteen year ongoing investment by the government to upgrade local universities to the highest international/American standards, create new national universities and attract prestigious foreign universities to collaborate with Singaporean universities in teaching and research and also to create branch campuses or research centers in Singapore. The now widely known “Global Schoolhouse” project launched in 2002 with the objectives of extending financial support to an identified group of “world class universities” to establish operations in Singapore, with the intent of attracting 150,000 foreign students by 2015 to study in universities based in Singapore and develop a local capacity for advanced research and graduate education especially in science and technology fields. The Global Schoolhouse aims at creating a leading global knowledge hub in Asia by drawing inspiration from foreign expertise³⁰.

The financial investments by the Singapore government were significant and included subsidies and tax advantages to foreign institutions for land and infrastructure development as well as major investments in Singapore’s own universities. The National University of Singapore was remodeled, with new divisions created to promote entrepreneurship, innovation and global outreach, including an Entrepreneurship center and a Venture Support Unit, as well as an Overseas College Programme. Two new universities were launched – Singapore Management University, and the Singapore University of Technology and Design and over 25 foreign universities have opened “substantial” operations in Singapore since 2000.

Early American university engagements in Singapore included projects by MIT and Johns Hopkins University in research and technical assistance. The University of Pennsylvania’s Wharton Business School was instrumental in the creation of Singapore Management University and MIT assisted in the recent launch of Singapore University of Technology and Design. Other American institutions with facilities or substantial activities there include, the University of Chicago, Cornell University, Duke University, Georgia Tech, Carnegie Mellon and Yale University which is in negotiations to launch a new undergraduate college with National Singapore University.³¹

Singapore’s Global Schoolhouse is viewed as largely successful, although not on a pace to enroll 150,000 in four or so years. However, foreign student enrollment is now over 30,000 students. There has been significant growth in the number of graduate degree programs in science, technology and management and the number and quality of advanced research projects have increased. Singapore has become one of the preferred locations for multi-national corporations to establish regional

headquarters in Asia and there has been growth in the creation of new start-up companies based there. Some of the leading Western scientists are working on research projects with links to Singapore. As evidence that the commitment is long term, Singapore's National Research Foundation recently launched the "Campus for Research Excellence and Technological Enterprises" – CREATE that will further stimulate collaborations with Foreign and Singaporean universities to undertake industry relevant research. It has a budget of \$600 million.

- **Qatar – Education City**

Sheikh Hamad bin Khalifa Al-Thani, emir of Qatar, invited a handful of American universities to establish branch campuses on a tract of desert near the capital beginning in 1997, calling the project "Education City." Through his "Qater Foundation for Education, Science and Community Development" billions of dollars have been invested in the development of a modern and architecturally sophisticated campus, housing branch campuses of American and some European Universities. Virginia Commonwealth University was the first to come in 1997 and offers a degree program in arts and design, followed by Cornell University's Weill Cornell Medical College in 2002, Texas A & M University's engineering school in 2003, Carnegie Mellon University offering business and computer science degrees in 2004 and later Northwestern University in journalism and Georgetown University in foreign affairs. Recently the French business school HEC has joined the campus.

The principal idea of Education City is to eventually create a world-class university by combining programs from leading foreign institutions on the same campus that it is hoped will have 8,000 students in the next few years. Students are recruited from abroad and represent 45 nationalities. Qatari students represent about half of those enrolled. One of the early Presidents of Education City was Charles E. Young, former Chancellor at UCLA. Education City also has developed a science and technology park to attract firms and investors interested in applied and basic research. There is a Research Foundation that funds research projects and a branch of Rand Corporation has been established there.³²

- **South Korea - Songdo Global University Campus and BrainKorea21 Project**

The idea of the Songdo Global University Campus was first conceived by the city of Incheon in 2006 to encourage prestigious foreign universities to operate extended campuses where students could obtain degrees in the Incheon Free Economic Zone. The city government supports programs for foreign universities, including giving US\$1 million to each foreign university that sets up a branch program, and begins developing an undergraduate program. The model for the Global University Campus is similar to Qatar's Education City, in which American universities will offer undergraduate programs inside a single campus, while administering them separately. Campus developers predict it will enroll 12,000 students by 2012. Built on 1,500 acres of land reclaimed from the Yellow Sea off Incheon, about 35 miles from South Korea's capital, New Songdo City is billed as the largest private real-estate development in history. Up to \$60 billion is expected to be spent developing the new city.

North Carolina State University and State University of New York at Stony Brook have entered into agreements to establish operations on the campus and have each received one million dollars as incentive funds. Other institutions considering participating in the project include Duke University, Columbia University, Boston University, the University of California - San Diego, the University of Illinois, Urbana-Champaign and Carnegie Mellon University and the University of Pavia in Italy.

