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Ronald Jean Degen is in the Ph.D. Program of the International School of Management in Paris, and the Vice Chairman of Masisa in Chile. He was a Professor at the Getúlio Vargas Graduate Business School of São Paulo where he pioneered the introduction of teaching entrepreneurship in 1980 and wrote the first textbook in Portuguese on entrepreneurship published in 1989 by McGraw-Hill. He just published a new textbook on entrepreneurship that was published in 2009 by Pearson Education

Open entrepreneurship centers in Brazil: To promote sustainable development and poverty reduction

ABSTRACT

Degen introduced the teaching of entrepreneurship in Brazil in 1980 and wrote the first Portuguese language textbook on entrepreneurship in 1989. The purpose was to raise awareness of the country's poverty among students, motivate them to become entrepreneurs, and promote the sustainable development necessary to eliminate the country's extreme poverty. After almost 30 years extreme poverty continues to be the greatest challenge for the sustainable development of Brazil. Without solving this problem there will be no preservation of the country's natural resources, no personal safety for its citizens, and no political stability. Degen demonstrates that the teaching of entrepreneurship in Brazilian business schools has not in fact been effective in promoting entrepreneurship and sustainable development. In this paper he proposes a new approach for Brazilian universities in which they create open entrepreneurship centers and enhance their role so as to act as social agents promoting sustainable development and poverty reduction. Their new role will be to better motivate students to become entrepreneurs with social responsibility, to assist them in finding business opportunities that preserve the country's natural resources and reduce poverty, and to help them find investors for sustainable development projects in Brazil.

Keywords: open entrepreneurship centers, teaching entrepreneurship in Brazil, entrepreneurship to promote sustainable development, entrepreneurship to reduce extreme poverty, universities as social agents

Introduction

Ronald Jean Degen pioneered the teaching of entrepreneurship in Brazil at the business school of the Fundação Getúlio Vargas (FGV-EASP) in 1980 (Dolabela, 1999, p. 55). He also wrote the first Portuguese language textbook on entrepreneurship, published in 1989 with the aim of demonstrating to students the extreme poverty in which a significant percentage of their countrymen lived, and to motivate them to consider entrepreneurship as a career option to create the necessary wealth and jobs to reduce this poverty.

After almost 30 years and relatively modest results from entrepreneurs contributing to sustainable development and poverty reduction in Brazil, Degen analyzes the reason for these modest results, and what can be done to improve them. Based on this analysis Degen proposes that Brazilian universities change the way they teach entrepreneurship: he proposes that they create open entrepreneurship centers, and assume the role of social agents to promote entrepreneurship with the purpose of promoting sustainable development and poverty reduction.

The first Brazilian University to implement this new approach proposed by Degen will be the Universidade do Sul de Santa Catarina (UNISUL), beginning in 2010.

Entrepreneurship at Brazilian universities

Degen is a Swiss citizen who arrived in Brazil in the second half of the 1970s from the United States after being hired as the planning and control officer of a large Brazilian holding company controlling eleven companies, with more than 26 thousand employees and sales of over one billion dollars at the time. Establishing himself in Brazil he was confronted with the extreme poverty in the *favelas* (shantytowns) around São Paulo and most other Brazilian cities, indicative of one of the worst income distributions in the world. Living in an affluent neighborhood he was shocked by the indifference of the Brazilian well-to-do to the extreme poverty surrounding them, and so decided to do something to change this unsustainable situation.

Figure 1. Headline in a leading newspaper about teaching of entrepreneurship as a career option at the EASP of the FGV



Source: O Estado de São Paulo, June 14, 1985

Invited to give classes in 1979 at the then most prestigious business school in Latin America (Escola de Administração de Empresas de São Paulo da Fundação Gétúlio Vargas (FGV-EAESP)), Degen accepted under the condition that he could speak to the students about the need to create wealth to reduce the country's extreme poverty, and the opportunities for them to create the needed wealth through entrepreneurship. His purpose was to create awareness of the extreme poverty in which a substantial part of the Brazilian population was living and motivate the students (representing the country's future elite) to become entrepreneurs, and to thus generate the wealth and the employment needed to reduce the country's levels of poverty.

The classes began with Degen explaining to the students that Brazil had one of the worst income distributions in the world and that without reducing the country's extreme poverty the students' and their country's future was at risk. This was because extreme poverty and crass income inequality was already generating pollution, crime, political instability and the systematic destruction of natural resources like the Amazon rainforest.

The students were then challenged to consider entrepreneurship as a career option distinct from working as executives for large companies, especially since by becoming entrepreneurs they could contribute directly to the needed sustainable economic development of Brazil. The students responded enthusiastically and the new course on entrepreneurship introduced in 1980 became so popular among the students that the leading Brazilian newspapers wrote stories about it (Figure 1).

The success of the entrepreneurship course at the FGV-EAESP motivated other Brazilian universities to introduce similar courses during the 1980s (Dolabela, 1999, p. 55). In 1989 Degen transformed his class notes into a textbook (Degen, 1989) to help other professors introduce similar courses in other universities. The first textbook on entrepreneurship published in Portuguese, it became a best seller in continuous print for over 20 years, and was adopted by many Brazilian universities. In 2009 Degen wrote a new textbook (Degen, 2009) intended to replace the old one and help promote a new approach to teaching entrepreneurship in Brazilian universities

Poverty is still Brazil's greatest challenge

Brazil is the eighth largest economy in the world as measured by its Gross Domestic Product (GDP) of 1.6 trillion USD, and has a population of 192 million (World Bank, 2009, April). Of the total population 21.5 percent, or 41 million, live below the national poverty line (defined as a monthly per capita household income of less than half the minimum wage); this includes the 12.7 percent or 24 million that live on less than 2 USD per day and the 5.2 percent or 10 million that live on less than 1.25 USD per day (United Nations HDR, 2009).

