Abstract

The purpose of this paper is to describe a project, which has been in work for the past two years, which we believe, has several implications for education. This project has been partially funded by the Department of Education, Business and International Education Division. While we all agree that the economic and technical world is smaller and closer every day, we do not agree on how we should handle that in terms of educating our students who will be the main drivers in this new world. This paper presents some ideas, which involve student projects in many parts of the world plus a program for faculty training and industrial interactions.

I. Introduction

The work for this project has taken place at a highly innovative university in New England, Worcester Polytechnic Institute (WPI). There have been three parts to this project, one part focuses on students, a second part focuses on faculty training, and while a third part is involved with industry.

In the past, traditional engineering education focused on fields such as mechanical, electrical, civil and chemical engineering. In management, fields such as marketing, production, organizational behavior and finance still dominate most curriculums. However, with Internet and ultra high-speed communication and with the world so interconnected, we believe it is time to change that thinking. That is why we at WPI have been focusing on global and on interdisciplinary project based learning.

In a recent article in The New York Times, it was stated ”The world has been utterly transformed in recent years, globalization is sweeping old models aside, technology is bringing U.S. together faster and more furiously than ever before…”

The old thinking used to be that universities should be teaching the fundamentals and that industry would teach the applications. The problem with that model is that industry no longer has the time to teach the applications and expects when our students report for work they are ready to “hit the ground running.” Industry needs persons who are aware of the global implications of their decisions and who are ready to work as part of a project team (in this
country or another) from the very first day. With that theme in mind we shall now describe our approach.

II. Background

Our focus will first be on Latin America in general, then Mercosur, and finally some key countries including Argentina, Brazil, and Chile.

"The fastest-growing part of the world economy is in the developing world, not in the industrialized nations," said Robert Miller, senior consultant to the International Finance Corporation (IFC), an arm of the World Bank. The World Bank has predicted that developing nations will absorb 50 percent of global foreign direct investment within 25 years, more than doubling their share since the early 1980s. The largest single block of foreign direct investment now goes to China. Miller explains that as trade barriers fall in response to treaties such as GATT (the General Agreement on Tariffs and Trade) – now WTO (World Trade Organization) - and NAFTA (the North American Free Trade Agreement), it becomes easier for Southern firms to export. Moreover, the costs of doing business overseas are falling rapidly, owing to dramatic advances in telecommunications, data transmission, and data processing. Corporations can now afford to control dispersed international manufacturing networks that would not have been possible a few years ago. On the other hand, corporations that traditionally had a virtual monopoly on local markets may suddenly face stiff competition from around the world. These changes are going to affect businesses everywhere, and they will have to adapt or be left behind he declared.2

Latin America:

Latin America and the Caribbean region is the most urbanized in the developing world with about 74 percent of nearly five hundred million people living in and around the cities. A sharp recession hit the region in 1997, but there seems to be a positive outlook for the future. Given that an estimate of 37 percent of the population in Latin America lives under the poverty line, of which 39 percent live in urban areas, there is an awareness that sustained economic growth is essential for long-term poverty reduction. In that sense, foreign direct investment is very important totaling 58 billion dollars in 1998.3 This reality has motivated several countries in Latin America to modernize and strengthen the financial markets, regulatory policies, and the public sector as such.

According to Latin Trade’s analysis of the 100 major Latin American publicly traded companies, sales by sector have been distributed as shown in Figure 1.4 Telecommunication and Energy sectors are the most representative ones overall in the region.
These areas have also been the main targets of foreign investment of various types from direct investment to joint ventures and partnerships. Privatization efforts also offer important investment opportunities. These projects cover a wide-range of sectors. For instance, in the infrastructure arena there are projects for the construction, development, and/or management of roads, airports, and ports. Other areas are banking and financial services, generation and distribution of energy, transportation, and telecommunications.

Latin America has progressed during the past decade and in many senses overcame some of the most profound problems faced during the eighties frequently referred to as the lost decade. Nevertheless, it has also become evident that the market economics requires more than just pricing, there is a need for deeper and broader institutional reforms in terms of taxes, legal systems, and capital markets.