South Korea has signed pledges of cooperation with American colleges and lured hundreds of foreign professors to what was once considered an educational backwater. The government believes it can propel its best universities into the world's top 50 and stem the flow of students out of the country. The South Korean government has committed \$800 million over the next five years to a "World Class University" project, a ministry of education effort to raise the quality of research at 30 universities. One part of the project recruits highly regarded foreign professors to come and teach for short or long periods at Korean institutions and help develop new departments and specialties. It is reported that nine Nobel Prize winners including the 2006 chemistry laureate Roger D. Kornberg are among 81 foreign researchers who are contracted to come to Korea for teaching and research at Korean universities. There are also 18 members of the U.S. National Academy of Engineering.

Another government project called "BrainKorea21" is aimed at creating "centers of excellence" in information technology, bioengineering and other "knowledge-based" fields. Started back in 1999 this project has already invested \$1.4 billion in this effort and has committed another \$2.3 billion investment over the next five years.³³

- **United Arab Emirates – Dubai Knowledge Village, Abu Dhabi Masdar City and Institute**

Dubai's Knowledge Village was launched in 2003 with the government and private investors offering very attractive financial and real estate subsidies to attract universities from the UK, the U.S., France, India and other countries to establish a branch campus there. It is designed to attract students from throughout the Middle East and Asia and also serve a large expatriate community based in Dubai. Over 20 universities and professional schools have established programs in Dubai including London Business School, Michigan State University, Manchester Business School (UK), Rochester Institute of Technology, Middlesex University (UK), St. Petersburg University, Heriot Watt University (Scotland), UAE University and the University of Bradford (UK). The

Knowledge Village is also a site for offices and research facilities for private industry. The government reported that there are over 400 firms located in the free enterprise zone linked to the Knowledge Village.

Abu Dhabi's Masdar City and Masdar Institute is another major planned education/research/enterprise zone that has attracted some leading American universities including MIT and New York University. The project is backed by *Mubadala*, an investment fund controlled by Sheikh Mohamed bin Zayed Al-Nahyan, the crown prince of Abu Dhabi and next in line to be president of the United Arab Emirates. The fund says it has set aside \$15-billion in seed capital to build the city, including the Masdar Institute.

The Masdar Institute aspires to be a graduate level research university and has a five-year agreement with MIT to develop the curriculum, recruit and train faculty and to undertake joint research in the area of renewable, clean and sustainable sources of energy. MIT graduate students and faculty will spend time in Abu Dhabi and will benefit from significant funding for its research on renewable energy. The Masdar Institute hopes to attract 800 graduate students from abroad to its program over the next five years.

New York University has established a campus in Abu Dhabi and recently launched an undergraduate college it has named "World Honors College" which has attracted a first class of 150 students from 39 countries speaking 43 different languages. It is designed to be highly selective and highly international. NYU hopes to grow the campus so that there will be significant opportunities for students in New York to study in Abu Dhabi and vice versa. The Louvre museum will also develop a new museum in Abu Dhabi to promote cultural education.³⁴

- **Malaysia - EduCity**

EduCity is located in Nusajaya, Iskandar Malaysia on 129 hectares of land. It is designed to house eight universities to be developed over ten years. Malaysia's National Higher Education Strategic Plan calls for a major increase in the number of foreign students attending universities in Malaysia. It currently has over 70,000 students from abroad, mainly from Indonesia, China and the Middle East. EduCity is expected to attract branch campuses of universities from Australia, the UK and the U.S. attracting significant numbers of new foreign students.

The University of Nottingham (UK) has had a campus in Malaysia for a number of years and there are three Australian University campuses there as well: Monash University, Curtin University of Technology and Swinburne University. EduCity is designed for eight additional universities to be established over the next ten years. The government hopes to attract institutions that can offer degrees in engineering, hospitality management, marine biology and logistics related studies. In a second phase, Malaysia will look at language courses, fine arts and multimedia disciplines to provide support for the creative industry, one of the new economic pillars in Iskandar.

Britain's Newcastle University has been invited to become the first foreign university to establish a branch campus in EduCity. The university plans to replicate its UK program of two years of the Bachelor of Medicine and Bachelor of Surgery in Malaysia. It is hoped that EduCity will bring additional academic and research talent to Malaysia and stimulate collaboration between Malaysian universities and the foreign universities through joint research projects and student exchanges.³⁵

- **Bhutan**

Bhutan, located in a magnificent isolated mountainous region between India and China became a democracy only two years ago. As part of that transition and to boost educational attainment levels, the national government is embarking on an ambitious plan to build a high-end US\$1 billion education city to encourage prestigious universities and colleges worldwide to establish affiliated institutions in Bhutan.