Brazil is also one of the most unequal nations in the world: the country's income inequality as measured by the Gini index (Gini coefficient, Wikipedia) commonly used as a measure of inequality of income distribution or inequality in a country is 55; with only some very poor African countries such as Namibia (74) or Botswana (61) being lower, and it is worse than others like Zambia (51) or Nigeria (42). The richest ten percent of the

country's population has 41 times more income than the poorest ten percent. The same multiplier for the US is 16 times; for Germany, 7 times; and for France and Switzerland, 9 times (United Nations HDR, 2009).

The gap between the rich and the poor can be clearly observed in the shantytowns around urban areas where over 86 per cent of all Brazilians live today (The World Factbook); and in rural areas, where a small number of large landowners (large farmers, owners of unused land and large rural entrepreneurs) monopolize most of the agricultural land, thus marginalizing millions of landless rural workers and small barely subsisting landowners.

Brazil's three south-central states comprise 15 percent of its land area, but contribute more than half the country's Gross National Product (GNP). This economic concentration leaves out a good part of the population as the lagging states have average poverty rates more than twice those of the dynamic states (World Bank, 2009). One example is the State of Piauí; it has one of the highest rates of poverty in Brazil. It is estimated that 77 per cent of the population live below the poverty line and survive on less than two US dollars a day, including 46 per cent that live in extreme rural poverty and survive on less than 1 US dollar a day (IFAD). These geographically disadvantaged people cope every day with the reality that development does not bring economic prosperity everywhere at once and that markets favor some places over others.

The rise in inequality is the result of the market forces that have generated Brazil's strong growth in the past. The economist Arthur Levis (1954) has suggested that "development must be inegalitarian because it does not start in every part of the economy at the same time." The reason for this, according to his model, is the dualism of the labor market. In this model, one group (the modern, industrial, capitalist, formal, or urban) can capture the full benefits of the economic development; and the other (the subsistence, informal, traditional, agricultural, or rural) will benefit less.

The polarity described by Levis has occurred in Brazil - between the prosperous urban population and the poor landless rural workers. Many of these poor landless workers trying to escape poverty were attracted to the prosperous urban areas, where because they lack formal education and

training they become marginalized and subsist precariously, and in most cases in extreme poverty, in the shanty towns that surround the prosperous and rich urban areas.

A simple dispersion of production to less developed regions in Brazil to avoid the concentration of the poor around the large urban centers and to take advantage of the extraordinary natural riches of the land does not necessarily foster the expected economic prosperity. On the contrary, the irresponsible exploitation of both natural resources and of the cheap labor of the poor landless rural workers by socially irresponsible entrepreneurs does not generate the sustainable development needed to solve the problem of extreme poverty in the poorer regions, nor does it stop the migration to large urban centers.

A solution to Brazil's poverty problem is essential for the sustainable development of the country and to preserve its natural resources for future generations. It is also important in guaranteeing the safety of its citizens from crime, and is the only way to ensure the country's political stability, and thus preserve its democracy.

All countries that have large contingents of poor people cannot avoid the fact that these people destroy the country's natural resources as they attempt to survive. The Brazilian 'shifted cultivators' (term used for people who have moved into rainforest areas and established small-scale farming operations) in most cases are landless peasants who have followed roads into the rainforest areas. One of the primary forces pushing them into the forests is the inequitable distribution of agricultural land in Brazil. Approximately 42% of cultivated land is owned by a mere 1% of the population. Once displaced, the 'shifted cultivators' move into forest areas, often with the encouragement of the Brazilian government. After a time, because the soil does not remain fertile for long, they are forced to move on, to shift again, going further into the rainforest and destroying more and more of it (Rainforest Information Center web site).

The 'shift cultivators' are currently being blamed for one third of the tropical forest loss. The other two thirds are attributed to land clearing for pastureland by commercial and speculative interests, misguided

government policies, inappropriate World Bank projects, and commercial exploitation of forest resources (The Amazon web site). For effective action in preserving the rainforests it is imperative that all these issues be addressed by the Brazilian government. Focusing solely on the promotion of sustainable use of the rain forest by local people would neglect the most important forces represented by the greedy unscrupulous entrepreneurs behind deforestation in Brazil.

Extreme income inequality such as in Brazil generates frustration and anger in the marginalized poor, some of which they vent by becoming criminals. In many Brazilian cities we have some sort of disorganized or even organized class war; Rio de Janeiro is an extreme example of this class war. While the total number of homicides fell last year (The Economist, 2008, August 21), the homicide rate in Brazil is still 27 per 100,000 inhabitants, placing the country in the top 14 internationally (List of countries by intentional homicide rate, Wikipedia).