In the 1990’s, Latin America grew 3 percent per year on average. There was also a moderate expansion of the Per Capita GDP of 1.1 percent according to the World Bank, yet it is lower than what was achieved in the 1960’s and 1970’s with 2.5 percent and 3.5 percent respectively. Inflation has fallen significantly, by the end of 2001 it is expected that all inflation percentages will be single digits with the exception of Ecuador. This unfortunately has done little to reduce poverty. According to estimates of the World Bank in 1998, 36 percent of 500 million people in Latin America and the Caribbean lived on less than $2 per day. The “tequila” crisis in Mexico, the recent devaluation in Brazil, the recession in Argentina, and the political instability in Ecuador, Peru, Colombia, and Venezuela have further affected the region.

According to The Economist, Latin America suffers from some deeply rooted weaknesses, political and economically, which can be summarized as follows:

1. The dependence of the region in foreign investment makes it very sensitive to external market changes. Despite overall good economic prospects the expected foreign investment is expected to be of around $80 billion from $109 billion in 1997.
2. Economic inequality in the region, which unfortunately is the highest in the world. This requires better education systems and in some instances land reform. It also demands that the government taxes and invest more equitable.
3. The savings rates are too low.
4. Many countries rely on few commodities for exports with high price fluctuations in the external market.
5. Latin American politics are still marked by populism, clientelism, corporatism and corruption. “Corruption is seen by many Brazilians, and indeed Latin Americans in general, to be steadily gnawing away at democracy and public institutions.”

Thus, Latin America requires tighter fiscal policies, higher savings, and increased social spending. Furthermore, there needs to be a stricter supervision of the financial sector. In Ecuador, the collapse of the financial sector between 1998-99 represented around twenty two percent of the GDP, making it one of the worst crises in the past decades. Unemployment and labor laws have to be carefully addressed since unemployment has risen and many of the new jobs are in the informal sector. Political traditions also have to be changed and uprooted where needed.

Nevertheless, there are signs of increasing trade between the United States and Latin America. Latin America – not including Mexico – attained a positive balance of fourteen billion dollars this year, four times more that in 1999 according to the U.S. Department of Commerce. This is due largely to the higher oil prices reached last year. Oil exports from Venezuela doubled in year 2000 totaling thirteen billion dollars.

The focus which follows will be on the most advanced integration process in Latin America and then it will provide with an overview on Argentina, Brazil, and Chile which are the most developed countries in the region aside of Mexico.

**Mercosur:**

The Southern Cone Common Market (MERCOSUR) formed originally by Argentina, Brazil, Paraguay, and Uruguay, is the strongest bloc in Latin America. It has experienced impressive growth since its establishment in 1995. The trade growth between 1990-97 was four 400 percent. Mercosur has a population of 220 million persons and a GDP of $1.3 trillion as of 1997. In addition, both Chile and Bolivia have signed a free trade agreement with MERCOSUR effective in October 1996 and April 1997 respectively. There are talks between this bloc and the Andean Community which includes Bolivia, Colombia, Ecuador, Peru, and Venezuela with over 105 million inhabitants and a GDP over 240 billion dollars. The areas covered by each of these integration processes are depicted in the maps below.
Mercosur’s principal objectives are to improve the economies of their countries by making them more efficient and competitive and by enlarging their markets and accelerating their economic development by means of a more efficient use of available resources; to preserve the environment; to improve communications; to coordinate macroeconomic policies; and to harmonize the different sectors of the economies of the member countries. In the 1970s, Uruguay strengthened its commercial relationship with Brazil by way of the Commercial Expansion Protocol (PEC), and with Argentina by way of the Argentine-Uruguayan Economic Cooperation Agreement (CAUCE). Between 1984 and 1989 Argentina and Brazil signed twenty-four bilateral protocols with the purpose of improving trade. Integration efforts date back to 1985 when the Foz de Iguazú Declaration was signed creating the High Level Bilateral Commission for the integration of Argentina and Brazil. On March 26, 1991 the four countries signed the Treaty of Asunción. This Treaty should not be seen as the final creation treaty of the Common Market of the South, but as an instrument, of international character, intended to make the implementation of the Common Market possible. The Treaty of Asunción is an economic integration agreement with regional vocation, which remains open to the accession of the other members.12