The project aims to bring in the branches of about 30 top universities, including those from the US Ivy Leagues, and about 50,000 international students. The city would be spread over 1,000 acres (405 hectares), whose development was approved recently by the government, with a population of more than 100,000 people, including academics and support staff. The city would have R&D (research and development) facilities, laboratories, hotels, healthcare services, sports centers, libraries, cultural and entertainment centers, and cafes. It would be located in one of the most picturesque spots in Bhutan, between the capital Thimphu and the country's only paved airport, Paro International Airport, around 20 miles (32 kilometres) away.

"World class international schools, general education colleges and specialized colleges in the fields of ICT (information and communication technologies), architecture, engineering, medicine, law, management, and design will be encouraged to open franchises/campuses..." says the country's 'economic development policy' (EDP), unveiled in April this year. "Education in the fields of maths and science shall be the priority." The policy lists education as a top priority sector for Bhutan and guarantees investors 100% foreign equity, tax holidays of up to 15 years, and exemption of customs duty and sales tax on various kinds of school equipment such as buses and books. The city is Bhutan's largest foreign direct investment proposal yet.³⁶

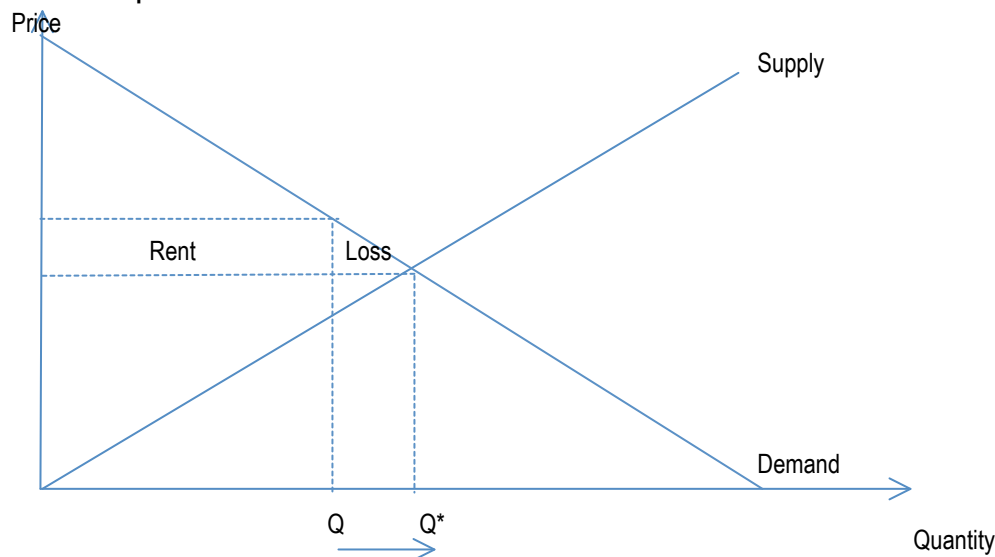
APPENDIX 2

The Elements of a Hub Cost and Benefits Model

Costs and benefits of increasing the intake of foreign students

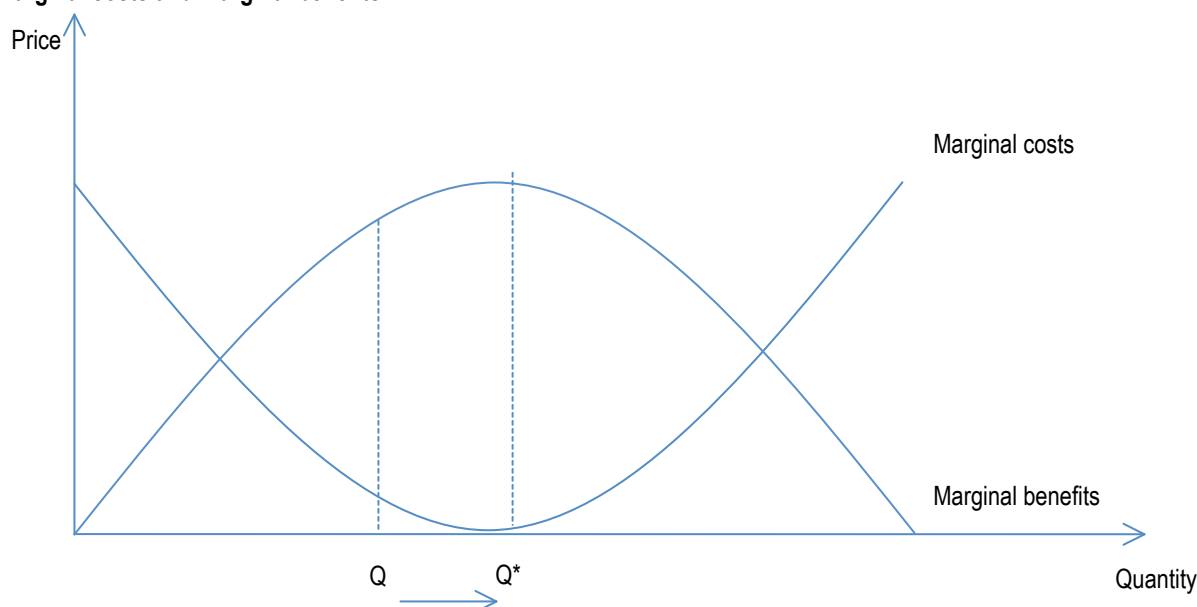
Creating a hub would increase the capacity to enrol foreign as well as national students. The graph below illustrates this reasoning. In this graph, a loss is generated if each higher education institution does not take part in the hub. This suboptimal equilibrium exists because institutions under-use the capacity that they could maximise with a hub, for example by using shared facilities. A classroom that, in the absence of a hub, is used by one institution to offer daytime classes could, with a hub, be shared with another institution which would offer evening classes. The offer of courses is therefore doubled with this shared classroom facility. And creating a hub would higher education provision to its ideal equilibrium Q^* .

Enrollment equilibrium