Figure 2. Brazil's President Luiz Inácio Lula da Silva, second right, with Venezuela's Hugo Chavez, Bolivia's Evo Morales and Ecuador's Rafael Correa at the meeting in which they talked about regional integration in Manaus, Brazil, October 2008



Source: <http://www.latinamericanstudies.org/politics.htm>

Another important consequence of extreme income inequality is that the poor people, being the largest contingent of voters in democratic regimes, often vent their frustration against the rich ruling classes by electing demagogic populist leaders such as Hugo Chavez in Venezuela, Evo

Morales in Bolivia and Rafael Correa in Ecuador (Figure 2). Most of these leaders are unable to solve the poverty problem in their countries because they adopt old socialist models that don't promote sustainable development. They also tend to antagonize the national and international business communities, so without their investment they are unable to grow their countries' economies and so don't generate the wealth needed to create more employment and better living conditions for their citizens. Under pressure because they can't deliver their promised poverty reduction they also tend to undermine democracy in their countries in order to keep themselves in power.

Brazil underwent the same process and elected a populist ex-metal worker, union leader, and head of the country's extreme left workers party (Partido dos Trabalhadores – PT) as president. Fortunately for Brazil, the president adopted a pragmatic government style abandoning the extreme left ideology of his party. The consequence was that Brazil continued to develop its economy and is slowly reducing its contingent of poor and extremely poor people. Unfortunately, the progress is slow and Brazil still has one of the highest levels of income inequality in the world.

The Brazilians were lucky this time and elected a pragmatic president. But every election brings the risk that the population, frustrated by extreme income inequality and the corruption of the politicians and government officials, will elect a populist like Hugo Chavez. The great challenge for Brazil in maintaining its political stability and democratic regime is to solve the country's poverty problem. Besides political stability, the solution of the poverty problem is essential for the sustainable development of the country, especially for the preservation of its natural resources for future generations, and to guarantee the safety of its citizens from crime.

Entrepreneurship promotes development

In the last century many economist and professors, including Degen, believed that promoting entrepreneurship to the young would generate the necessary economic development that would reduce or even eliminate poverty. Keynes (1963) in his famous essay *Economic Possibilities of our*

Grandchildren, written in 1930 in England in midst of the poverty and despair of the Great Depression, foresaw that the dramatic evolution of science and technology would promote exponential growth of the economy and so solve the eternal problem facing humanity of a large portion of the world population not having enough to eat and an income insufficient to satisfy their most basic needs. He also wondered what the society of his grandchildren would do with the wealth and their freedom from the need to fight for survival.

Another great economist, Schumpeter, in his book *Capitalism, Socialism and Democracy*, published in 1942, foresaw the triumph of capitalism over socialism because socialism did not promote entrepreneurship. Without entrepreneurs as the agents of what he called the "the process of creative destruction" the socialist economies would fail. The entrepreneurs of the capitalist economies are constantly creating new products and services that make less efficient or costlier ones obsolete. He predicted that without promoting entrepreneurship the socialist economies would not be able to keep up with the progress of the capitalist economies. He was proven right with the dismantling of the Berlin Wall in 1989 and the adoption of some form of capitalist economy by most of the former socialist countries.

Timmons, one of the pioneers in introducing the teaching of entrepreneurship in universities in the US, in his 1989 book *The Entrepreneurial Mind*, wrote:

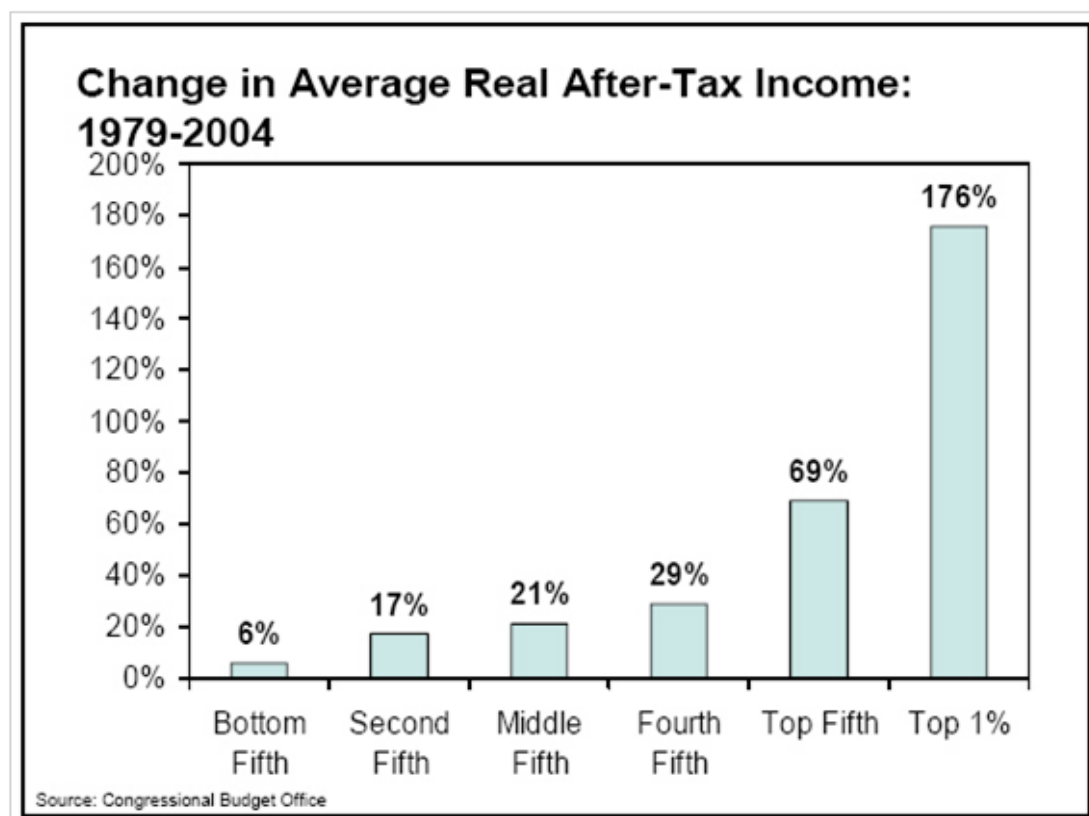
We are in the middle of a silent revolution, it is the triumph of the creative and entrepreneurial spirit of the humanity in the entire world, and I believe that its impact on the 21st century will be equal or exceed that of the industrial revolution of the 19th and 20th centuries.