Unfortunately, the overall situation of Mercosur seems to have weakened significantly. The recession that Argentina is facing and the devaluation in 1999 by Brazil have further slowed the progress of the integration group. In the past five years there has been little advancement toward the eradication of the remaining exceptions to free internal trade or the consolidation of a single market. Ricardo Lagos, Chile’s president stated that “If it’s just a trade agreement, if we coincide in our trade policy over time, then splendid, but if not, we will maintain our autonomy.”13 Chile took such a position before by separating itself from the Andean Pact now the Andean Community. Chile offers a better foreign trade policy than the rest of the Mercosur and also has a flat tariff of 9 percent scheduled to fall to 6 percent by 2003. Chile has already applied to change its present association to joining Mercosur with full membership, but this has not stopped Chile from considering other options. Chile has restarted its free-trade talks with the
United States. Argentina is considering doing the same since the country needs to expand its market.

Mercosur is the strongest integration effort in Latin America. Yet Mercosur is still fragile and is not consolidated enough to face the challenges of the Free Trade Area of the Americas (FTAA) to begin in 2005. The WTO’s ruling in favor of Canada regarding the illegal subsidizing of the successful Brazilian aeronautical industry by the Brazilian government demonstrated the lack of effective support of its partners in Mercosur. While the United States and Mexico supported Canada, as their NAFTA partner, Argentina, Paraguay, and Uruguay remained silent. In addition, Chile, although still an associate member, has decided to negotiate independently an agreement with NAFTA and has disregarded Mercosur’s goal to approach this as an integration bloc. The union or lack of it in the Mercosur could seriously alter the future of free trade in Latin America. According to the Chancellor of Argentina, Adalberto Rodríguez Giavarini, the way to attain a successful FTAA is through a strong Mercosur. The Chilean president, Ricardo Lagos, who sees Mercosur as a more ambitious plan, supports this also. Whereas the FTAA is a commercial agreement, Mercosur is an integration project that includes political, economical, and cultural dimensions. At the last meeting of the members of Mercosur in December 2000, they tried to set aside past disagreements and approved an important agreement for the auto industry. They established important macroeconomic common goals such as a maximum of 5 percent annual inflation between 2002-2005. Critical areas of conflict remain to be solved such as the tariffs on agricultural goods.

We shall now focus on three major countries in Latin America.

Argentina:

According to statistics from the World Bank, Argentina in 1999 had a population of 36.6 million people in an area of 2 million sq. km with a population growth of 1.2 percent and a life expectancy of 73 years. The GNP per capita for 1999 was at $7,600 and a GDP of $281.9 billion dollars.

Most of the 1990s was a decade of a booming economy in Argentina, growing at a yearly rate of 8 percent between 1991-95 and exports rising on an average of 12 percent a year from 1991-98. Furthermore, it was able to overcome the serious aftermath of the Tequila crisis. Under the presidency of Carlos Menem the peso was fixed at parity with the dollar (1991), the trade barriers fell significantly, and privatization and deregulation were strong. It seemed that the closed, inefficient, and hyper inflated economy was over. But in the past four years, Argentina has faced recession twice, with a declining GDP since 1997. Argentina’s economy has been affected by repercussions of Russia defaulting on its debt, which led foreign investors to become more cautious. Then around 60 percent of Argentinean exports are commodities whose prices have decreased significantly. Lastly, Brazil – its largest export market was also hit by a recession in 1999. The public sector debt has increase from 39 percent to 46 percent between 1997 and the end of 1999 respectively. The total debt of the country between the public and private sector represents 52 percent of the GDP. The IMF lent $40,000 million to Argentina to help stabilize the economy. The World Bank contributed with $303 million for the province of Cordoba to
balance its budget. Some of these amounts have been destined to fight corruption, subsidizes for small and medium business, and others.\textsuperscript{18}

Privatization has increased and improved many services provided by government owned utilities companies. It also represented $36 billion for the government. The waiting time to obtain a telephone line, for example, is two weeks and not years as before. The number of telephone lines has more than doubled to eight million. Nevertheless, this also needs some revision of the regulation agreements. Support for privatization has fallen from 52 percent in 1987 to 17 percent as of June 2000. The telephone tariffs were at a point four times higher that the United States and the road tolls are 50 percent higher than in other countries. Some privatizations have led to monopolies. Yet what can be done in terms of renegotiation is limited to terms of concession e.g. certain agreements are for a period of ninety years. “There was no discussion of what the state’s role should be after privatization, much less how the services should be regulated.”\textsuperscript{19}

The following charts will provide an overview of the existing trade between the U.S. and Argentina. The first graph represents the areas of trade according to the Standard International Trade Classification (SITC)\textsuperscript{20}.