Moving to Q^* leads to profit maximization, since the marginal benefits of enrolment would be maximized given the marginal costs³⁷. The marginal costs represented in Graph 3 below decrease when $Q < Q^*$, since it is assumed that existing infrastructure would accommodate increased intakes of students. When $Q > Q^*$, additional infrastructure costs (e.g. building additional facilities) would be necessary, which would raise the costs. Similarly, students would be willing to pay a higher price for enrolment until $Q = Q^*$ (if, $Q > Q^*$, they may deem that they may not get a good value for money with classrooms being overcrowded for example).

Marginal costs and marginal benefits



Further studies and a financial plan which takes into account the various capacities of each partner, are necessary to determine the exact value of the equilibrium Q^* .

Why prioritise foreign students when filling in enrolment capacity? Using foreign students would lead to a multiplier effect generating more resources to take-in an exponentially large number of national students. This multiplier effect is particularly strong given that higher education includes an array of benefits, not only private, for the economy and society as a whole (IHEP, 1998). A hub would contribute to generating such social benefits.

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³¹ Sidhu, R., Ho, K.C., Yeoh, B. op.cit; Olds, K. (2007). Global Assemblage: Singapore, Foreign Universities, and the Construction of a "Global Education Hub". *World Development*, 35(6), 959-975. doi:10.1016/j.worlddev.2006.05.014

³² *Chronicle of Higher Education* April 22, 2005 <http://chronicle.com/article/In-Qatar-s-Education/7480>

³³ *Chosen Ilbol* Jul. 16, 2009 http://english.chosun.com/site/data/html_dir/2009/07/16/2009071600258.html; *Chronicle of Higher Education* June 19, 2009 <http://chronicle.com/article/South-Korea-Builds-a-Global/48651/>; *Chronicle of Higher Education* October 10, 2008 <http://chronicle.com/article/South-Korea-Creates-Grant/29142>

³⁴ GlobalHigherEd Blog, February 13, 2009 <http://globalhighered.wordpress.com/2009/02/13/london-dubai-and-global-higher-ed/>; *The Chronicle of Higher Education* March 27, 2009 <http://chronicle.com/article/A-New-Model-for-American/33651/>; *The Chronicle of Higher Education* June 21, 2010 http://chronicle.com/article/New-York-Us-Abu-Dhabi-Campus/66005/?sid=at&utm_source=at&utm_medium=en

³⁵ Wagdy Sawahel, *University World News*, September 27, 2009 <http://www.universityworldnews.com/article.php?story=20090925024920661>

Chronicle of Higher Education October 13, 2010 http://chronicle.com/blogs/global/universities-want-to-set-up-campus-in-malaysia/27530?p=27530?sid&utm_source&utm_medium=en

³⁶ See <http://www.universityworldnews.com/article.php?story=20101022210058517>

³⁷ Arthur Hauptman offered general reflections on how increasing enrollment affects marginal costs, see Hauptman, Arthur (2010) 'A better option', in *Inside Higher Ed*: <http://www.insidehighered.com/views/2010/03/09/hauptman>