To justify his conclusion he states that in the US out of a working adult population of 120 million in 1988, more than one in seven were self--employed and millions of others dreamt of working for themselves.

Timmons was right in foreseeing the entrepreneurial revolution, and a substantial proportion of the wealth of the US was created by the present generation of entrepreneurs with companies like Microsoft, Google, Intel, and Wal-Mart displacing companies like IBM, US Steel, and Sears. These

entrepreneurs contributed significantly to the increase in wealth in the US and other countries of the world, especially in China. The problem is that the wealth has become increasingly concentrated: in the US since 1979 (the first year that Congressional Budget Office (CBO) data is available) the income gains among high-income households have dwarfed those of middle- and low-income households (see Figure 3). In a 25-year period the average after-tax income of the top one percent of the population nearly tripled, while the average after-tax income of the middle fifth of the population rose a relative modest 21 percent, and that of the poorest fifth rose just 6 percent (Aron-Dine & Sherman, 2007).

Figure 3. The average after-tax income of the top one percent of the US population nearly tripled between 1979 and 2004. By contrast that of the bottom fifth rose only 6 percent in these 25 years



Source: Aron-Dine & Sherman, 2007.

The Brazilian economy experienced a long period of economic development throughout the almost 30 years since the author introduced the teaching of entrepreneurship in the country (Skapinker, 2009). Today

Brazil is a respected emerging nation that together with the other BRIC (BRIC: Brazil, Russia, India, and China, Wikipedia) nations is rapidly increasing its influence upon the world economy. The four BRIC countries currently account for more than a quarter of the world's land area and more than 40 percent of the world's population. On the other hand, Brazil despite all this progress and a relatively high level of entrepreneurial activity was not able to generate enough wealth to reduce the country's extreme poverty and income inequality at the rate expected by the author. There are two reasons for this: 1/ a large percentage of the entrepreneurial activity was necessity driven; and 2/ the entrepreneurial activity was driven by opportunity and was in general self centered and predatory.

The contribution of entrepreneurs to the economic growth of a country depends essentially on their motivation. The Global Entrepreneurship Monitor (Bosma et al., 2008) classified entrepreneurs into two categories based on their motivation for starting their businesses: those motivated by business opportunities and those motivated by the necessity to survive. Entrepreneurs motivated by opportunity have a much greater impact on wealth generation than those motivated by necessity, as they are also better prepared and develop their businesses based on innovation and new technologies. Many of these businesses have great potential for sustainable growth and generating the needed wealth and jobs to reduce the country's poverty. In contrast, entrepreneurs motivated by necessity are less prepared and tend to develop subsistence businesses that have a negligible contribution to generating wealth and jobs and so contribute less to reducing poverty.

An increase in entrepreneurship motivated by necessity is a strong indicator that a country is experiencing economic stagnation or an economic crisis (Acs, 2006). This is because insufficient new jobs, or even a fall in the number of jobs due to layoffs, forces people to become entrepreneurs motivated by the necessity to survive. Normally the growth rate of a low income developing country is inversely proportional to its entrepreneurial activity motivated by necessity, while the inverse is true for a developed country. The growth rate of a high income developed country is generally directly proportional to its entrepreneurial activity motivated by

opportunities. This explains the higher rate of entrepreneurial activity per inhabitant in countries like Ecuador, Venezuela, Colombia, and Peru when compared to the US and Europe (Bosma et al., 2008).

The difference between the impacts that the entrepreneurial revolution had on the economic development of the US and of South America can be partially explained by the motivation of the entrepreneurs in starting their businesses. In the US 80 percent of entrepreneurs started their business motivated by opportunities. In Latin America this percentage is significantly lower: in Brazil and Colombia only 55 percent of entrepreneurs started their businesses motivated by opportunities; in Argentina, Uruguay, Venezuela and Peru the percentages are slightly higher, varying between 60 to 70 percent. The percentage of businesses starts motivated by opportunities has been slowly growing over the years (Bosma et al., 2008).

Numerous studies have demonstrated the importance of entrepreneurial activity in creating wealth and jobs, and that a very small percentage of the total number of entrepreneurs who start their businesses motivated by opportunities are responsible for most of the economic and social impact of entrepreneurial activities. The GEM defined this small group as high-expectation entrepreneurs. The high-expectation activity comprises all businesses start-ups which are expected to have at least 20 employees within five years time. This criterion is used because achieving the size of 20 employees is not simple. Firms of this size, typically, will have developed internal specialization; an identifiable management function; and some separation of ownership and employees, in the sense that not all employees are also owners of the company (Autio, 2005, October 25).