This information will indicate what are those fields where trade has been most important for the U.S., as well as areas where the U.S. could embark. As it can be observed export of machinery and transport equipment is the most significant commodity in the export from U.S. to Argentina. On the other hand, the import from Argentina to U.S. of mineral fuels, lubricants, and related materials are the most representative import.

The next graph portrays the U.S. Trade Balance with Argentina in the past two years. As it can be observed both years have led to a positive trade of balance for the United States. Yet the volume of trade has diminished which is correlated to the economic hardships that Argentina has faced in the past months. The most significant difference can be seen from September 99 to September 2000.
Brazil:

In 1999, Brazil had a population of 168 million people with a life expectancy of sixty-seven years; a GNP per capita for 1999 was at $4,420 and a GDP of $790 billion dollars according to statistics from the World Bank. Brazil is the fifth largest country in the world by area with an economy that competes with China for the ninth place. Brazil is the world largest producer of coffee, biggest exporter of sugar and orange juice, second largest of soy; third-largest exporter of beef and chicken; and a big producer of tobacco. In 1999, partly benefited by devaluation, Brazilian farm exports reached a record of $18 billion an increase of 3.5 percent over 1998. These type of products represent 37 percent of total exports and are the most vulnerable to market movements. The agriculture sector employs 17.4 million people, an increase of 6.3 percent from last year. Overall unemployment though has increased from 1994 when the real plan was introduced from 5.4 percent to the current 7.4 percent. In addition, real wages have dropped by 7 percent last year. Many consider that the present labor laws discourage job-creation and promote the spread of unprotected informal work.

An area of important development in Brazil is the transportation infrastructure and within it the railway. Seven rail firms were privatized between 1996-97. It expected that it would represent 30 percent of the market share by 2005. In 1998 the amount of goods carried measured in kilometretonnes rose by 12 percent. These changes will also go beyond Brazil. It could offer Bolivia and Paraguay access to Brazilian ports. A new railway line – Ferronorte – would connect the state of MatoGrosso to the existing line of Santos, Brazil’s biggest port. BASF, for instance is building a branch line from a plant near Sao Paulo to the network to switch import of material from Argentina via roads. Recently a rail company from the south of Brazil acquired two Argentine railways thus promoting increase links between these two members of Mercosur. These advancements in the transportation sector have attracted the presence of Ryder of America and Danzas of Switzerland to Brazil.
The following charts will provide an overview of the existing trade between the U.S. and Brazil. The first chart and graph represent the areas of trade according to the Standard International Trade Classification (SITC)\(^{26}\). This information will indicate what are those fields where trade has been most important for the U.S., as well as areas where the U.S. could embark. It is interesting to see that the area of dominant export and import is the same, machinery and transport equipment. This exemplifies how globalization has changed the market place and demonstrates a shift in U.S. Trade with Brazil toward products and goods with greater value such as machinery and not primary products like raw materials.

The next chart and graph present the Balance of Trade between the United States and Brazil in the past two years. This should help exemplify the type of trade existing between the two countries and complement the information provided above. The fluctuations are related to the economic changes in the countries, yet it is interesting to observe that the magnitude of the changes from year to year is less drastic. Thus, although the Brazilian economy has had its ups and downs, it is overall more stable which should benefit trade and foreign investment.
**Chile:**

According to statistics from the World Bank, Chile in 1999 had a population of 15 million people in an area of 757 thousand sq. km with a population growth of 1.3 percent and a life expectancy of 75 years, the highest of all three countries. Life expectancy, in general, is a figure that points to an average well being of the population and advancement of a society. The GNP per capita for 1999 was at $4,740 and a GDP of $71 billion dollars.²⁷