The GEM studies between 2000 and 2006 in participating countries found that 12.3 percent of the adult population (18-64 years old) was involved in some kind of entrepreneurial activity. Of these nearly one-half of all new business start-ups did not expect to create any jobs within five years. Their entrepreneurial activity may be to generate a complementary income in addition to regular employment. The other 6.3 percent of the adult population involved in business entrepreneurial activities - whether by necessity or by opportunity - expect to employ at least one person within

five years. Of these, 5.5 percent expect to have two or more employees within five years and 2.9 percent expect to have at least five employees. Entrepreneurs expecting to have 10 or more employees represented 1.7 percent, and those expecting to hire 20 or more employees (the high-expectation category) represented 0.9 percent. This percentage halved for more than 50 employees, and again for 100 or more employees (Autio, 2007).

Developing economies like those of the South American countries have an overall high entrepreneurial activity rate of 15.5 percent of their adult population. But they have a relative low expectation of creating new jobs; this level of growth aspiration seems to vary significantly according to the economic context of the countries. The GEM studies (Autio, 2007; & Bosma et al., 2008) have shown that countries with low levels of GDP per capita like the South American countries (including Brazil) tend to have higher levels of necessity-driven entrepreneurial activity (individuals start new firms in the absence of other viable sources of income), along with a lower level of growth aspiration. The same studies demonstrated that countries with higher GNP per capita have higher levels of opportunity-driven entrepreneurial activity, along with higher levels of growth aspiration.

It seems that people in higher income countries (like the US, Canada and Australia) with higher human and social capital in are attracted to entrepreneurship mainly because they perceive opportunities for the creation of personal wealth. The countries of the European Union and the highly developed Asian countries are an exception and people there are less attracted to entrepreneurship motivated by opportunities.

A famous exception among the low-income countries is China, with a rate of high-expectation entrepreneurship that is superior to all other countries, including slightly superior to the United States. In the past thirty years, China's entrepreneurs have transformed an economically and technologically backward nation into one of the world's most dynamic economies. Some recent statistics illustrate the growing success of the Chinese economy: China has been the fastest-growing major nation for the

past quarter of a century, with an average annual GDP growth rate above 10%.

From the GEM studies we conclude that entrepreneurs promote a country's economic development by creating wealth and jobs, and that a very small group of entrepreneurs motivated by high-expectation business opportunities are responsible for most of the wealth and jobs created. The examples of the United States, China and Brazil also demonstrate that entrepreneurs are self centered and that their successes contribute to increasing a country's income inequality. The GINI Index commonly used as a measure of inequality of income distribution or inequality of countries has deteriorated in the last five years in China from 40 to 47, and in the US from 41 to 45. The Brazilian index improved from 61 to 57 in the same period but still is absurdly high (data from The World Factbook; this differs from the data from the World Bank and United Nations). China has 8 percent of its population below the poverty line, the US 12 percent and Brazil 31 percent (poverty line as defined by the US Government sourced from The World Factbook; this differs from other sources). Additionally, there is the problem that many entrepreneurs in developing economies don't respect their countries' natural resources and environment as they seek to reduce their costs in order to compete in the world market.

The teaching of entrepreneurship in Brazilian universities has promoted entrepreneurship motivated by high-expectation business opportunities to generate the country's wealth and needed jobs. But it also has to teach the future entrepreneurs that no business will be successful if the society in which it is integrated and depends upon is not successful also. It is also necessary to teach them that without preserving the country's natural resources and protecting the environment not only their business but the whole human race will not have a future.

Problems with teaching entrepreneurship at business schools

Most universities in Brazil have undergraduate entrepreneurship courses in their business and engineering schools. Many universities have business incubators (mostly attached to their engineering schools) to give

support to their students who want to start new ventures. There are close to 400 business incubators in Brazil; they are attached to universities, municipalities, industrial associations; or are joint ventures between universities and municipalities and/or industrial associations.

Most of these Brazilian business incubators are simple industrial facilities that aid the entrepreneurs to start-up their business ventures by offering cheap rent for industrial space, and the sharing of equipment and services. The ones that seem to be more successful are those associated with technical schools (Lahorgue, 2007), although there are no studies available in Brazil about the effectiveness of these business incubators. There are some histories about start-ups promoted by the business incubators, but they don't have any statistical relevance for evaluating the overall effort to promote new business ventures, particularly in regard to promoting high-expectation business opportunities.

The vast majority of the entrepreneurship courses are undergraduate courses in business schools and in engineering schools and are offered to students that don't have the necessary business maturity and experience to visualize high-expectation business opportunities. There are very few universities that offer the postgraduate courses on entrepreneurship that allow more mature students to return to the university to get assistance in developing business opportunities.

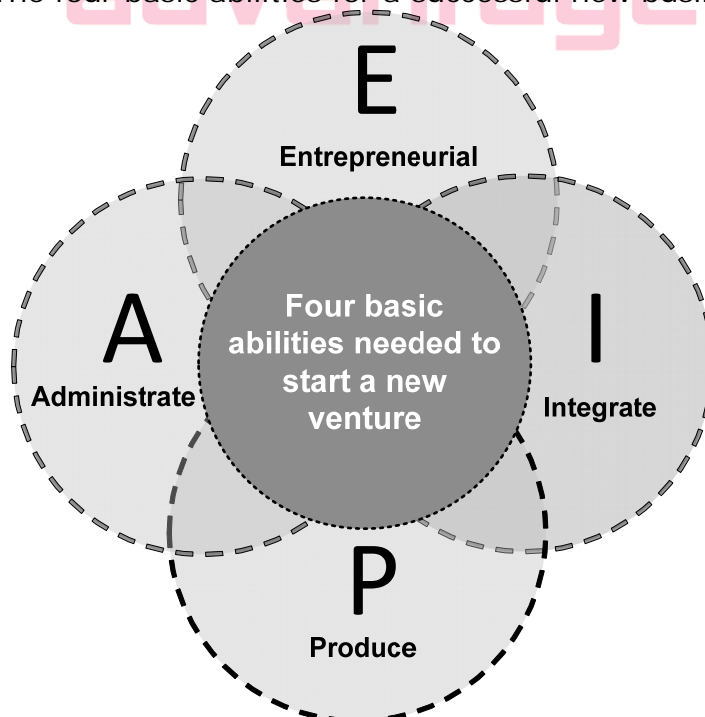
The entrepreneurship undergraduate courses in business schools and engineering schools have the additional problem of being confined to their respective schools; i.e.; both the business and the engineering students in these courses only have contact with their peers, which makes it very difficult to build effective new venture teams. The reason for this difficulty was explained by Degen (2009) by adapting the four fundamental management styles (PAEI) proposed by Adizes (1979). The four basic abilities for a successful new business venture are (Figure 3):

- P** for the ability to *produce* the product or service of the business;
- A** for the ability to *administrate* others to produce;
- E** for the ability to be *entrepreneurial* and proactive in improving and renewing; and
- I** for the ability to *integrate*, lead, and motivate a team.

Since no single individual is strong in all the four basic abilities most of the successful new ventures were started by teams comprised of individuals with complementary abilities. Examples are Microsoft, founded April 4, 1975 by two partners, Bill Gates and Paul Allen; Apple founded April 1, 1976 by three partners, Steve Jobs, Steve Wozniak and Ronald Wayne; and Google founded in September 4, 1998 by two partners Larry Page and Sergey Brin (Microsoft, Apple Inc. and Google, Wikipedia).

Some of the key characteristics of successful entrepreneurs are 1/ that they recognize their weaknesses in some of the abilities necessary to starting their new venture; 2/ the need to attract to their businesses the right partners to supply these missing abilities; and 3/ the need to form effective functioning teams with all the abilities necessary to succeed. Any course on entrepreneurship, besides preparing individuals to start their own business, has to help these individuals to access their abilities to do so. Based on this assessment, the future entrepreneurs have to find the right partners to start their business venture, and the best place to find business partners is among colleagues on an entrepreneurship course.

Figure 3. The four basic abilities for a successful new business venture



Source: Degen (2009) adapted from the four management styles of Adizes (1979).

The teaching of entrepreneurship in undergraduate business or technical courses has the problem that most of the students are not mature enough to start a business venture based on a high-expectation opportunity. They are still searching for their career path and for them the course on entrepreneurship is only one of many opportunities they can explore. Those students studying business have the additional disadvantage that they don't learn the technical and operational abilities in their courses that would prepare them for the development and production of products or technical services. Because their colleagues in the course have the same deficiencies there is no opportunity to find between them the missing ability to produce.

Engineering students on the other hand, have a strong ability to produce and most learn some rudiments of administration in their operational management courses. Their ability to administrate however is limited because they have no courses in finance and marketing and therefore need to find partners to complement them with their ability to administrate a new business venture. They also cannot find the right partners to supplement these missing abilities to administrate between their colleagues because all have similar deficiencies. Most other technical course students besides engineers have even higher deficiencies in their ability to administrate.

Another problem with the present entrepreneurship courses in Brazilian universities is that most are offered at the undergraduate level and those at the graduate level are only one semester courses. This means that students have relatively little time a business opportunity, and in fact most entrepreneurship courses are in reality business plan courses, where the students are encouraged to form teams and develop business plans for new ventures. A good business plan is important to get investors interested in expanding the business venture, but is overkill for a startup. Write a good business plan may help an entrepreneur in the future, but it does not help much in first stage of starting a new venture, when what is needed is know-how on how to produce and how to administer, and particularly to understand the client's needs and how to satisfy them.

Shane (2008) concluded that most new businesses are started without a formal business plan as they usually start as very simple operations without any sophistication. An example is the case of Apple, which started in Jobs' garage with Wozniak building by hand a computer kit that was just a motherboard with a CPU, RAM and textual video chip – and there was no business plan (Apple Inc., Wikipedia).

Degen, during his long experience teaching entrepreneurship to graduate business students at the FGV-EAESP, observed that almost no high-expectation business opportunities were developed by the students during the course. Most of the business opportunities identified by the student were what Degen (1989) classified as 'mediocre businesses'. In his definition, 'mediocre businesses' are business without barriers to the entry of competitors, and that the entrepreneurs work harder and make less money than they would if they were employed. Most small owner operated businesses such as restaurants, night clubs and boutiques. fall into this category. Additionally less than one percent of the students attending the graduate course on entrepreneurship actually started a business venture.