Chile has historically worked very hard to create an environment that invites foreign investment and promotes internal competitiveness of goods and services to compete in international markets. Chile has presented some legal amendments to improve investment conditions in the country. Some of the areas of concentration have been equity requirements for foreign investment, labor legislation, modernization of regulation, and new types of contracts.²⁸

The government in Chile that has been in office for the past ten years is facing a serious crisis that arose from scandals related to severance payments of public officers. The payments are supposed to be proportional to the monthly salary, which would point to annual salaries of over $200,000 when actual average wages in Chile are closer to $5,000. The previous president Eduardo Frei signed most of these payments. What is most disturbing is that twenty of the employees only switched offices or departments and were still paid severance. Although, they have been requested to resign or return the money, some have refused.²⁹
The following charts will provide an overview of the existing trade between the U.S. and Chile. The first chart and graph represent the areas of trade according to the Standard International Trade Classification (SITC). This information will indicate those fields where trade has been most important for the U.S., as well as areas where the U.S. could embark. It is interesting to observe that while the most important export from the U.S. to Chile is machinery and transport equipment. On the other hand, the U.S. imports commodities from Chile under the classification of food and live animals. This provides the U.S. with a greater negotiating power since the products the U.S. exports have a greater value added and it makes Chile’s exports more sensible to market prices changes.

The next chart demonstrates more clearly the balance of trade between the U.S. and Chile. From the countries chosen to be the focus of this paper, Chile is the only one country with which the U.S. has had a negative trade balance in the past two years as shown below. This in itself is not necessarily bad, “what matters to the economy is not the difference between imports and exports but the extend to which Americans are free to benefit from the efficiencies in an economy open to world trade”. This might highlight why it is that Chile and the United States are once again involved in trade agreement discussions. In 1995, Chile had begun negotiations to join NAFTA. It is also important to mention that Chile has free trade agreements with Mexico, Canada, Colombia, Venezuela, Bolivia, and Ecuador. In the case of Mexico, zero duties apply to 99 percent of all products and goods and with Canada duties average 0 to 6 percent.
III. Our Program

The WPI Global Business Perspective Program (GBPP) strives to enhance the knowledge of global issues particularly in Latin America through an approach directed toward students, faculty, and the business sector in New England.

1. Faculty-focus – Under the umbrella of this program, three professors from WPI have been able to study in Latin America. Prior to their trips, each professor did research on specific sectors and established contacts overseas. The information that has been gathered and attained through the meetings in Latin America have been incorporated into undergraduate and graduate course modules and student projects. Thus, the transfer of the information is being achieved. Furthermore, the diffusion of this information has also reached the business place through conferences, publications, and presentations.

The outreach of the program has extended beyond the Management Department of WPI to other areas of the University. We have worked closely with the Global Project Center at WPI in the definition, development, and implementation of projects and programs.

In some respects, the most difficult part of introducing a global and project based learning perspective is to have faculty who have the ability to do such training. For the majority of the faculty, their education has been of the more traditional type. In order to have impact on students about the culture and opportunities in, for example, Latin America it is obviously necessary that the faculty understand that part of the world. In order to train faculty we had the choice of sending them to a training program, which focuses on Latin America or, to send them to Latin America to experience the culture and opportunities first hand. We selected this second option.
One faculty person, as part of this program, went to Argentina and spent time at a university there and also spent time at several companies. Interviews and newspaper publications emerged from his visit. He has now been invited back to Argentina to give short courses so that his learning about that part of the world will continue. He has now added Latin America modules and uses examples from Latin America in several of his graduate and undergraduate courses and will be adding more. When interviewed, he explained how enriching the experience has been since now he can better understand other cultures and bring different aspects of his experience into the work and research he does. Furthermore, he also expressed his hope that what is learned through this projects will not only be transmitted to the student body, but also foster an environment where other faculty members would learn about these differences. Hopefully in the future there could also be joint projects in which students could work simultaneously with other students in Latin America. His involvement with Latin America will continue to strengthen over time. One of the projects that has emerged is a collaborative effort to launch a program between Universities.