Degen did teach a night course on entrepreneurship - in a graduate MBA type course sponsored by FGV in a leading Brazilian technical university (Universidade Estadual de Campinas (UNICAMP)). The objective there was to provide a graduate management course to technical students that had graduated or were pursuing graduate courses at the university. Most of the students attending the classes were students that had already graduated and were working.

The results of the entrepreneurship course at UNICAMP were surprising. Around 30 percent of the students that attended the entrepreneurship course started some kind of business venture based on opportunities. Of these, about 2 percent were high-expectation business opportunities. The conclusion was that the graduate students that were interested in starting a business venture realized that they needed some administrative skills and therefore took the entrepreneurship course.

The persistent complaint by the students about the entrepreneurship course at UNICAMP was that it was too short, with duration of only one

semester and only 30 hours of classes. This short duration did not satisfy their need for assistance in developing their business opportunities. They suggested that the course should have a minimum duration of two semesters with more time from the professor to coach them in planning their business start-up. Furthermore, some of them felt that the course should be a standalone course for those interested in starting a business venture and not be part of an MBA program.

Based on his teaching experiences Degen concluded that teaching entrepreneurship to management students at the undergraduate and graduate levels was not very effective. The vast majority took the course out of curiosity and not because they were motivated to start a business venture. This lack of interest in starting a business venture can also be attributed to the fact that the students did not have the strong skills needed to produce a product or service with a technical content and so did not visualize high-growth business opportunities.

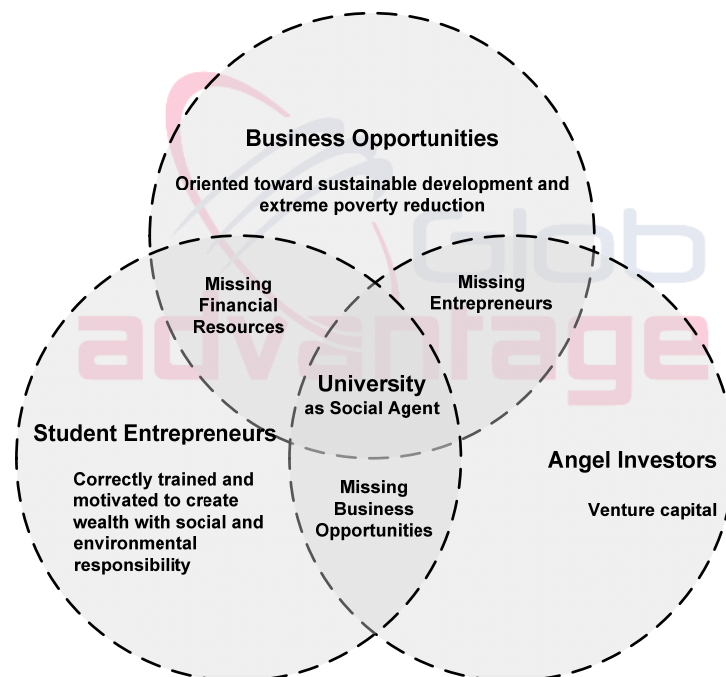
On the other hand technical graduate students, because of their proficiency skills in producing products or technical services, saw the high-expectation business opportunities and felt the need to gain the administrative skills necessary to start their business ventures. Evidently though, this generates a distraction to their technical focus as those that tried to start their business without acquiring these abilities had trouble doing so and some even failed. Ideally they needed partners that had the skills that they did not have if they wanted to start a business. The obvious solution is for both graduate management and technical students to take the entrepreneurship courses together.

Open entrepreneurship centers

Brazilian universities that want to promote entrepreneurship motivated by high-expectation business opportunities have to help students in finding the right business opportunities. Ideally they would assist students in developing businesses that promote the country's sustainable development and will help reduce extreme poverty. Additionally, the universities have to help the students in evaluating their ability to start a business venture and

help them find the right partners to cover their skill deficiencies. They have to teach and coach the students on how to develop a high-expectation business opportunity and have to help in attracting angel investors to the business ventures the students develop. The universities that want to be successful in promoting entrepreneurship that will help develop the Brazilian economy and that has social and environmental responsibility have to act as social agents correctly motivating their students and bringing all these factors together for their benefit (Figure 4).

Figure 4. University as social agent, training and correctly motivating their students to find high-expectation business opportunities that promote sustainable development and reduce extreme poverty, and helping them find angel investors for their start-ups.



Source: Degen (2009)

The efforts of the Brazilian universities should lie in acting as social agents that put all the pieces together (motivated student, high-expectation business opportunities, and angel investors) to create the necessary wealth to reduce extreme poverty and guarantee the sustainable future of the country. To fulfill this social obligation the universities should create open entrepreneurship centers and offer the entrepreneurship course proposed by Degen (2009).

The open entrepreneurship center should independent from the other faculties of the university so as to bring together all students interested in entrepreneurship that graduated from the university - independent of the subjects/degrees in which they graduated. The open entrepreneurship center should also attract selected professionals with no ties to the university but who are looking for support in developing a business venture, and also angel investors looking for opportunities to invest and participate in high potential business start-ups. If the university is able to secure the necessary private or official funding the open entrepreneurship center should also have an incubator to support business start-ups.