While in Latin America and in various interviews, we learned that one of the key issues with the introduction of Internet is the inertia which presently exists in Latin America. The relatively high cost of computers compared to income in Latin America is very high. This is another deterrent to the fast growth of e-commerce and Internet in general. A third issue is the lack of confidence in credit card use. While in the U.S. this was at first a problem with purchases on line, it is not a difficulty here today although it is still a problem there.

A second faculty person went to Chile and spent time in places of that country that are seldom visited by outsiders. In addition to case write ups, he is now adding video sections of interviews as part of explaining some of the cultural differences between Chile and the United States. In this case we are developing modules for our students that show some of the cultural differences between Chile and United States. Even as the faculty member prepared the project, it became apparent how people’s cultural differences and perceptions affect how businesses are conducted.

In the words of another professor who participated in this project, the opportunities that have arisen have significantly altered the importance of Latin American in his life. This two-year grant has allowed him to become very involved in projects that can increase the contacts and business opportunities between the U.S. and Latin America. He has been able to advice in several student projects done overseas, increase his students’ global awareness, and serve as an advisor to businesses and organizations in New England on doing business abroad.

2. Student-focus – this is probably the most rewarding segment of the program. It is a cycle that expands as new knowledge and experiences are acquired and which can later also be shared with other student groups. The Projects as part of this program have taken place in Costa Rica, Chile, Brazil, Ecuador, and Argentina.
The founders of Worcester Polytechnic Institute many years ago understood from the start the importance of preparing students at both the theoretical and practical level. Students are required to complete two projects as part of their curriculum for graduation. The projects are known as the Interactive Qualifying Project (IQP) and the Major Qualifying Project (MQP). These projects not only allow students to learn about the applicability of what they learn in class, but at the same time they are able to see the impact of their work on society.

Each year WPI has teams made up of three students each assigned to a specific project. The faculty advisor meets with the companies and determines what it is that they should target in order to set-up a plan of action. A preparation period, equivalent to one full course, is done on campus in which the students perform all the literature review and research necessary to target the project in the most effective way possible given the restriction of time and of resources. Once the project begins, for example in Argentina, the students work at the company for two months. At the end, the results are presented to the company and the faculty. The projects foster the development and strengthening of communication skills, both written and oral, as well as teamwork, global thinking, and creativity. The diversity of the members in the teams is another enriching feature of these projects. For example, in the MQP recently completed in Argentina, the students were from many different countries including Sri Lanka, Cape Verde Island, Dominican Republic, Brazil, Argentina, and United States.

Those projects done overseas have an additional component in the preparation phase. The students try to learn about the cultures to which they will be exposed. The students learn about the country’s history, geography, economy, and other pertinent subjects including some language training. This not only prepares the students to better understand the differences, the limitations, and the positive aspects of the new environment, but also leads them to propose solutions to the client. The students’ perspective allows them to maintain the necessary objectivity to see what is often invisible to those immersed in the everyday business.

The student impact from our program takes several forms. The first and most obvious impact is in the classroom with modules, which focus on particular parts of the world, for example, a Latin America module, as well as guest speakers from Latin America. This presents an approach, which we believe is better than trying to have separate courses focusing on Latin America. Besides it is obviously difficult for a small university to offer special courses, which focus on many parts of the world.

The number of students in each year of the two-year grant that were exposed to Latin America modules is more than one hundred. The advantage of this modular education is that these modules will remain in place over a period of many years as an increasing number of students each year being exposed to the culture of Latin America.

One of the projects done in Costa Rica during the summer of year 2000 investigated the use of a geographical information system (GIS) for Fire Safety. This has resulted not only in a great learning experience for the students, but also in an article being published by
GIS User from Australia. The project incorporated an analysis based on existing practices in Winston-Salem, North Carolina and once on site the students studied and developed an implementation plan for the Fire Department in Costa Rica. This process included interviews and evaluation of the current situation of the Fire Department in Costa Rica. The thoroughness of the project earned it a Second Place Award at WPI during a recognition ceremony of the best IQP projects across the University.