The entrepreneurship course offered by the open entrepreneurship centers should have a minimum duration of one year so as to give the students enough time to do the necessary research to develop their business opportunities and prepare a business plan that can be submitted to angel investors. The format of the course must bring together students with all kinds of skills and abilities and encourage them to create partnerships that complement each other. The course should be an open course that can be attended all the students that graduate from a university, along with individuals selected based on their professional experience.

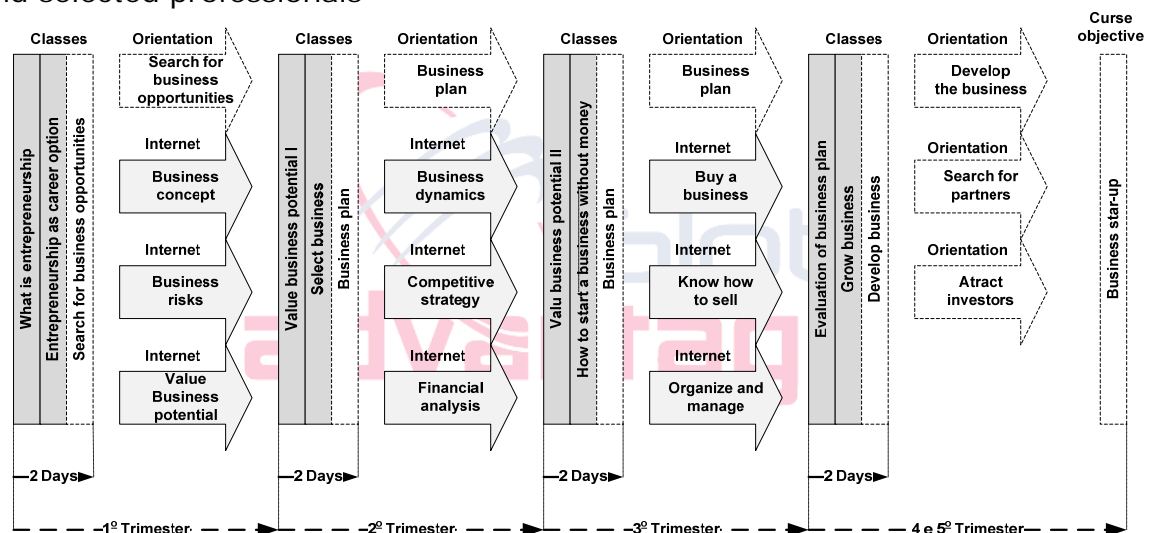
The course does not have to give any formal recognition to the students attending it, since the students' objective is to start a business not to get academic recognition. The only obligation is should be to get passing grades in the classes they attend - so they may continue participating in the program. Additionally, the course format must permit the students and attending professionals to be able continue working, or in the case of the students, continue their graduate studies in other fields.

To attract students to the entrepreneurship center and its entrepreneurship course the university should offer optional introductory entrepreneurship courses in all faculties. These courses should be teasers designed to make students aware of the entrepreneurship center and the possibility of becoming entrepreneurs as a career option.

The entrepreneurship course should follow the model adopted by some business schools for their executive MBA courses and have a duration of

four trimesters with the possibility of a fifth trimester for students that need additional coaching. The course would have four two day class sessions (Friday and Saturday) at the open entrepreneurship center along with courses over the internet (Figure 5). This structure was created to give students the maximum freedom to do research on their business venture and write the business plan under the supervision of a professor, and at the same time continue their work or study. The two day sessions at the open entrepreneurship center are important to the students not only to enhance their learning experience but also to meet fellow students and find potential business partners.

Figure 5. Proposal for an entrepreneurship course for graduate students and selected professionals



Source: Degen (2009)

Apart from the supervision of the professors the students will also have access to business mentors to coach them in developing their business opportunity. These mentors will be successful entrepreneurs or business executive volunteers that will dedicate time to coaching students on how to start-up a business venture. Some of these volunteers will double as angel investors. This course format will give the students the possibility to be oriented by professors and experienced entrepreneurs or executives during four to five trimesters.

The syllabus of the proposed entrepreneurship course and each particular class and internet course (Figure 5) are based on Degen's (2009) recent book that was specially written to be used as textbook for such a course. The first course using this syllabus will be taught in 2010 at the open entrepreneurial center being created at UNISUL.

Conclusion

Brazilian universities have the obligation to prepare the future citizens that will develop and grow the country. They have to take special care in preparing the next generation of entrepreneurs and have to motivate them to pursue high-expectation business opportunities that will generate the necessary wealth to develop the country and solve once and for all the extreme poverty problem that Brazil has. If this problem is not solved the country's rich natural resources and beautiful environment are at great risk, and furthermore there will be no personal safety for its citizens due to crime motivated by the extreme inequality between rich and poor. There will also be no political stability because the poor, who form the largest voting body in a country without adequate schooling and culture, will vote for any populist that promises a better life for them. Brazil runs the risk of following the example of Venezuela.

It is important that all future entrepreneurs take to heart what Schmidheiny (1992) wrote for the 1992 Rio Earth Summit in his book *Changing Course*:

The requirement for clean, equitable economic growth remains the biggest single difficulty within the large challenge of sustainable development.

Providing such growth is possible is certainly the greatest test for business and industry, which must devise strategies to maximize added value while minimizing resource and energy use.

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