Another student project done in Costa Rica this past summer was based on Aquafarming, particularly the raising of tilapia. This fish is of high nutrition that can survive in many adverse conditions and is a low cost to produce. This product is of great interest in developing countries as an alternative to offer a nutritional product to people of low incomes. Our students were able to prepare a manual, which will greatly help in the raising of these fish addressing issues such as feeding, sex-reversal, breeding, water quality, types of tanks, and minimum production lots. An article will be published in reference to this topic, which the students have co-authored with their advisors, adding to their experience and learning process. This project earned First Place on a University wide competition of student projects.

3. Business-focus – this area of the Program is quite diverse. The relations with businesses have taken place at different levels ranging from student projects, discussion forums, to consulting organizations on ways to improve their reach and strategies such as New England – Latin American Business Council (NELABC).

The relation between universities and business is growing closer all the time. For that reason in this international program we did not just focus on faculty and students. The third leg of our three-legged stool is industry. For this portion we have been working closely with the NELABC.

Some years ago a group was formed in New England, which had as its goal to promote better relations, interactions, commerce, and technical exchanges among firms in Latin America and those in U.S. With the support from this grant, we were able to help NELABC go through the steps of signing agreements between several Chambers of Commerce in Latin America and NELABC. There are now agreements signed between the Chamber of Commerce in Lima-Peru, Jamaica and NELABC and most recently a signing between the of Rio de Janeiro Chamber of Commerce and NELABC. In addition, there is a fourth agreement being negotiated with Venezuela. These agreements aid New England firms to identify customers and suppliers in Latin America. According to NELABC’s President, Nelson A. Valverde, “the purpose for creating these strategic business alliances is to open trade opportunities between New England and Latin American companies”.

Another important area of involvement between WPI and NELABC through the grant has led to an internal restructuring of the organization and a revision of its strategic planning. The focus of NELABC and the way it reaches out to the community has been closely analyzed and reframed. This analysis led to a questioning of what it offers and how it markets its services. One of the tangible tools that is an output has been its website.
IV. Conclusions and Future Directions

Often when one speaks of globalization he or she refers to connections between United States and Europe or between United States and Asia. For some reason we think in terms of East and West instead of North and South. Yet there are vast opportunities right within our own hemisphere.

We have tried to show in this paper that there is no one way in which to accomplish the goal of an education with more focus on globalization. What we have tried to demonstrate is that one must use a many approaches, which includes faculty training, student education, and industrial training. It is within that spirit that we believe that our students, faculty, and businesses can be thinking beyond our own borders.

We have tried to show in this paper, our approach to the increasing opportunities in Latin America. At WPI, we have other projects taking place in Italy, England, Switzerland, Hong Kong, Australia and Thailand. Our plan for the future is to have student projects in Africa particularly in the southern cone. In a recent conference, co-sponsored by NELABC and Council of the Americas, it was evident the importance of Latin America in the future foreign affairs of the U.S. would increase. Not only is the deadline for the Free Trade Area of the Americas (FTAA), 2005, approaching fast, but the need to coordinate efforts on the continent become increasingly apparent. As an example, the focus on cooperation during the recent visit of President Bush to Mexico points towards an increasing willingness to find alternatives to make common goals a reality. Chile’s insistence on trade agreements reinforces this perception.

We are concerned that in spite of the word “globalization” that most universities still revert back to normal operations with major allegiances still by individual departments. It is not easy to have interdisciplinary training particularly as each specialty needs more attention. However, just as factory productivity keeps increasing, we must do the same in universities. We believe that the model shown above does allow for both breadth and depth.

We urge that other universities consider such an approach. We are pleased to offer our assistance in order to help make this happen. We are convinced that this is not only the right direction to take, but without such an approach their remains the danger of having faculty, students, and industry continuing to remain focused on local issues.

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Biography

ARTHUR GERSTENFELD

Arthur Gerstenfeld is a Professor of Management and Professor of Industrial Engineering at W.P.I. He has authored and edited five books and published more than forty articles in academic journals. He has recently received a grant from the Department of Education to carry on the work described in this paper. His Bachelors degree is from RPI and Masters and Ph.D. from MIT.

MARIA F. FLORES G.

María F. Flores G. has worked as a Research Associate on different aspects of the grant from the Department of Education described in this paper. She has co-authored some articles in academic journals. Her Bachelors degrees are from Boston College, has a Masters from W.P.I. and is currently working on her dissertation for her Ph.D.